Agenda

Planning Commission - Regular Meeting
City and Borough of Juneau
Mike Satre, Chairman

October 27, 2015
Assembly Chambers
7:00 PM

I. ROLL CALL

II. APPROVAL OF MINUTES

III. PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

IV. PLANNING COMMISSION LIAISON REPORT

V. RECONSIDERATION OF THE FOLLOWING ITEMS

VI. CONSENT AGENDA

- **A.** SMF2015 0007, Final Plat review for a seven lot subdivision in a D-15 zoning district.
- **B.** AAP2015 0023, A Conditional Use Permit for accessory apartment on an undersized lot.
- **C.** USE2015 0008, Conditional Use Permit to convert a church into a child care center in a D-3 zoning district.
- **D.** CSP2015 0014, Cope Park Improvements Phase II

VII. CONSIDERATION OF ORDINANCES AND RESOLUTIONS

VIII. UNFINISHED BUSINESS

IX. REGULAR AGENDA

- **A.** AME2015 0014, Planning Commission review of Preliminary Draft Juneau Wetlands Management Plan Update.

X. BOARD OF ADJUSTMENT

XI. OTHER BUSINESS

- **A.** Alaska Superior Court Decision re: USE2013 0027, Landscape Alaska Conditional Use Permit

XII. DIRECTOR'S REPORT

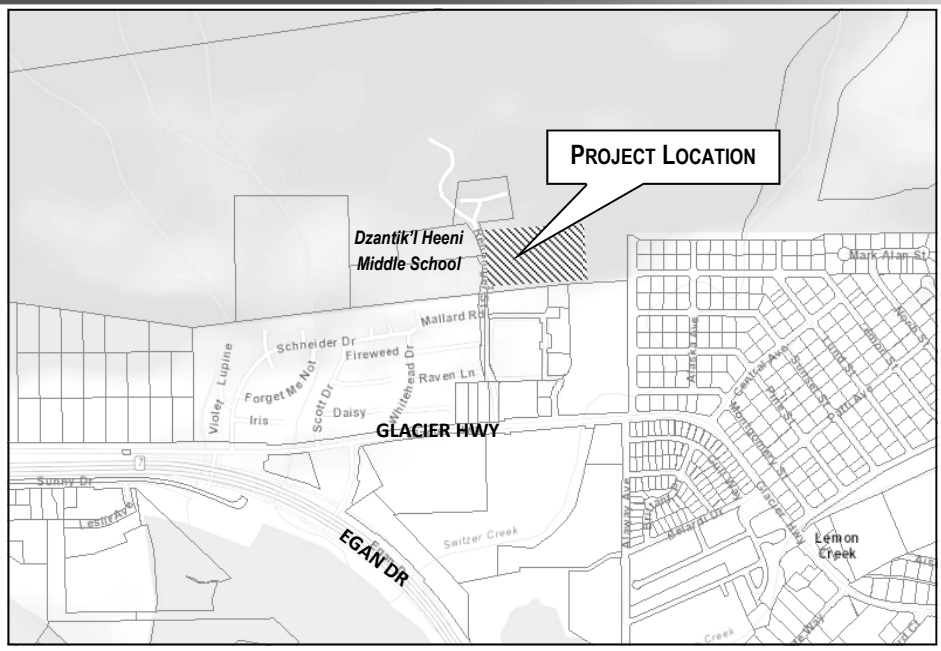
XIII. REPORT OF REGULAR AND SPECIAL COMMITTEES

- **A.** Lands Committee Minutes - September 28, 2015 Meeting

XIV. PLANNING COMMISSION COMMENTS AND QUESTIONS

XV. ADJOURNMENT

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

SHIP TO:

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PROPOSAL: **SMF2015 0007: Final Plat review for an eight lot subdivision in a D-15 zoning district.**

File No:	SMF2015 0007	Applicant:	CBJ Lands and Resources
To:	Adjacent Property Owners	Property PCN:	5-B14-0-100-017-0
Hearing Date:	October 13, 2015	Owner:	City and Borough of Juneau
Hearing Time:	7:00 PM	Site size:	Approximately 12 Acres
Place:	Assembly Chambers	Zoned:	D-15
	Municipal Building	Site Address:	1598 Renninger Street
	155 South Seward Street	Accessed Via:	Renninger Street
	Juneau, Alaska 99801		

PROPERTY OWNERS PLEASE NOTE:

You are invited to attend this Public Hearing and present oral testimony. The Planning Commission will also consider written testimony. You are encouraged to submit written material to the Community Development Department 14 days prior to the Public Hearing. Materials received by this deadline are included in the information packet given to the Planning Commission a week before the Public Hearing. Written material received after the deadline will be provided to the Planning Commission at the Public Hearing.

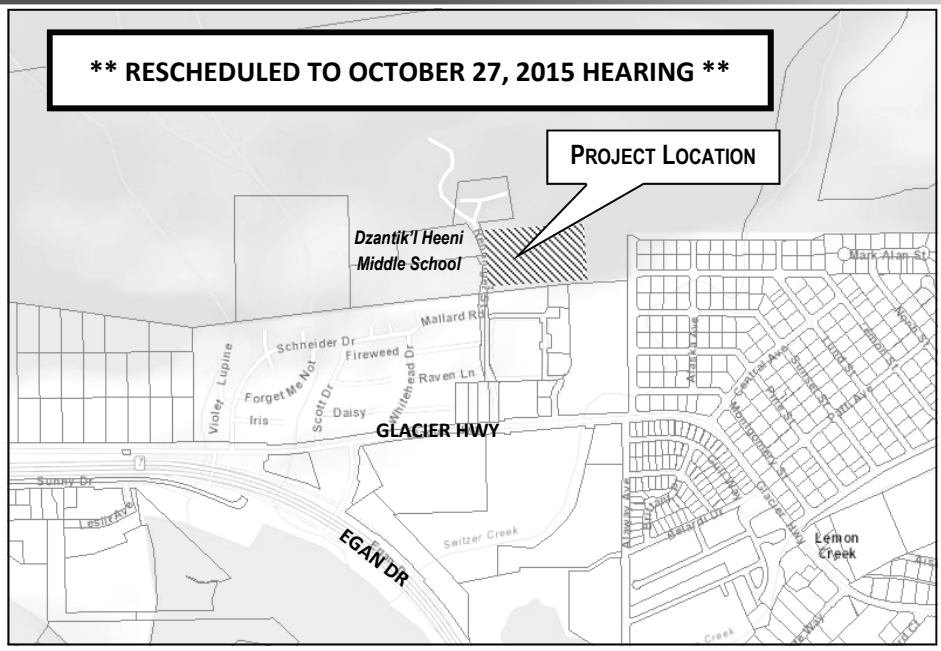
If you have questions, please contact Tim Felstead at tim.felstead@juneau.org or at 586-0466.

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Planning Commission Agendas, Staff Reports and Meeting Results can be viewed at http://www.juneau.org/assembly/novus.php

Date notice was printed: September 14, 2015

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

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Date notice was printed: September 30, 2015

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: October 16, 2015

TO: Planning Commission

FROM: Tim Felstead, Planner
Community Development Department

FILE NO.: SMF2015 0007

PROPOSAL: Final Plat review for a seven lot subdivision in a D-15 zoning district.

GENERAL INFORMATION

Applicant:	CBJ Lands and Resources
Property Owner:	City and Borough of Juneau
Legal Description:	USS 5504 Lot A2
Parcel Code No.:	5-B14-0-100-017-0
Site Size:	32,186,484 square feet (738.9 acres) – Approximately 12 acres are intended for development.
Comprehensive Plan Future Land Use Designation:	Medium Density Residential
Zoning:	D15
Utilities:	Public water, Public Sewer
Access:	Renninger Street
Existing Land Use:	Vacant
Surrounding Land Use:	North - D-15; Eaglewood Apartments; Renninger Street South - D-15; Gruening Park; Renninger Street East - D-15; Switzer Creek Natural Area Park West - D-15; Dzantik'i Heeni Middle School; Renninger Street

0 250 500 1,000 Feet

VICINITY MAP FOR PROPOSED RENNINGER SUBDIVISION

ATTACHMENTS

Attachment A – Application including supporting documentation for fulfillment of conditions for Final Plat approval. Application includes:

(i) Notice of Decision for SMP2015 0005: Preliminary Plat review for an eight lot subdivision in a D-15 zoning district.
(ii) Construction drawings for new street (Jackie Street)
(iii) Army Corp of Engineers wetland fill permit.

Attachment B – May 13, 2015 memorandum from Eric Feldt, Community Development, to the CBJ Planning Commission regarding SMP2015 0005

Attachment C – Draft Final Plat for Renninger Subdivision

Attachment D –Traffic Impact Analysis for Renninger Street/Glacier Highway intersection.

Attachment E – Notice of Public Hearing

NOTE: References to code sections relate to the CBJ Land Use Code in effect prior to September 30, 2015.

PROPOSAL

The City & Borough of Juneau (CBJ) is initiating a seven lot subdivision on CBJ-owned property across from Dzantik'i Heeni (DZ) Middle School in Lemon Creek to create more housing options during a time of severe housing shortage. This subdivision will establish a new 350-foot long paved CBJ road with utilities and sidewalks to enable immediate development.

This memorandum addresses the Final Plat review process, the second part of a two-step Major Subdivision process (as per CBJ 49.15.430 prior to September 30, 2015 which was in effect when the subdivision process was first filed). Approval of this step will allow the applicant to record the plat to complete the subdivision of the lots and allow the subsequent sale of all but the larger remainder lot (Lot 1). During the Preliminary Plat review (SMP2015 0005), three conditions were specified by the Planning Commission (see **Attachments A(i)** and **B**). The Preliminary Plat memorandum gives a more detailed review of the proposed subdivision in terms of consistency with the Land Use Code and other CBJ adopted plans, such as lot dimensions and size, required utilities and other general improvements of the subdivision.

This memorandum provides specific information on the conditions required following the Preliminary Plat review as well as additional information on minor changes to the subdivision design since the Preliminary Plat review. The project has also been reviewed through a City Consistency process (CSP2015 0009) to ensure the subdivision is consistent with city adopted plans.

BACKGROUND

In 1997, R&M Engineering prepared the 'CBJ Switzer Area Land Study' for the CBJ to determine future development. The area investigated was north and east of the DZ Middle School. The subject site is within this study area.

The site was also identified on the 'Long Term Disposal' list in the 1999 CBJ Land Management Plan. This list was compiled through an evaluation of the 1996 Comprehensive Plan and Capital Improvement Project (CIP) list. The evaluation resulted in a list of 'immediate' and 'long term' disposal of CBJ lands within the urban service area (primarily those lands having CBJ sewer and water). The subject area was placed on the 'long term disposal' because it needed to be subdivided prior to development.

Later in 2011, R&M Engineering produced the 'CBJ Switzer Lands Residential Development Study' which provided a narrowed focus of the 1997 study area by identifying three development phases, one including the subject site. The site was identified as the easiest to be developed and envisioned to be developed first. The excerpt from this study explains why the subject site was chosen first.

> *"Development Area 2A would be the least expensive to develop and offers the lowest cost per dwelling unit. It is a very short piece of road being constructed and utility costs are minimal. It is zoned D-15, which would allow up to 48 units; but the cost per dwelling unit is based on a more conservative 32 units. There are some wetlands near Renninger Street that would require permitting; but these are not high-functioning wetlands; and they may be able to be avoided. The existing Switzer Trail that connects DZMS and neighborhoods off Alaska and Lund Street is used by students coming to and from school. The Juneau Safe Routes to Schools Plan (March 2012 public review draft) recommends adding lights and improving the narrow bridges on this trail through area 2A. Design of housing in this area should improve or relocate and improve this non-motorized route to and from school as well as Renninger Street."* Page 28.

Following the Preliminary Plat review, the following three conditions were required for approval of the Preliminary Plat, and these should be addressed for review of the Final Plat.

1. Prior to Final Plat approval, the applicant shall submit a Traffic Impact Analysis to the Community Development Department consistent with the Land Use Code (49.40.305(c) (1-8)). Any improvements recommended in the TIA shall be analyzed by staff and put into project design, where required.

2. Prior to Final Plat approval, the applicant shall submit construction drawings showing a crosswalk or similar feature on Renninger Street that connects the existing northern middle school driveway to Jackie Street.

3. Prior to Final Plat approval, the applicant shall submit construction drawings showing the extension of the eastern sidewalk on Renninger Street connecting with the future sidewalk along Jackie Street.

The fulfillment of these conditions together with other minor changes is addressed under the appropriate sub-heading in the following 'analysis' section. The plat has been reviewed internally to ensure compliance with CBJ surveying requirements.

ANALYSIS

Zoning- The subdivision is zoned D15. The Preliminary Plat memorandum identified 8 distinct lots,

one of which was to be a 'conservation' lot which preserved wetlands within the overall subdivision. On the Final Plat, this has instead been identified as a 'Preservation Easement' within Lot 5. A note has been added to the Final Plat to this effect describing how development is prohibited (See Note 5, Sheet 1 of **Attachment C**). The purpose, size and location of the lot is the same as described in the Preliminary Plat (i.e. required by the Army Corp of Engineers for wetlands preservation as part of the permit to fill other wetlands within the subdivision).

The designation as a preservation easement and not a distinct lot allows this area to be included in the total area of Lot 5. This allows for the maximum number of dwelling units on lot 5 to be increased to 66 units. The theoretical maximum number of residential units for the whole subdivision becomes 189 units. This is an increase of 19 units above that which was reviewed in the preliminary plat.

It is unlikely that all 189 units will be constructed due to costs of construction, site constraints and environmental challenges.

Drainage

The property slopes away from Renninger Street at a shallow grade. As the new road and properties are developed, the drainage will be changed from its natural state and contained within each site and directed to either the road or an approved drainage area as approved by CBJ Engineering. Road construction plans are provided in **Attachment A(ii)**.

Wetlands

There are wetlands within in this subdivision that will be affected by the new road and future development. The preservation easement fulfills the requirements of the Army Corp of Engineers and a Permit has been issued for the proposed construction locations (see Army Corp of Engineers Permit in **Attachment A(iii)**).

Habitat

Besides wetlands, there is no other mapped habitat located in the proposed subdivision that is regulated by the CBJ Land Use Code.

Access

The proposed lots will have direct access onto the new street (Jackie Street), which will connect to Renninger Street. Construction plans are provided in **Attachment A(ii)**.

Traffic Analysis

A Traffic Impact Analysis (TIA) was required as a condition of preliminary plat approval to determine whether the Renninger Street /Glacier Highway intersection could adequately accommodate future traffic growth. A TIA based on 2015 traffic survey data was prepared by DOWL Engineering for CBJ Lands and Resources/Engineering and Public Works to determine the future Level Of Service (LOS) at this intersection (see **Attachment D**).

LOS is a measure of the amount of delay experienced by vehicles at intersections – it is categorized into bands with 'A' being the best and 'F' being the worst. The Renninger Street/Glacier Highway intersection is an un-signalized intersection. ***Table 1*** shows the delay per vehicle (seconds/vehicle) range for each band.

LOS criteria for un-signalized intersections	
LOS Band	***Delay range (seconds/vehicle)***
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Table 1: LOS bands for un-signalized intersection (Source: ITE Highway Capacity Manual)

The TIA examined the potential vehicle traffic generated by 189 dwelling units. The LOS reported is that of the worst performing street contributing to the intersection. In this case, it was on Renninger St. The study forecasts that LOS C would be achieved during the AM and PM peaks traffic periods if maximum build out of the subdivision were achieved (see **Attachment D, p.7**). As per 49.40.310, a TIA showing a deterioration of traffic performance below LOS D as a result of the subdivision would have required mitigating measures. No mitigating measures are needed as a result of this subdivision. This latest TIA also references a 2012 TIA undertaken for Alaska Department of Transportation and Public Facilities (DOT&PF) that examined the length of Glacier Highway through the Lemon Creek area. The 2012 TIA reviewed accident data at the Renninger St/Glacier Highway intersection and identified no significant accident issues with an existing 0.6/vehicle crashes per year occurring at this intersection. Given this low level of accidents, any identification of an accident pattern would not be statistically significant.

It should also be noted that Alaska Department of Transportation and Public Facilities (DOT&PF) plan to implement road improvements along Glacier Highway in the Lemon Creek area including improvements to pedestrian and cycling, and intersection capacity where required. These improvements are scheduled for construction in 2017.

According to the Land Use Code CBJ 49.40.305, the purpose of the TIA is to "…identify and assess the impacts of the proposed development on all affected transportation systems. The TIA shall

identify any effective development design or operational measures that would mitigate impacts of a development on transportation systems". TIA's are required to address items included under CBJ 49.40.305(c) (1-8). Mitigation measures may be required as a result from the TIA, as provided under CBJ 49.40.330.

Because the subdivision does not involve construction of structures there are some items in 49.40.305(c) (1-8) such as internal traffic circulation and parking or on-site bike and pedestrian facilities that are not relevant to this subdivision. These aspects would be reviewed during the building permit process for each of the developments on the lot. Other local street impacts regarding pedestrian movements noted during the preliminary plat review have been addressed under the pedestrian access section below. Given the location of the new street and the number dwelling units that could be built, it is suggested that the Safe Routes to School recommendations for DZ Middle School be reviewed and that area of Renninger Street incorporated into the School Zone (i.e. reduced speed limits during school start and end times).

Condition 1 of the approved Preliminary Plat is satisfied.

Pedestrian Access

Conditions 2 & 3 of the Preliminary Plat approval related to pedestrian movement – these have been met.

Condition 2 required a pedestrian crossing or similar feature to be shown on construction drawing at the north end of Renninger Street linking the new street with the northern school entrance. These construction drawings, as submitted with the application, show a pedestrian crossing at an appropriate location (see *Sheet 7* of road construction drawings in **Attachment A(ii)**).

Condition 3 required the footpath running along the eastern side of Renninger Street to the new street be paved and matched to the existing sidewalk. The construction plans address this condition (see Note 7, *Sheet 9* of road construction plans in **Attachment A(ii)**).

FINDINGS

CBJ §49.15.440(3) Commission Action, states that the "Planning Commission shall approve the final plat if the final plat substantially conforms to the approved preliminary plat, and all applicable conditions have been satisfactorily completed." The conditions of the preliminary plat are as follows:

1. Prior to Final Plat approval, the applicant shall submit a Traffic Impact Analysis to the Community Development Department consistent with the Land Use Code (49.40.305(c) (1-

8)). Any improvements recommended in the TIA shall be analyzed by staff and put into project design, where required.

A TIA has been undertaken which identified no traffic mitigation improvements were required due to this subdivision. Pedestrian improvements are addressed in **Conditions 2 & 3**. Internal traffic circulation and parking, and on-site bike and pedestrian facilities will be assessed that are not relevant to this subdivision. ***Condition 1 of the approved preliminary plat is satisfied***.

2. Prior to Final Plat approval, the applicant shall submit construction drawings showing a crosswalk or similar feature on Renninger Street that connects the existing northern middle school driveway to Jackie Street.

These construction drawings, as submitted with the application, show a pedestrian crossing at an appropriate location (see *Sheet 7* of road construction drawings in **Attachment A(ii)**). ***Condition 2 of the approved Preliminary Plat is satisfied***.

3. Prior to Final Plat approval, the applicant shall submit construction drawings showing the extension of the eastern sidewalk on Renninger Street connecting with the future sidewalk along Jackie Street.

The construction plans address this condition (see Note 7, *Sheet 9* of road construction plans in **Attachment A(ii)**). ***Condition 3 of the approved Preliminary Plat is satisfied***.

RECOMMENDATION

Staff recommends that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Final Plat permit. The permit would allow Final Plat approval for the proposed Renninger Subdivision.

It is recommended that the current School Zone design and coverage be reviewed to account for the new dwellings in this subdivision.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received: 08/19/15
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION

Project Description
Seven lot multi-family residential subdivision between Dzantik'I Heeni Middle School and Switzer Creek.

PROPERTY LOCATION

Street Address	City/Zip
1598 Renninger Street	Juneau Alaska 99801

Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot)
A Subdivision Within Lot A-2, a resubdivision of Tract A1-A, U.S.S. 5504 and Tract B, Golden Heights Subdivision

Assessor's Parcel Number(s)
5-B14-0-100-017-0

LANDOWNER/ LESSEE

Property Owner's Name	Contact Person:	Work Phone:
City and Borough of Juneau	Greg Chaney	586-0205
Mailing Address	**Home Phone:**	**Fax Number:**
155 South Seward Street, Juneau AK 99801	586-2594	586-5385
E-mail Address	**Other Contact Phone Number(s):**	
greg.chaney@juneau.org	586-0224	

LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****

I am (we are) the owner(s)or lessee(s) of the property subject to this application and I (we) consent as follows:
A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.
B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.

X Greg P. Chaney — Landowner/Lessee Signature — Date: Aug 19 2015

X _____ Landowner/Lessee Signature — Date

NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.

APPLICANT If the same as OWNER, write "SAME" and sign and date at X below

Applicant's Name	Contact Person:	Work Phone:
Same		
Mailing Address	**Home Phone:**	**Fax Number:**
E-mail Address	**Other Contact Phone Number(s):**	

X Greg P. Chaney — Applicant's Signature — Date of Application: Aug 19 2015

----------OFFICE USE ONLY BELOW THIS LINE----------

STAFF APPROVALS

✔	Permit Type	***SIGN	Date Received	Application Number(s)
	Building/Grading Permit			
	City/State Project Review and City Land Action			
	Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
	Mining Case (Small, Large, Rural, Extraction, Exploration)			
	Sign Approval (If more than one, fill in all applicable permit #'s)			
	Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)		08/19/15	SMF 20150007
	Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
	Variance Case (De Minimis and all other Variance case types)			
	Wetlands Permits			
	Zone Change Application			
	Other (Describe)			

***Public Notice Sign Form filled out and in the file.

Comments: Permit Intake Initials

Attachment A - Application including supporting documentation for fulfillment of conditions from preliminary plat approval

NOTE: DEVE... ...ONS

I:\FORMS\2010... ...2009

MAJOR SUBDIVISION OR PLATTING APPLICATION

(CHANGING OR CREATING 5 OR MORE LOTS)

Project Number	Project Name (15 characters)	Case Number	Date Received
		SMF20150007	08/19/15

TO BE COMPLETED BY THE APPLICANT

TYPE OF MAJOR SUBDIVISION OR PLATTING APPROVAL REQUESTED

(please see submittal requirements on reverse)

- [ ] Preliminary Plat (SMP)
- [x] Final Plat (SMF)
- [ ] Planned Unit Development- Preliminary Plan Approval (PDP)
- [ ] Planned Unit Development - Final Plan Approval (PDF)
- [ ] Other _____

Please attach a cover letter to fully explain the project if there is not adequate space on this form.

LEGAL DESCRIPTION(S) OF PROPERTY TO BE SUBDIVIDED OR PLATTED:

A Subdivision Within Lot A-2, a resubdivision of Tract A1-A, U.S.S. 5504 and Tract B, Golden Heights Subdivision

Number of Existing Parcels 1 Total Land Area 738.9 Acres Number of Resulting Lots or Parcels 7

EXISTING BUILDING(S) OR STRUCTURES ON THE LAND:

- [ ] YES
- [x] NO

CURRENT USE OF LAND OR BUILDING(S):

Vacant. Boardwalk trail and drainage channel borders southern property line.

PROPOSED USE OF LAND OR BUILDING(S):

Six lot multifamily subdivision with a large tract remaining. The boardwalk trail and drainage infrastructure will remain in place with easements. Lot 1 consists of the majority of the remaining parcel. It is roughly 725 acres and stretches to Lemon Creek. This lot will be used for future CBJ development and habitat preservation.

UTILITIES AVAILABLE:

WATER: [x] Public [ ] On Site SEWER: [x] Public [ ] On Site

UNIQUE CHARACTERISTICS OF LAND OR BUILDING(S):

The lot contains wetlands and small tributaries which feed into Switzer Creek. Switzer Creek flows directly into the Mendenhall Refuge. Lower value wetlands border Renninger Street so it is not possible to build a driveway or road to the site without wetland fill. USACE has issued a wetland fill permit for this development. See Attached Memo.

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

SUBDIVISION/PLATTING/PUD FEES

	Fees	Check No.	Receipt	Date
Application Fees	$ 490.00			
Admin. of Guarantee	$			
Adjustment	$			
Pub. Not. Sign Fee	$ N/A			
Pub. Not. Sign Deposit	$ N/A			
Total Fee	$ 490.00	N/A		08/19/15

NOTE: MUST BE ACCOMPANIED BY DEVELOPMENT PERMIT APPLICATION FORM

Charge to CIP M14-062

2 71140106 5390

MEMORANDUM

CITY/BOROUGH OF JUNEAU
Lands and Resources Office
155 S. Seward St., Juneau, Alaska 99801
Greg_Chaney@ci.juneau.ak.us
Voice (907) 586-0205
Fax (907) 586-5385

TO: CBJ Planning Commission

FROM: Greg Chaney, Lands and Resources Manager

DATE: August 19, 2015

SUBJECT: Renninger (formerly Switzer) Seven Lot Subdivision Application

At the regular May 26 2015 Planning Commission meeting Preliminary Plat Application SMP2015 0005 was approved with three conditions. These included:

1. Prior to Final Plat approval, the applicant shall submit a Traffic Impact Analysis to the Community Development Department consistent with the Land Use Code (49.40.305(c) (1-8)). Any improvements recommended in the TIA shall be analyzed by staff and put into project design, where required.

2. Prior to Final Plat approval, the applicant shall submit construction drawings showing a crosswalk or similar feature on Renninger Street that connects the existing northern middle school driveway to Jackie Street.

3. Prior to Final Plat approval, the applicant shall submit construction drawings showing the extension of the eastern sidewalk on Renninger Street connecting with the future sidewalk along Jackie Street.

A traffic impact analysis titled "Glacier Highway Bike and Pedestrian Improvements" was completed by Kittelson & Associates in 2012 including the Renninger Street region. It contained allowances for increased development in the area and concluded that proposed improvements scheduled to be constructed by DOT would accommodate future traffic in the region. The CBJ Lands and Resources Division contracted with DOWL Engineering to conduct a review of the 2012 traffic impact analysis to see if its conclusions were still valid in consideration of the proposed subdivision. The conclusion of DOWL Engineering's June 3 2015 report states:

> "...the analysis in 2012 TIA is considered valid for the proposed Switzer Creek Subdivision."

The CBJ Lands and Resources Division contracted with DOWL Engineering to develop designs for the Renninger Subdivision. CBJ Engineering put the project out to bid on August 13 2015 (RFP: E16-046). Page 7 of 15 for these plans includes a diagram showing sidewalks on both sides of the street along with crosswalks across proposed Jackie Street. Note 7 on page 9 of 15 states:

> "The top of the new AC pavement shall match the top back of existing curb and connect to the existing asphalt path approximately 136 feet south.

Therefore, all three conditions for Preliminary Plat SMP2015 0005 have been satisfied.

On Friday, June 12 2015 the US Army Corps of Engineers issued POA-2013-695 the wetland fill permit for the Renninger Subdivision. The wetland fill permit was issued without requirements for further mitigation. The Corps determined that sufficient allowances were made to avoid and minimize wetland fill so that no further mitigation was required. As a result, the "Preservation Lot" that was presented for Preliminary Plat SMP2015 0005 has been converted to a "Preservation Easement". The advantage of an easement is that it allows the owner of the lot to utilize the density (dwelling units) allowed under zoning in the environmentally sensitive portion of the property, to be built in another location on the lot. As a result, the theoretical maximum density for subdivision will increase from 170 to 189 dwelling units.

This may be the last seven lot subdivision proposal to be reviewed through the Major Subdivision process. A major change to the Land Use Code known as the Subdivision Ordinance is being reviewed by the CBJ Assembly as this subdivision application is being reviewed by the Planning Commission. Under the draft Subdivision Ordinance, a seven lot subdivision would be a minor subdivision and reviewed at the staff level. Due to time constraints and the unpredictable nature of the Assembly review process, Lands staff has decided to have this subdivision reviewed under the existing Land Use code for a subdivision of this size. The current process requires Planning Commission approval for preliminary and final plats.

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION
Date: May 27, 2015
File No.: SMP2015 0005

City and Borough of Juneau
Lands and Resources Division
130 S. Franklin Street
Juneau, Alaska 99801

Application For:	Preliminary Plat review for an eight lot subdivision in a D-15 zoning district.
Legal Description:	Lot A2 USS 5504
Property Address:	1598 Renninger Street
Parcel Code No.:	5-B14-0-100-017-0
Hearing Date:	May 26, 2015

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated May 13, 2015, and approved the preliminary plat to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. Prior to Final Plat approval, the applicant shall submit a Traffic Impact Analysis to the Community Development Department consistent with the Land Use Code (49.40.305(c) (1-8)). Any improvements recommended in the TIA shall be analyzed by staff and put into project design, where required.

2. Prior to Final Plat approval, the applicant shall submit construction drawings showing a crosswalk or similar feature on Renninger Street that connects the existing northern middle school driveway to Jackie Street.

3. Prior to Final Plat approval, the applicant shall submit construction drawings showing the extension of the eastern sidewalk on Renninger Street connecting with the future sidewalk along Jackie Street.

Attachment: May 13, 2015 memorandum from Eric Feldt, Community Development, to the CBJ Planning Commission regarding SMP2015 0005.

This Notice of Decision does not authorize any construction. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

A(i) - Notice of Decision for Preliminary plat review SMP2015-0005

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance to CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date: The permit is effective upon approval by the Commission, [Insert Date of Meeting].

Expiration Date: The permit will expire 18 months after the effective date, or November 26, 2016, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the subdivision permit was authorized or no final plat has been approved. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner: _____ _____

Eric Feldt, Planner
Community Development Department

Michael Satre, Chair
Planning Commission

_____ 5/29/2015

Filed With City Clerk Deputy Clerk

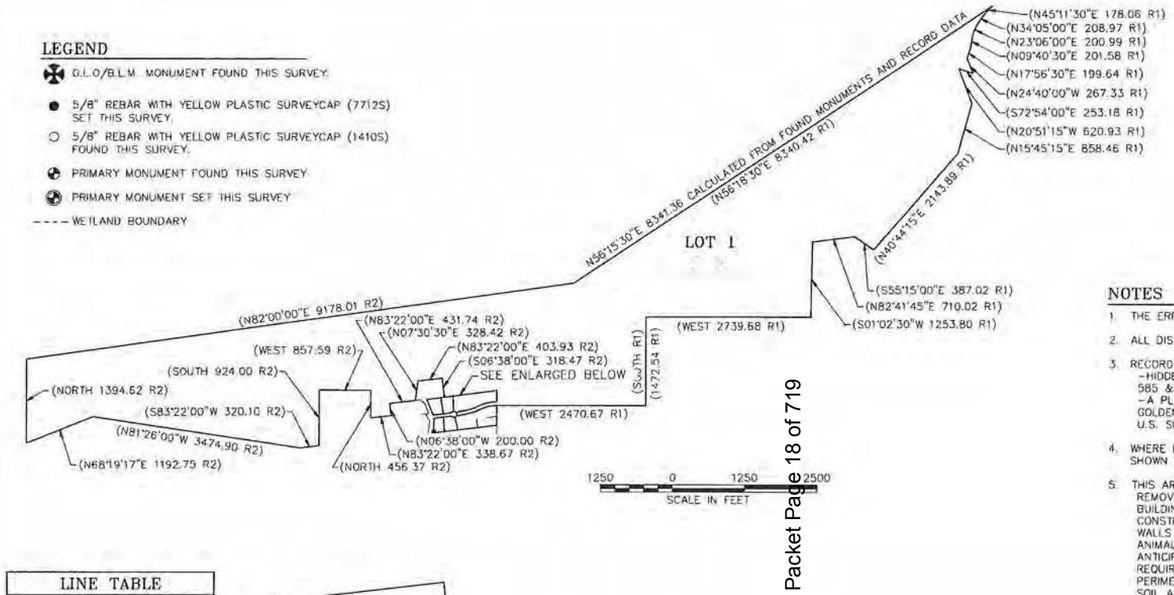
Date

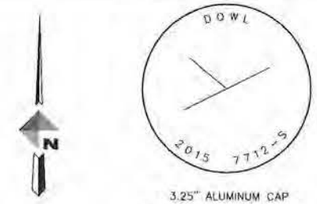
cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this subdivision. ADA regulations have access requirements above and beyond CBJ - adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

LEGEND

- G.L.O./B.L.M. MONUMENT FOUND THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (7712S) SET THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (1410S) FOUND THIS SURVEY.
- PRIMARY MONUMENT FOUND THIS SURVEY
- PRIMARY MONUMENT SET THIS SURVEY
- ---- WETLAND BOUNDARY





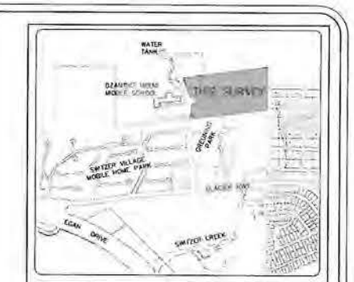
3.25" ALUMINUM CAP

TYPICAL PRIMARY MONUMENT DETAIL
N.T.S.

DOWL HKM
7712-S

5/8"x36" REBAR WITH YELLOW PLASTIC CAP

TYPICAL PRIMARY MONUMENT DETAIL
N.T.S.



VICINITY MAP
SCALE: N.T.S.
SOURCE: CBJ BASEMAP SERIES

NOTES

1. THE ERROR OF CLOSURE OF THIS SURVEY DOES NOT EXCEED 1:5000.
2. ALL DISTANCES ARE MEASURED IN U.S. SURVEY FEET.
3. RECORD INFORMATION DERIVED FROM:
   - HIDDEN VALLEY SUBDIVISION, JUNEAU PLAT 99-35, WITHIN TRACT A, M.S. 585 & FR. U.S. SURVEY 5504 (R1).
   - A PLAT OF A RESUBDIVISION OF TRACT A1-A U.S. SURVEY 5504 AND TRACT B, GOLDEN HEIGHTS SUBDIVISION, WITHIN PORTIONS OF LOT 3 U.S. SURVEY 5504 AND U.S. SURVEY 3801, JUNEAU PLAT No. 98-27 (R2).
4. WHERE DIFFERENT FROM MEASURED OR CALCULATED, RECORDED DIMENSIONS ARE SHOWN IN PARENTHESES.
5. THIS AREA IS SET ASIDE FOR HABITAT PRESERVATION PURPOSES. NO VEGETATION REMOVAL IS ALLOWED EXCEPT FOR REMOVAL OF INVASIVE SPECIES. NO FILL OR BUILDING DEVELOPMENT IS PERMITTED. BUILDING DEVELOPMENT MEANS CONSTRUCTION OF ANY STRUCTURE HAVING A ROOF SUPPORTED BY COLUMNS OR WALLS AND INTENDED FOR THE SHELTER, HOUSING, OR ENCLOSURE OF PERSONS, ANIMALS, EQUIPMENT, MATERIALS, OR ANY SITE WORK IN PREPARATION OR ANTICIPATION OF SUCH CONSTRUCTION. TRAIL CONSTRUCTION THAT DOES NOT REQUIRE FILL IS PERMITTED. INSTALLATION OF A FENCE ALONG THE OUTER PERIMETER OF THE EASMENT IS PERMITTED USING TECHNIQUES THAT MINIMIZE SOIL AND VEGETATION DISTURBANCE.

OWNERSHIP CERTIFICATE

I HEREBY CERTIFY THAT THE CITY AND BOROUGH OF JUNEAU IS THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I _____ AS MANAGER, HEREBY ADOPT THIS PLAT OF SUBDIVISION WITH MY FREE CONSENT, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS NOTED.

BY: _____ DATE: _____ ,2015

NOTARY ACKNOWLEDGMENT

STATE OF ALASKA)
)ss.
FIRST JUDICIAL DISTRICT)

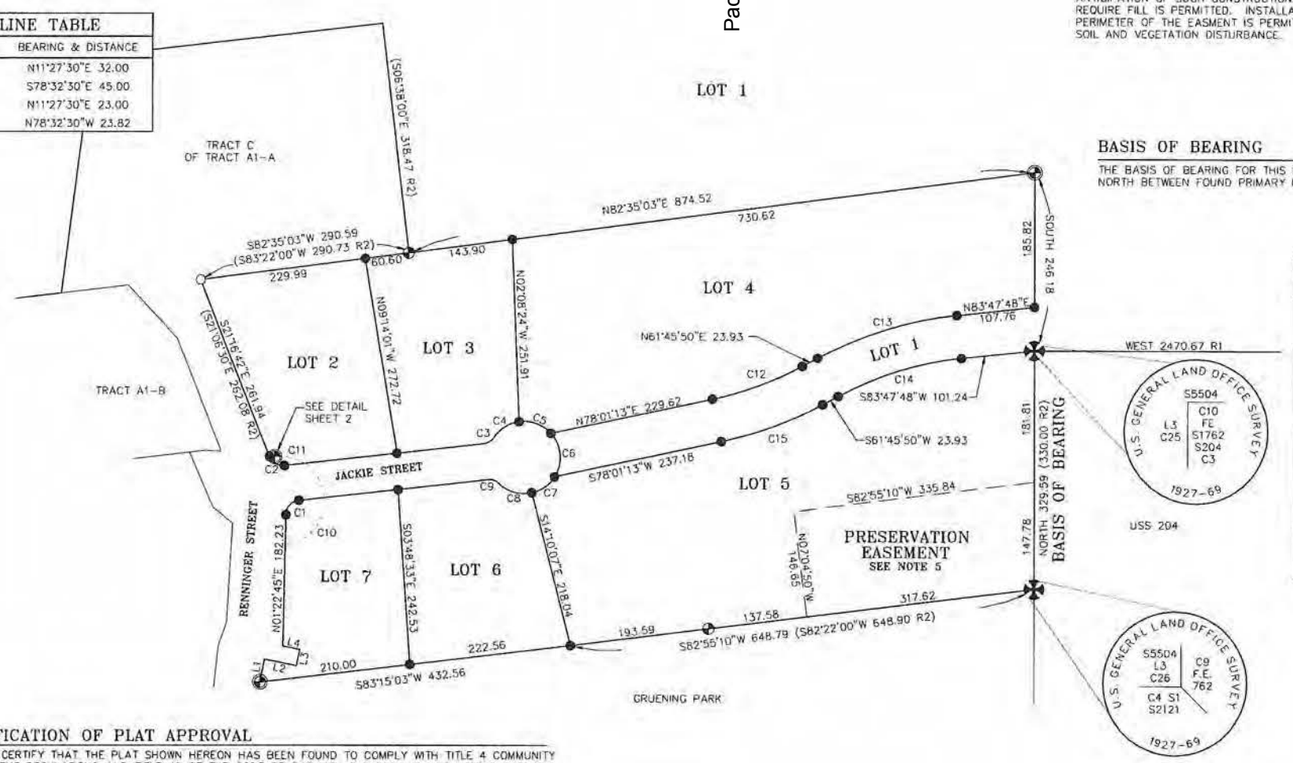
THIS IS TO CERTIFY THAT ON THIS ____ DAY OF_____ , 2015, BEFORE ME THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR THE STATE OF ALASKA, DULY COMMISSIONED AND SWORN, PERSONALLY APPEARED _____, TO ME KNOWN TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE ABOVE AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE SIGNED AND SEALED THE SAME FREELY AND VOLUNTARILY FOR THE USES AND PURPOSES THEREIN MENTIONED.
WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

_____
NOTARY PUBLIC FOR ALASKA
MY COMMISSION EXPIRES:

RECEIVED
AUG 19 2015
PERMIT CENTER CBJ

LINE TABLE

LINE No.	BEARING & DISTANCE
L1	N11°27'30"E 32.00
L2	S78°32'30"E 45.00
L3	N11°27'30"E 23.00
L4	N78°32'30"W 23.82



USS 204

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS PLAT IS THE RECORD BEARING OF NORTH BETWEEN FOUND PRIMARY MONUMENTS NOTED.

CURVE TABLE

CURVE	LENGTH	DELTA	RADIUS	CHORD
C1	28.72	82°16'53"	20.00	S42°31'11"W 26.32
C2	26.20	75°03'40"	20.00	N58°48'32"W 24.37
C3	17.45	49°59'41"	20.00	S58°39'47"W 16.90
C4	42.30	48°28'05"	50.00	S57°53'59"W 41.05
C5	48.74	55°51'16"	50.00	N69°56'20"W 46.84
C6	64.94	74°25'13"	50.00	S04°48'06"E 60.47
C7	39.13	44°50'08"	50.00	N54°49'35"E 38.14
C8	49.23	56°24'40"	50.00	S74°33'01"E 47.26
C9	17.45	49°59'41"	20.00	N71°20'32"W 16.90
C10	93.19	87°31'58"	61.00	N39°56'12"E 84.39
C11	42.68	40°05'22"	61.00	N77°16'09"W 41.82
C12	133.35	16°15'23"	470.00	N69°53'32"E 132.91
C13	203.81	22°01'59"	530.00	N72°46'49"E 202.56
C14	180.74	22°01'59"	470.00	S72°46'49"W 179.63
C15	150.38	16°15'23"	530.00	S69°53'32"W 149.87

CERTIFICATION OF PLAT APPROVAL

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH TITLE 4 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU AND IS APPROVED BY THE CITY AND BOROUGH OF JUNEAU DEPARTMENT OF COMMUNITY DEVELOPMENT FOR RECORDING IN THE OFFICE OF THE JUNEAU RECORDING DISTRICT, JUNEAU, ALASKA.

DATED THIS ____ DAY OF_____, 2015.

_____
DIRECTOR
CITY AND BOROUGH OF JUNEAU
DEPARTMENT OF COMMUNITY DEVELOPMENT

_____
ATTEST:

CLERK
CITY AND BOROUGH OF JUNEAU

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS THE SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE ACCURACY OF THE SURVEY IS WITHIN THE LIMITS REQUIRED BY TITLE 04 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, THAT ALL DIMENSIONAL AND RELATIVE BEARINGS ARE CORRECT AND THAT MONUMENTS ARE SET IN PLACE AND NOTED UPON THIS PLAT AS PRESENTED.

DATED: APRIL, 2015

STATE OF ALASKA
49th
William T. Pence
No. 7712-S
REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY PLAT

RENNINGER SUBDIVISION

A SUBDIVISION WITHIN LOT A-2, BEING A RESUBDIVISION OF TRACT A1-A, U.S.S. 5504 AND TRACT B, GOLDEN HEIGHTS SUBDIVISION

CITY AND BOROUGH OF JUNEAU, ALASKA, JUNEAU RECORDING DISTRICT

DOWL

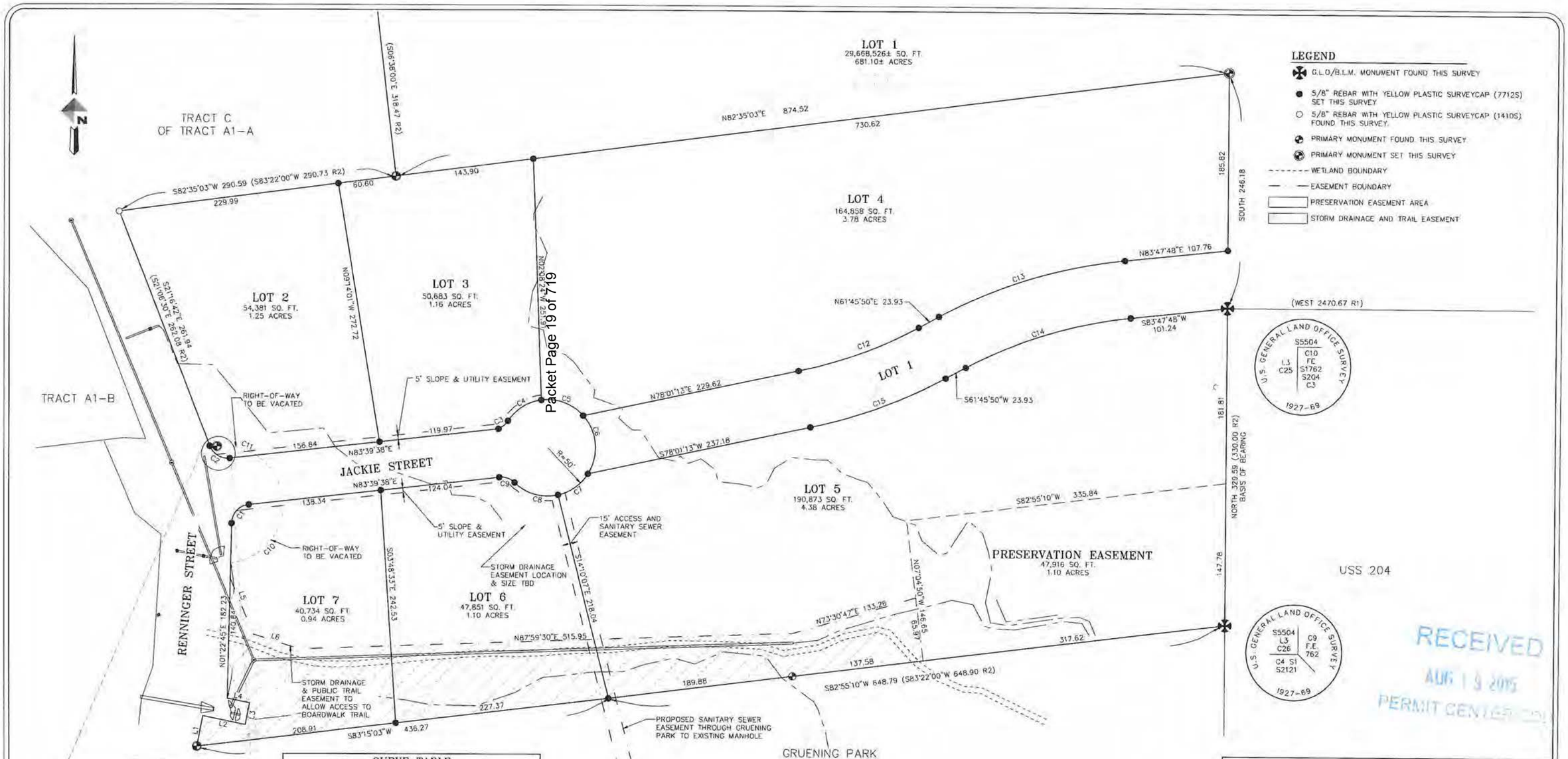
CIVIL ENGINEERING-LAND SURVEYING-CONSTRUCTION MANAGEMENT
5368 COMMERCIAL BOULEVARD
JUNEAU ALASKA 99801 907-780-3533

OWNER

CITY AND BOROUGH OF JUNEAU
155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

SCALE:	DATE:	PROJECT NO:	FILE NO:	SHEET NO:
1"= 100'	JUNE 2015	J70725		1 OF 2

SMF 2015 0007



Packet Page 19 of 719

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AUG 19 2015
PERMIT CENTER

CURVE TABLE

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L4	N78°32'30"W 23.82
L5	S22°43'23"E 63.08
L6	S72°27'13"E 49.94

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS THE SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE ACCURACY OF THE SURVEY IS WITHIN THE LIMITS REQUIRED BY TITLE 04 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, THAT ALL DIMENSIONAL AND RELATIVE BEARINGS ARE CORRECT AND THAT MONUMENTS ARE SET IN PLACE AND NOTED UPON THIS PLAT AS PRESENTED.

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DOWL
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CITY AND BOROUGH OF JUNEAU
155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

SCALE:	DATE:	PROJECT NO:	FILE NO:	SHEET NO:
1"= 50'	JUNE 2015	J70725		2 OF 2

DOWL

MEMORANDUM

TO: John Nelson, City & Borough of Juneau Project Manager

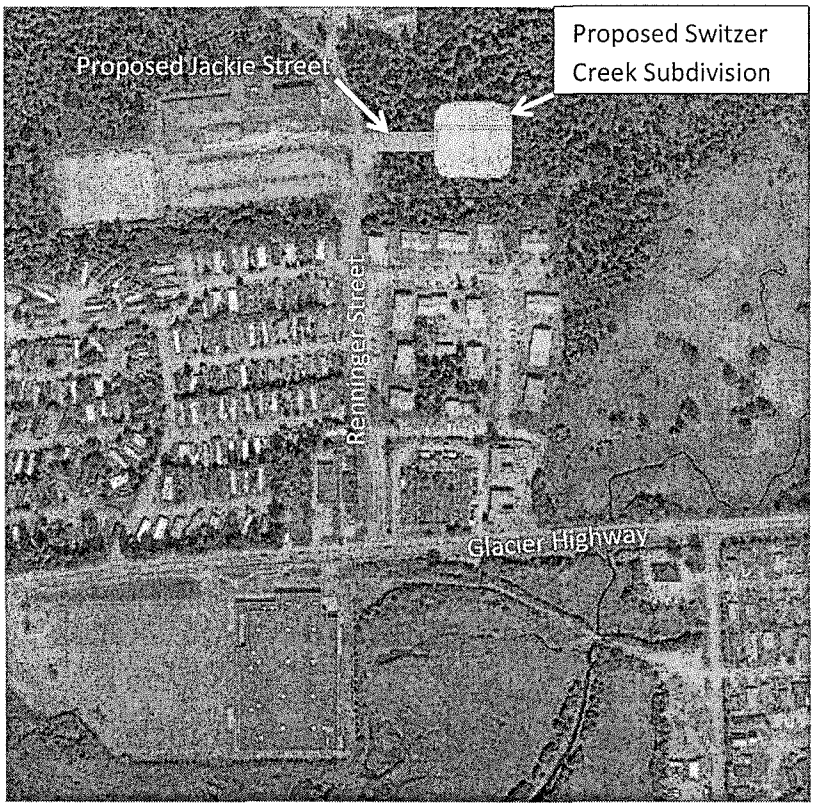
FROM: Naomi Hobbs, P.E., DOWL Transportation Engineering Manager
Matt Ruder, P.E., PTOE, DOWL Transportation Engineer

DATE: June 3, 2015

SUBJECT: Switzer Creek Subdivision – Evaluating Need for Traffic Impact Analysis

This technical memorandum was prepared to evaluate the forecasted traffic volumes provided in the Glacier Highway Bike & Pedestrian Improvements project by Kittelson & Associates, Inc. in 2012 (2012 TIA). Site generated trips by the Switzer Creek Subdivision should have been accounted for in the 2012 TIA. This memorandum evaluates the validity of the forecasted traffic volumes in the 2012 TIA and the need for a revised TIA study.

The proposed subdivision would be located east of Dzantik'i Heeni Middle School. Renninger Street and Jackie Street would provide access to the subdivision. The project location is shown below.



DOWL

Data Collection

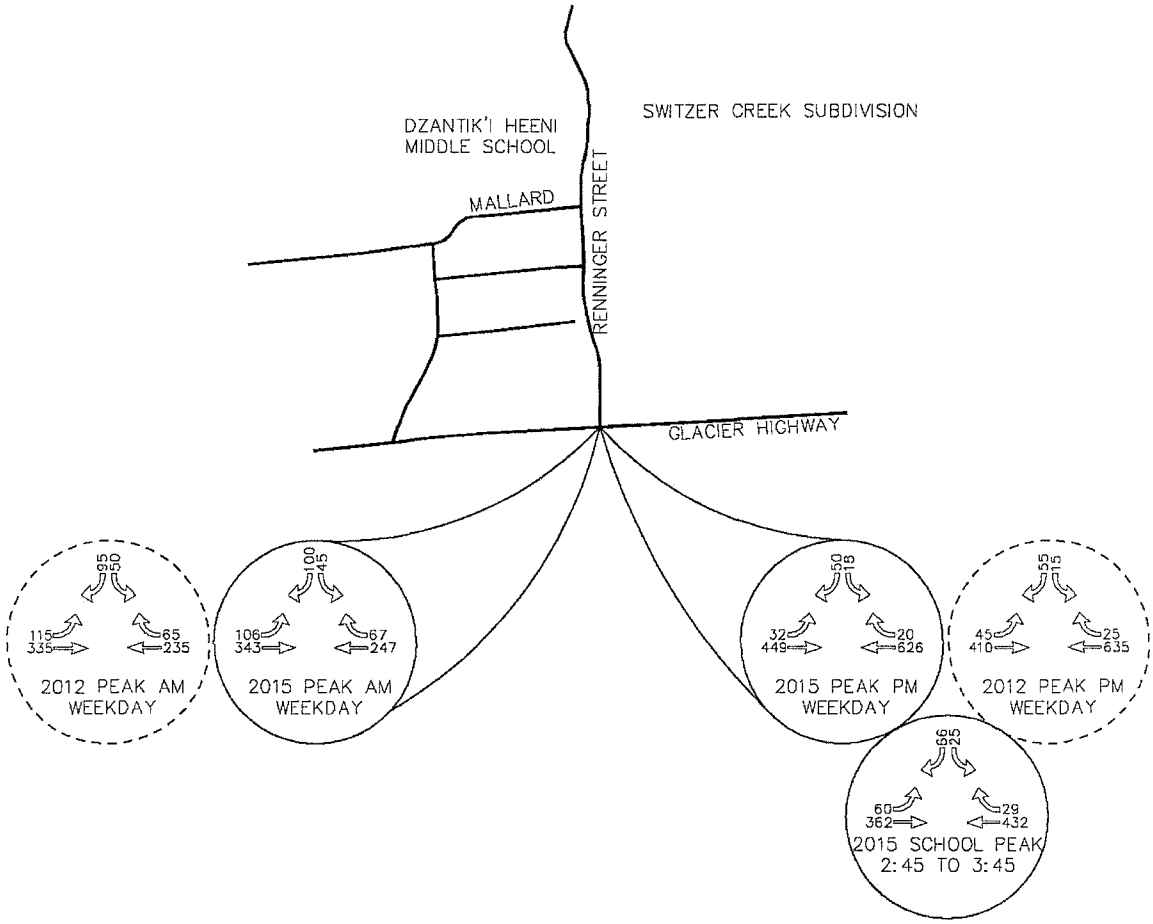
A pneumatic tube counter was installed on Renninger Street, approximately 200 feet north of Glacier Highway, before the apartment complex entrance, on May 11 and 12, 2015. The calculated average daily traffic (ADT) was 1,740 vehicles per day on Renninger Street. The calculated ADT directional distribution was 864 vehicles per day traveling northbound and 876 vehicles per day traveling southbound on Renninger Street.

Turning movement counts were also collected for the intersection of Renninger Street and Glacier Highway on Monday, May 11, 2015. Morning count data were collected between 7 and 9 a.m. and the a.m. peak hour occurred from 7:30 a.m. to 8:30 a.m. with 318 vehicles on Renninger Street. The a.m. peak hour on Renninger Street coincided with the a.m. peak hour of the overall intersection (including traffic on Glacier Highway). Afternoon data were collected between 2 and 6 p.m. The afternoon peak hour on Renninger Street occurred from 2:45 p.m. to 3:45 p.m. with 180 vehicles on Renninger Street. The afternoon peak hour of the overall intersection (including traffic on Glacier Highway) occurred between 4:15 p.m. and 5:15 p.m. The a.m. and p.m. peak hours were determined by identifying the highest four consecutive fifteen minute intervals during each period.

Traffic volumes from the 2015 turning movement counts and from the 2012 TIA are shown in Figure 1.

DOWL

Figure 1 – Peak Hour Turning Movement Counts



NOTES:

1. 2012 TURNING MOVEMENTS ARE FROM A 2012 TECHNICAL MEMORANDUM FROM KITTELSON & ASSOCIATES, INC. THE DATA WAS COLLECTED FOR DOT&PF AS PART OF THE GLACIER HIGHWAY BIKE & PEDESTRIAN IMPROVEMENTS PROJECT.
2. PEAK AM HOURS: FROM 12/6/2012 KAI MEMORANDUM – 7:30AM TO 8:30AM
   FROM 5/11/2015 COUNTS – 7:30AM TO 8:30AM
3. PEAK PM HOURS: FROM 12/6/2012 KAI MEMORANDUM – 4:15PM TO 5:15PM
   FROM 5/11/2015 COUNTS – 4:15PM TO 5:15PM
4. SCHOOL PEAK HOUR: FROM 5/11/2015 COUNTS – 2:45PM TO 3:45PM

As shown, the data collected in 2015 is consistent with the data reported in the 2012 TIA. It should be noted that intersection a.m. and p.m. peak hours for the 2012 TIA occurred during the same time periods as the 2015 count data.

DOWL

Future Traffic Volumes

As currently proposed, the subdivision would be constructed over a four year period, with an anticipated completion date in late 2019. The following steps were used to estimate total traffic volumes:

- The number of weekday daily, AM, and PM peak hour site generated trips were estimated based on rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. "Peak Hour of Adjacent Street" trip generation rates were used to estimate trip generation volumes for the subdivision.
- A trip distribution pattern was derived through a review of existing traffic patterns.
- Site generated trips were added to the 2032 background traffic volumes to determine total traffic volumes for each scenario.

Table 1 shows the estimated trip generation for the proposed development.

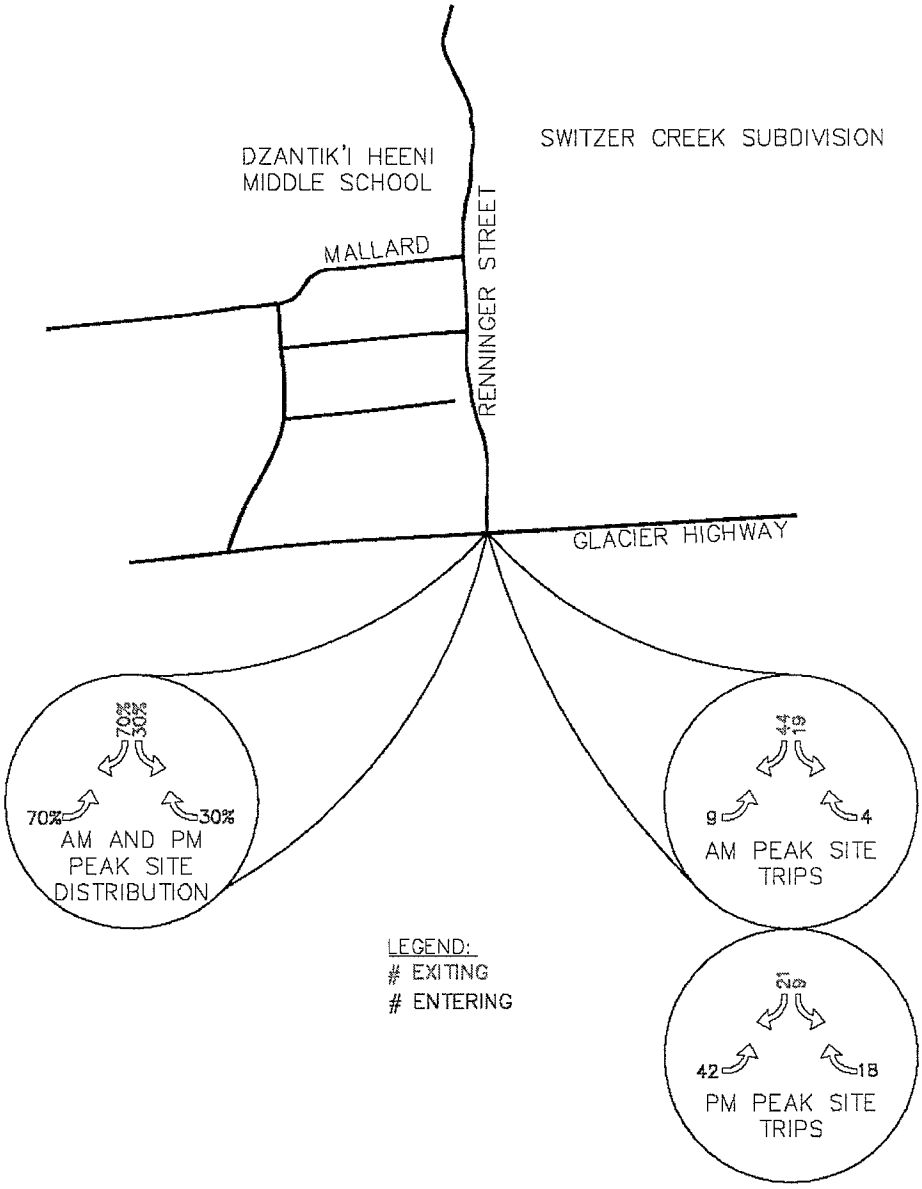
Table 1 – Trip Generation Calculations

ITE Code	Land Use	Dwelling Units	Analysis Period	Trip Rate	Total Trips	% Entering	% Exiting	Trips Entering	Trips Exiting
230	Residential Condominium/ Townhouse	173	Weekday	5.81	1005	50%	50%	503	503
			AM Peak Hour	0.44	76	17%	83%	13	63
			PM Peak Hour	.52	90	67%	33%	60	30

Trip distribution of site generated trips for the proposed development was derived through a review of existing travel patterns. Assumptions regarding entering/exiting traffic for the proposed development during the peak hours are based on information from the ITE trip generation manual. Site trip distribution percentages and trips are shown in Figure 2.

DOWL

Figure 2 – Site Trip Distribution



In the 2012 TIA, traffic volumes were projected by applying a 0.25% annual growth rate (AGR) to 2012 counts for 20 years and adding ITE trip generation data for anticipated development at the time of the study. This calculation resulted in the forecasted 2032 traffic volumes shown on the left side of Figure 3.

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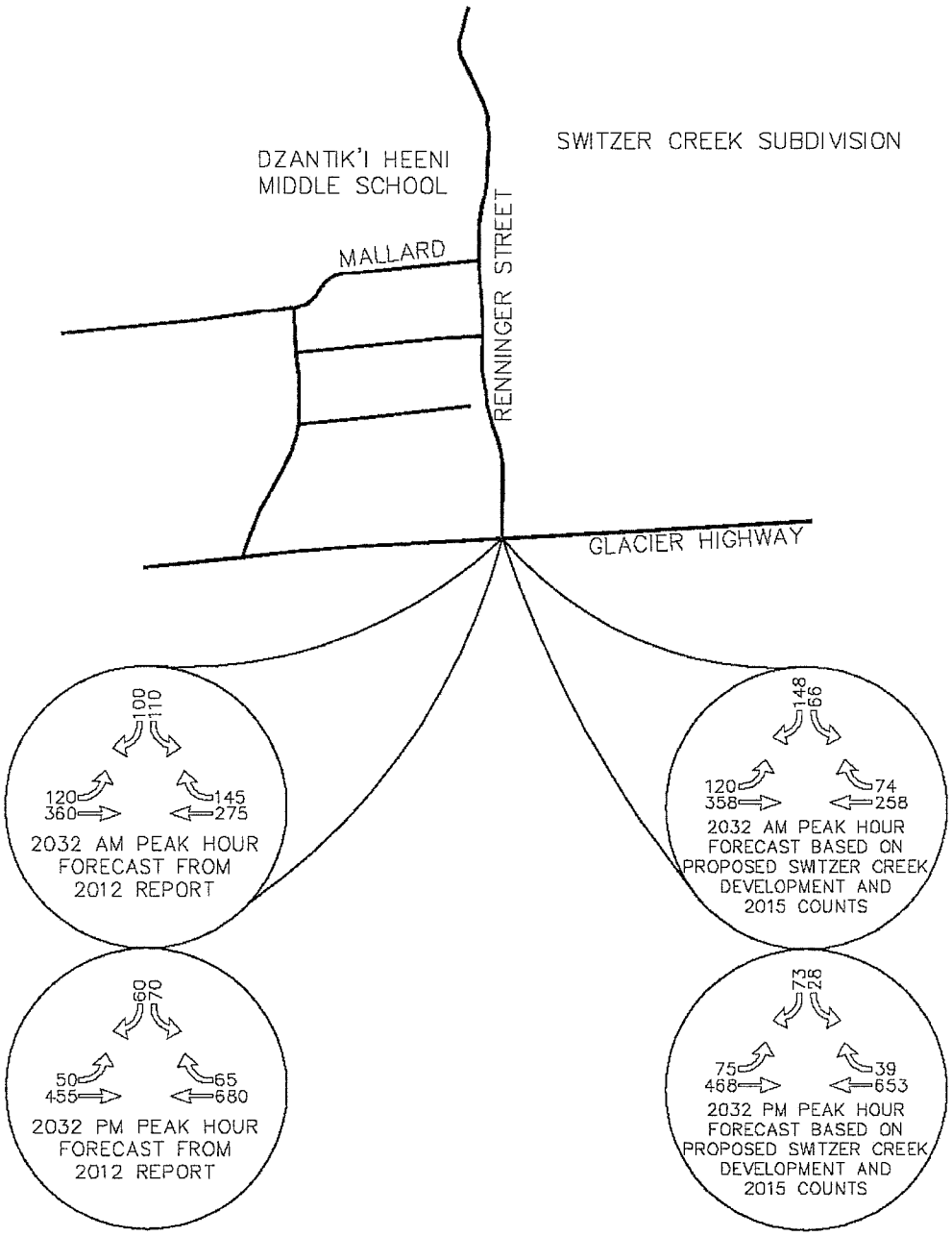
The same methodology was used for this analysis. A 0.25% AGR was applied to 2015 peak hour counts for 17 years and estimated site generated trips were added based on the distribution shown in Figure 2. This calculation resulted in the forecasted 2032 traffic volumes shown on the right side of Figure 3.

Figure 3 – 2032 Forecast Traffic Volumes



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Estimated 2032 a.m. peak and p.m. peak volumes with site generated trips for Renninger Street and for Glacier Highway from each study are shown in Table 2.

Table 2 – Traffic Volume Comparison

Location	2032 forecast from 2012 KAI Study		2032 Forecast from 2015 DOWL Study	
	AM Peak	PM Peak	AM Peak	PM Peak
Renninger Street	475	245	408	215
Glacier Highway east of Renninger Street	890	1270	756	1188
Glacier Highway west of Renninger Street	855	1245	884	1269
Total Intersection	**1110**	**1380**	**1024**	**1336**

Conclusion

The data collected and analyzed in 2015 for the intersection of Renninger Street and Glacier Highway shows a high degree of correlation with the data presented in the 2012 TIA. The biggest discrepancy between the two studies occurs for the forecasted southbound left-turn and westbound right-turn volumes where the volumes are higher in the 2012 TIA (southbound right and eastbound left volumes are lower in the 2012 study). The forecasted a.m. and p.m. peak hour intersection approach volumes from each study are within 10% of each other. Therefore, the analysis in 2012 TIA is considered valid for the proposed Switzer Creek Subdivision. A revised TIA does not appear to be necessary.

SWITZER CREEK SUBDIVISION

Packet Page 27 of 719

VOLUME II of II

Contract No. E16-046

File No. 1853

CITY & BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
UNIFIED JULY 1, 1970

ENGINEERING DEPARTMENT

A(ii) - Construction drawings for new street (Jackie St)

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BEDDED CULVERT PLAN AND PROFILE	6 OF 15
HORIZONTAL AND VERTICAL CONTROL CURB AND GUTTER LAYOUT AND GRADES RENNINGER STREET TO STA "J" 11+85	7 OF 15
HORIZONTAL AND VERTICAL CONTROL CURB AND GUTTER LAYOUT AND GRADES STA "J" 11+85 TO EOP	8 OF 15
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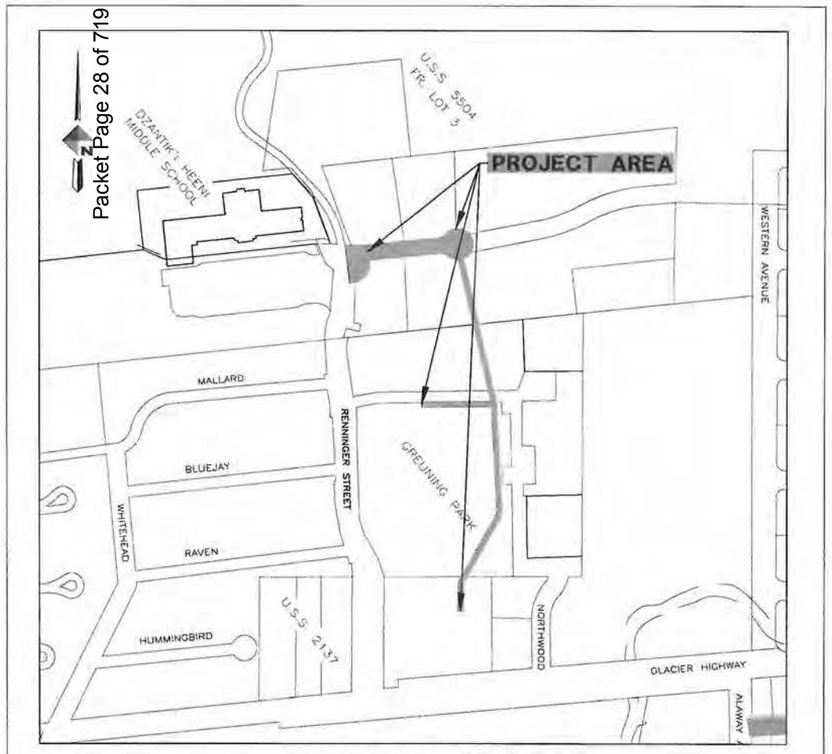
LOAD CENTER DETAILS - JACKIE STREET	13 OF 15
LIGHT POLE DETAILS - JACKIE STREET	14 OF 15
TRENCH DETAILS - JACKIE STREET	15 OF 15

SWITZER CREEK SUBDIVISION

CONTRACT NO. E16-046



VICINITY MAP
NTS

Packet Page 28 of 719

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

DOWL
5368 Commercial Blvd.
Juneau, Alaska 99801
(907) 780-3533 Office
(907) 780-3535 Fax
Consulting Engineers • Land Surveyors • Construction Administration

Q:\27\70725-01\65CAD\SC14-CT-CV-70725-01.dwg 2015-7-31 10:10:51

LEGEND

DESCRIPTION	EXISTING	REMOVE	PROPOSED
AREA DRAIN			
BURIED ELECTRICAL UTILITIES			
CLEARING LIMITS			
CATCH BASIN			CB-1
CONCRETE PAVEMENT			
CONTROL POINT			
CURB & GUTTER			
CUT LIMITS			
FILL LIMITS			
FIRE HYDRANT			
HOUSE NO	9333		
MAILBOX	MB		
PROJECT CONTROL LINE			
PROPERTY LINE			
LIGHT POLE			
SANITARY SEWER PIPE			
SANITARY SEWER MANHOLE			MH-1
SIGN			SEE SIGN ASSEMBLY TABLE
STORM DRAIN PIPE			S-1
STORM DRAIN MANHOLE			
SURVEY MONUMENT– REBAR W/ PLASTIC CAP			
TREE CONIFER			
TREE DECIDUOUS			
VALLEY GUTTER			
WATER LINE PIPE			
WATER VALVE BOX			

ABBREVIATIONS

AC	ASPHALT PAVING
BOP	BEGINNING OF PROJECT
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED POLYETHYLENE PIPE
CONC	CONCRETE
CTE	CONNECT TO EXISTING
DI	DUCTILE IRON
DIA	DIAMETER
EOP	END OF PROJECT
FL	FLOW LINE
FG	FINISHED GRADE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
INV	INVERT
LG	LIP OF GUTTER
LT	LEFT
MH	MANHOLE
MN	MAGNETIC NAIL
MTE	MATCH TO EXISTING
NO	NUMBER
NTS	NOT TO SCALE
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
POC	POINT ON CURVE
PCC	POINT OF COMPOUND CURVE
PVC	POLYVINYL CHLORIDE PIPE
RT	RIGHT
STA	STATION
STD	STANDARD
TBC	TOP BACK OF CURB
TBG	TOP BACK OF VALLEY GUTTER
TP	TOP OF PAVEMENT
TSW	TOP OF SIDEWALK

ABBREVIATIONS TO BE USED WITHOUT PERIODS

GENERAL NOTES

1. BEGIN SUBCUT AT 24 INCHES FROM PAVEMENT SAWCUT LINE AT STREET CONNECTIONS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, OR DIRECTED BY THE ENGINEER. REMOVE AND REPLACE BASE COURSE WITH 6 INCHES OF 2" MINUS SHOT ROCK/BASE COURSE TO 12 INCHES FROM PAVEMENT SAWCUT LINE. SAWCUT AS NECESSARY ALONG ALL STREET, DRIVEWAY AND SIDEWALK APPROACHES TO PROVIDE A NEAT MATCH LINE.
2. LARGE BOULDERS, STUMPS, LOGS, ORGANICS AND GROUND WATER MAY BE ENCOUNTERED AT VARIOUS DEPTHS DURING EXCAVATION OPERATIONS.
3. THE 4TH EDITION OF THE CBJ STANDARD DETAILS, DATED AUGUST 14 2011, IS MADE PART OF THIS CONTRACT, WITH CURRENT REVISIONS AS APPLICABLE.
4. EXISTING PIPE LOCATIONS ARE DERIVED FROM CBJ AS–BUILTS OR FIELD LOCATED. ACTUAL LOCATIONS MAY VARY FROM THOSE SHOWN. DEPTH OF THE EXISTING PIPES SHOWN ON THE ELEVATIONS ARE ASSUMED. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EACH EXISTING SERVICE PIPE PRIOR TO INSTALLING THE STORM DRAIN PIPES. DIAL BEFORE YOU DIG 586–1333.
5. GRADING AND ALIGNMENT ARE SUBJECT TO MINOR REVISIONS BY THE ENGINEER.
6. LOCATION OF STORM CATCH BASINS, PIPING AND PIPE LENGTHS ARE SUBJECT TO MINOR REVISIONS BY THE ENGINEER.
7. THE CONTRACTOR SHALL NOTIFY CBJ WATER UTILITIES AT 780–6888 OF PROPOSED WATER MAIN INTERRUPTION AND SUBMIT THE "WATER SYSTEM SPECIAL USE PERMIT" (COSIGNED BY THE ENGINEER) AT LEAST ONE WEEK PRIOR TO SHUTDOWN OF MAINLINE WATER PIPE.
8. PROVIDE KNOCKOUTS IN CATCH BASINS FOR ALL PIPES SHOWN ON THE PLANS.
9. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL SITE, EXCEPT AS NOTED IN THE CONTRACT DOCUMENTS.
10. SAWCUT AS NECESSARY ALONG SIDEWALKS TO PROVIDE NEAT MATCH LINE.
11. CONTRACTOR SHALL REFERENCE ALL EXISTING PROPERTY CORNER MONUMENTS (I.E. REBARS, CONCRETE NAILS, BRASS CAP MONUMENT AND ETC.) PRIOR TO CONSTRUCTION AND REMONUMENT AFTER SURFACING IS REPLACED. ALL WORK SHALL BE DONE BY, OR UNDER THE DIRECTION OF, AN ALASKA REGISTERED LAND SURVEYOR.
12. ALL ASPHALT PAVEMENT TO BE REMOVED AND DISPOSED OF SHALL BE DELIVERED TO A STOCKPILE AREA AT THE LEMON CREEK CITY PIT TO BE DESIGNATED BY THE ENGINEER. CONTACT THE ENGINEER FOR THE EXACT LOCATION OF THE STOCKPILE.
13. AEL&P, ACS, AND GCI MAY CONDUCT WORK WITHIN THE PROJECT LIMITS TO INSTALL OR RELOCATE UTILITIES. THE CONTRACTOR SHALL COORDINATE ITS ACTIVITIES WITH EACH UTILITY COMPANY AND PROVIDE ACCESS AS NECESSARY FOR UTILITY COMPANIES TO CONDUCT THEIR WORK.
14. ONLY HORIZONTAL ELBOW FITTINGS (BENDS) ARE SHOWN ON PLANS. ADDITIONAL FITTINGS WILL BE REQUIRED FOR VERTICAL DEFLECTIONS NEAR CONNECTIONS TO EXISTING PIPES AND AT OTHER LOCATIONS REQUIRING GRADE CHANGES TO AVOID CONFLICTS.
15. THE USE OF GROUT AND QUICKSET CEMENT PRODUCTS WITH ADJUSTING RINGS, BRICKS, WOOD, STONES AND OTHER SIMILAR GRADE ADJUSTMENT DEVICES TO SUPPORT CATCH BASIN FRAMES OVER CATCH BASINS AND MANHOLES WILL NOT BE PERMITTED. CATCH BASIN FRAME AND GRATES SHALL BE SET AT 6–3/4" BELOW TOP BACK OF CURB ELEVATION WITH 3 FOOT LONG CONCRETE TRANSITIONS TO BOTH SIDES OF GRATE..
16. ALL FORMS FOR SEGMENTS BETWEEN PC'S AND PT'S SHALL BE ARCED TO MATCH REQUIRED CURVATURE. NO STRAIGHT FORMS SHALL BE USED WITHIN THE CURVED SEGMENTS OF LESS THAN 200 FEET RADIUS.
17. APPLY "CONCRETE INTERNATIONAL CORPORATION" ASHFORD FORMULA CURING COMPOUND, OR APPROVED EQUAL, TO ALL NEWLY PLACED CONCRETE SURFACES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
18. "JUMPING JACK" OR SIMILAR TYPE COMPACTORS SHALL BE USED TO THOROUGHLY COMPACT ALL LAYERS OF MATERIAL AROUND WATER VALVE BOXES, CATCH BASINS, MANHOLES AND OTHER STRUCTURES.

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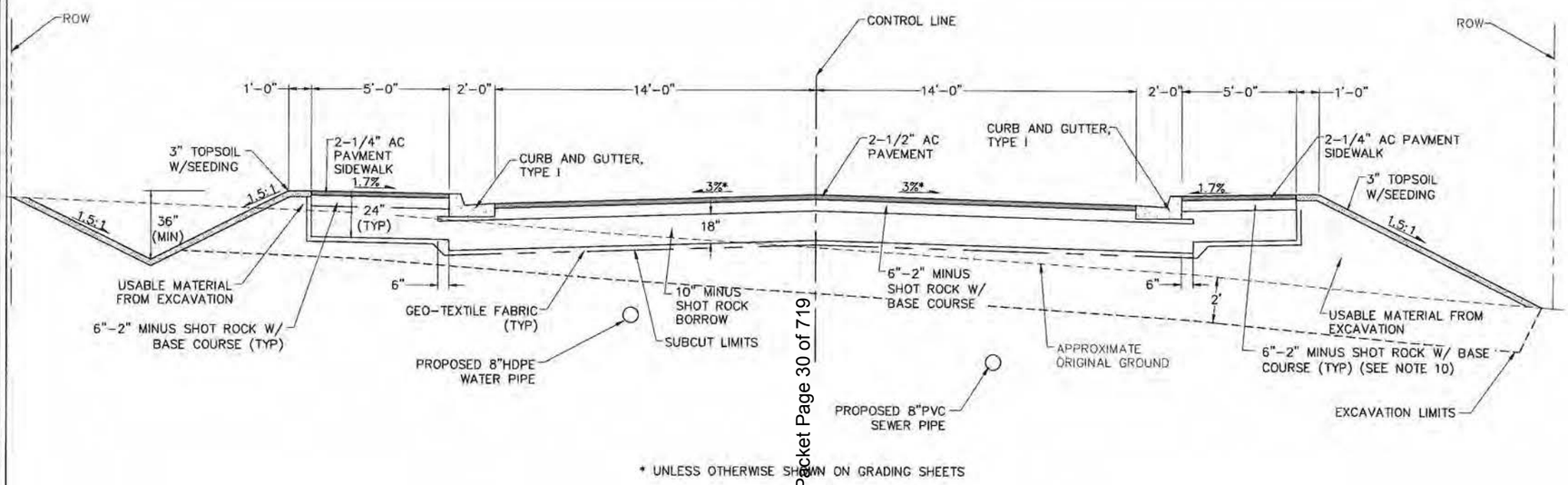
CITY/BOROUGH OF JUNEAU ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

LEGEND, ABBREVIATIONS, AND GENERAL NOTES



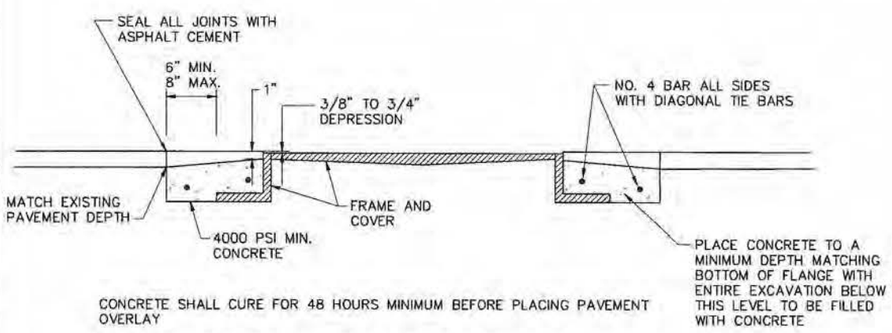
* UNLESS OTHERWISE SHOWN ON GRADING SHEETS

TYPICAL SECTION - JACKIE STREET

NTS

NOTES FOR TYPICAL SECTIONS THIS SHEET

1. ADDITIONAL EXCAVATION BELOW THE NEATLINE SUBCUT LEVEL MAY BE REQUIRED, IF ORGANIC OR OTHER UNSUITABLE MATERIALS ARE FOUND AT OR NEAR THE PLANNED SUBCUT LEVEL, AS DIRECTED BY THE ENGINEER. USABLE MATERIAL FROM EXCAVATION SHALL BE USED TO BACKFILL THE ADDITIONAL AREAS OF EXCAVATION, THE BACKFILLING WITH USABLE MATERIAL FROM EXCAVATION WILL BE CONSIDERED INCIDENTAL TO OTHER WORK.
2. SEE HORIZONTAL AND VERTICAL CONTROL, CURB AND GUTTER LAYOUT AND GRADE DRAWINGS FOR GRADING DETAILS.
3. ALL FILL AREAS BEYOND SUBCUT LIMITS SHALL BE BACKFILLED WITH USABLE MATERIAL FROM EXCAVATION AND GRADED TO DRAIN AS SHOWN ON THE PLAN VIEW DRAWINGS.
4. ACCESS RAMPS SHALL CONFORM TO CBJ STANDARD 105 REGARDING CROSS SLOPES AND TRANSITIONS FOR THE DEPRESSED SIDEWALK. THE CURB AND GUTTER AT ACCESS RAMPS SHALL BE CONSTRUCTED WITH NO LIP.
5. TOP OF A.C PAVEMENT SHALL BE ¼ INCH TO ½ ABOVE THE TOP EDGE OF CONCRETE GUTTER OR TOP OF CURB. TOP OF PAVEMENT GRADES GIVEN ON THE PLANS ARE ¼ BELOW ACTUAL FINISH PAVEMENT SURFACE.
6. GRADE TOP OF CURB AT 2%.
7. THE BASE COURSE LAYER SHALL BE 4" TO 5" OF 2-INCH MINUS SHOT ROCK WITH 1" TO 2" TOP LAYER OF BASE COURSE, GRADING D-1 FOR A TOTAL THICKNESS OF 6". THE 2" MINUS SHOT ROCK SHALL BE WELL COMPACTED PRIOR TO PLACING THE BASE COURSE GRADING D-1.
8. BASE COURSE, GRADING D-1, MAY BE USED FOR THE FULL DEPTH OF THE BASE COURSE UNDER THE SIDEWALKS AND DRIVEWAYS AS A NO COST SUBSTITUTION.
9. CATCH LINE FOR USABLE MATERIAL AND TOPSOIL WILL VARY IN DISTANCE FROM RIGHT-OF-WAY LINES AND MUST REMAIN WITHIN THE ESTABLISHED EASEMENTS. PLACE AND GRADE THESE MATERIALS TO PROVIDE A SMOOTH, WELL DRAINED TRANSITION TO EXISTING GRADES, AS DIRECTED BY THE ENGINEER.

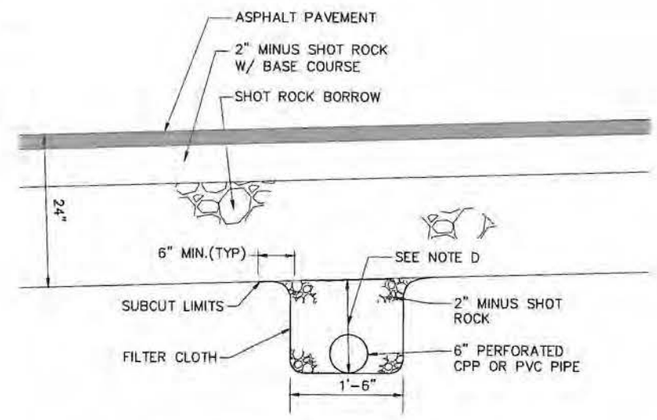


CONCRETE SHALL CURE FOR 48 HOURS MINIMUM BEFORE PLACING PAVEMENT OVERLAY

* THIS TRANSITION SLAB WILL NOT BE REQUIRED IF DEPRESSION TO COVER LUGS OR FRAME, WHICHEVER IS HIGHER, MEETS THE REQUIRED DEPRESSION RANGE FOLLOWING THE FINISH PAVING OPERATIONS

TRANSITION SLAB W/ ASPHALT PAVEMENT OVERLAY

NTS



6-INCH UNDERDRAIN

NTS

A. 6-INCH UNDERDRAIN IS A CONTINGENCY ITEM. THE ACTUAL LENGTHS AND LOCATIONS, IF USED SHALL BE AS DETERMINED BY THE ENGINEER.

B. OUTFALL CONNECTIONS WILL BE EITHER INTO CATCH BASINS, OR CPP SADDLE TEES.

C. UPPER END OF PIPES SHALL BE CAPPED AND THE FILTER CLOTH FOLDED AND OVERLAPPED TO SEAL END OF DRAINAGE ROCK SECTION. VARIES AS DIRECTED BY THE ENGINEER.

D. VARIES 12" TO 30", AS DETERMINED BY THE ENGINEER.

E. MINIMUM PIPE GRADIENT SHALL BE 1%.

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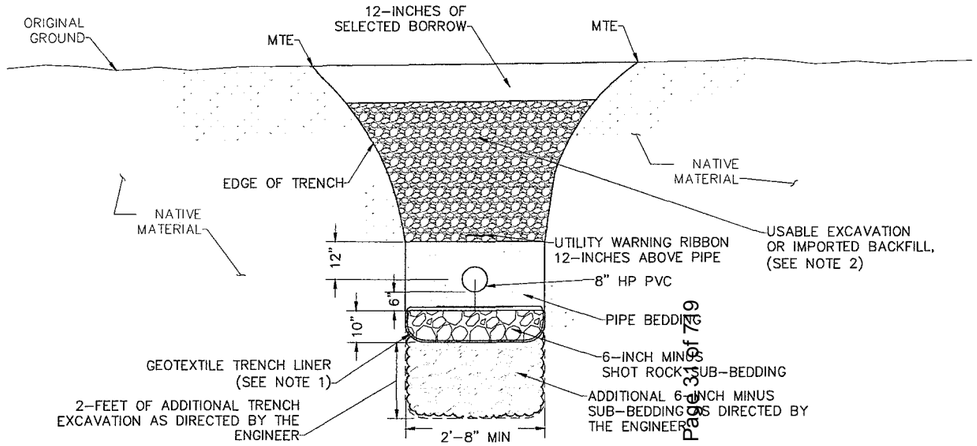
CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

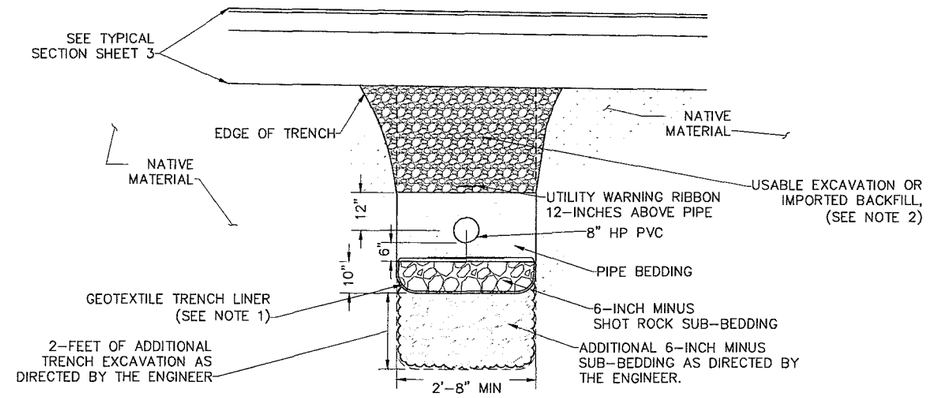
SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

TYPICAL SECTIONS AND DETAILS



TRENCH DETAIL - SEWER PIPE OUTSIDE OF ROADWAY SECTION

NTS



TRENCH DETAIL - SEWER PIPE INSIDE OF ROADWAY SECTION

NTS

TRENCH DETAIL NOTES:

1. THE GEOTEXTILE TRENCH LINER SHALL WRAP AROUND THE 6-INCH MINUS SHOT ROCK SUB-BEDDING IN THE AXIS TRANSVERSE TO THE SANITARY SEWER MAIN. THE LINER SHALL OVERLAP A MINIMUM OF 2-FEET ON TOP OF THE SUB-BEDDING. IN THE LONGITUDINAL AXIS THE GEOTEXTILE TRENCH LINER SHALL BE OVERLAPPED A MINIMUM OF 2-FEET.
2. BEFORE INSTALLING IMPORTED BACKFILL (SELECTED BORROW), ALL USABLE EXCAVATION MEETING THE REQUIREMENTS OF SELECTED BORROW SHALL BE PLACED UP TO THE BOTTOM OF THE SHOT ROCK MATERIAL OR TO THE EXISTING GROUND SURFACE DEPENDING ON LOCATION OF THE TRENCH. THE BOTTOM OF THE SHOT ROCK MATERIAL SHALL BE ESTABLISHED BY THE TOP OF THE EXISTING PEAT LAYER, OR AT A DEPTH 24-INCHES BELOW FINISHED GRADE, WHICHEVER IS DEEPER.
3. ALL BRANCHES, ROOTS, AND OTHER ORGANICS PROTRUDING FROM THE TRENCH WALLS SHALL BE TRIMMED TO PREVENT DAMAGE TO THE GEOTEXTILE TRENCH LINER.

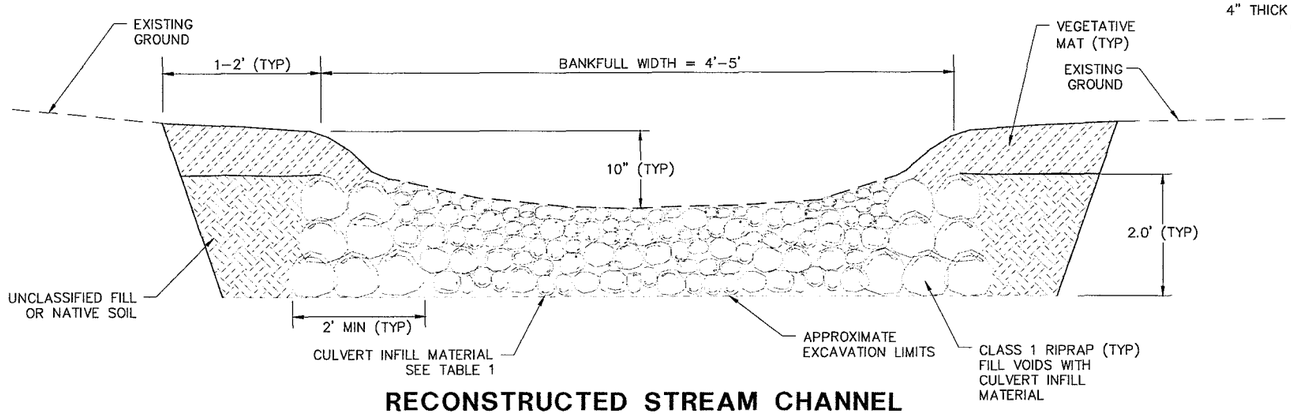
TABLE 1	
CULVERT INFILL	MATERIAL SIZES
100% PASSING	6"
80% PASSING	2"
50% PASSING	1"
20% PASSING	#4
<5% PASSING	#200

GENERAL NOTES:

1. CONSTRUCT CULVERT INFILL WITH MATERIAL MEETING GRADATION SHOWN IN TABLE 1 OR AS APPROVED BY ENGINEER.

BEDDED CULVERT PROFILE AND CROSS SECTION NOTES:

1. CONSTRUCT CULVERT INFILL WITH MATERIAL MEETING THE GRADATION SHOWN IN TABLE 1.
2. SEE SHEET 8 FOR CULVERT PLAN LAYOUT.



RECONSTRUCTED STREAM CHANNEL DETAIL

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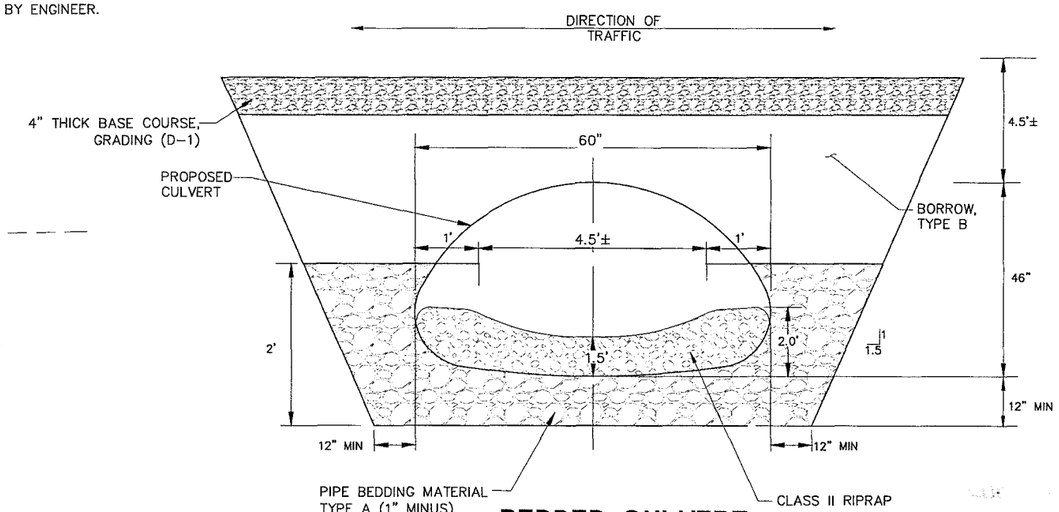

BEDDED CULVERT DETAIL

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CITY/BOROUGH OF JUNEAU ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

SANITARY SEWER TRENCH AND BEDDED CULVERT DETAILS

SIGN ASSEMBLY TABLE

NO.	LOCATION	MUTCD DESIGNATION OR DESCRIPTION	LEGEND AND COMMENTS
1	STA "J" 10+39.0, 23.0 LT	S1-1 W16-7P	"CROSSWALK" W/ DOWN ARROW
2	STA "J" 10+48.4, 23.0 LT	R1-1	"STOP" (30"X30") - NEW STREET NAME SIGNS ("RENNINGER STREET"/"JACKIE STREET")
3	STA "J" 10+50.6, 24.3 RT	W14-2	"NO OUTLET" (30"X30")
4	STA "J" 10+75.9, 23.0 RT	R2-1	"SPEED LIMIT 20" (24"X30")
5	STA "J" 11+90.9, 23.0 RT	R7-1	"NO PARKING NOV 1-APR 1" (12"X18") W/ DOUBLE ARROW
6	STA "J" 11+90.9, 23.0 LT	R7-1	"NO PARKING NOV 1-APR 1" (12"X18") W/ DOUBLE ARROW
7	STA "J" 13+07.8, 23.0 LT	R2-1	"SPEED LIMIT 20" (24"X30")
8	STA "J" 13+22.8, 23.0 RT	R7-1	"NO PARKING ANY TIME" (12"X18") W/ SINGLE ARROW LEFT
9	STA "J" 13+22.8, 23.0 LT	R7-1	"NO PARKING ANY TIME" (12"X18") W/ SINGLE ARROW RIGHT

A) ALL SIGNS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY & BOROUGH STANDARD DETAIL NO. 127.

B) ALL SIGNS TO BE LOCATED AS DIRECTED BY THE ENGINEER.

C) ALL POSTS SHALL BE "TELSPAR", OR APPROVED EQUAL.

D) POSTS SHALL BE PRE-PUNCHED WITH ALL KNOCKOUTS REMOVED.

E) REPLACE ALL POST ASSEMBLY MATERIALS.

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CATCH BASIN FRAME AND GRATE TABLE

CATCH BASIN No.	EAST JORDAN IRON WORKS, OLYMPIC FOUNDRY CO., CBJ STANDARD No., OR APPROVED EQUAL
CB-1	OF MH34SC
CB-2	EJIW 7701 T2 HOOD W/ 7700 M3 GRATE
CB-3	EJIW 7701 T2 HOOD W/ 7700 M3 GRATE
CB-4	EJIW 7701 T2 HOOD W/ 7700 M3 GRATE
CB-5	EJIW 7701 T2 HOOD W/ 7700 M3 GRATE
CB-6	OF SM18

CATCH BASIN TOP SLAB OPENINGS SHALL BE DIMENSIONED TO FIT THE FRAME DIMENSIONS. ALL COVERS SHALL BE HEAVY DUTY CONSTRUCTION AND BICYCLE SAFE. ALL FRAMES AND GRATES SHALL BE DUCTILE IRON.

LOCAL FLOW LINE DEPRESSION AT CATCH BASIN SHALL BE ¾ INCH, WITH 36" TRANSITIONS TO EACH SIDE OF FRAME, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

NOTES FOR TRAFFIC CONTROL:

- ALL TRAFFIC TO BE CONTROLLED PER THE REQUIREMENTS OF THE ALASKA TRAFFIC MANUAL (U.S. DEPARTMENT OF TRANSPORTATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE ALASKA SUPPLEMENT).
- ALL DETOURS SHALL BE AS APPROVED BY THE ENGINEER.
- ROAD CLOSURES ON RENNINGER STREET WILL BE PERMITTED ONLY AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR WILL NOT BE PERMITTED TO OBSTRUCT VEHICULAR TRAFFIC ON RENNINGER STREET BETWEEN THE HOURS OF 4:30pm AND 8:00am SEVEN DAYS A WEEK. DURING THIS PERIOD, TWO LANES SHALL BE OPEN TO VEHICULAR TRAFFIC AND WITH A MINIMUM TOTAL WIDTH OF 18 FEET.
- PROVIDE ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES.
- PEDESTRIAN TRAFFIC SHALL BE AVAILABLE ALONG AT LEAST ONE SIDE OF RENNINGER STREET AT ALL TIMES. THE PEDESTRIAN PATHWAY SHALL BE CLEARLY MARKED AND SHALL SATISFY THE REQUIREMENTS AS DESCRIBED IN THE SPECIAL PROVISIONS.

PAVING SEQUENCE REQUIREMENTS:

- ALL ROADWAY PAVING OPERATIONS SHALL BE COMPLETED IN ONE WORK SHIFT.

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
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SWITZER CREEK SUBDIVISION
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TRAFFIC CONTROL NOTES, TABLES, AND PAVING SEQUENCE REQUIREMENTS

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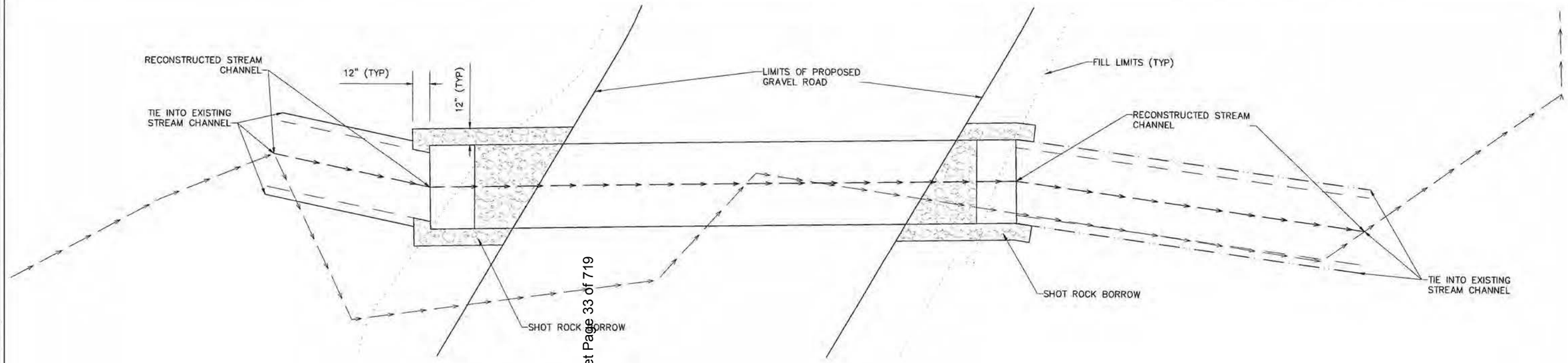

BEDDED CULVERT PLAN LAYOUT

NTS

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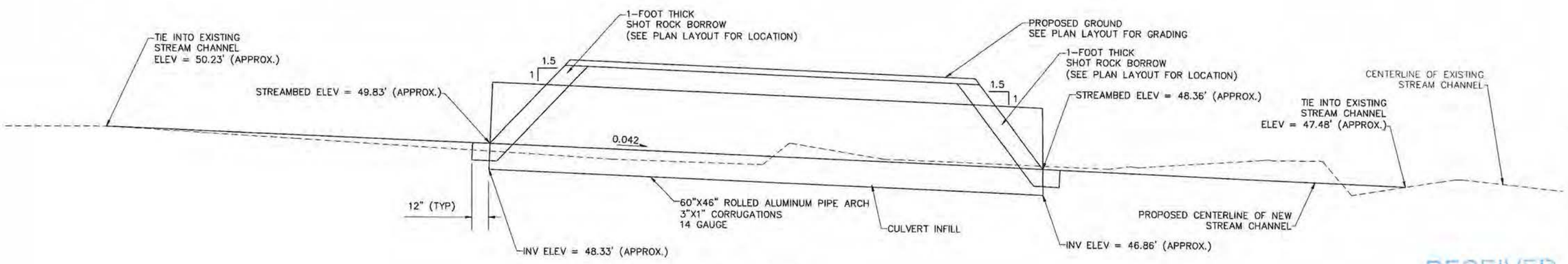

BEDDED CULVERT PROFILE

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BEDDED CULVERT PLAN AND PROFILE

SHEET NO. 6 of 15

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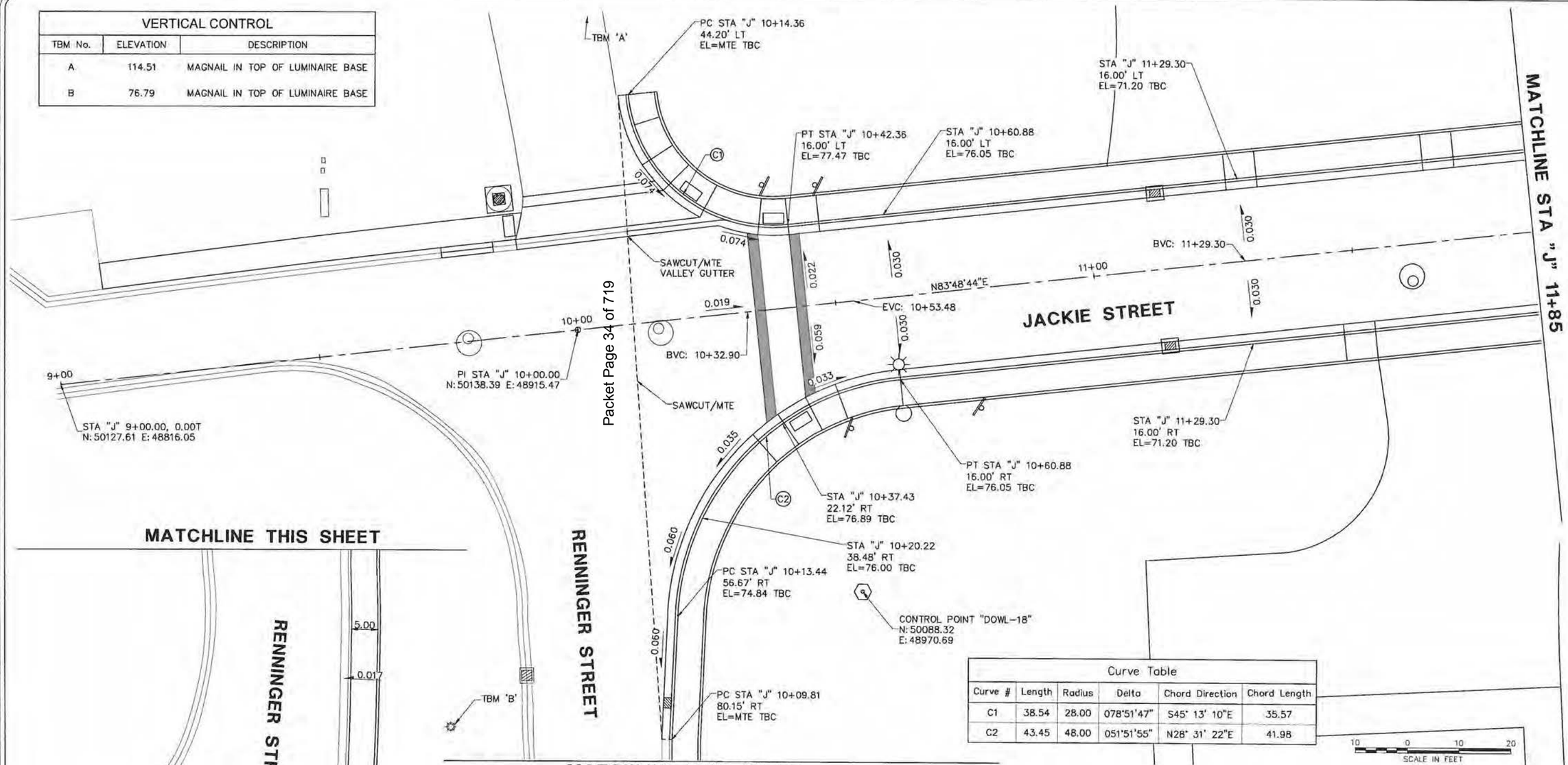
VERTICAL CONTROL		
TBM No.	ELEVATION	DESCRIPTION
A	114.51	MAGNAIL IN TOP OF LUMINAIRE BASE
B	76.79	MAGNAIL IN TOP OF LUMINAIRE BASE



Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	38.54	28.00	078°51'47"	S45° 13' 10"E	35.57
C2	43.45	48.00	051°51'55"	N28° 31' 22"E	41.98

NOTES

1. STATIONS, OFFSETS, ELEVATIONS AND CURVE INFORMATION ALONG CURBING ARE TO TOP BACK OF CURB (TBC), UNLESS OTHERWISE NOTED. TOP OF PAVEMENT ARE TP. TOP OF SIDEWALK ARE TSW. TOP BACK OF VALLEY GUTTER ARE TBG.
2. SEE TYPICAL SECTIONS FOR OTHER GRADING INFORMATION.
3. ESTABLISH VERTICAL CURVES AS NECESSARY FOR A SMOOTH ALIGNMENT (NO ANGLE POINTS) BY VISUALLY ALIGNING TOP OF CURB THROUGH VERTICAL CONTROL POINTS.
4. ALL FORMS FOR CONCRETE SEGMENTS BETWEEN PC'S AND PT'S WITH A RADIUS LESS THAN 200' SHALL BE ARCED TO MATCH THE REQUIRED CURVATURE. NO STRAIGHT FORMS SHALL BE USED WITHIN ANY CURVED SEGMENT WITH A RADIUS OF LESS THAN 200'. STRAIGHT FORMS USED FOR ANY ARCED SEGMENT WITH A RADIUS OF MORE THAN 200' SHALL NOT EXCEED 10' IN LENGTH.
5. SIDEWALK CROSS SLOPE SHALL BE 1.7% UNLESS OTHERWISE NOTED. TRANSITION SMOOTHLY AWAY FROM THE DRIVEWAY TO 1.7% FROM THE SHOWN CROSS SLOPE.
6. THE CONTRACTOR SHALL PERFORM A CLOSED LEVEL LOOP THROUGH TBMs AS LISTED TO VERIFY ELEVATIONS BEFORE BEGINNING ANY GRADING WORK.
7. SLOPES ALONG THE CURBING ARE ALONG THE LIP OF GUTTER.
8. ADJUST CURBING ALIGNMENT AT CONNECTIONS TO EXISTING CURBING AS REQUIRED FOR A TANGENT ALIGNMENT MATCH.
9. SEE SHEET 8 FOR PROFILE GEOMETRY.

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HORIZONTAL AND VERTICAL CONTROL
CURB AND GUTTER LAYOUT AND GRADES
RENNINGER STREET TO STA "J" 11+85

SHEET NO. 7 of 15

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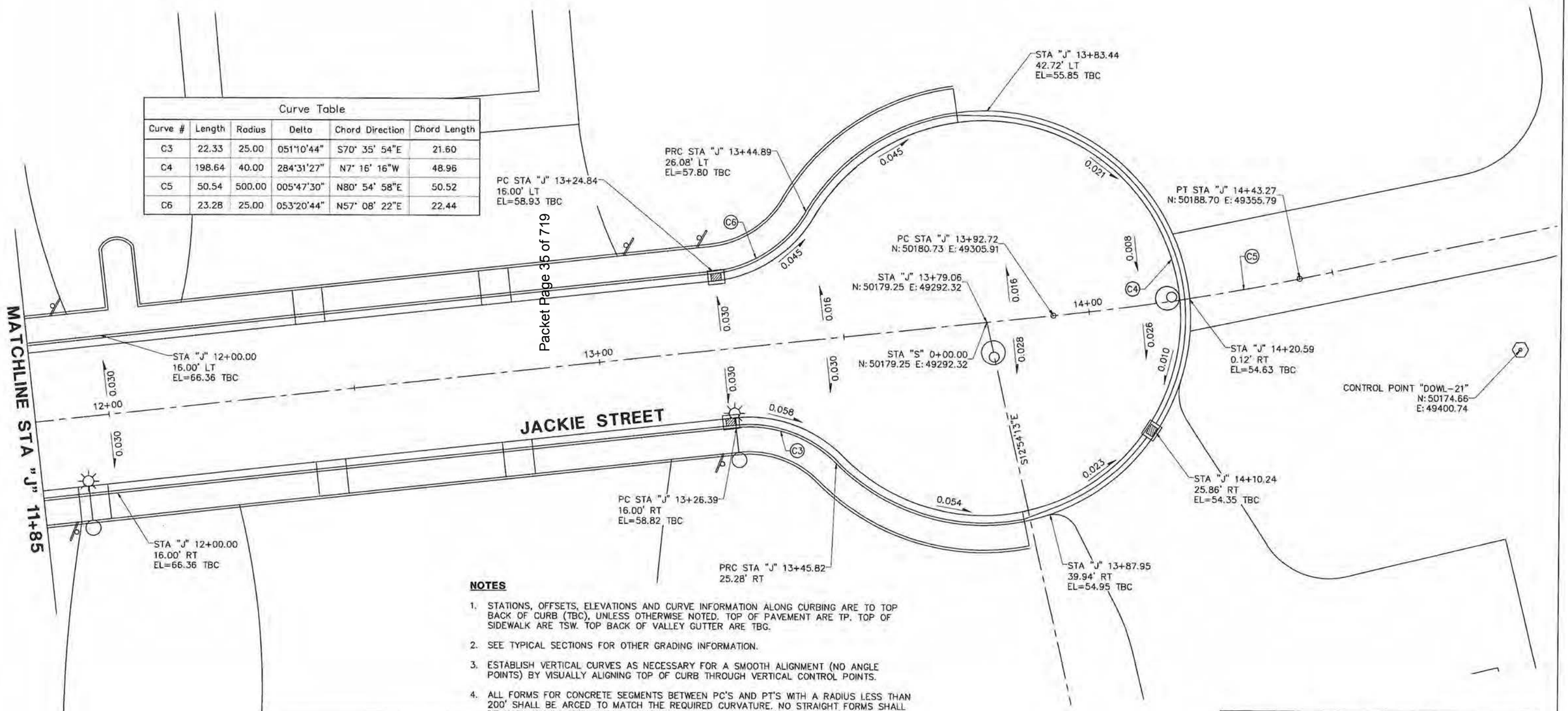
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C3	22.33	25.00	051°10'44"	S70° 35' 54"E	21.60
C4	198.64	40.00	284°31'27"	N7° 16' 16"W	48.96
C5	50.54	500.00	005°47'30"	N80° 54' 58"E	50.52
C6	23.28	25.00	053°20'44"	N57° 08' 22"E	22.44



NOTES

1. STATIONS, OFFSETS, ELEVATIONS AND CURVE INFORMATION ALONG CURBING ARE TO TOP BACK OF CURB (TBC), UNLESS OTHERWISE NOTED. TOP OF PAVEMENT ARE TP. TOP OF SIDEWALK ARE TSW. TOP BACK OF VALLEY GUTTER ARE TBG.
2. SEE TYPICAL SECTIONS FOR OTHER GRADING INFORMATION.
3. ESTABLISH VERTICAL CURVES AS NECESSARY FOR A SMOOTH ALIGNMENT (NO ANGLE POINTS) BY VISUALLY ALIGNING TOP OF CURB THROUGH VERTICAL CONTROL POINTS.
4. ALL FORMS FOR CONCRETE SEGMENTS BETWEEN PC'S AND PT'S WITH A RADIUS LESS THAN 200' SHALL BE ARCED TO MATCH THE REQUIRED CURVATURE. NO STRAIGHT FORMS SHALL BE USED WITHIN ANY CURVED SEGMENT WITH A RADIUS OF LESS THAN 200'. STRAIGHT FORMS USED FOR ANY ARCED SEGMENT WITH A RADIUS OF MORE THAN 200' SHALL NOT EXCEED 10' IN LENGTH.
5. SIDEWALK CROSS SLOPE SHALL BE 1.7% UNLESS OTHERWISE NOTED. TRANSITION SMOOTHLY AWAY FROM THE DRIVEWAY TO 1.7% FROM THE SHOWN CROSS SLOPE.
6. THE CONTRACTOR SHALL PERFORM A CLOSED LEVEL LOOP THROUGH TBMs AS LISTED TO VERIFY ELEVATIONS BEFORE BEGINNING ANY GRADING WORK.
7. SLOPES ALONG THE CURBING ARE ALONG THE LIP OF GUTTER.
8. ADJUST CURBING ALIGNMENT AT CONNECTIONS TO EXISTING CURBING AS REQUIRED FOR A TANGENT ALIGNMENT MATCH.
9. SEE SHEET 8 FOR PROFILE GEOMETRY.

VERTICAL CONTROL		
TBM No.	ELEVATION	DESCRIPTION
A	114.51	MAGNAIL IN TOP OF LUMINAIRE BASE
B	76.79	MAGNAIL IN TOP OF LUMINAIRE BASE

10 0 10 20
SCALE IN FEET

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JOB NO: J70725.01 | DRAWN BY: STAFF | DESIGNED BY: N. HOBBS | CHECKED BY: STAFF | DATE: JULY 2015

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

HORIZONTAL AND VERTICAL CONTROL
CURB AND GUTTER LAYOUT AND GRADES
STA "J" 11+85 TO EOP

SHEET NO. 8 of 15

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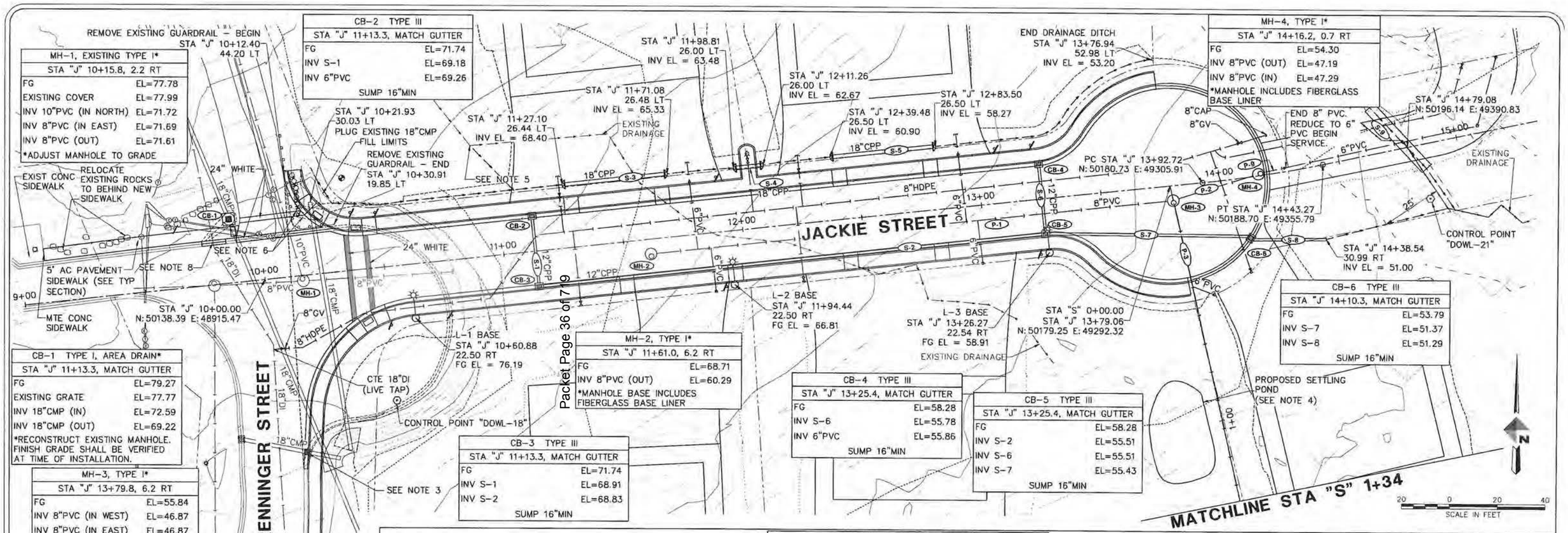
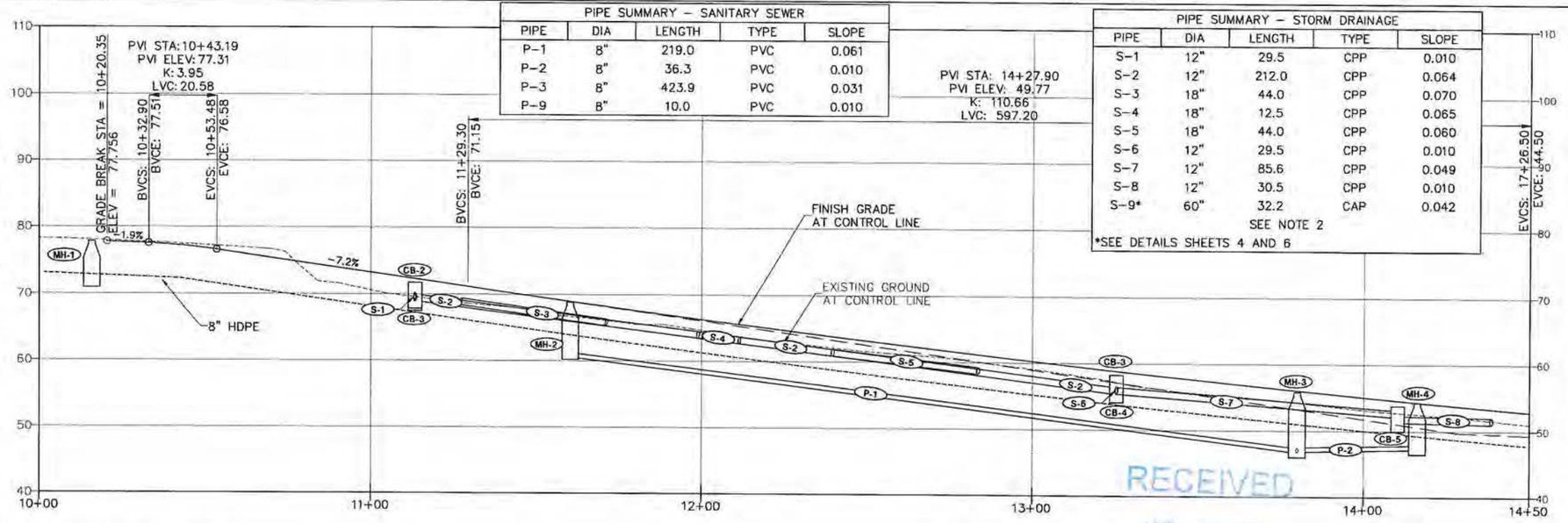


PIPE SUMMARY – SANITARY SEWER				
PIPE	DIA	LENGTH	TYPE	SLOPE
P-1	8"	219.0	PVC	0.061
P-2	8"	36.3	PVC	0.010
P-3	8"	423.9	PVC	0.031
P-9	8"	10.0	PVC	0.010

PIPE SUMMARY – STORM DRAINAGE				
PIPE	DIA	LENGTH	TYPE	SLOPE
S-1	12"	29.5	CPP	0.010
S-2	12"	212.0	CPP	0.064
S-3	18"	44.0	CPP	0.070
S-4	18"	12.5	CPP	0.065
S-5	18"	44.0	CPP	0.060
S-6	12"	29.5	CPP	0.010
S-7	12"	85.6	CPP	0.049
S-8	12"	30.5	CPP	0.010
S-9*	60"	32.2	CAP	0.042
SEE NOTE 2				

*SEE DETAILS SHEETS 4 AND 6



NOTES:

1. PROVIDE ALL ADAPTERS, ELBOWS AND OTHER FITTINGS NECESSARY TO CONNECT TO DISSIMILAR PIPE SIZES, MATERIALS AND DEPTHS. CONNECT TO EXISTING.
2. PIPE LENGTHS ARE MEASURED ALONG THE SLOPE, FROM CENTER TO CENTER OF STRUCTURES. SLOPES ARE CALCULATED TO ENDS OF PIPE.
3. ALIGN EXISTING FRAME AND GRATE WITH NEW CURB ALIGNMENT AS DIRECTED BY THE ENGINEER.
4. THE PROPOSED SETTLING POND LOCATION AND DRAINAGE DITCHES TO AND FROM THE POND ARE INTENDED TO BE USED FOR STORM WATER TREATMENT DURING CONSTRUCTION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SIZING THE DITCHES AND POND AS PART OF THEIR SWPPP.
5. REROUTE EXISTING DRAINAGE INTO PROPOSED ROADSIDE DRAINAGE DITCH.
6. REMOVE AND DISPOSE OF EXISTING ROCK WALL AND CONCRETE HEADWALL.
7. GRADE AND COMPACT THE EXISTING GRAVEL PATH TO ALLOW INSTALLATION OF 2¼" THICK AC PAVEMENT. CROSS SLOPE OF THE PATHWAY SHALL BE 1.7% TOWARDS THE EXISTING CURB AND GUTTER. WIDTH OF THE PATHWAY SHALL BE 5'. THE TOP OF THE NEW AC PAVEMENT SHALL MATCH THE TOP BACK OF EXISTING CURB AND CONNECT TO THE EXISTING ASPHALT PATH APPROXIMATELY 136 FEET SOUTH.
8. REMOVE AND REPLACE THE EXISTING VALLEY GUTTER WITH NEW VALLEY GUTTER. SAWCUTS SHALL BE MADE AT THE EXISTING JOINT LOCATIONS AS SHOWN.
9. ALL NEW DRIVEWAY & HYDRANT PAD CULVERTS SHALL BE INSTALLED WITH CONCRETE HEADWALLS WITHOUT TRASH RACKS AS SHOWN ON THIS SHEET.

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

PLAN & PROFILE
JACKIE STREET

SHEET NO. 9 of 15

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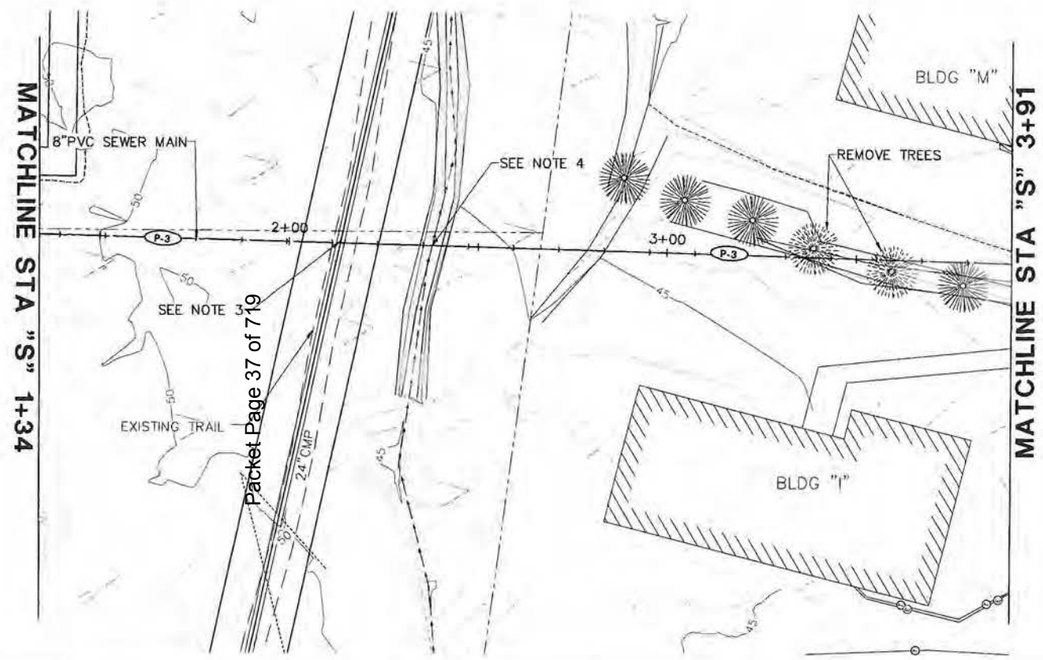
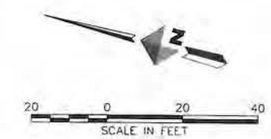
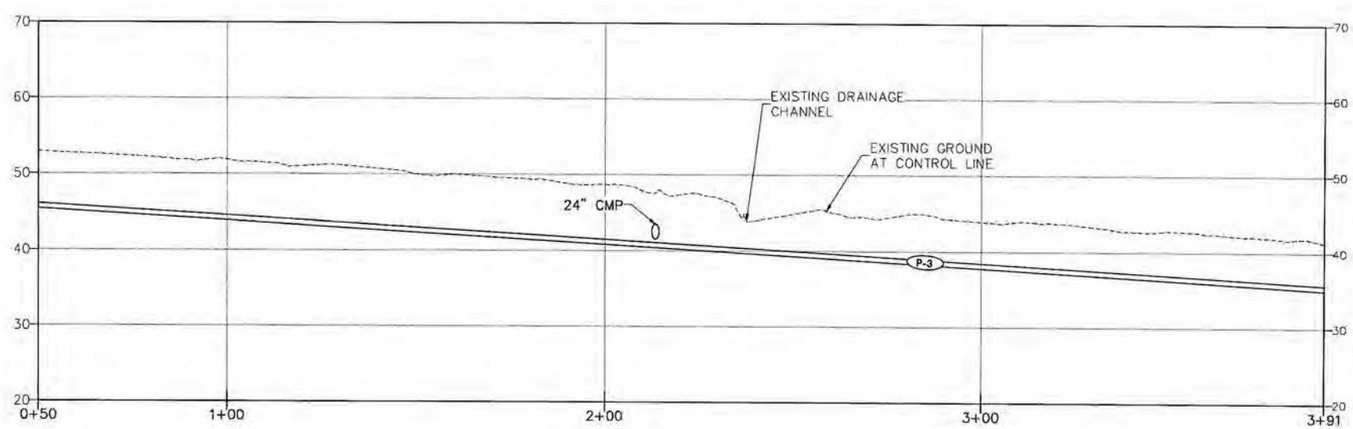
NOTES:

1. PROVIDE ALL ADAPTERS, ELBOWS AND OTHER FITTINGS NECESSARY TO CONNECT TO DISSIMILAR PIPE SIZES, MATERIALS AND DEPTHS. CONNECT TO EXISTING.
2. PIPE LENGTHS ARE MEASURED ALONG THE SLOPE, FROM CENTER TO CENTER OF STRUCTURES. SLOPES ARE CALCULATED TO ENDS OF PIPE.
3. MAINTAIN A MINIMUM OF 6-INCHES OF CLEARANCE BETWEEN TOP OF 8"PVC SEWER PIPE AND BOTTOM OF EXISTING 24"CMP STORM DRAIN PIPE.
4. MAINTAIN A MINIMUM OF 2-FEET OF COVER OVER THE 8"PVC SEWER PIPE AS IT IS INSTALLED UNDER THE EXISTING DRAINAGE CHANNEL.

PIPE SUMMARY – SANITARY SEWER				
PIPE	DIA	LENGTH	TYPE	SLOPE
P-3	SEE SHEET 8			







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STATE OF ALASKA 49th Naomi R. Hobbs No. CE9959 7-31-15 REGISTERED PROFESSIONAL ENGINEER

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

PLAN & PROFILE
SEWER MAIN FROM JACKIE STREET TO GREUNING PARK
STA "S" 1+34 TO STA "S" 3+91

SHEET NO. 10 of 15

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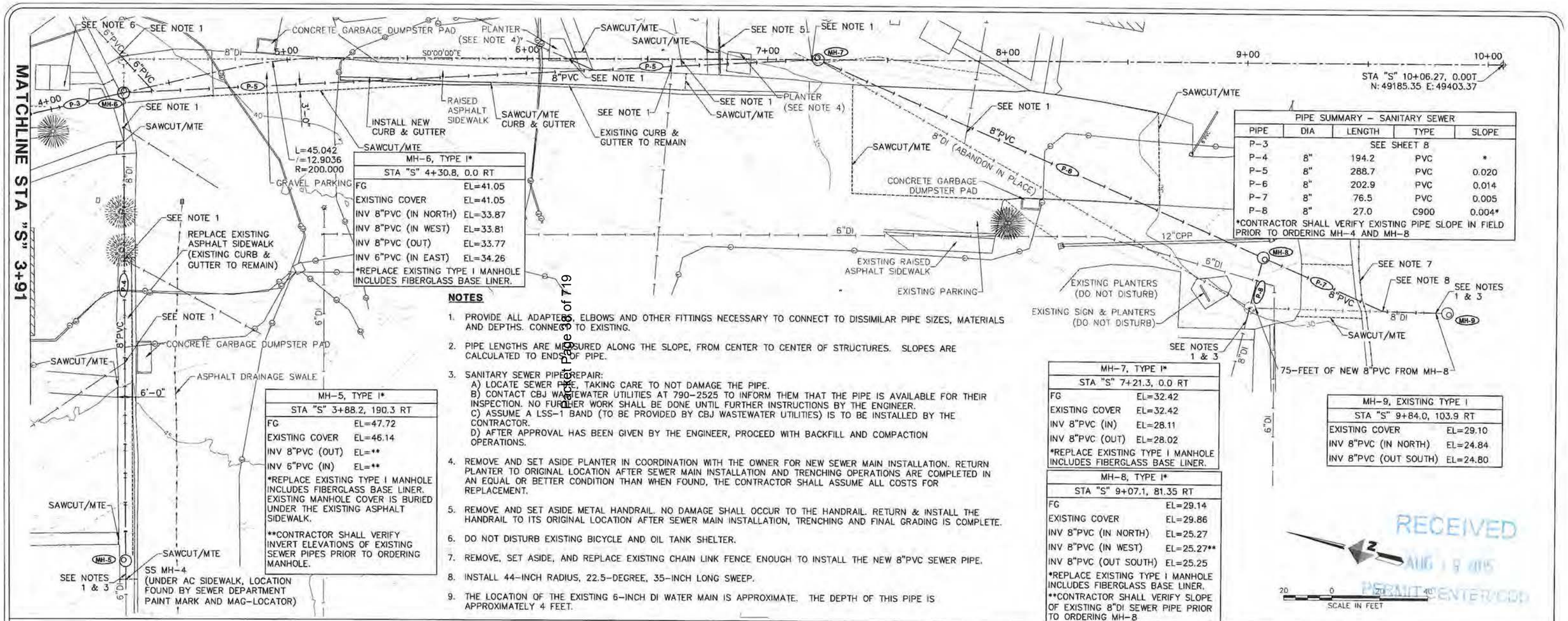

MH-6, TYPE I*	
STA "S" 4+30.8, 0.0 RT	
FG	EL=41.05
EXISTING COVER	EL=41.05
INV 8"PVC (IN NORTH)	EL=33.87
INV 8"PVC (IN WEST)	EL=33.81
INV 8"PVC (OUT)	EL=33.77
INV 6"PVC (IN EAST)	EL=34.26

*REPLACE EXISTING TYPE I MANHOLE INCLUDES FIBERGLASS BASE LINER.

MH-5, TYPE I*	
STA "S" 3+88.2, 190.3 RT	
FG	EL=47.72
EXISTING COVER	EL=46.14
INV 8"PVC (OUT)	EL=**
INV 6"PVC (IN)	EL=**

*REPLACE EXISTING TYPE I MANHOLE INCLUDES FIBERGLASS BASE LINER. EXISTING MANHOLE COVER IS BURIED UNDER THE EXISTING ASPHALT SIDEWALK.

**CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING SEWER PIPES PRIOR TO ORDERING MANHOLE.

PIPE SUMMARY – SANITARY SEWER				
PIPE	DIA	LENGTH	TYPE	SLOPE
P-3	SEE SHEET 8			
P-4	8"	194.2	PVC	*
P-5	8"	288.7	PVC	0.020
P-6	8"	202.9	PVC	0.014
P-7	8"	76.5	PVC	0.005
P-8	8"	27.0	C900	0.004*

*CONTRACTOR SHALL VERIFY EXISTING PIPE SLOPE IN FIELD PRIOR TO ORDERING MH-4 AND MH-8

NOTES

1. PROVIDE ALL ADAPTERS, ELBOWS AND OTHER FITTINGS NECESSARY TO CONNECT TO DISSIMILAR PIPE SIZES, MATERIALS AND DEPTHS. CONNECT TO EXISTING.
2. PIPE LENGTHS ARE MEASURED ALONG THE SLOPE, FROM CENTER TO CENTER OF STRUCTURES. SLOPES ARE CALCULATED TO ENDS OF PIPE.
3. SANITARY SEWER PIPE REPAIR:
   A) LOCATE SEWER PIPE, TAKING CARE TO NOT DAMAGE THE PIPE.
   B) CONTACT CBJ WASTEWATER UTILITIES AT 790-2525 TO INFORM THEM THAT THE PIPE IS AVAILABLE FOR THEIR INSPECTION. NO FURTHER WORK SHALL BE DONE UNTIL FURTHER INSTRUCTIONS BY THE ENGINEER.
   C) ASSUME A LSS-1 BAND (TO BE PROVIDED BY CBJ WASTEWATER UTILITIES) IS TO BE INSTALLED BY THE CONTRACTOR.
   D) AFTER APPROVAL HAS BEEN GIVEN BY THE ENGINEER, PROCEED WITH BACKFILL AND COMPACTION OPERATIONS.
4. REMOVE AND SET ASIDE PLANTER IN COORDINATION WITH THE OWNER FOR NEW SEWER MAIN INSTALLATION. RETURN PLANTER TO ORIGINAL LOCATION AFTER SEWER MAIN INSTALLATION AND TRENCHING OPERATIONS ARE COMPLETED IN AN EQUAL OR BETTER CONDITION THAN WHEN FOUND, THE CONTRACTOR SHALL ASSUME ALL COSTS FOR REPLACEMENT.
5. REMOVE AND SET ASIDE METAL HANDRAIL. NO DAMAGE SHALL OCCUR TO THE HANDRAIL. RETURN & INSTALL THE HANDRAIL TO ITS ORIGINAL LOCATION AFTER SEWER MAIN INSTALLATION, TRENCHING AND FINAL GRADING IS COMPLETE.
6. DO NOT DISTURB EXISTING BICYCLE AND OIL TANK SHELTER.
7. REMOVE, SET ASIDE, AND REPLACE EXISTING CHAIN LINK FENCE ENOUGH TO INSTALL THE NEW 8"PVC SEWER PIPE.
8. INSTALL 44-INCH RADIUS, 22.5-DEGREE, 35-INCH LONG SWEEP.
9. THE LOCATION OF THE EXISTING 6-INCH DI WATER MAIN IS APPROXIMATE. THE DEPTH OF THIS PIPE IS APPROXIMATELY 4 FEET.

MH-7, TYPE I*	
STA "S" 7+21.3, 0.0 RT	
FG	EL=32.42
EXISTING COVER	EL=32.42
INV 8"PVC (IN)	EL=28.11
INV 8"PVC (OUT)	EL=28.02

*REPLACE EXISTING TYPE I MANHOLE INCLUDES FIBERGLASS BASE LINER.

MH-8, TYPE I*	
STA "S" 9+07.1, 81.35 RT	
FG	EL=29.14
EXISTING COVER	EL=29.86
INV 8"PVC (IN NORTH)	EL=25.27
INV 8"PVC (IN WEST)	EL=25.27**
INV 8"PVC (OUT SOUTH)	EL=25.25

*REPLACE EXISTING TYPE I MANHOLE INCLUDES FIBERGLASS BASE LINER.
**CONTRACTOR SHALL VERIFY SLOPE OF EXISTING 8"DI SEWER PIPE PRIOR TO ORDERING MH-8

MH-9, EXISTING TYPE I	
STA "S" 9+84.0, 103.9 RT	
EXISTING COVER	EL=29.10
INV 8"PVC (IN NORTH)	EL=24.84
INV 8"PVC (OUT SOUTH)	EL=24.80

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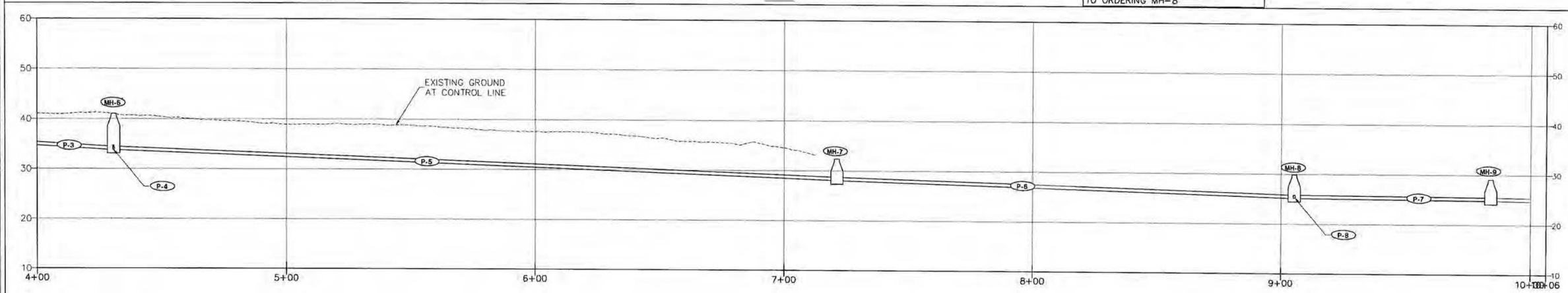

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

PLAN & PROFILE
SEWER MAIN FROM JACKIE STREET TO GREUNING PARK

SHEET NO. 11 of 15

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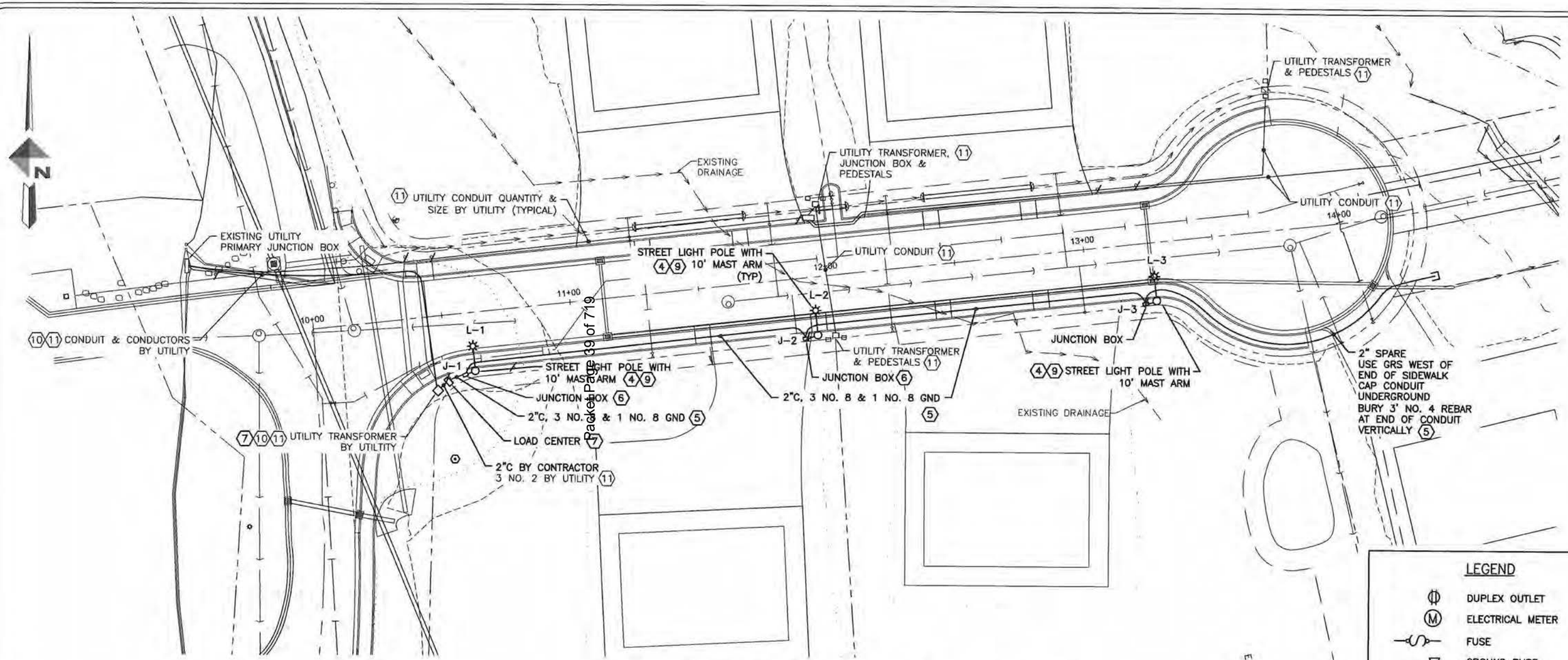
Packet Page 3 of 719



(1) JACKIE STREET - ELECTRICAL

10' 20' 40'

NOTES:

1. THE PURPOSE OF THIS PROJECT IS TO PROVIDE NEW STREET LIGHTING FOR THE JACKIE STREET PROJECT. PROVIDE ALL WORK SHOWN ON THE DRAWINGS AND AS NECESSARY TO PROVIDE NEW STREET LIGHTS AS SHOWN. PERFORM ALL WORK PER THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE STATE AND LOCAL CODES. ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED.

2. COORDINATE INSTALLATION WITH OTHER TRADES. OBTAIN LOCATES PRIOR TO DIGGING. RELOCATE CONDUIT, J-BOXES & EQUIPMENT AS NECESSARY TO AVOID CONFLICTS WITH PIPING AND OTHER STRUCTURES. INSTALL LIGHT BASES WHERE SHOWN.

3. COORDINATE WITH UTILITY TO PROVIDE A SERVICE TO THE NEW LOAD CENTER. UTILITY WORK TO BE PAID FOR BY OTHERS.

(4) PROVIDE NEW LIGHT POLES PER LIGHT POLE DETAILS ON SHEET E-3. THE LIGHT POLES SHALL MEET CBJ STANDARD 118. THE LUMINARIES SHALL CONSIST OF 120 LED LAMPS, 140W, WITH ELECTRONIC DRIVER, TYPE 1 DISTRIBUTION, FULL CUTOFF, 5100K, WHITE, MINIMUM INITIAL 7400 LUMENS, 240V (L-1 TO L-3). GRAY, SLIP FITTER MOUNT, HOUSE SIDE CUTOFF OPTICS, WITH TERMINAL BLOCKS INSIDE LUMINAIRE AND PHOTOCELL RECEPTACLE (NEMA) ON L-1 ONLY. KIM 1SAWP9LE1120L5K240LGA-25HSFTB. VERIFY PART NUMBER WITH MANUFACTURER. PROVIDE A NEMA BASE PHOTOCELL SEPARATELY, INSTALL PHOTOCELL ON RECEPTACLE PROVIDED WITH LUMINAIRE. PROVIDE A SHEILD ON FRONT OF LUMINIARE TO REDUCE GLARE INTO BUILDING PADS ON OPPOSITE SIDE OF THE STREET. LOCATE THE LIGHT POLES WHERE SHOWN ON SHEET E-1 AND AS SHOWN ON THE CIVIL SHEETS. ORIENT THE LIGHT POLES PERPENDICULAR TO THE CURB, AND INSTALL PER THE NOTES ON THIS SHEET.

(5) ALL CONDUIT SHALL BE SCHEDULE 40 PVC, HDPE OR GRS. USE GRS ELBOWS AND SWEEPS. USE THREE CONDUCTOR CABLE WITH COPPER CONDUCTORS WITH XHHW OR RHW INSULATION RATED AT 600V. USE TWO CONDUCTORS FOR POWER AND ONE AS A SPARE. SPLICE CONDUCTORS ONLY IN LIGHT POLES. BURY CONDUIT PER TRENCH DETAIL ON SHEET E-4. LOCATE CONDUIT WHERE SHOWN ON THESE DRAWINGS. THE CABLE SHALL HAVE AN OUTER JACKET OF XLP OR APPROVED EQUAL. NO PLOWING IN OF CONDUIT. MAINTAIN SEPARATION OF CONDUIT PER TRENCH DETAIL WITH OTHER PIPING AND UTILITY CONDUITS. DO NOT SHARE A TRENCH WITH OTHER UTILITY PIPING. CONDUIT LOCATIONS ARE NOT SCHEMATIC IN NATURE. LOCATE CONDUITS WHERE SHOWN. MODIFY LOCATIONS AS REQUIRED TO AVOID OBSTACLES. OBTAIN ENGINEER'S PERMISSION PRIOR TO RELOCATING CONDUIT.

(6) PROVIDE TYPE 1A JUNCTION BOXES PER A.D.O.T. STANDARD DRAWING L-23. INSTALL PER LIGHT POLE MOUNTING DETAIL ON SHEET E-3. LOCATE JUNCTION BOXES WHERE SHOWN ON THESE DRAWINGS AND PER THE CIVIL DRAWINGS.

(7) COORDINATE WITH UTILITY TO PROVIDE A 120/240V, 1ϕ, 3W, 100A, SERVICE TO THE LOAD CENTER. PROVIDE 2"C FROM LOAD CENTER TO UTILITY TRANSFORMER. UTILITY TO PROVIDE CONDUCTORS.

8. ORIENT ALL MAST ARMS PERPENDICULAR TO ROADWAY. ADJUST ORIENTATION FROM WHAT IS SHOWN AS NECESSARY.

(9) PROVIDE A LOAD CENTER TO POWER LIGHT POLES L-1 TO L-3. SEE DETAILS SHEET E-2.

(10) COORDINATE WITH UTILITY TO PROVIDE A 120/240V, 1ϕ, 3W, 100A, SERVICE FROM EXISTING UTILITY PRIMARY JUNCTION BOX UNDERGROUND TO NEW UTILITY TRANSFORMER AND TO THE LOAD CENTER. UTILITY TO PROVIDE CONDUCTORS. ELECTRICAL UTILITY WORK TO BE PAID FOR BY OTHERS.

(11) ELECTRICAL UTILITY FACILITIES. COORDINATE WITH UTILITIES (AEL&P, GCI, AND ACS) TO ALLOW THEM TO INSTALL THEIR FACILITIES. ALLOW TIME IN THE PROJECT SCHEDULE FOR THE UTILITIES TO PERFORM THEIR WORK. ELECTRICAL UTILITY WORK TO BE PAID FOR BY OTHERS.

LEGEND

⦶	DUPLEX OUTLET
(M)	ELECTRICAL METER
—∿—	FUSE
▽	GROUND BUSS
	POLE MOUNT LUMINAIRE.
C	CONDUIT
ELEC	ELECTRIC OR ELECTRICAL
GALV	GALVANIZED
GFI	GROUND FAULT INTERUPTER
HOA	HAND-OFF-AUTO
GRS	GALVANIZED RIGID STEEL
GND	GROUND
LC	LIGHTING CONTACTOR
NEC	NATIONAL ELEC CODE
NO.	NUMBER
P.E. CELL	PHOTOELECTRIC CELL
TYP	TYPICAL

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Fax: 907-789-3360

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CITY/BOROUGH OF JUNEAU ☆ ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

ELECTRICAL PLAN - JACKIE STREET

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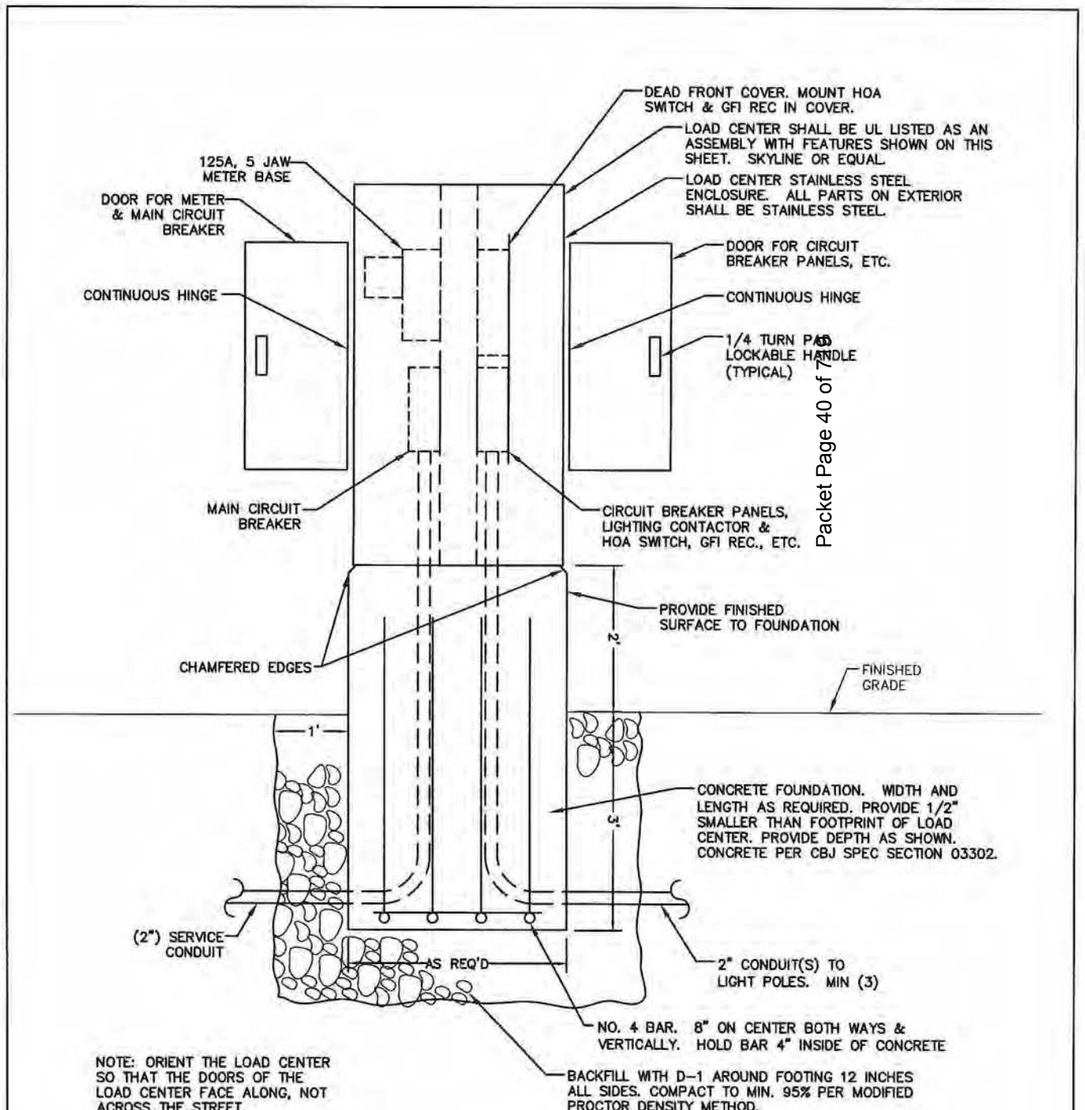
E-1

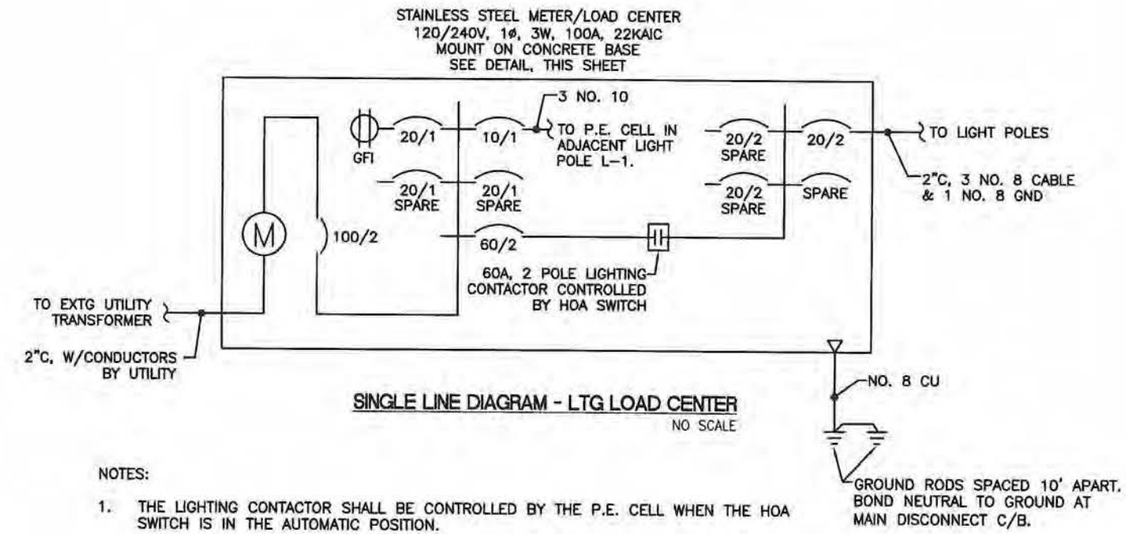
SHEET NO. 12 of 15

Y:\129 Dowl Engineering\17 Switzer Subdivision\WORKING DRAWINGS\JACKIE STREET LIGHTING.dwg 2015-7-31 10:44:24



LIGHTING LOAD CENTER ELEVATION

NO SCALE

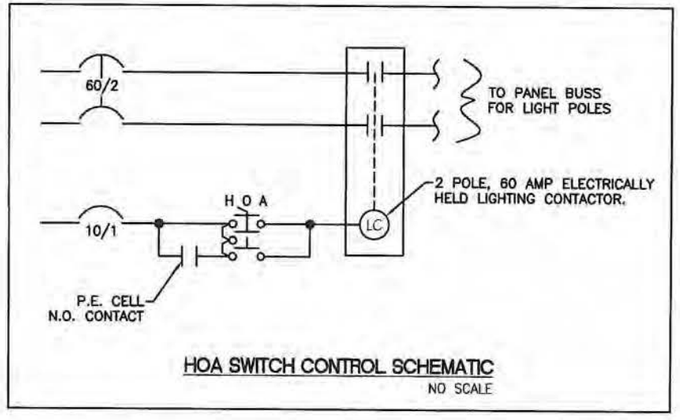


SINGLE LINE DIAGRAM - LTG LOAD CENTER

NO SCALE

NOTES:

1. THE LIGHTING CONTACTOR SHALL BE CONTROLLED BY THE P.E. CELL WHEN THE HOA SWITCH IS IN THE AUTOMATIC POSITION.
2. A STATE OF ALASKA DOT/PF STANDARD LOAD CENTER FOR HIGHWAY ILLUMINATION MAY BE SUBSTITUTED FOR THE LOAD CENTER SHOWN. COMPLY WITH THE ELECTRICAL REQUIREMENTS SHOWN.
3. INSTALL GROUNDING HUBS, THIRD PARTY CERTIFIED FOR WET LOCATIONS (MYERS TYPE), WHEN ATTACHING CONDUITS TO THE LOAD CENTER ENCLOSURE.
4. LABEL ALL CIRCUIT BREAKERS AS TO FUNCTION AND POSITION. LABEL THE SELECTOR SWITCH "LIGHTING" AND ITS POSITIONS "ON-OFF-AUTO".
5. STORE A SCHEMATIC DIAGRAM, A CIRCUIT DIRECTORY, AND A MATERIALS LIST THAT INCLUDES THE MANUFACTURER'S NAME AND PART/CATALOG NUMBERS, ALL LAMINATED IN PLASTIC, IN A METAL POCKET ATTACHED TO THE INSIDE OF THE LOAD CENTER. INSTALL THE POCKET ON THE LOAD CENTER DOOR AND PROVIDE DRAIN HOLES IN THE LOAD CENTER TO PREVENT WATER ACCUMULATION.



HOA SWITCH CONTROL SCHEMATIC

NO SCALE

RECEIVED
AUG 13 2015
PERMIT CENTER

MORRIS ENGINEERING GROUP LLC
12480 Mendenhall Loop Rd, Auke Bay, AK 99821
Phone: 907-789-3350
Fax: 907-789-3360

DOWL
5368 Commercial Blvd.
Juneau, Alaska 99801
(907) 780-3533 Office
(907) 780-3535 Fax
Consulting Engineers • Land Surveyors • Construction Administration

JOB NO: J70725.01	DRAWN BY: AQM	DESIGNED BY: M. MORRIS	CHECKED BY: LDS	DATE: JULY 2015

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

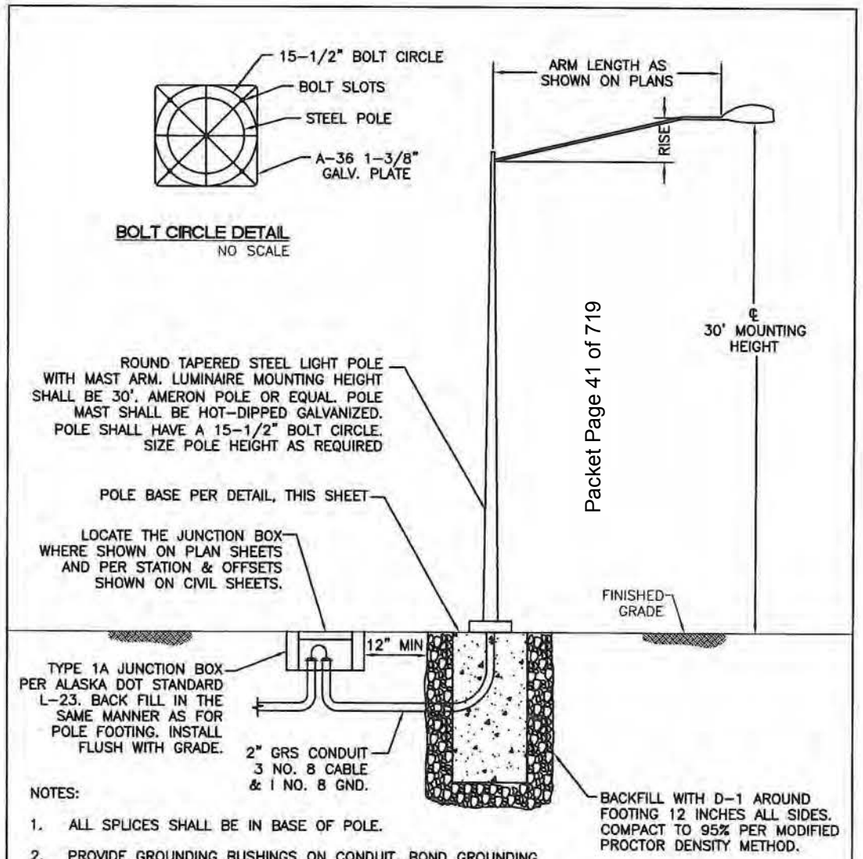
LOAD CENTER DETAILS - JACKIE STREET

E-2

SHEET NO. 13 of 15

Packet Page 40 of 72

X:\129 Dowl Engineering\17 Switzer Subdivision\WORKING DRAWINGS\JACKIE STREET LIGHTING.dwg 2015-7-31 10:25:52

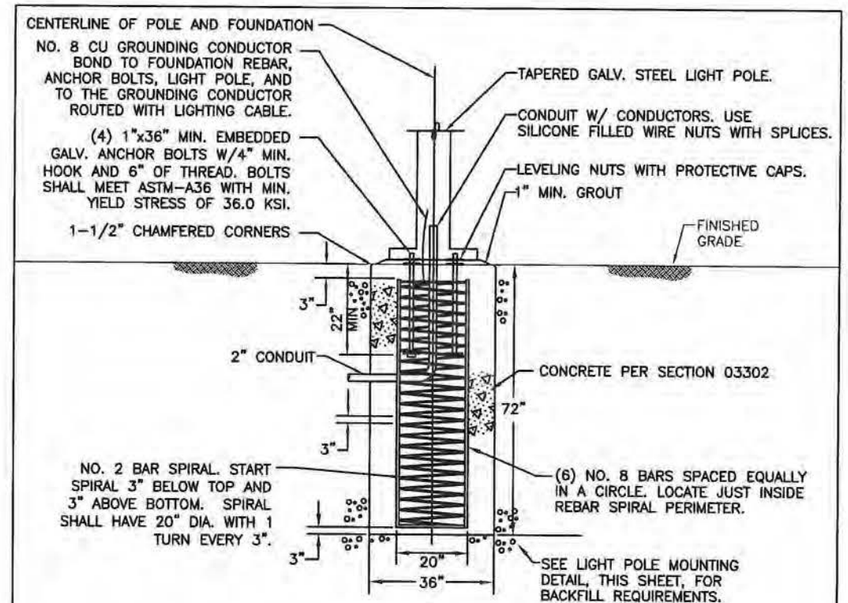


NOTES:

1. ALL SPLICES SHALL BE IN BASE OF POLE.
2. PROVIDE GROUNDING BUSHINGS ON CONDUIT. BOND GROUNDING CONDUCTOR ROUTED WITH LIGHTING CABLE TO GROUNDING BUSHINGS AND STEEL COVER, AND ROUTE TO LIGHT POLE BASE.
3. PROVIDE DOUBLE FUSED CONNECTOR KITS IN BASE OF POLE. SEC NO. 1791-DF OR EQUAL. THE FUSES SHALL BE BUSS KTK-5 FAST ACTING DUAL FERRULE TYPE OR APPROVED EQUAL.
4. LOCATE THE CENTER OF THE LIGHT POLE WHERE SHOWN ON PLAN SHEETS AND PER CIVIL DRAWINGS.
5. SIZE POLE WITH LUMINAIRE FOR 90 MPH SUSTAINED WINDS WITH GUSTS TO 110 MPH, EXPOSURE B (IBC 2003)
6. PROVIDE A PE CELL AT TOP OF POLE L-1.

MAST ARM RISE	
LENGTH (NOM.)	RISE (MAX)
10'	2'-6"

LIGHT POLE MOUNTING DETAIL
NO SCALE



LIGHT POLE BASE DETAIL
NO SCALE

Packet Page 41 of 719

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PERMIT CENTER/CDD

MORRIS ENGINEERING GROUP LLC
12480 Mendenhall Loop Rd, Auke Bay, AK 99821
Phone: 907-789-3350
Fax: 907-789-3360

DOWL
5368 Commercial Blvd.
Juneau, Alaska 99801
(907) 780-3533 Office
(907) 780-3535 Fax
Consulting Engineers • Land Surveyors • Construction Administration

STATE OF ALASKA 49TH Mark G. Morris July 31, 2015 No. EE 8613 REGISTERED PROFESSIONAL ENGINEER

JOB NO: J70725.01	DRAWN BY: AQM	DESIGNED BY: M. MORRIS	CHECKED BY: LDS	DATE: JULY 2015

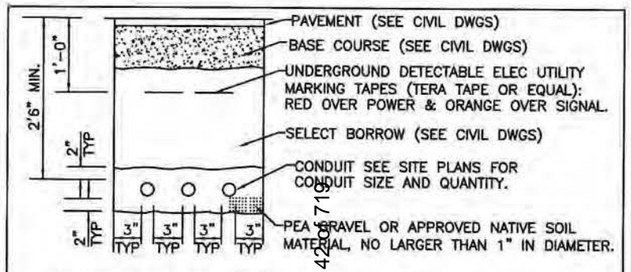
CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

LIGHT POLE DETAILS - JACKIE STREET

E-3

Y:\129 Dowl Engineering\17 Switzer Subdivision\WORKING DRAWINGS\JACKIE STREET LIGHTING.dwg 2015-7-31 10:45:46

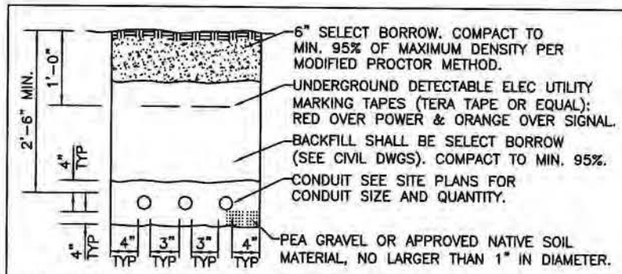


TRENCH DETAIL - PAVED AREAS

NO SCALE

NOTES:

1. ALL DIMENSIONS ARE MINIMUM.
2. SEE CIVIL DRAWINGS FOR TYPICAL SECTIONS UNDER PAVED AREAS. PROVIDE BACKFILL (MATERIAL, COMPACTION, ETC.) PER THE CIVIL DRAWINGS.
3. THE LOCATION OF ALL EXISTING PIPING, CONDUIT, ETC MAY NOT BE WHERE SHOWN AND MAY NOT BE SHOWN. ALL LOCATIONS THAT ARE SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED. OBTAIN UTILITY LOCATES PRIOR TO DIGGING. DIG WITH CAUTION. AVOID WATER, SEWER, DRAINAGE PIPES AND OTHER CONFLICTS.
4. MAINTAIN 12 INCHES MINIMUM SEPARATION (ALL DIRECTIONS) BETWEEN POWER AND OTHER EXISTING CONDUITS, PIPES, ETC.
5. CUT & REPLACE EXISTING ASPHALT, CONCRETE, CONCRETE CURB, GUTTER, SIDEWALK, ETC AS NECESSARY.
6. SAWCUT EXISTING ASPHALT AS REQUIRED TO INSTALL CONDUIT AND OTHER ELECTRICAL ITEMS. SAWCUT ASPHALT BACK 18" ON EACH SIDE OF EDGE OF TRENCH OR EXCAVATION AREA (ALL SIDES). THERE SHALL BE 18" OF UNDISTURBED SOIL BETWEEN EDGE OF SAWCUT AND EXCAVATION LIMITS. ALL TRENCHES SHALL BE 18" WIDE MIN. COMPACT BACKFILL TO 95%. COMPACT D-1 TO 100% WHERE COVERED WITH PAVEMENT. RE-PAVE SAWCUT AREAS PER PAVING SPECIFICATIONS.
7. POWER UTILITY CONDUITS SHALL BE BURIED AT A MINIMUM OF 3'-6". BURY CONDUITS DEEPER WHERE REQUIRED TO AVOID OTHER PIPES AND STRUCTURES.
8. MODIFY CONDUIT BURIAL DEPTH WHERE SHOWN ON DRAWINGS AND AS REQUIRED TO AVOID ALL OBSTACLES.
9. THIS DETAIL APPLIES TO DRAIN CONDUITS AS WELL AS POWER & SIGNAL CONDUITS.



TRENCH DETAIL - NON-PAVED AREAS

NO SCALE

NOTES:

1. ALL DIMENSIONS ARE MINIMUM.
2. THE LOCATION OF ALL EXISTING PIPING, CONDUIT, ETC MAY NOT BE WHERE SHOWN AND MAY NOT BE SHOWN. ALL LOCATIONS THAT ARE SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED. OBTAIN UTILITY LOCATES PRIOR TO DIGGING. DIG WITH CAUTION. AVOID WATER, SEWER, DRAINAGE PIPES AND OTHER CONFLICTS.
3. MAINTAIN 12 INCHES MINIMUM SEPARATION (ALL DIRECTIONS) BETWEEN POWER AND OTHER EXISTING CONDUITS, PIPES, ETC.
4. CUT & REPLACE EXISTING ASPHALT, CONCRETE, CONCRETE CURB, GUTTER, SIDEWALK, ETC AS NECESSARY.
5. ALL TRENCHES SHALL BE 18" WIDE MIN. COMPACT BACKFILL TO 95%.
6. POWER UTILITY CONDUITS SHALL BE BURIED AT A MINIMUM OF 3'-6". BURY CONDUITS DEEPER WHERE REQUIRED TO AVOID OTHER PIPES AND STRUCTURES.
7. MODIFY CONDUIT BURIAL DEPTH WHERE SHOWN ON DRAWINGS AND AS REQUIRED TO AVOID ALL OBSTACLES.
8. THIS DETAIL APPLIES TO DRAIN CONDUITS AS WELL AS POWER & SIGNAL CONDUITS.

RECEIVED
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PERMIT CENTER

MORRIS ENGINEERING GROUP LLC
12480 Mendenhall Loop Rd, Auke Bay, AK 99821
Phone: 907-789-3350
Fax: 907-789-3360

STATE OF ALASKA 49TH — Mark G. Morris — July 31, 2015 — No. EE 8013 — REGISTERED PROFESSIONAL ENGINEER

DOWL
5368 Commercial Blvd.
Juneau, Alaska 99801
(907) 780-3533 Office
(907) 780-3535 Fax
Consulting Engineers • Land Surveyors • Construction Administration

JOB NO: J70725.01	DRAWN BY: AOM	DESIGNED BY: M. MORRIS	CHECKED BY: LDS	DATE: JULY 2015

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIVISION
CONTRACT NO. E16-046

TRENCH DETAILS - JACKIE STREET

E-4

SHEET NO. 15 of 15

Y:\129 Dowl Engineering\17 Switzer Subdivision\WORKING DRAWINGS\JACKIE STREET LIGHTING.dwg 2015-7-31
10:46:29

Packet Page 42 of 719

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 22270
JUNEAU, ALASKA 99802-2270

June 12, 2015

Regulatory Division
POA-2013-695

Mr. Greg Chaney
City and Borough of Juneau
Lands and Resources
155 South Seward Street
Juneau, Alaska 99801

Dear Mr. Greg Chaney:

Enclosed is the signed Department of the Army permit, file number POA2013-695, Switzer Creek, which authorizes the construction of a 6 lot subdivision. The project site is located within Section 33, T. 40 S., R. 66 E., Copper River Meridian; USGS Quad Map Juneau B-2; Latitude 58.3627° N., Longitude -134.5117° W.; in Juneau, Alaska. Also enclosed is a Notice of Authorization which should be posted in a prominent location near the authorized work.

If changes to the plans or location of the work are necessary for any reason, plans must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at Matthew.T.Brody@usace.army.mil, by mail at the address above, or by phone at (907) 790-4493, if you have questions. For more information about the Regulatory Program, please visit our website at http://www.poa.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

BRODY.MATTHEW.T.1383923111

Digitally signed by BRODY.MATTHEW.T.1383923111
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BRODY.MATTHEW.T.1383923111
Date: 2015.06.12 12:27:44 -08'00'

Matthew Brody
Regulatory Specialist

Enclosures

A(iii) - Army Corp of Engineers wetland fill permit

DEPARTMENT OF THE ARMY PERMIT

Permittee: Greg Chaney – City and Borough of Juneau

Permit No.: POA-2013-695

Issuing Office: U.S. Army Engineer District, Alaska

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The construction of a 6 lot subdivision consisting of an access road and multi-family housing units on the 6 lots. A single access road measuring 56 feet in width from the toe of slope and 600 feet long resulting in the placement of fill into 0.09 acres of wetlands. The construction of the 6 proposed lots resulting in the placement of 2600 cubic yards of clean shot rock, 2" minus, and sand & gravel into 0.54 acres of wetlands to construct the building pads. The construction of a driveway resulting in the installation of a 24" culvert into a tributary to Wimpy Tributary that would include the placement of 30 cubic yards of fill into 0.006 acres of stream below the ordinary high water mark on Lot 3A. The project would result in the permanent placement of fill into a total of 0.63 acres of wetlands and 0.006 acres of streambed.

All work will be performed in accordance with the attached plan, sheets 1-4, dated 6/16/2014.

Project Location: The project site is located within Section 33, T. 40 S., R. 66 E., Copper River Meridian; USGS Quad Map Juneau B-2; Latitude 58.3627° N., Longitude -134.5117° W.; in Juneau, Alaska

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on June 30, 2020. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a revaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Greg Chaney

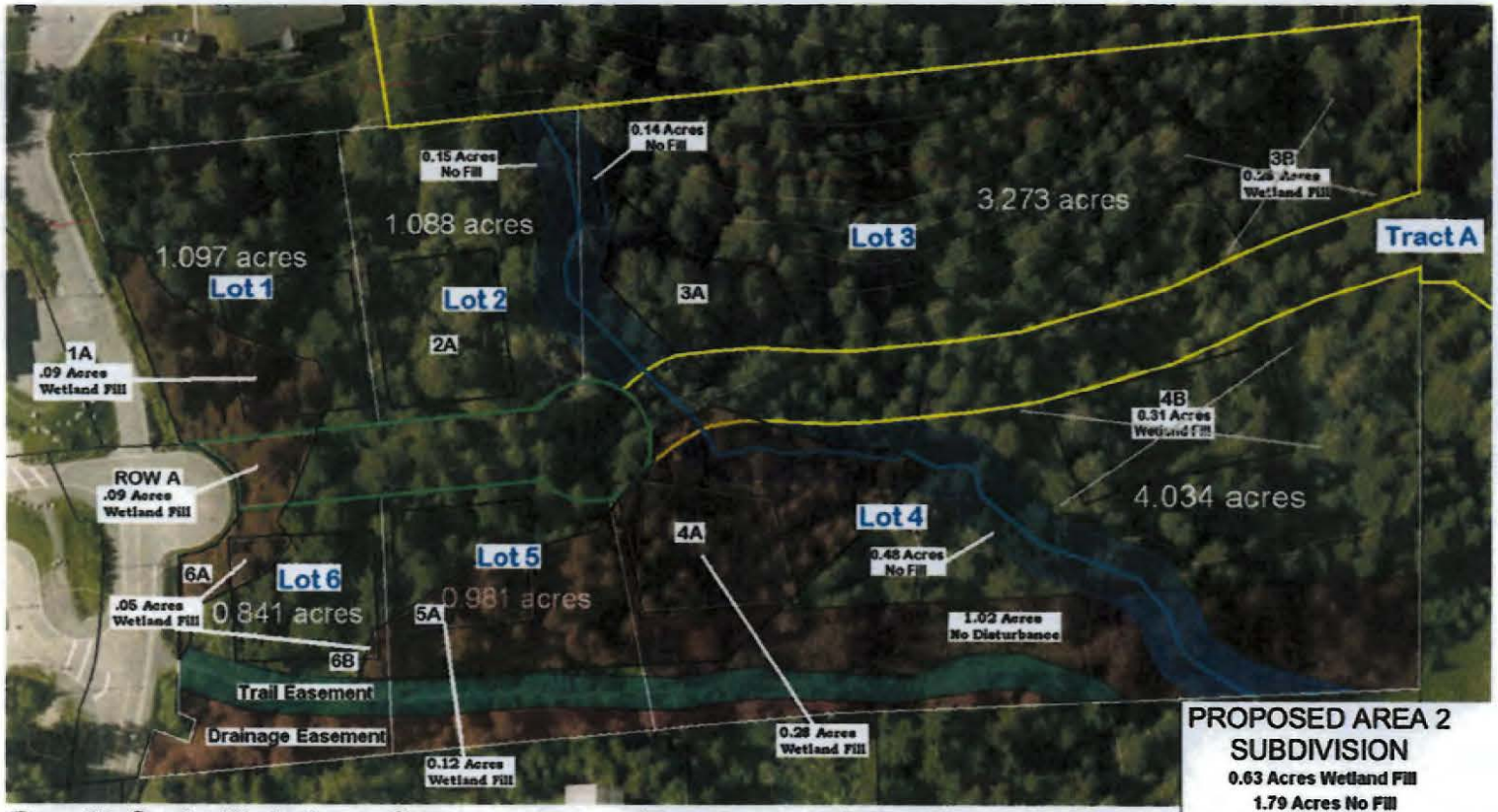
Mr. Greg Chaney, City and Borough of Juneau

June 10 2015
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

FOR (DISTRICT COMMANDER)
Colonel Christopher D. Lestochi
Matthew Brody
Southeast Branch, Regulatory Division

June 12, 2015
(DATE)

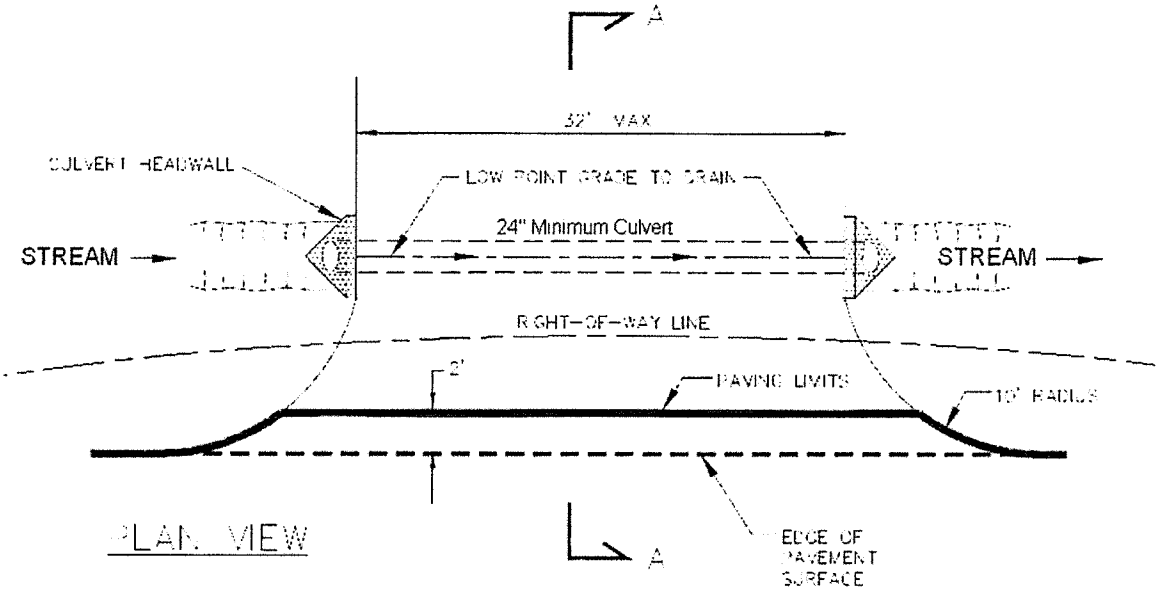


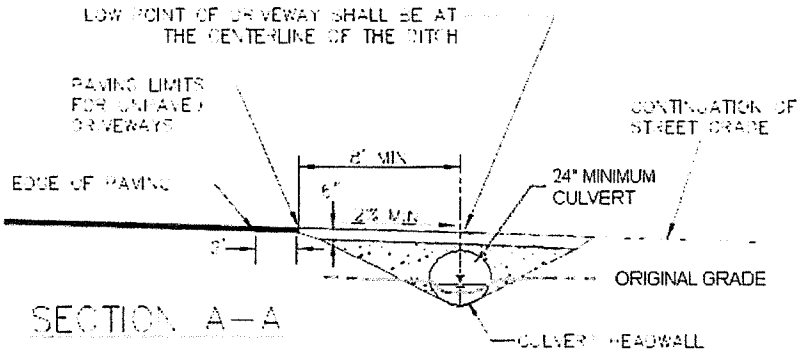
Draft Subdivision Concept **Zoning 15 Units per Acre**

POA-2013-695
Page 1 of 4
Switzer Creek Subdivision

CBJ
June 16, 2014

Stream Crossing Detail
24" Minimum Partially Buried Culvert





NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Mr. Greg Chaney – City and Borough of Juneau		File Number: POA-2013-695	Date: June 12, 2015
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
X	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

THE STATE of ALASKA

GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF WATER
Wastewater Discharge Authorization Program

555 Cordova Street
Anchorage, Alaska 99501-2617
Main: 907.269.6285
Fax: 907.334.2415
www.dec.alaska.gov/water/wwdp

August 29, 2014

Certified Mail: 7012-3460-0002-9326-6544

Mr. Greg Chaney
City/Borough of Juneau
155 South Seward Street
Juneau, AK 99801

Re: Switzer Creek, CBJ, Switzer Creek Subdivision
Reference No. POA–2013-695

Dear Mr. Chaney:

In accordance with Section 401 of the Federal Clean Water Act of 1977 and provisions of the Alaska Water Quality Standards, the Department of Environmental Conservation (DEC) is issuing the enclosed Certificate of Reasonable Assurance for placement of fill material in waters of the U.S. in association with the development of six multi-family housing lots.

DEC regulations provide that any person who disagrees with this decision may request an informal review by the Division Director in accordance with 18 AAC 15.185 or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 15 days of the permit decision. Visit http://www.dec.state.ak.us/commish/ReviewGuidance.htm for information on Administrative Appeals of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, PO Box 111800, Juneau, AK 99811-1800, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

By copy of this letter we are advising the U.S. Army Corps of Engineers of our actions and enclosing a copy of the certification for their use.

Sincerely,

James Rypkema
Section Manager, Storm Water and Wetlands

Enclosure: 401 Certificate of Reasonable Assurance

cc: (with encl.)
Matthew Brody, USACE, Juneau
Jackie Timothy, ADF&G
USFWS Field Office Juneau
Mark Jen, EPA Operations, Anchorage

Water Pollution Prevention Plan (SWPPP). For projects that disturb more than five acres, this SWPPP must also be submitted to DEC (William Ashton, 907-269-6283) prior to construction.

4. During the work on culverts, construction equipment shall not be operated below the ordinary high water mark if equipment is leaking fuel, oil, hydraulic fluid, or any other hazardous material. Equipment shall be inspected on a daily basis for leaks. If leaks are found the equipment shall not be used and pulled from service until the leak is repaired.
5. All work areas, material access routes, and surrounding wetlands involved in the construction project shall be clearly delineated and marked in such a way that equipment operators do not operate outside of the marked areas.
6. Natural drainage patterns shall be maintained, to the extent practicable, without introducing ponding or drying.
7. Fill material must be clean sand, gravel or rock, free from petroleum products and toxic contaminants in toxic amounts.
8. Excavated or fill material, including overburden, shall be placed so that it is stable, meaning after placement the material does not show signs of excessive erosion. Indicators of excess erosion include: gullying, head cutting, caving, block slippage, material sloughing, etc.
9. Fill placed during winter construction within wetlands that during the summer contain surface water that is connected to natural bodies of water, must be stabilized or contained in the spring prior to breakup. This action is to ensure that silts are not carried from the fill to the natural bodies of water in the spring and summer.
10. Prior to fill placement in the spring or summer, a silt fence or similar structure shall be installed on a line parallel to and within five feet of the proposed fill toe of slope within all wetland areas that contain standing water that is connected to any natural body of water or where the fill toe is within 25 feet of such a water body. This structure shall remain in place until the fill has been stabilized or contained in another manner.
11. Any disturbed ground and exposed soil not covered with fill must be stabilized and re-vegetated with endemic species, grasses, or other suitable vegetation in an appropriate manner to minimize erosion and sedimentation, so that a durable vegetative cover is established in a timely manner.

This certification expires five (5) years after the date the certification is signed. If your project is not completed by then and work under U.S Army Corps of Engineers Permit will continue, you must submit an application for renewal of this certification no later than 30 days before the expiration date (18 AAC 15.100).

Date: August 29, 2014

James Rypkema

James Rypkema, Section Manager
Storm Water and Wetlands

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: May 13, 2015

TO: Planning Commission

FROM: Eric Feldt, Planner II, CFM
Community Development Department

FILE NO.: SMP2015 0005

PROPOSAL: Preliminary Plat review for an eight lot subdivision in a D-15 zoning district.

GENERAL INFORMATION

Applicant:	City & Borough of Juneau
Property Owner:	City & Borough of Juneau
Property Address:	1598 Renninger Street
Legal Description:	Lot A2 USS 5504
Parcel Code No.:	5-B14-0-100-017-0
Site Size:	Approximately 12 Acres
Comprehensive Plan Future Land Use Designation:	Medium Density Residential
Zoning:	D-15
Utilities:	Public Water & Sewer
Access:	Renninger Street
Existing Land Use:	Vacant
Surrounding Land Use:	North - D-15; Eaglewood Apartments; Renninger St. South - D-15; Gruening Park; Renninger St. East - D-15; Vacant CBJ Land West - D-15; Dzantik'i Heeni Middle School; Renninger St.

Attachment B - May 13 2015 memorandum from Eric Feldt to CBJ Planning Commission regarding SMP2015 0005

Vicinity Map

0 250 500 1,000 Feet

VICINITY MAP FOR PROPOSED RENNINGER SUBDIVISION

ATTACHMENTS

Attachment	A	Proposed Subdivision Design
Attachment	B	Proposed Street Design

PROPOSAL

The City & Borough of Juneau (CBJ) is initiating an 8-lot subdivision on CBJ-owned property across from Dzantik'i Heeni (DZ) Middle School in Lemon Creek to create more housing options during a time of severe housing shortage. This subdivision will establish a new 350-foot long paved CBJ road with utilities and sidewalks and enable immediate future development.

The subject memorandum addresses the Preliminary Plat review process, the first of a two-step Major Subdivision process (49.15.430). Approval of this step will allow the applicant to finalize construction designs and start construction. Once completed, the applicant will submit a Final Plat (final step) to ensure all improvements have been made. This will enable the recording of the plat and subsequent sale of the new lots. The subject memorandum provides a basic overview of the subdivision to ensure consistency with the Land Use Code and other CBJ adopted plans, such as lot dimensions and size, required utilities and other general improvements of the subdivision.

Concurrent with the preliminary plat review, the project has been reviewed through a City Consistency process (CSP2015 0009) to ensure the subdivision is consistent with city adopted plans. The CSP reviews required for two reasons: 1) the project utilizes Capital Improvement Program (CIP) funds and, 2) the project will result in selling CBJ land (49.10.170(c)).

BACKGROUND

In 1997, R&M Engineering prepared the 'CBJ Switzer Area Land Study' for the CBJ to determine future development. The area investigated was north and east of the DZ Middle School. The subject site is within this study area.

The site was also identified on the 'Long Term Disposal' list in the 1999 CBJ Land Management Plan. This list was compiled through an evaluation of the 1996 Comprehensive Plan and Capital Improvement Project (CIP) list. The evaluation resulted in a list of 'immediate' and 'long term' disposal of CBJ lands within the urban service area (primarily those lands having CBJ sewer and water). The subject area was placed on the 'long term disposal' because it needed to be subdivided prior to development.

Later in 2011, R&M Engineering produced the 'CBJ Switzer Lands Residential Development Study' which provided a narrowed focus of the 1997 study area by identified three development phases, one including the subject site. The site was identified as the easiest to be developed and

envisioned to be developed first. The excerpt from this study explains why the subject site was chosen first.

> "Development Area 2A would be the least expensive to develop and offers the lowest cost per dwelling unit. It is a very short piece of road being constructed and utility costs are minimal. It is zoned D-15, which would allow up to 48 units; but the cost per dwelling unit is based on a more conservative 32 units. There are some wetlands near Renninger Street that would require permitting; but these are not high-functioning wetlands; and they may be able to be avoided. The existing Switzer Trail that connects DZMS and neighborhoods off Alaska and Lund Street is used by students coming to and from school. The Juneau Safe Routes to Schools Plan (March 2012 public review draft) recommends adding lights and improving the narrow bridges on this trail through area 2A. Design of housing in this area should improve or relocate and improve this non-motorized route to and from school as well as Renninger Street." Page 28.

ANALYSIS

Zoning

The subdivision is located in a D-15 zoning district in the Lemon Creek area. This district allows 15 units per acre and multi-family residences such as condominiums and apartments, as well as common-walls, duplexes, single families, and bungalows. A breakdown of the maximum allowed dwelling unit per lot is provided below.

Allowed No. of Dwelling Units (Dw/ Units)

- Proposed Lot 1: Not ready for development but part of subdivision
- Proposed Lot 2: Size = 1.25 acres, allowed Dw/ Units = 18.75 round to **19**
- Proposed Lot 3: Size = 1.16 acres, allowed Dw/ Units = 17.4 round to **17**
- Proposed Lot 4: Size = 3.78 acres, allowed Dw/ Units = 56.7 round to **57**
- Proposed Lot 5: Size = 3.16 acres, allowed Dw/ Units = 47.4 round to **47**
- Proposed Lot 6: Size = 1.10 acres, allowed Dw/ Units = 16.5 round to **17**
- Proposed Lot 7: Size = .94 acres, allowed Dw/ Units s = 14.1 round to **14**
- Proposed Lot 8: Preservation Lot for wetlands; Development not allowed

Total number of allowed homes (using rounded figures) = 171

Due to the cost of site development, area dedicated to parking, slopes, and wetlands, it is not likely this subdivision will reach the maximum dwelling count of 171.

The CBJ Division of Lands & Resources has received interest from housing organizations to build 8-plexes (8-unit buildings) on some of the proposed lots. Based on the lot size, allowed density, and zoning, this would be allowed.

All lots of within the subdivision exceed the minimum required lot size and lot width and depth (50' wide X 80' deep) for the D-15 district.

Drainage

The property slopes away from Renninger Street at a shallow grade. As the new road and properties are developed, the drainage will be changed from its natural state and contained within each site and directed to either the road or an approved drainage area as approved by CBJ Engineering.

Wetlands

There are wetlands within in this subdivision that will be affected by the new road and future development. The CBJ Division of Lands & Resources has been working with the US Army Corps of Engineers (COE) to allow the filling of wetland in order to move the project forward. One condition of COE approval is a wetland preservation lot (Lot 8). This lot is located in the eastern area of the project. See Attachment A. The following was provided from the CBJ Division of Lands & Resources regarding the filling of wetlands.

> In order for the US Army Corps of Engineers to permit wetlands to be filled for development of this subdivision, the US Army Corps of Engineers will require the CBJ to record a Restrictive Covenant in the form of an easement that protects the Preservation Lot from being disturbed during construction. This Restrictive Covenant will have the same meets and bounds description as the Preservation Lot so that when the Final Plat is recorded, the Restrictive Covenant would apply to the Preservation Lot. The US Army Corps of Engineers requires this step in order to ensure that the area with sensitive habitat will be preserved and will not be inadvertently impacted during construction.

Habitat

Besides wetlands, there is no other mapped habitat located in the proposed subdivision that is regulated by the CBJ Land Use Code.

Access

The proposed lots will have direct access onto the new street (Jackie Street), which will connect to Renninger Street, as seen in Figure 1 and Attachment A.

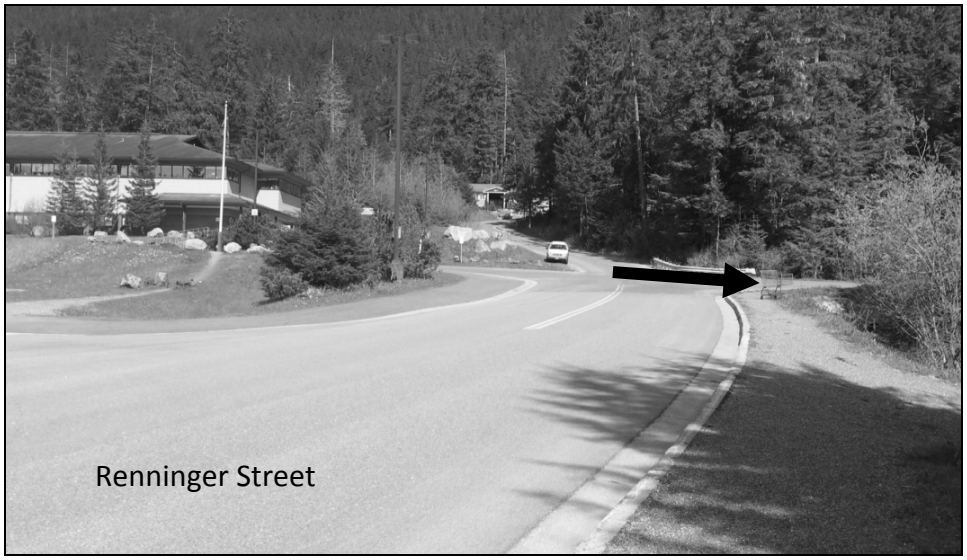


Figure 1: Looking uphill Renninger Street towards new subdivision where the arrow is pointing. Dzantik'i Heeni Middle School can be seen on the left side. Picture taken by CDD staff 5/5/2015.

Traffic Analysis

The new street (Jackie Street) will meet the required minimum dimensions for a public street and consist of sidewalks on both sides, underground drainage, pavement, and curbs and gutters (required per 49.35.210(e)(3)). The proposed subdivision will connect to public water and sewer, in addition to power, phone, and internet.

A Traffic Impact Analysis (TIA) is required for the subdivision because the forecasted total number of generated vehicular trips is approximately 1,100 average daily trips (ADT). According to 49.40.300 (a)(1), a TIA is required for development exceeding 500 ADT. Staff determined the forecasted 1,100 ADT by first determining the Average Daily Trips (ADT) of a single apartment unit (allowed use in the D-15 district) by utilizing the 2003 Institute of Traffic Engineers (ITE) Trip Generation 7th Edition manual. CDD staff uses this manual to determine if forecasted trip generation of a project triggers a TIA. Staff averaged the ADTs weekday and weekend days of apartment units, as provided in this manual. This averaging came to 6.42 ADT for a single apartment unit. Staff multiplied 6.42 by the 171 (maximum allowed dwelling units in proposed subdivision) to total 1,097 ADT (approximately 1,100).

According to the Land Use Code 49.40.305, the purpose of the TIA is to "…identify and assess the impacts of the proposed development on all affected transportation systems. The TIA shall identify any effective development design or operational measures that would mitigate impacts of a development on transportation systems". The TIA must address items under 49.40.305(c) (1-8). As a condition of approving the Preliminary Plat, the applicant must submit a TIA for CDD review that

addresses items under 49.40.305(c) (1-8). Mitigation measures may result from the TIA, as provided under 49.40.330. Staff recommends the applicant submit a TIA prior to Final Plat approval as a conditional of Preliminary Plat approval.

As stated earlier, it is unlikely that all 171 allowed units will be constructed due to costs of construction and environmental challenges. Therefore, fewer than 1,097 average daily trips are expected. However, since all 171 units are allowed to be built, the TIA will ensure transportation systems are maintained or improved.

Pedestrian Access

All lots in the subdivision will have direct access to sidewalks all Jackie Street. The new sidewalks will link to Renninger Street. The sidewalks are intermittent along Renninger Street, and the applicant will extend the existing sidewalk along the east side of Renninger to the sidewalks of the subdivision. This will provide a continuous pedestrian linkage to the Glacier Highway sidewalk whereby pedestrians can reach the nearby CBJ bus stop and shopping opportunities.

The recreational public-use Switzer Trailhead is located along Renninger Street near the subdivision. See Figure 2. This trail connects to other trails in the neighborhood.

The DZ Middle School is located directly across Renninger Street from the proposed subdivision. Residents of the proposed subdivision will likely walk to the school or the nearby basketball court and baseball diamonds. There is currently no crosswalk. The applicant will install a crosswalk or similar feature to provide safe access to the school for pedestrians. The design and construction drawings for the crosswalk will be submitted prior to Final plat approval for review.

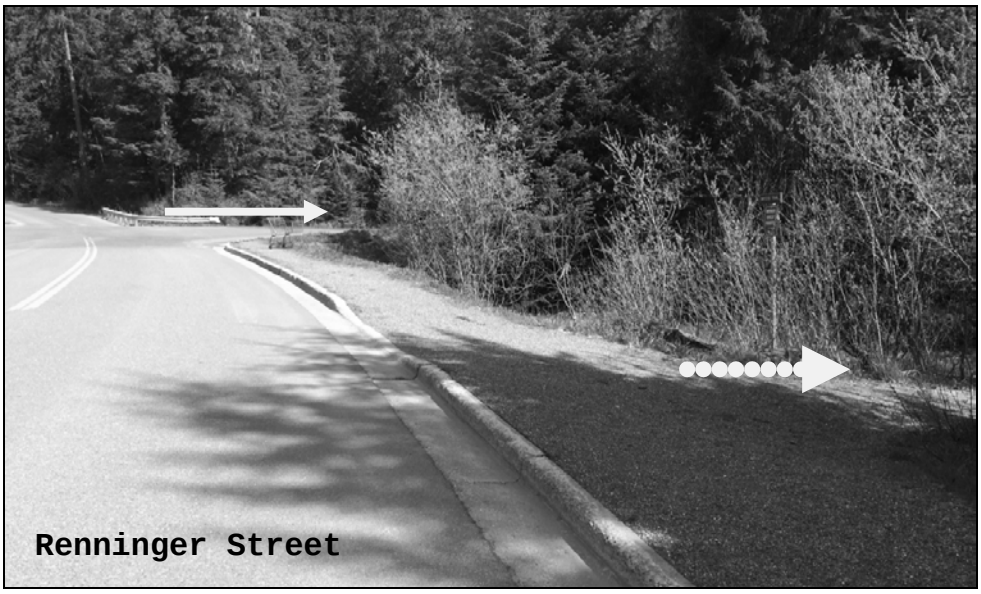


Figure 2: The dashed arrow points to the Switzer trailhead. The solid arrow points to the location of the proposed subdivision. Picture taken by CDD staff 5-5-2015.

Consistency with Adopted Plan

2013 Comprehensive Plan

The proposed subdivision will create new opportunities for additional housing. The Comprehensive Plan states a strong desire for more housing choices and affordable housing. See excerpt below.

> "The three indicators of a housing crisis are the presence of households that (1) are paying more than 30% of their household income for shelter, thereby deemed "overburdened" by housing costs; (2) live in overcrowded conditions, that is, more than one person per room within the home; and/or (3) live in unsafe and/or unsanitary housing units, that is, without a full kitchen and bath. The 2008 American Community Survey by the U.S Census reports that nearly 4,000 of the 12,187 Juneau households spent more than 30% of their household incomes on household costs in 2008. This includes 1,350 households that spent more than 50% of their incomes on household costs. According to the 2010 *CBJ Housing Needs Assessment* report by the Juneau Economic Development Council (JEDC), 38% of Juneau renters and 39% of homeowners do not have affordable housing." Emphasis added. Page 25.

The following policies of the Comprehensive Plan are germane to the proposal:

> **POLICY 4.2. TO FACILITATE THE PROVISION OF AN ADEQUATE SUPPLY OF VARIOUS HOUSING TYPES AND SIZES TO ACCOMMODATE PRESENT AND FUTURE HOUSING NEEDS FOR ALL ECONOMIC GROUPS**. Page 37.
>
> **POLICY 4.6. TO FACILITATE AND ASSIST IN THE DEVELOPMENT OF AFFORDABLE HOUSING.** Page 40.
>
> **POLICY 10.1. TO FACILITATE AVAILABILITY OF SUFFICIENT LAND WITH ADEQUATE PUBLIC FACILITIES AND SERVICES FOR A RANGE OF HOUSING TYPES AND DENSITIES TO ENABLE THE PUBLIC AND PRIVATE SECTORS TO PROVIDE AFFORDABLE HOUSING OPPORTUNITIES FOR ALL JUNEAU RESIDENTS.** Page 129
>
> **POLICY 8.6. TO PROMOTE AND FACILITATE TRANSPORTATION ALTERNATIVES TO PRIVATE VEHICLES AS A MEANS OF REDUCING TRAFFIC CONGESTION, AIR POLLUTION AND THE CONSUMPTION OF FOSSIL FUELS, AND TO PROVIDE SAFE AND HEALTHY MEANS OF TRANSPORTATION TO ALL PEOPLE.** Page 114

The proposal meets the policies of the 2013 Comprehensive Plan because it creates an opportunity for future housing in an area that has public water, sewer, and access to transit.

CBJ Capital Improvement Program (CIP)
The proposed subdivision is listed on the Preliminary fiscal year 2016-2021 CIP under 'Switzer Land Development'. Forecasted funding amount has been listed at approximately $5 million for fiscal year 2017. Exact funds and project costs will be determined in the future.

2009 Non-Motorized Transportation Plan (NMTP)
According to page 7 for the NMTP, "The goal of the Juneau Non-Motorized Transportation Plan is to make bicycling and walking safe, convenient and pleasant so that residents choose ac tive forms of transportation more often." The applicant will install a new crosswalk or similar feature and extend an existing sidewalk to the entrance of Jackie Street. With these improvements and the sidewalks within the subdivision, this project will meet the goal of the NMTP.

2012 Safe Routes to Schools Plan
According to the CBJ Safe Routes to School program is to "… create safe, convenient and fun opportunities for Juneau children to walk and bicycle to and from school and thus encourage more children to be physically active."

The following indicates the percentage of students that walk to Dzantik'i Heeni Middle School and identifies nearby streets.

> "Between 10-16% of Dzantik'i Heeni Middle School students walk to or from school on any given day. Students approaching from Switzer Village and Gruening Park use side streets that lead to Renninger Street. Students who live north of Glacier Highway between Switzer Creek and Lemon Creek walk to school either using the Switzer Trail connecting Alaska Avenue and Renninger Street, or, along the north side of Glacier Highway."

This plan recommends new crosswalks at the existing streets which intersect Renninger Street south of the subdivision. The need for a crosswalk at those locations fits the same reason for a future crosswalk where Jackie Street intersect Renninger Street. The applicant will install a sidewalk or similar feature. This will meet the purpose of the Safe Routes to Schools Plan.

LAND USE CODE, TITLE 49

The subdivision meets the minimum lot size and dimension of the underlying D-15 zoning district (49.25.400). The proposed street (Jackie Street) meets the design and construction standards per Article II of 49.35 *Public Improvements*. Staff recommends the applicant submit a TIA prior to Final Plat approval as a conditional of Preliminary Plat approval to ensure compliance with the Land Use Code.

FINDINGS

CBJ §49.15.330 (e)(1), Review of Director's Determinations, states that the Planning Commission shall review the Director's report to consider:

1. Whether the application is complete; and,
2. Whether the proposed use is appropriate according to the Table of Permissible Uses;
3. Whether the development as proposed will comply with the other requirements of this chapter.

The Commission shall adopt the Director's determination on the three items above unless it finds, by a preponderance of the evidence, that the Director's determination was in error, and states its reasoning for each finding with particularity.

CBJ §49.15.330 (f), Commission Determinations, states that even if the Commission adopts the Director's determination, it may nonetheless deny or condition the permit if it concludes, based upon its own independent review of the information submitted at the public hearing, that the development will more probably than not:

1. Materially endanger the public health or safety;
2. Substantially decrease the value of or be out of harmony with property in the neighboring

area; or,

3. Not be in general conformity with the comprehensive plan, thoroughfare plan, or other officially adopted plans.

Per CBJ §49.15.300 (e)(1)(A through C), Review of Director's Determinations, the Director makes the following findings on the proposed development:

1. Is the application for the requested conditional use permit complete?

Yes. We find the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The proposed subdivision is appropriate according to the Table of Permissible Uses.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed subdivision complies with the other requirements of this chapter. Public notice of this project was provided in the May 15, 2015 and May 25, 2015 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public right of way.

4. Will the proposed development materially endanger the public health or safety?

No. Approval of the preliminary subdivision will result in a new CBJ street, water, sewer, and storm sewer utilities, each reviewed by appropriate CBJ department staff to meet forecasted capacity and sizing.

A TIA will be required upon submittal of a Final Plat review to ensure adequate road capacity and design to meet forecasted use resulting from the proposed subdivision. Staff recommends this analysis be a condition of Preliminary Plat approval.

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. The proposed subdivision results in new multifamily housing development opportunities in a multifamily residential neighborhood.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. The proposed subdivision is consistent with the policies of CBJ Comprehensive Plan, Capital Improvement Program, Non-Motorized Transportation Plan, and regulations of the Land Use Code.

Per CBJ §49.70.900 (b)(3), General Provisions, the Director makes the following Juneau Coastal Management Program consistency determination:

7. Will the proposed development comply with the Juneau Coastal Management Program?

Yes. The applicant has gained preliminary approval by the US Army Corps of Engineers to fill a portion of affected wetlands with the preservation other wetlands within the subdivision as mitigation.

RECOMMENDATION

Staff recommends that the Planning Commission adopt the Director's analysis and findings and grant the requested Preliminary Plat permit. The permit would allow Preliminary Plat approval of an eight lot subdivision in Lemon Creek.

We further recommend that the approval be subject to the following conditions:

1. Prior to Final Plat approval, the applicant shall submit a Traffic Impact Analysis to the Community Development Department consistent with the Land Use Code (49.40.305(c) (1-8)). Any improvements recommended in the TIA shall be analyzed by staff and put into project design, where required.

2. Prior to Final Plat approval, the applicant shall submit construction drawings showing a crosswalk or similar feature on Renninger Street that connects the existing northern middle school driveway to Jackie Street.

3. Prior to Final Plat approval, the applicant shall submit construction drawings showing the extension of the eastern sidewalk on Renninger Street connecting with the future sidewalk along Jackie Street.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received: 4/15/15
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION

Project Description
Eight ~~Seven~~-Lot Subdivision between Dzantik'I Heeni Middle School and Switzer Creek. Also includes a variance application to the requirement that a "Conservation Lot" must be adjacent to the Mendenhall Wetland State Game Refuge.

PROPERTY LOCATION

Street Address	City/Zip
1598 Renninger Street	Juneau Alaska 99801

Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot)
A Subdivision Within Lot A-2, a resubdivision of Tract A1-A, U.S.S. 5504 and Tract B, Golden Heights Subdivision

Assessor's Parcel Number(s)
5-B14-0-100-017-0

LANDOWNER/ LESSEE

Property Owner's Name	Contact Person:	Work Phone:
City and Borough of Juneau	Greg Chaney	586-0205
Mailing Address	**Home Phone:**	**Fax Number:**
155 South Seward Street, Juneau AK 99801	586-2594	586-5385
E-mail Address	**Other Contact Phone Number(s):**	
greg.chaney@juneau.org	586-0224	

LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****

I am (we are) the owner(s)or lessee(s) of the property subject to this application and I (we) consent as follows:

A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.
B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.

X Greg P. Chaney CBJ LANDS MANAGER April 15 2015
Landowner/Lessee Signature — Date

X _____ _____
Landowner/Lessee Signature — Date

NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.

APPLICANT If the same as OWNER, write "SAME" and sign and date at X below

Applicant's Name	Contact Person:	Work Phone:
Same		
Mailing Address	**Home Phone:**	**Fax Number:**
E-mail Address	**Other Contact Phone Number(s):**	

X Greg P. Chaney CBJ LANDS MANAGER April 15 2015
Applicant's Signature — Date of Application

---OFFICE USE ONLY BELOW THIS LINE---

STAFF APPROVALS

✓	Permit Type	***SIGN	Date Received	Application Number(s)
	Building/Grading Permit			
X	City/State Project Review and City Land Action		4/15/15	csp15-009
	Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
	Mining Case (Small, Large, Rural, Extraction, Exploration)			
	Sign Approval (If more than one, fill in all applicable permit #'s)			
X	Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)		4/15/15	smp15-005
	Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
X	Variance Case (De Minimis and all other Variance case types)		4/15/15	var 15-014
	Wetlands Permits			
	Zone Change Application			
	Other (Describe) _____			

***Public Notice Sign Form filled out and in the file.

Comments:

Permit Intake Initials: ANE

NOTE: DEVELOPMENT PERMIT APPLICATION FORMS MUST ACCOMPANY ALL OTHER COMMUNITY DEVELOPMENT DEPARTMENT APPLICATIONS

MAJOR SUBDIVISION OR PLATTING APPLICATION

(CHANGING OR CREATING 5 OR MORE LOTS)

Project Number	Project Name (15 characters)	Case Number	Date Received
		Smp15-005	4/16/15

TO BE COMPLETED BY THE APPLICANT

TYPE OF MAJOR SUBDIVISION OR PLATTING APPROVAL REQUESTED

(please see submittal requirements on reverse)

- [x] Preliminary Plat (SMP)
- [ ] Final Plat (SMF)
- [ ] Planned Unit Development- Preliminary Plan Approval (PDP)
- [ ] Planned Unit Development - Final Plan Approval (PDF)
- [ ] Other _____

Please attach a cover letter to fully explain the project if there is not adequate space on this form.

LEGAL DESCRIPTION(S) OF PROPERTY TO BE SUBDIVIDED OR PLATTED:

A Subdivision Within Lot A-2, a resubdivision of Tract A1-A, U.S.S. 5504 and Tract B, Golden Heights Subdivision

Number of Existing Parcels 1 Total Land Area 738.9 Acres Number of Resulting Lots or Parcels 8

EXISTING BUILDING(S) OR STRUCTURES ON THE LAND:

- [ ] YES
- [x] NO

CURRENT USE OF LAND OR BUILDING(S):

Vacant. Boardwalk trail and drainage channel borders southern property line.

PROPOSED USE OF LAND OR BUILDING(S):

Eight lot subdivision intended to be used for multifamily development. A "Conservation Lot" will be included to preserve habitat values. The boardwalk trail and drainage infrastructure will remain in place with easements. Lot 1 consists of the majority of the remaining parcel. It is roughly 725 acres and stretches to Lemon Creek. This lot will be used for future CBJ development and habitat preservation.

UTILITIES AVAILABLE:

WATER: [ ] Public [x] On Site SEWER: [ ] Public [ ] On Site

UNIQUE CHARACTERISTICS OF LAND OR BUILDING(S):

The lot contains high value wetlands and small tributaries which feed into Switzer Creek. Switzer Creek flows directly into the Mendenhall Refuge. Lower value wetlands border Renninger Street so it is not possible to build a driveway or road to the site without wetland fill. See Attached Memo.

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

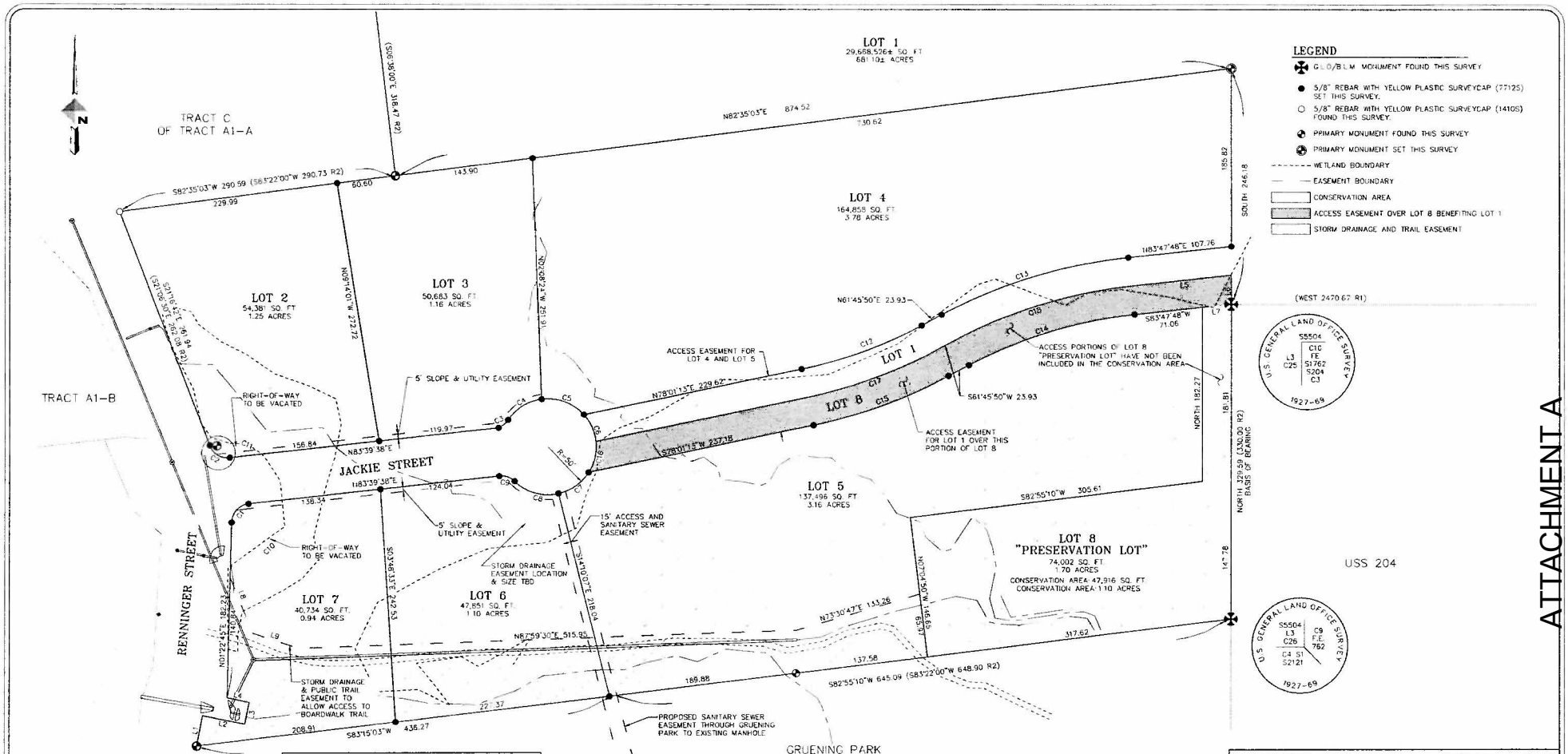
If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

SUBDIVISION/PLATTING/PUD FEES

	Fees	Check No.	Receipt	Date
Application Fees	$ 880.00			4/15/15
Admin. of Guarantee	$			
Adjustment	$			
Pub. Not. Sign Fee	$ 50			
Pub. Not. Sign Deposit	$ 100			
Total Fee	1030.00 $ 880.00	paid by PAC		4/15/15

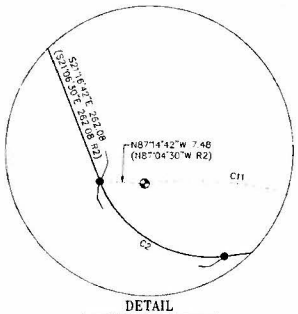
NOTE: MUST BE ACCOMPANIED BY DEVELOPMENT PERMIT APPLICATION FORM

ATTACHMENT A



LEGEND

- G.L.O./B.L.M. MONUMENT FOUND THIS SURVEY
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (77125) SET THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (1410S) FOUND THIS SURVEY.
- PRIMARY MONUMENT FOUND THIS SURVEY
- PRIMARY MONUMENT SET THIS SURVEY
- WETLAND BOUNDARY
- EASEMENT BOUNDARY
- CONSERVATION AREA
- ACCESS EASEMENT OVER LOT 8 BENEFITING LOT 1
- STORM DRAINAGE AND TRAIL EASEMENT



DETAIL
N.T.S.

CURVE TABLE

CURVE	LENGTH	DELTA	RADIUS	CHORD
C1	28.72	82°16'53"	20.00	S42°31'11"W 26.32
C2	26.20	75°03'40"	20.00	N58°48'32"W 24.37
C3	17.45	49°59'41"	20.00	S58°39'47"W 16.90
C4	42.30	48°28'05"	50.00	S57°53'59"W 41.05
C5	48.74	55°51'16"	50.00	N69°56'20"W 46.84
C6	31.19	35°44'36"	50.00	S24°08'24"E 30.69
C7	39.13	44°50'08"	50.00	N54°49'35"E 38.14
C8	49.23	56°24'40"	50.00	S74°33'01"E 47.26
C9	17.45	49°59'41"	20.00	N71°20'32"W 16.90
C10	93.19	87°31'58"	61.00	N39°56'12"E 84.39
C11	42.68	40°05'22"	61.00	N77°16'38"W 41.82
C12	133.35	16°15'23"	470.00	N69°53'32"E 132.91
C13	203.81	22°01'58"	530.00	N72°46'49"E 202.56
C14	180.74	22°01'58"	470.00	S72°46'49"W 179.63
C15	150.38	16°15'23"	530.00	S69°53'32"W 149.87
C16	33.75	38°40'37"	50.00	S13°04'12"W 33.11
C17	141.86	16°15'23"	500.00	S69°53'31"W 141.39
C18	192.27	22°01'58"	500.00	S72°46'49"W 191.09

LINE TABLE

LINE No.	BEARING & DISTANCE
L1	N11°27'30"E 32.00
L2	S78°32'30"E 45.00
L3	N11°27'30"E 23.00
L4	N78°32'30"W 23.82
L5	S83°47'48"W 104.50
L6	NORTH 30.18
L7	S83°47'48"W 30.18
L8	S22°43'23"E 63.06
L9	S72°27'13"E 49.94

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS THE SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE ACCURACY OF THE SURVEY IS WITHIN THE LIMITS REQUIRED BY TITLE 04 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, THAT ALL DIMENSIONAL AND RELATIVE BEARINGS ARE CORRECT AND THAT MONUMENTS ARE SET IN PLACE AND NOTED UPON THIS PLAT AS PRESENTED.

DATED: APRIL, 2015

STATE OF ALASKA
49th
William T. Pence
No. 7712-S
REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY PLAT

RENNINGER SUBDIVISION

A SUBDIVISION WITHIN LOT A-2, BEING A RESUBDIVISION OF TRACT A1-A, U.S.S. 5504 AND TRACT B, GOLDEN HEIGHTS SUBDIVISION

CITY AND BOROUGH OF JUNEAU, ALASKA, JUNEAU RECORDING DISTRICT

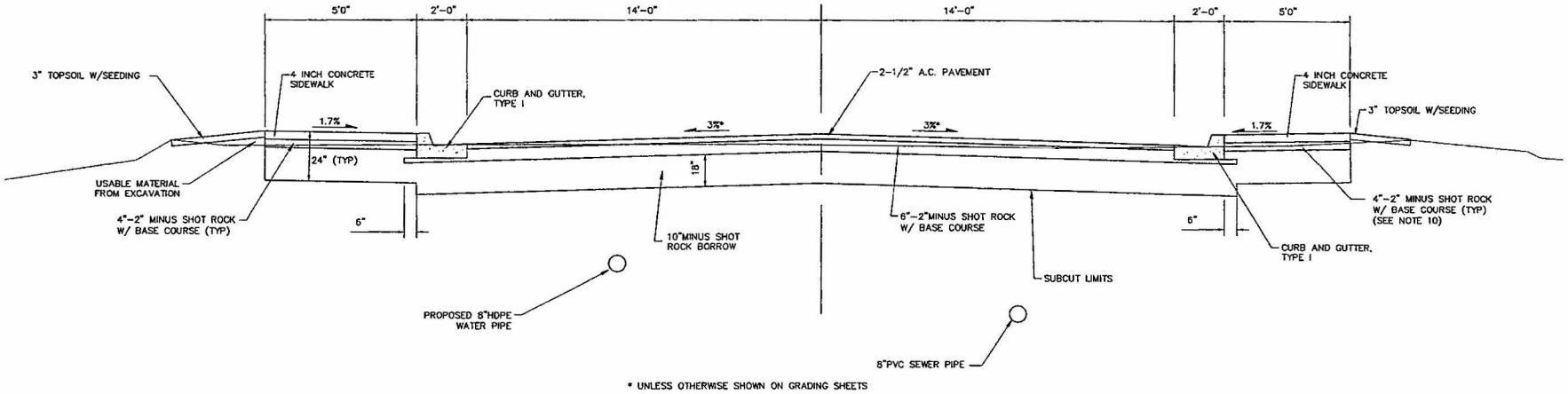
DOWL

CIVIL ENGINEERING–LAND SURVEYING–CONSTRUCTION MANAGEMENT
5368 COMMERCIAL BOULEVARD
JUNEAU ALASKA 99801 907-780-3533

OWNER

CITY AND BOROUGH OF JUNEAU
155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

SCALE:	DATE:	PROJECT NO:	FILE NO:	SHEET NO:
1"= 50'	APR. 2015	J70725		2 OF 2



* UNLESS OTHERWISE SHOWN ON GRADING SHEETS

ATTACHMENT B

RECEIVED
APR 15 2015
PERMIT CENTER/CDD

DOWL
5368 Commercial Blvd.
Juneau, Alaska 99801
(907) 780-3533 Office
(907) 780-3535 Fax
Consulting Engineers • Land Surveyors • Construction Administration

JOB NO: J70725.01	DRAWN BY: STAFF	DESIGNED BY: N. HOBBS	CHECKED BY: STAFF	DATE: APRIL 2015

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DEPARTMENT OF ENGINEERING

SWITZER CREEK SUBDIV.
PRELIMINARY DESIGN
CONTRACT NO. E15-082

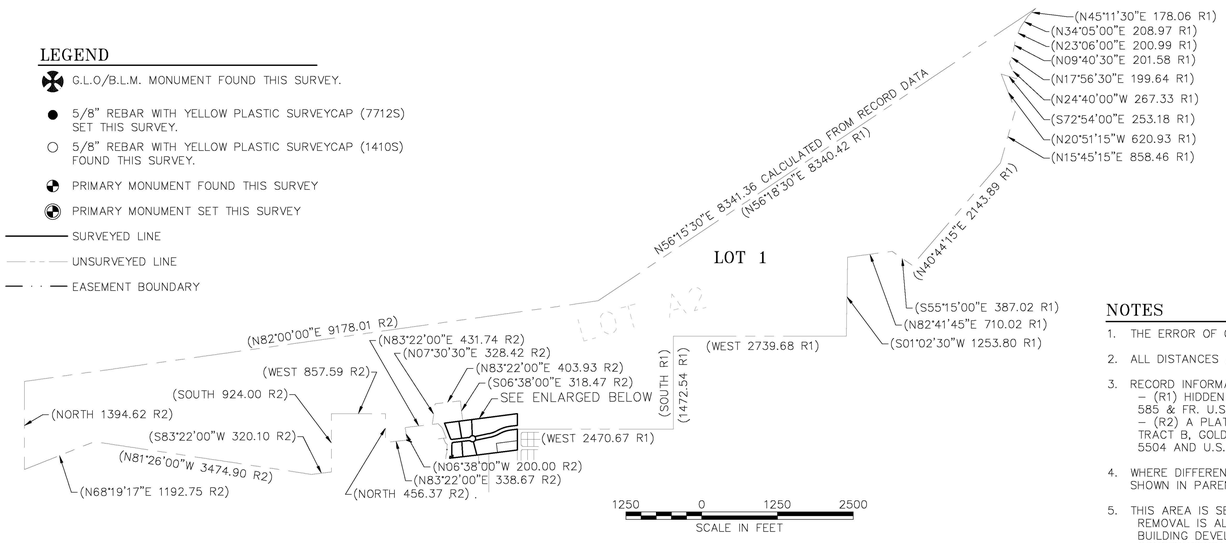
TYPICAL SECTION - SWITZER CREEK SUBDIV.

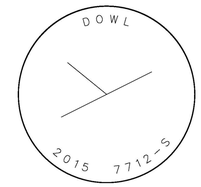
SHEET NO. 3 of 3

G:\J70725-01\ESCAD\MC14-CT-CR-70725-01.dwg 2015-4-14 11:26:56

LEGEND

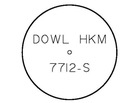
- G.L.O/B.L.M. MONUMENT FOUND THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (7712S) SET THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (1410S) FOUND THIS SURVEY.
- PRIMARY MONUMENT FOUND THIS SURVEY
- PRIMARY MONUMENT SET THIS SURVEY
- SURVEYED LINE
- UNSURVEYED LINE
- EASEMENT BOUNDARY





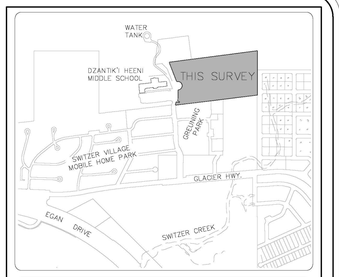
3.25" ALUMINUM CAP

TYPICAL PRIMARY MONUMENT DETAIL
N.T.S.



5/8"x36" REBAR WITH YELLOW PLASTIC CAP

TYPICAL PRIMARY MONUMENT DETAIL
N.T.S.



VICINITY MAP
SCALE: N.T.S.
SOURCE: CBJ BASEMAP SERIES

NOTES

1. THE ERROR OF CLOSURE OF THIS SURVEY DOES NOT EXCEED 1:5000.
2. ALL DISTANCES ARE MEASURED IN U.S. SURVEY FEET.
3. RECORD INFORMATION DERIVED FROM:
   – (R1) HIDDEN VALLEY SUBDIVISION, JUNEAU PLAT 99–35, WITHIN TRACT A, M.S. 585 & FR. U.S. SURVEY 5504.
   – (R2) A PLAT OF A RESUBDIVISION OF TRACT A1–A U.S. SURVEY 5504 AND TRACT B, GOLDEN HEIGHTS SUBDIVISION, WITHIN PORTIONS OF LOT 3 U.S. SURVEY 5504 AND U.S. SURVEY 3801, JUNEAU PLAT No. 98–27.
4. WHERE DIFFERENT FROM MEASURED OR CALCULATED, RECORDED DIMENSIONS ARE SHOWN IN PARENTHESES.
5. THIS AREA IS SET ASIDE FOR HABITAT PRESERVATION PURPOSES. NO VEGETATION REMOVAL IS ALLOWED EXCEPT FOR REMOVAL OF INVASIVE SPECIES. NO FILL OR BUILDING DEVELOPMENT IS PERMITTED. BUILDING DEVELOPMENT MEANS CONSTRUCTION OF ANY STRUCTURE HAVING A ROOF SUPPORTED BY COLUMNS OR WALLS AND INTENDED FOR THE SHELTER, HOUSING, OR ENCLOSURE OF PERSONS, ANIMALS, EQUIPMENT, MATERIALS, OR ANY SITE WORK IN PREPARATION OR ANTICIPATION OF SUCH CONSTRUCTION. TRAIL CONSTRUCTION THAT DOES NOT REQUIRE FILL IS PERMITTED. INSTALLATION OF A FENCE ALONG THE OUTER PERIMETER OF THE EASEMENT IS PERMITTED USING TECHNIQUES THAT MINIMIZE SOIL AND VEGETATION DISTURBANCE.
6. LOTS 2–7 ARE PART OF LOT A–2
7. SEE SHEET 2 FOR EASEMENT DETAILS.

OWNERSHIP CERTIFICATE

I HEREBY CERTIFY THAT CITY AND BOROUGH OF JUNEAU, AK IS THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I AS LANDS MANAGER, HEREBY ADOPT THIS PLAT OF SUBDIVISION WITH MY FREE CONSENT, AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS NOTED:

DATE:_____,2015

GREG CHANEY
CBJ LANDS MANAGER

STATE OF ALASKA)
)ss.
FIRST JUDICIAL DISTRICT)

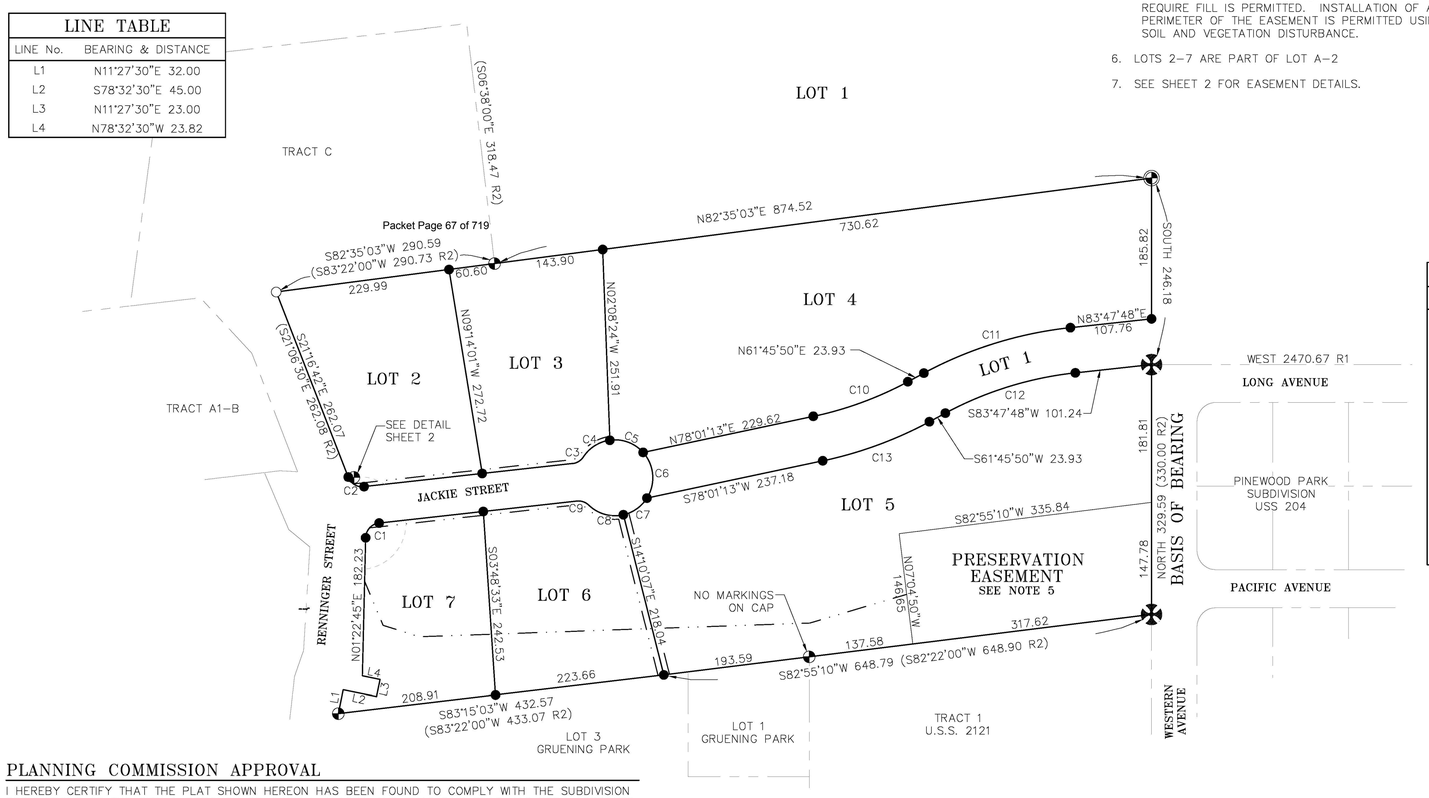
NOTARY ACKNOWLEDGMENT

THIS IS TO CERTIFY THAT ON THE ____ DAY OF _____ , 2015, BEFORE THE UNDERSIGNED A NOTARY PUBLIC IN AND FOR THE STATE OF ALASKA, DULY COMMISSIONED AND SWORN, APPEARED GREG CHANEY TO ME KNOWN AND KNOWN TO ME TO BE THE PERSON HE REPRESENTS HIMSELF TO BE AND THE LANDS MANAGER FOR THE CITY & BOROUGH OF JUNEAU, WHO ACKNOWLEDGED TO ME THAT HE EXECUTED THE FOREGOING INSTRUMENT AS THE FREE ACT AND DEED OF THE SAID CORPORATION FOR THE PURPOSES THEREIN MENTIONED, BEING FULLY AUTHORIZED TO DO SO.

WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

NOTARY PUBLIC FOR ALASKA
MY COMMISSION EXPIRES:

LINE TABLE	
LINE No.	BEARING & DISTANCE
L1	N11°27'30"E 32.00
L2	S78°32'30"E 45.00
L3	N11°27'30"E 23.00
L4	N78°32'30"W 23.82



BASIS OF BEARING

THE BASIS OF BEARING FOR THIS PLAT IS THE RECORD BEARING OF NORTH BETWEEN FOUND PRIMARY MONUMENTS NOTED.

CURVE TABLE				
CURVE	LENGTH	DELTA	RADIUS	CHORD
C1	28.72	82°16'53"	20.00	S42°31'11"W 26.32
C2	26.20	75°03'40"	20.00	N58°48'32"W 24.37
C3	17.45	49°59'41"	20.00	S58°39'47"W 16.90
C4	42.30	48°28'05"	50.00	S57°53'59"W 41.05
C5	48.74	55°51'16"	50.00	N69°56'20"W 46.84
C6	64.94	74°25'13"	50.00	S04°48'06"E 60.47
C7	39.13	44°50'08"	50.00	N54°49'35"E 38.14
C8	49.23	56°24'40"	50.00	S74°33'01"E 47.26
C9	17.45	49°59'41"	20.00	N71°20'32"W 16.90
C10	133.35	16°15'23"	470.00	N69°53'32"E 132.91
C11	203.81	22°01'59"	530.00	N72°46'49"E 202.56
C12	180.74	22°01'59"	470.00	S72°46'49"W 179.63
C13	150.38	16°15'23"	530.00	S69°53'32"W 149.87

PLANNING COMMISSION APPROVAL

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE SUBDIVISION REGULATIONS OF THE CITY & BOROUGH OF JUNEAU, ALASKA AND THAT SAID PLAT HAS BEEN APPROVED BY THE PLANNING COMMISSION BY PLAT RESOLUTION No. SMF2015–____ DATED _____ 2015, AND THAT THE PLAT SHOWN HEREON HAS BEE APPROVED FOR RECORDING IN THE OFFICE OF THE DISTRICT RECORDING OFFICE, JUNEAU, ALASKA.

DATED THIS ____DAY OF_____, 2015.

CHAIRMAN
CITY AND BOROUGH OF JUNEAU
PLANNING COMMISSION

ATTEST:

CLERK
CITY AND BOROUGH OF JUNEAU

Attachment C - Renninger Subdivision draft final plat

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS THE SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE ACCURACY OF THE SURVEY IS WITHIN THE LIMITS REQUIRED BY TITLE 04 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, THAT ALL DIMENSIONAL AND RELATIVE BEARINGS ARE CORRECT AND THAT MONUMENTS ARE SET IN PLACE AND NOTED UPON THIS PLAT AS PRESENTED.

DATED: APRIL, 2015

PLAT OF

RENNINGER SUBDIVISION

A SUBDIVISION OF
LOT A–2, U.S. SURVEY No. 5504
WITHIN
CITY AND BOROUGH OF JUNEAU, ALASKA, JUNEAU RECORDING DISTRICT

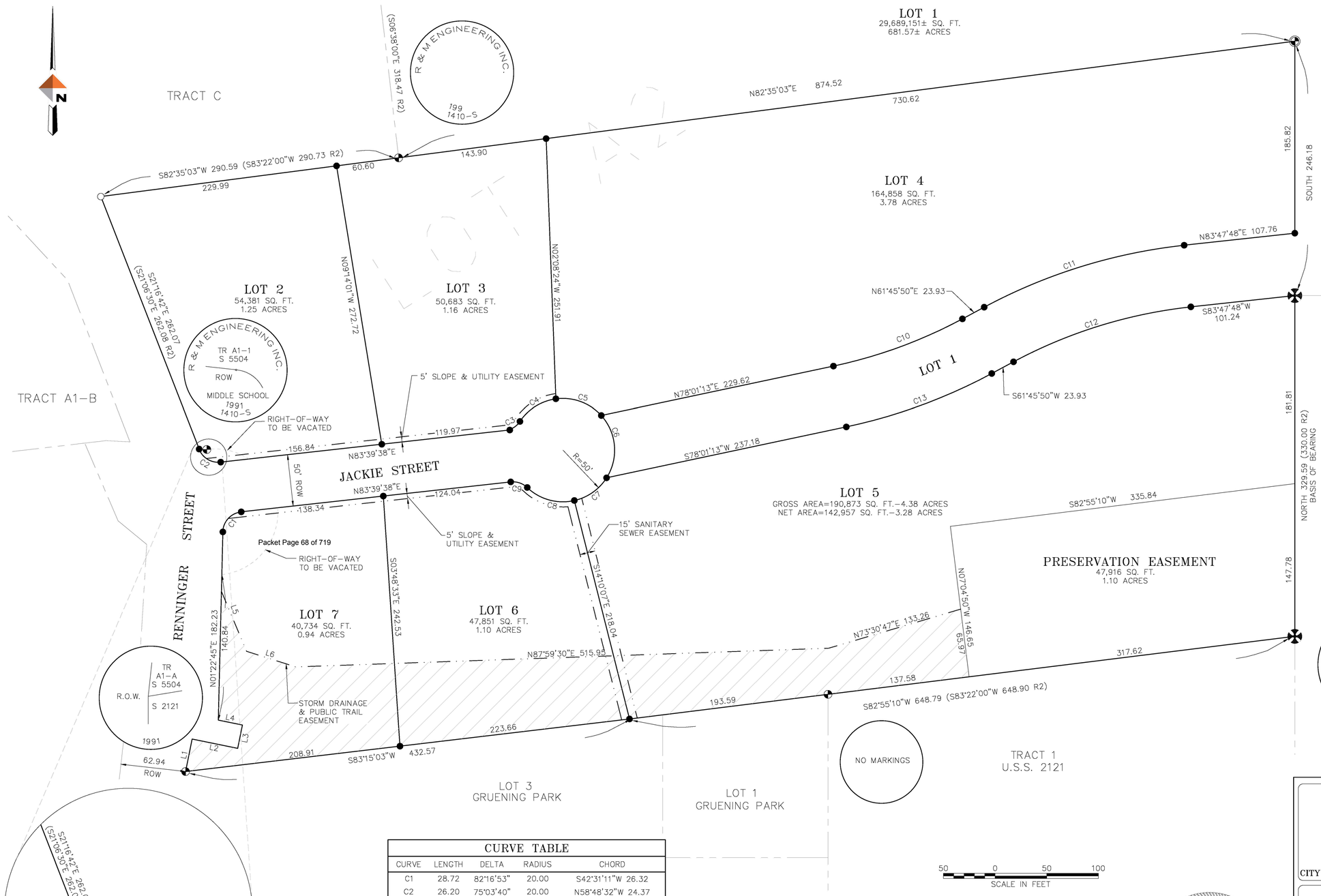
DOWL

CIVIL ENGINEERING–LAND SURVEYING–CONSTRUCTION MANAGEMENT
5368 COMMERCIAL BOULEVARD
JUNEAU ALASKA 99801 907–780–3533

OWNER

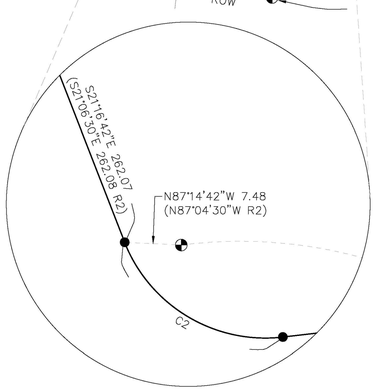
CITY AND BOROUGH OF JUNEAU
155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

SCALE:	DATE:	PROJECT NO:	FILE NO:	SHEET NO:
1"= 100'	AUG 2015	J70725		1 OF 2



LEGEND

- G.L.O./B.L.M. MONUMENT FOUND THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (7712S) SET THIS SURVEY.
- 5/8" REBAR WITH YELLOW PLASTIC SURVEYCAP (1410S) FOUND THIS SURVEY.
- PRIMARY MONUMENT FOUND THIS SURVEY
- PRIMARY MONUMENT SET THIS SURVEY
- EASEMENT BOUNDARY
- PRESERVATION EASEMENT AREA
- STORM DRAINAGE AND TRAIL EASEMENT
- SURVEYED LINES
- UNSURVEYED LINES
- VACATED ROW THIS SURVEY



DETAIL
N.T.S.

CURVE TABLE

CURVE	LENGTH	DELTA	RADIUS	CHORD
C1	28.72	82°16'53"	20.00	S42°31'11"W 26.32
C2	26.20	75°03'40"	20.00	N58°48'32"W 24.37
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LINE TABLE

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L3	N11°27'30"E 23.00
L4	N78°32'30"W 23.82
L5	S22°43'23"E 63.06
L6	S72°27'13"E 49.94

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA, AND THAT THIS PLAT REPRESENTS THE SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE ACCURACY OF THE SURVEY IS WITHIN THE LIMITS REQUIRED BY TITLE 04 COMMUNITY DEVELOPMENT REGULATIONS AND TITLE 49 OF THE CODE OF THE CITY AND BOROUGH OF JUNEAU, THAT ALL DIMENSIONAL AND RELATIVE BEARINGS ARE CORRECT AND THAT MONUMENTS ARE SET IN PLACE AND NOTED UPON THIS PLAT AS PRESENTED.

DATED: AUGUST, 2015

STATE OF ALASKA
49th
William T. Pence
No. 7712-S
REGISTERED PROFESSIONAL LAND SURVEYOR

PLAT OF

RENNINGER SUBDIVISION

A SUBDIVISION OF
LOT A-2, U.S. SURVEY No. 5504
WITHIN
CITY AND BOROUGH OF JUNEAU, ALASKA, JUNEAU RECORDING DISTRICT

DOWL

CIVIL ENGINEERING-LAND SURVEYING-CONSTRUCTION MANAGEMENT
5368 COMMERCIAL BOULEVARD
JUNEAU ALASKA 99801 907-780-3533

OWNER

CITY AND BOROUGH OF JUNEAU
155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

SCALE:	DATE:	PROJECT NO:	FILE NO:	SHEET NO:
1"= 50'	AUG 2015	J70725		2 OF 2

DOWL

MEMORANDUM

TO: John Nelson, City & Borough of Juneau Project Manager

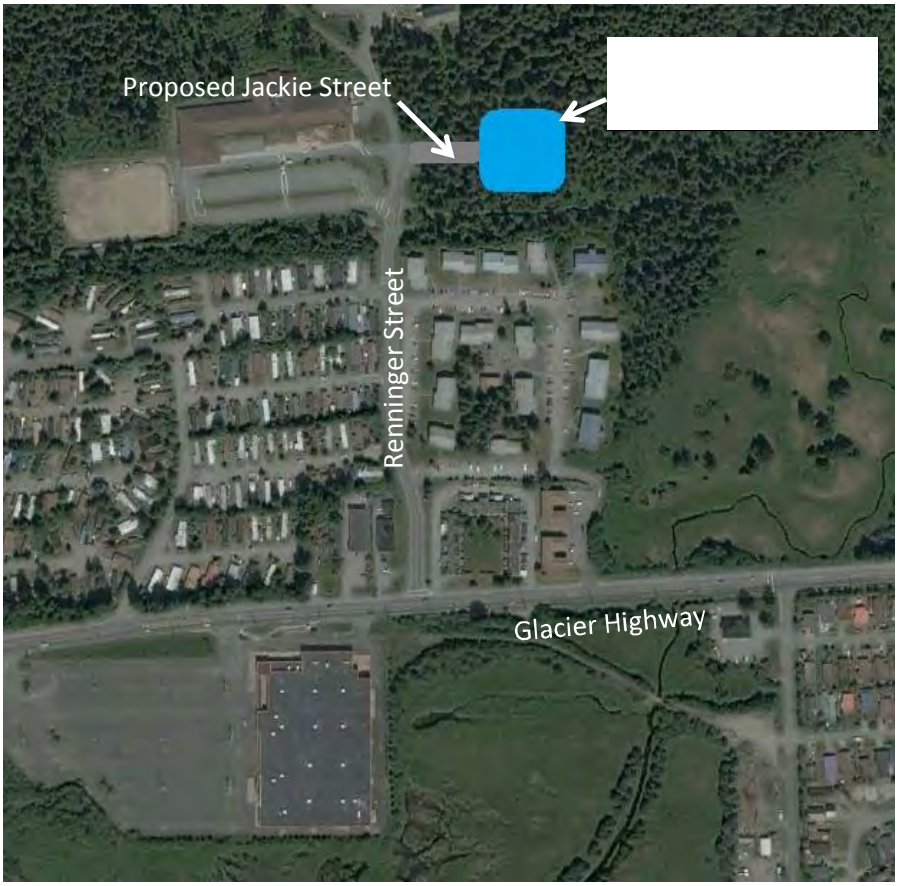
FROM: Naomi Hobbs, P.E., DOWL Transportation Engineering Manager
Matt Ruder, P.E., PTOE, DOWL Transportation Engineer
Brad Coy, P.E., DOWL Transportation Engineer

DATE: October 14, 2015

SUBJECT: Traffic Impact Analysis for Switzer Creek Subdivision

This technical memorandum was prepared to evaluate the traffic impacts the Switzer Creek Subdivision is expected to have on the intersection of Renninger Street and Glacier Highway. The proposed subdivision would be located east of Dzantik'i Heeni Middle School and access would be provided via Jackie Street, which is connected to Glacier Highway via Renninger Street. The project location is shown below in Figure 1.

Figure 1 – Project Location of Proposed Switzer Creek Subdivision



Attachment D - Traffic Impact Analysis for Renninger St/ Glacier Highway Intersection

Existing Traffic Volumes

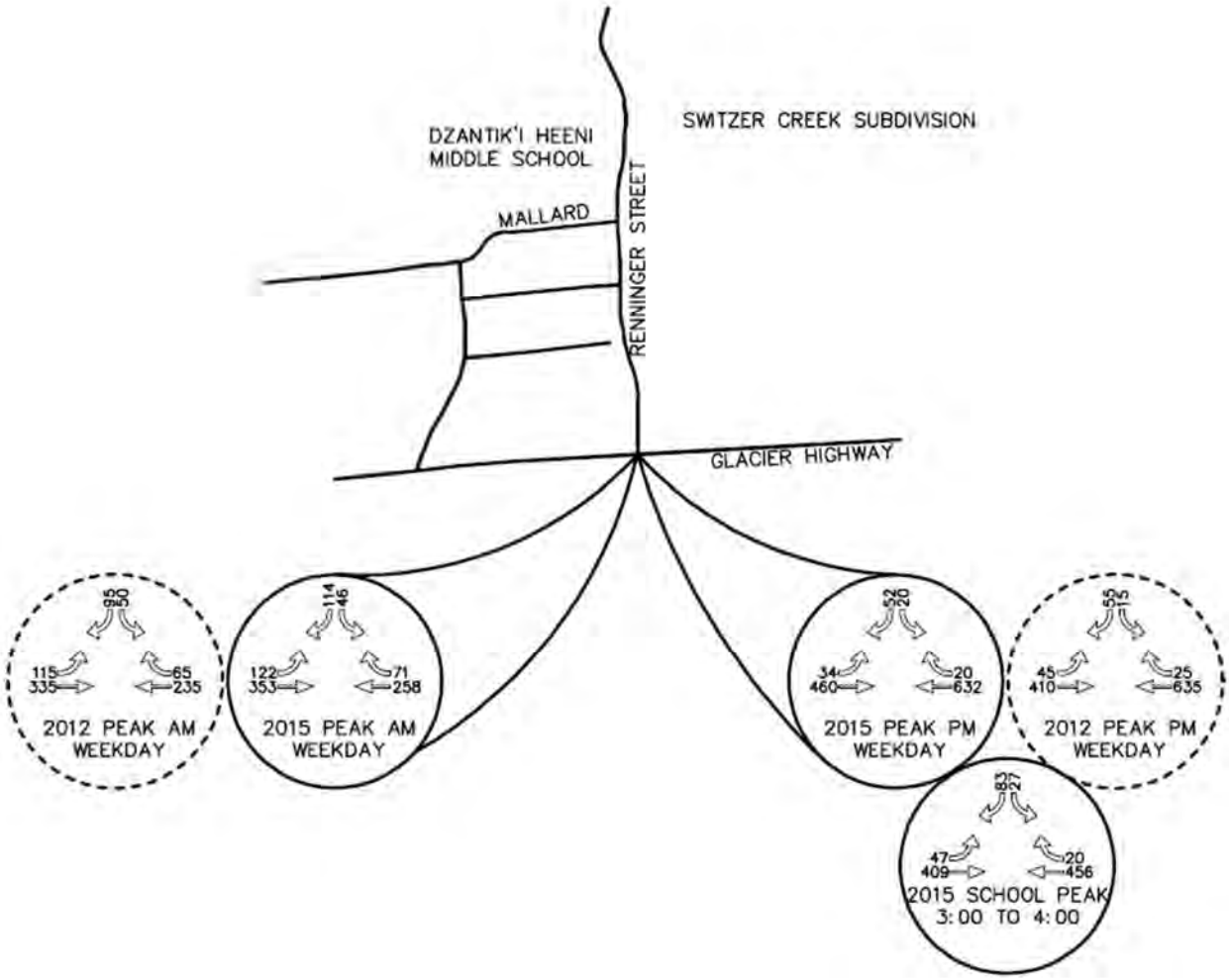
Existing traffic volumes were counted along Renninger Street and at the intersection of Renninger Street and Glacier Highway in order to gain a baseline understanding of study area traffic.

A pneumatic tube counter was installed on Renninger Street on Monday, May 11 and Tuesday, May 12, 2015. The tube counter was located south of the apartment complex entrance and approximately 200 feet north of Glacier Highway. The average daily traffic (ADT) on Renninger Street recorded by the tube counter was 1,740 vehicles per day. The calculated ADT directional distribution was 864 vehicles per day traveling northbound and 876 vehicles per day traveling southbound on Renninger Street.

Turning movement counts were collected for the intersection of Renninger Street and Glacier Highway on Monday, May 11, 2015. Morning count data were collected between 7 and 9 AM, with the AM peak hour occurring from 7:30 AM to 8:30 AM with 353 vehicles on Renninger Street. The AM peak hour on Renninger Street coincided with the AM peak hour of the overall intersection (including traffic on Glacier Highway). Afternoon data were collected between 2 and 6 PM. The afternoon peak hour on Renninger Street occurred from 3:00 PM to 4:00 PM with 177 vehicles on Renninger Street. The afternoon peak hour of the overall intersection (including traffic on Glacier Highway) occurred between 4:15 PM and 5:15 PM with 126 vehicles on Renninger Street. The AM and PM peak hours were determined by identifying the highest four consecutive fifteen minute intervals during each count period.

Traffic volumes from the 2015 turning movement counts are shown in Figure 2. This figure also shows volumes that were used in a 2012 analysis performed as part of Alaska DOT&PF's *Glacier Highway Bike and Pedestrian Improvement Project*. As shown, the data collected in 2015 is consistent with the data reported in the 2012 analysis. The AM and PM peak hours also occurred during the same time periods for both the 2012 and 2015 traffic counts.

Figure 2 – Peak Hour Turning Movement Counts



NOTES:

1. 2012 TURNING MOVEMENTS ARE FROM A 2012 TECHNICAL MEMORANDUM FROM KITTELSON & ASSOCIATES, INC. THE DATA WAS COLLECTED FOR DOT&PF AS PART OF THE GLACIER HIGHWAY BIKE & PEDESTRIAN IMPROVEMENTS PROJECT.

2. PEAK AM HOURS: FROM 12/6/2012 KAI MEMORANDUM – 7:30AM TO 8:30AM
   FROM 5/11/2015 COUNTS – 7:30AM TO 8:30AM

3. PEAK PM HOURS: FROM 12/6/2012 KAI MEMORANDUM – 4:15PM TO 5:15PM
   FROM 5/11/2015 COUNTS – 4:15PM TO 5:15PM

4. SCHOOL PEAK HOUR: FROM 5/11/2015 COUNTS – 3:00PM TO 4:00PM

Future Traffic Volume

As currently proposed, the subdivision would be constructed over a four year period, with an anticipated completion date in late 2019. The following steps were used to estimate total traffic volumes for a future 2032 scenario:

- The number of weekday daily, AM peak hour, and PM peak hour site generated trips were estimated based on rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*. "Peak Hour of Adjacent Street" trip generation rates were used to estimate trip generation volumes for the subdivision. Assumptions regarding entering/exiting traffic were also based on information from the ITE *Trip Generation Manual*.
- A trip distribution pattern was derived through a review of existing traffic patterns.
- Site generated trips were added to the 2032 background traffic volumes to determine total traffic volumes for each analysis period.

Table 1 shows the estimated trip generation for the proposed development, and Figure 3 shows the site trip distribution percentages and resulting project trips once they are routed through the study intersection.

Table 1 – Trip Generation Calculations (Weekday, AM Peak Hour, and PM Peak Hour)

ITE Code	Land Use	Dwelling Units	Analysis Period	Trip Rate	Total Trips	% Entering	% Exiting	Trips Entering	Trips Exiting
230	Residential Condominium/ Townhouse	189	Weekday	5.81	1,098	50%	50%	549	549
			AM Peak Hour	0.44	83	17%	83%	14	69
			PM Peak Hour	0.52	98	67%	33%	66	32

In the 2012 traffic analysis performed as part of Alaska DOT&PF's *Glacier Highway Bike and Pedestrian Improvement Project*, traffic volumes were projected by applying a 0.25% annual growth rate (AGR) to 2012 counts for 20 years and adding ITE trip generation data for anticipated development at the time of the study. This calculation resulted in the forecasted 2032 traffic volumes shown on the left side of **Figure** . The same methodology was used to estimate the revised 2032 volumes used in this updated analysis. Namely, a 0.25% AGR was applied to the 2015 peak hour counts for 17 years, and the estimated site generated trips were added based on the distribution shown in Figure 3. This calculation resulted in the forecasted 2032 traffic volumes shown on the right side of **Figure** .

Figure 3 – Site Trip Distribution and Project Trips

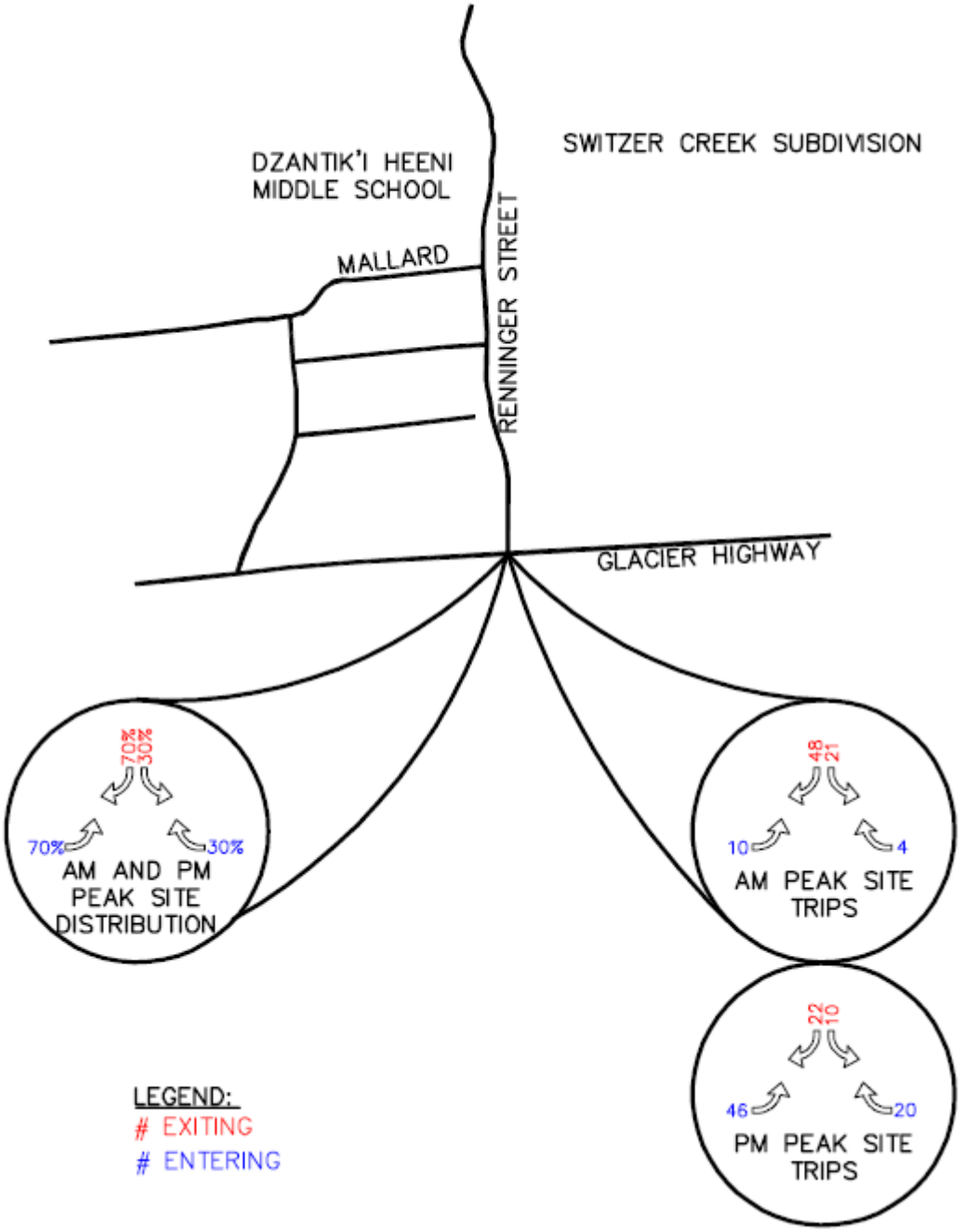
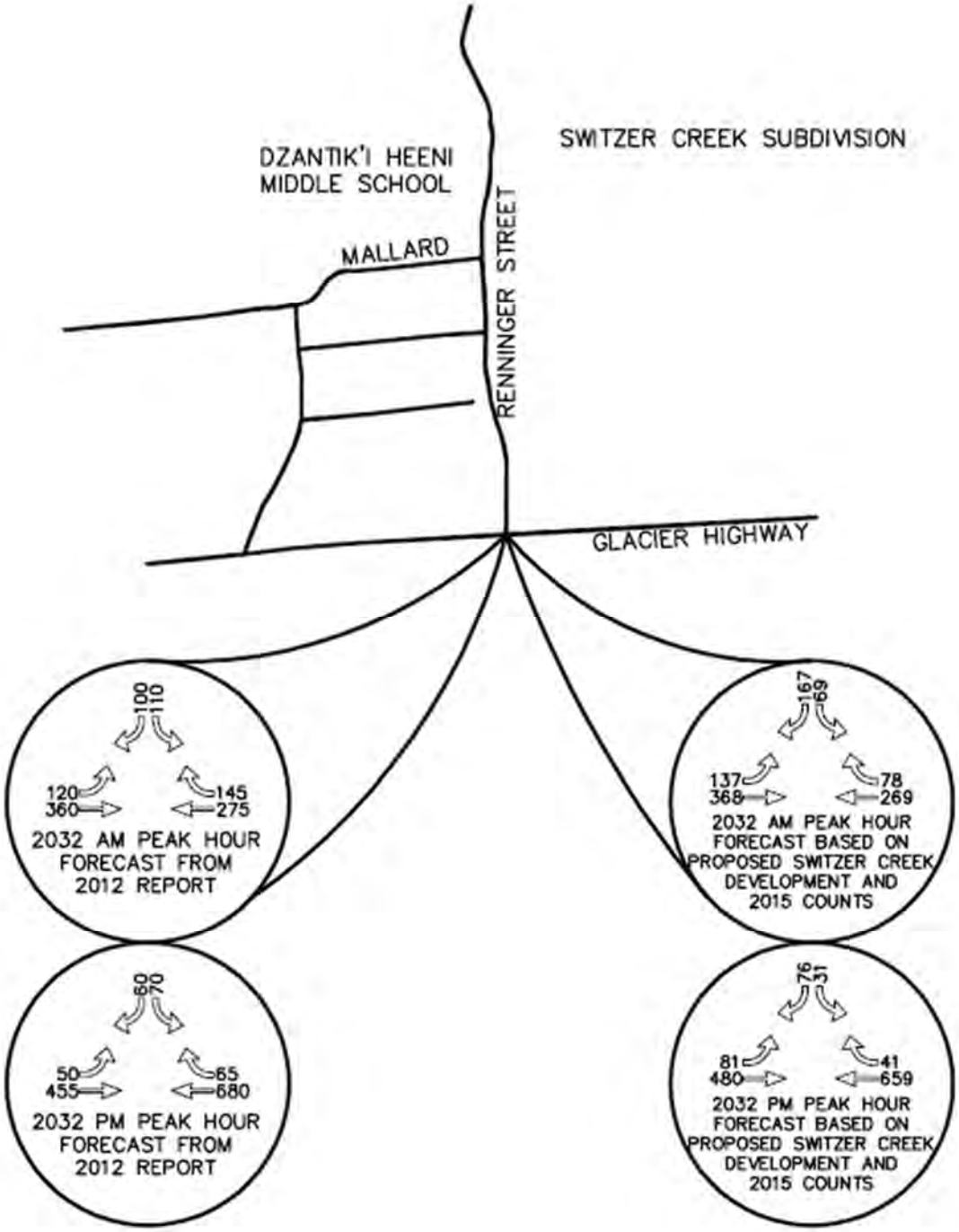


Figure 4 – 2032 Forecast Traffic Volumes



Future Intersection Operations

Intersection operations analysis was performed for the intersection of Renninger Street and Glacier Highway for the 2032 horizon year with the addition of Switzer Creek Subdivision project traffic. The analysis utilized Highway Capacity Manual 2010 (HCM2010) methodology for unsignalized intersections and assumes that drivers are able to use the two way left turn lane (TWLTL) on Glacier Highway to reduce delays in performing southbound left turn maneuvers from Renninger Street to Glacier Highway. The TWLTL provides a refuge for southbound left turning vehicles after completing their first turning movement across westbound traffic while waiting for a gap in eastbound traffic before merging.

Table 2 shows the resulting 2032 level of service (LOS) and volume-to-capacity (V/C) ratio for the study intersection. As shown, the intersection is expected to operate at LOS C for both the AM and PM peak hours. This meets the Alaska DOT&PF's applicable operating standard.

Table 2 – 2032 Forecast Traffic Operations (AM and PM Peak Hours)

Intersection	Jurisdiction	Operating Standard	AM Peak			PM Peak		
			LOS	*Delay*	*V/C*	*LOS*	*Delay*	*V/C*
Glacier Highway/ Renninger Street	AK DOT&PF	LOS C	A/C	17.2	0.46	A/C	20.1	0.33

LOS = Level of Service (Major/Minor Approaches)
Delay = Average Control Delay (Worst Movement)
V/C = Volume-to-Capacity Ratio (Worst Movement)

Conclusion

The data collected and analyzed in 2015 for the intersection of Renninger Street and Glacier Highway shows a high degree of correlation with the data presented in the 2012 *Glacier Highway Bike and Pedestrian Improvement Project*. Therefore, the analysis in the 2012 study is considered valid for the proposed Switzer Creek Subdivision. Since the 2012 study recommends a roundabout at Renninger Street and Glacier Highway that may not be constructed before the Switzer development is occupied, additional analysis was performed for the intersection using 2032 horizon year traffic volumes and existing lane configuration and control. This analysis indicates the intersection of Renninger Street and Glacier Highway is expected to operate at LOS C for both the 2032 AM and PM peak hours. Therefore, the intersection is expected to meet applicable operating standards under its existing geometry.

APPENDIX

Turn Movement Counts
(1) Glacier Highway and Renninger Street
Collected on 5/11/2015

Annual Growth Rate (AGR) 0.25% AM PHF = 0.94
Years 17 PM PHF = 0.91

	From North (Southbound)				From East (Westbound)				From South (Northbound)				From West (Eastbound)				Rolling Hourly Intersection Count
15-min	Renninger Street				Glacier Highway								Glacier Highway				
Interval	Left	Through	Right	Ped	Left	Through	Right	Ped	Left	Through	Right	Ped	Left	Through	Right	Ped	
7:00	4	0	2	5	0	30	2	3	0	0	0	0	5	56	0	1	
7:15	4	0	5	4	0	56	5	2	0	0	0	0	8	85	0	3	
				3				1				0				1	
				0				1				0				1	
				1				2				0				0	
				4				2				0				0	
8:30	7	0	10	1	0	65	3	1	0	0	0	0	5	68	0	3	
8:45	3	0	4	2	0	79	3	1	0	0	0	0	5	62	0	7	
				8				**6**				**0**				**2**	
				8				**6**				**0**				**2**	
AM Site Generated Volumes	**21**	**0**	**48**				**4**						**10**				**83**
				8				**6**				**0**				**2**	
14:00	5	0	5	3	0	121	4	1	0	0	0	0	10	119	0	8	
14:15	3	0	8	2	0	107	3	0	0	0	0	0	4	95	0	2	
14:30	2	0	4	1	0	102	4	1	0	0	0	0	7	83	0	5	
14:45	2	0	10	3	0	91	19	1	0	0	0	0	29	97	0	3	
				12				1				0				4	
				4				1				0				7	
				1				1				0				4	
				5				1				0				4	
16:00	10	0	12	5	0	125	6	4	0	0	0	0	9	109	0	0	
				5				1				0				5	
				8				2				0				2	
				2				1				0				1	
				2				1				0				1	
17:15	1	0	6	2	0	134	2	2	0	0	0	0	7	106	0	13	
17:30	2	0	2	12	0	126	4	4	0	0	0	0	4	109	0	6	
17:45	4	0	7	4	0	126	2	0	0	0	0	0	10	103	0	9	
Existing 2015 PM School Peak Hour Volumes	**27**	**0**	**83**	**22**	**0**	**456**	**20**	**4**	**0**	**0**	**0**	**0**	**47**	**409**	**0**	**19**	**1042**
Existing 2015 PM Peak Hour Volumes	**20**	**0**	**52**	**17**	**0**	**632**	**20**	**5**	**0**	**0**	**0**	**0**	**34**	**460**	**0**	**9**	**1218**
Forecast 2032 PM Peak Background Volumes	**21**	**0**	**54**	**18**	**0**	**659**	**21**	**5**	**0**	**0**	**0**	**0**	**35**	**480**	**0**	**9**	**1270**
PM Site Generated Volumes	**10**	**0**	**22**				**20**						**46**				**98**
Forecast 2032 PM Peak Hour Total Volumes	**31**	**0**	**76**	**18**	**0**	**659**	**41**	**5**	**0**	**0**	**0**	**0**	**81**	**480**	**0**	**9**	**1368**

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	137	368	269	78	69	167
Future Vol, veh/h	137	368	269	78	69	167
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	391	286	83	73	178

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	369	0	-	0	1011	328
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	683	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1190	-	-	-	265	713
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1190	-	-	-	232	713
Mov Cap-2 Maneuver	-	-	-	-	346	-
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1190	-	-	-	544
HCM Lane V/C Ratio	0.122	-	-	-	0.462
HCM Control Delay (s)	8.4	-	-	-	17.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	2.4

Intersection	
Int Delay, s/veh	2.1

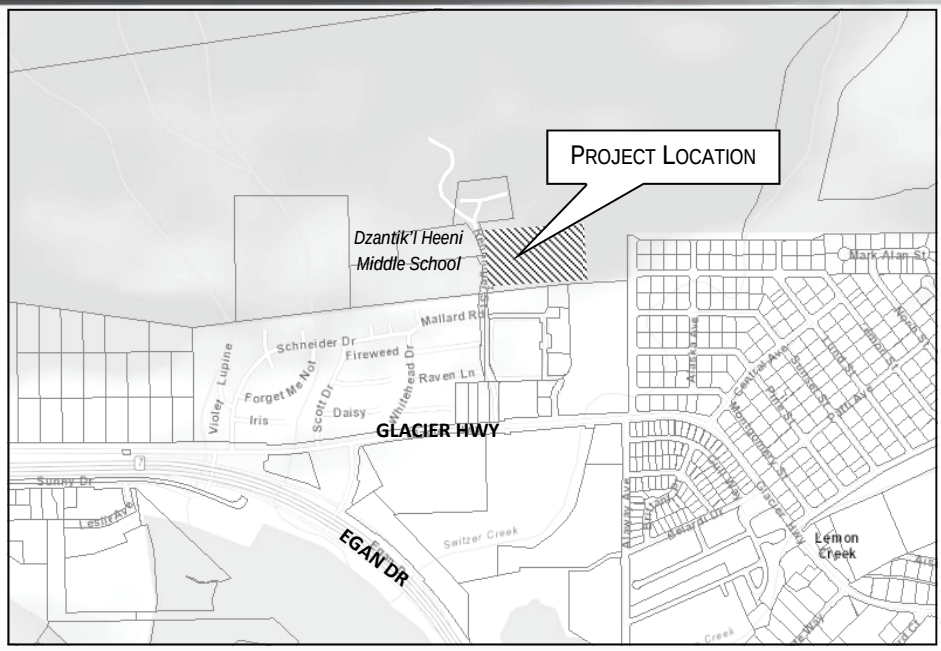
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	81	480	659	41	31	76
Future Vol, veh/h	81	480	659	41	31	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	527	724	45	34	84

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	769	0	-	0	1452	747
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	705	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	845	-	-	-	144	413
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	490	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	845	-	-	-	129	413
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	845	-	-	-	355
HCM Lane V/C Ratio	0.105	-	-	-	0.331
HCM Control Delay (s)	9.8	-	-	-	20.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.4

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

SHIP TO:

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PROPOSAL: **SMF2015 0007: Final Plat review for an eight lot subdivision in a D-15 zoning district.**

File No:	SMF2015 0007	Applicant:	CBJ Lands and Resources
To:	Adjacent Property Owners	Property PCN:	5-B14-0-100-017-0
Hearing Date:	October 13, 2015	Owner:	City and Borough of Juneau
Hearing Time:	7:00 PM	Site size:	Approximately 12 Acres
Place:	Assembly Chambers	Zoned:	D-15
	Municipal Building	Site Address:	1598 Renninger Street
	155 South Seward Street	Accessed Via:	Renninger Street
	Juneau, Alaska 99801		

PROPERTY OWNERS PLEASE NOTE:

You are invited to attend this Public Hearing and present oral testimony. The Planning Commission will also consider written testimony. You are encouraged to submit written material to the Community Development Department 14 days prior to the Public Hearing. Materials received by this deadline are included in the information packet given to the Planning Commission a week before the Public Hearing. Written material received after the deadline will be provided to the Planning Commission at the Public Hearing.

If you have questions, please contact Tim Felstead at tim.felstead@juneau.org or at 586-0466.

can be viewed at

Attachment E - Notice of public hearing

CITY/BOR
ALASKA'S CAPITAL CITY

Date notice was printed: September 14, 2015

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION
Date: October 27, 2015
File No.: SMF2015 0007

Lands and Resources
City and Borough of Juneau
155 S. Seward Street
Juneau, AK 99801

Application For:	Final Plat review for a seven lot subdivision in a D-15 zoning district.
Legal Description:	USS 5504 Lot A2
Property Address:	1598 Renninger Street
Parcel Code No.:	5-B14-0-100-017-0
Hearing Date:	October 27 2015

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated October 16, 2015, and **APPROVED** the final plat to be conducted as described in the project description and project drawings submitted with the application.

Attachment: October 16, 2015 memorandum from Tim Felstead, Community Development, to the CBJ Planning Commission regarding SMF2015 0007.

This Notice of Decision does not authorize any construction. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance to CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date: The permit is effective upon approval by the Commission, October 27 2015.

Project Planner: Tim Felstead
Tim Felstead, Planner
Community Development Department

Michael Satre, Chair
Planning Commission

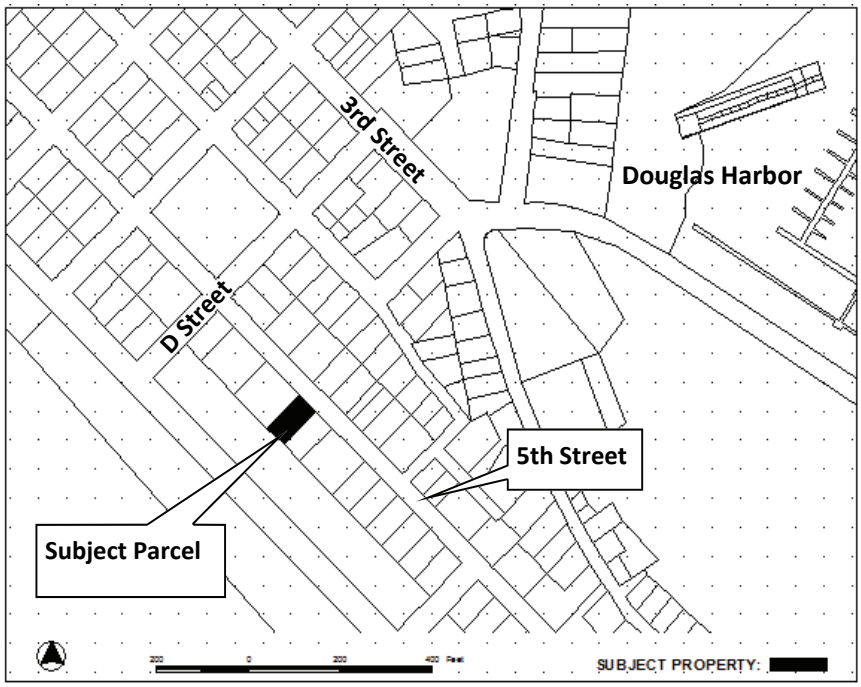
CBJ Lands and Resources
File No.: SMF2015 0007
October 27, 2015
Page 2 of 2

Filed With City Clerk 10/28/15
Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this subdivision. ADA regulations have access requirements above and beyond CBJ - adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

SHIP TO:

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PROPOSAL: A Conditional Use Permit for accessory apartment on an undersized lot.

File No:	AAP2015 0023	Applicant:	Brad Campbell
To:	Adjacent Property Owners	Property PCN:	2-D04-0-T39-007-0
Hearing Date:	October 27, 2015	Owner:	Brad Campbell
Hearing Time:	7:00 PM	Size:	5,000 Square Feet
Place:	Assembly Chambers	Zoned:	D-5
	Municipal Building	Site Address:	755 5th Street
	155 South Seward Street	Accessed Via:	5th Street
	Juneau, Alaska 99801		

PROPERTY OWNERS PLEASE NOTE:

You are invited to attend this Public Hearing and present oral testimony. The Planning Commission will also consider written testimony. You are encouraged to submit written material to the Community Development Department 14 days prior to the Public Hearing. Materials received by this deadline are included in the information packet given to the Planning Commission a week before the Public Hearing. Written material received after the deadline will be provided to the Planning Commission at the Public Hearing.

If you have questions, please contact Tim Felstead at tim.felstead@juneau.org or at 586-0466.

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Planning Commission Agendas, Staff Reports and Meeting Results can be viewed at http://www.juneau.org/assembly/novus.php

Date notice was printed: September 25, 2015

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: October 13, 2015

TO: Planning Commission

FROM: Tim Felstead, Planner
Community Development Department

FILE NO.: AAP2015 0023

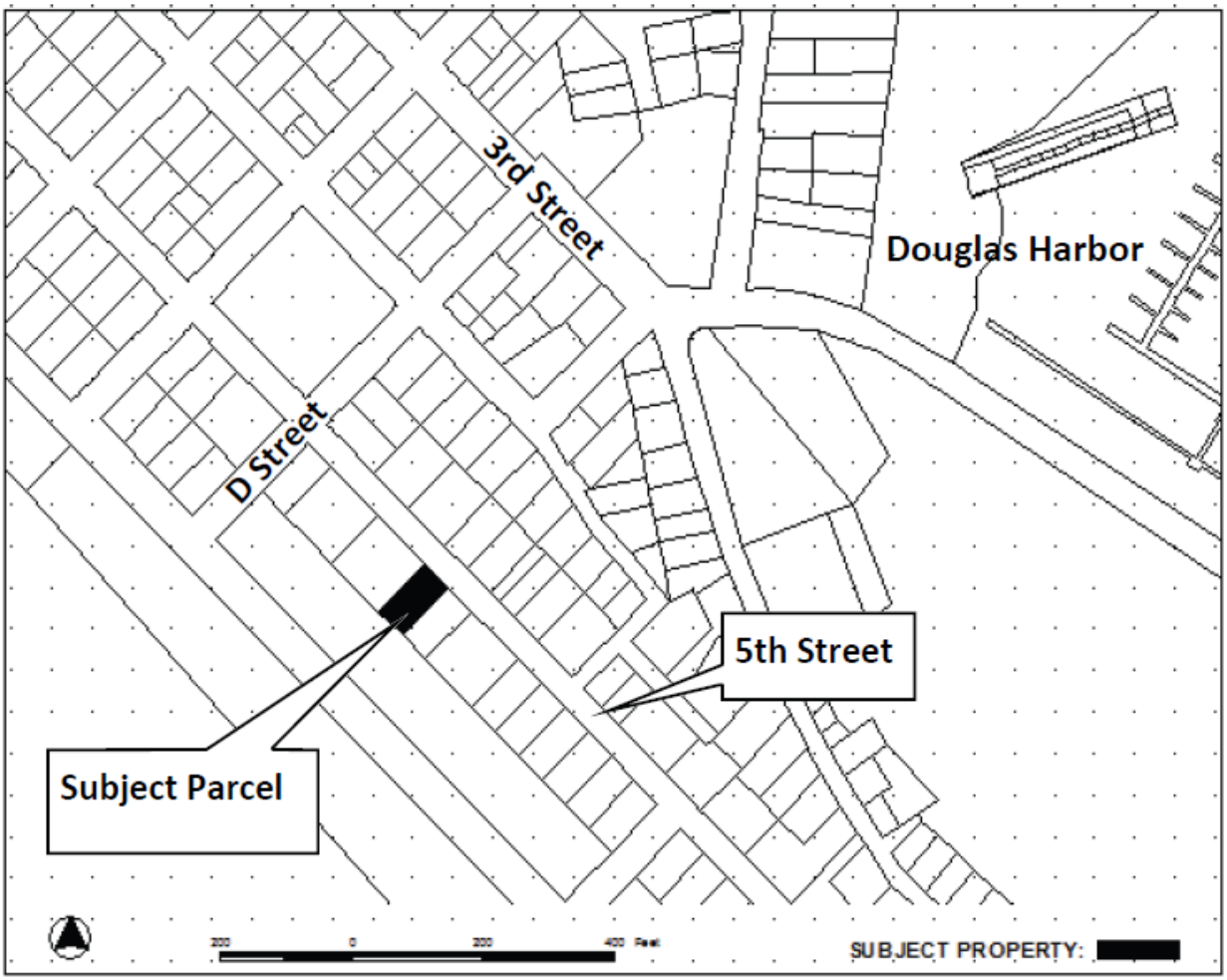
PROPOSAL: A Conditional Use Permit for accessory apartment on undersized lot.

GENERAL INFORMATION

Applicant:	Brad Campbell
Property Owner:	Brad Campbell
Property Address:	755 5th Street
Legal Description:	Douglas Townsite Block 39 Lot 19
Parcel Code Number:	2-D04-0-T39-007-0
Site Size:	5,000 Square Feet (0.114 Acres)
Comprehensive Plan Future Land Use Designation:	Urban Low Density Residential (ULDR)
Zoning:	D-5
Utilities:	Public Water/Public Sewer
Access:	5th Street, Douglas
Existing Land Use:	Single family dwelling

Surrounding Land Use: North East - Single Family dwelling with Accessory Apartment (D5)
South East - Single Family dwelling (D5)
South West - Vacant (D5)
North West - Single family dwelling (D5)

Vicinity Map



ATTACHMENTS

Attachment A - Application for Accessory Apartment Permit including building plans
Attachment B - Deed restriction on rental of additional living space
Attachment C - Notice of public hearing
Attachment D - Site Photos
Attachment E - Aerial photograph of subject parcel with approximate lot outline superimposed

PROJECT DESCRIPTION

The applicant requests an Accessory Apartment Permit for the development of an accessory apartment within an existing single family dwelling.

As per the CBJ Land Use Code, 49.25.510(E)(ii), accessory apartments on lots smaller than the minimum lot size for the zoning district require Planning Commission approval via the Conditional Use Permit process.

BACKGROUND

Plans for the current single family residence on the lot were submitted in 1998. During construction in 2000, the plans were modified to include an independent living area on the 2nd floor of the building. This living area was subject to a CBJ deed restriction that limited the use as a non-rentable living space. If this application is approved, the deed restriction will be released by CBJ.

The applicant is now renovating this living space and would like to turn it into a permitted accessory apartment. The applicant will be required to obtain a building permit for any work required for the accessory apartment.

ANALYSIS

Project Site and Design - The minimum lot size for the D-5 zoning district is 7,000 square feet. The subject lot, like many surrounding lots is 5,000 square feet. Douglas Townsite, including the subject parcel, was platted well before the current minimum lot size requirements (the earliest plat on file in CDD is 1936).

The proposed 2nd floor apartment will be accessed via an exterior staircase shared with the main dwelling which occupies the 3rd and 4th stories of the same building. The 1st floor provides storage space.

The Land Use Code (CBJ 49.25.510) has a number of requirements for accessory apartments. The proposed accessory apartment meets all the criteria. At 528 square feet, it is below the maximum allowed size of 600 square feet with a maximum of one bedroom (**Attachment A**).

All setbacks are believed to be satisfied by the current building although the building permit (BLD1998-00465) for the current dwelling has not been finalized. One remaining requirement is

the provision of an asbuilt survey to confirm the front yard setback is satisfactory. It is suggested that a condition of approval of this application is for the building permit (BLD1998-00465) to be finalized and that the required 20 foot front yard setback is met.

The required parking standard for three parking spaces is met – see below.

The proposal would not enlarge the current building footprint. Both the lot coverage and vegetative coverage requirements are met.

Traffic, Parking and Circulation - Single family dwellings including an accessory apartment are required to have three off-street parking spaces (two for the single family dwelling and one for the accessory apartment). The subject lot currently has at least three parking spaces directly at the front of the property.

Noise - The proposed use as an accessory apartment will be in keeping with a residential neighborhood. There will be no external construction during conversion of the existing living space to an accessory apartment.

Public Health or Safety - Staff is unaware of any public health or safety issues associated with the proposed development. CBJ Fire Department, CBJ General Engineering and CBJ Building divisions have stated they have no issues with the application. The accessory apartment will require a Building Permit which should ensure health and safety issues are addressed.

Habitat - No sensitive areas, eagle nests, anadromous fish streams, or wetlands are known to exist on the subject site.

Property Value or Neighborhood Harmony - No evidence has been identified or presented by neighbors indicating that the proposed development will have a negative impact on property value or neighborhood harmony. No comments against the proposal have been received at the time of writing this memorandum.

Conformity with Adopted Plans - The project substantially conforms to the 2013 Juneau Comprehensive Plan Policy 4.1 as follows:

> '*Policy 4.1 To facilitate the provision and maintenance of safe, sanitary, and affordable housing for its residents.*'

The proposed development meets the intent of this policy by providing additional housing in the community.

FINDINGS

CBJ §49.15.330(e)(1), Review of Director's Determinations, states that the Planning Commission shall review the Director's report to consider:

1. Whether the application is complete;
2. Whether the proposed use is appropriate according to the Table of Permissible Uses; and,
3. Whether the development as proposed will comply with the other requirements of this chapter.

The Commission shall adopt the Director's determination on the three items above unless it finds, by a preponderance of the evidence, that the Director's determination was in error, and states its reasoning for each finding with particularity.

CBJ §49.15.330(f), Commission Determinations, states that even if the Commission adopts the Director's determination, it may nonetheless deny or condition the permit if it concludes, based upon its own independent review of the information submitted at the public hearing, that the development will more probably than not:

1. Materially endanger the public health or safety;
2. Substantially decrease the value of or be out of harmony with property in the neighboring area; or,
3. Not be in general conformity with the comprehensive plan, thoroughfare plan, or other officially adopted plans.

Per CBJ § 49.15.330(e) & (f), Review of Director's & Commission's Determinations, the Director makes the following findings on the proposed development:

1. Is the application for the requested Accessory Apartment permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 1.130 for the D5 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the October 16, 2015 and October 26, 2015 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way.

4. Will the proposed development materially endanger the public health or safety?

No. As described in the preceding analysis, Building Permits will help ensure that the proposed development will not materially endanger the public health or safety.

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. As described in the preceding analysis, no evidence indicates that the development will substantially decrease the value of or be out of harmony with the property in the neighboring area.

6. Will the proposed development be in general conformity with the land use plan, thoroughfare plan, or other officially adopted plans?

Yes. The proposed development meets the intent of the 2013 Juneau Comprehensive Plan, specifically Policy 4.1, regarding provision of safe and affordable housing.

Per CBJ §49.70.900 (b)(3), General Provisions, the Director makes the following Juneau Coastal Management Program consistency determination:

7. Will the proposed development comply with the Juneau Coastal Management Program?

Not applicable.

<u>RECOMMENDATION</u>

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Accessory Apartment permit. The permit would allow the development of a 528 square foot, one bedroom accessory apartment on an undersized lot as per the submitted plans.

The approval is subject to the following conditions:

1. The open building permit related to construction of the single family dwelling (BLD1998-00465) be finalized. This includes submission of an asbuilt survey showing the required 20 foot front yard setback is met. The deed restriction should be released by CBJ once this condition is met.

ALLOWABLE/CONDITIONAL USE PERMIT APPLICATION

Project Number	Project Name (15 characters)	Case Number	Date Received
		AAP 20150023	09/09/15

TO BE COMPLETED BY THE APPLICANT

TYPE OF ALLOWABLE OR CONDITIONAL USE PERMIT REQUESTED

☒ Accessory Apartment*** (AAP) ☐ Driveway in Right-of-Way (ADW)

☐ Use Listed in §49.25.300 (Table of Permissible Uses) (USE)

Please list the Table of Permissible Uses Category: _____

***An Accessory Apartment Application will also be required.

DESCRIBE THE PROJECT FOR WHICH AN ALLOWABLE OR CONDITIONAL USE APPROVAL IS NEEDED. Change of use of existing space into a 528 sq/ft Apartment

IS THIS A MODIFICATION OF AN EXISTING APPROVAL? ☐ NO ☐ YES – Case # _____

CURRENT USE OF LAND OR BUILDING(S): Single Family Residential

PROPOSED USE OF LAND OR BUILDING(S): Residential Single Family with apartment

UTILITIES PROPOSED: WATER: ☒ Public ☐ On Site SEWER: ☒ Public ☐ On Site

SITE AND BUILDING SPECIFICS:

Total Area of Lot 5000 square feet Total Area of Existing Structure(s) 768 square feet

Total Area of Proposed Structure(s) 768 square feet (Foot Print)

EXTERNAL LIGHTING:

Existing to remain ☐ No ☒ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

Proposed ☒ No ☐ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

PROJECT NARRATIVE AND SUBMITTAL CHECKLIST:

- ☒ Site Plan
- ☒ Floor Plan of proposed buildings
- ☐ Elevation view of existing and proposed buildings
- ☐ Proposed Vegetative Cover
- ☒ Existing and proposed parking areas (including dimensions) and proposed traffic circulation
- ☐ Existing Physical Features of the site (drainage, habitat, hazard areas, etc.)

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

ALLOWABLE/CONDITIONAL USE FEES

	Fees	Check No.	Receipt	Date
Application Fees	$ 350			
Admin. of Guarantee	$			
Adjustment	$			
Pub. Not. Sign Fee	$ 50			
Pub. Not. Sign Deposit	$ 100			
Total Fee	$ 500		7101	09/09/15

NOTE: MUST BE ACCOMPANIED BY DEVELOPMENT PERMIT APPLICATION FORM

Attachment A - Application including building plans

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received: 09/09/15
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION

Project Description: Change of use existing Space to 528 sq/ft Apt.

PROPERTY LOCATION

Street Address: 755 Fifth Street — City/Zip: Douglas AK 99824

Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot): Douglas Townsite BL 39 LT 19

Assessor's Parcel Number(s): 2D040T390070

LANDOWNER/ LESSEE

Property Owner's Name: Brad Campbell — Contact Person: 907-209-8586 — Work Phone: Same

Mailing Address: 16270 Ocean View Dr. Juneau, AK 99801 — Home Phone: 907-364-2128 — Fax Number:

E-mail Address: akbradcampbell@gmail.com — Other Contact Phone Number(s):

LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****

I am (we are) the owner(s)or lessee(s) of the property subject to this application and I (we) consent as follows:

A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.

B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.

X [signature] — Landowner/Lessee Signature — Date: Sept 9, 2015

X _____ — Landowner/Lessee Signature — Date

NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.

APPLICANT If the same as OWNER, write "SAME" and sign and date at X below

Applicant's Name — Contact Person: — Work Phone:

Mailing Address — Home Phone: — Fax Number:

E-mail Address — Other Contact Phone Number(s):

X [signature] — Applicant's Signature — Date of Application: 9-9-15

----OFFICE USE ONLY BELOW THIS LINE----

STAFF APPROVALS

✓	Permit Type	***SIGN	Date Received	Application Number(s)
	Building/Grading Permit			
	City/State Project Review and City Land Action			
	Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
	Mining Case (Small, Large, Rural, Extraction, Exploration)			
	Sign Approval (If more than one, fill in all applicable permit #'s)			
	Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
✓	Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)		09/09/15	AAP20150023
	Variance Case (De Minimis and all other Variance case types)			
	Wetlands Permits			
	Zone Change Application			
	Other (Describe)			

***Public Notice Sign Form filled out and in the file.

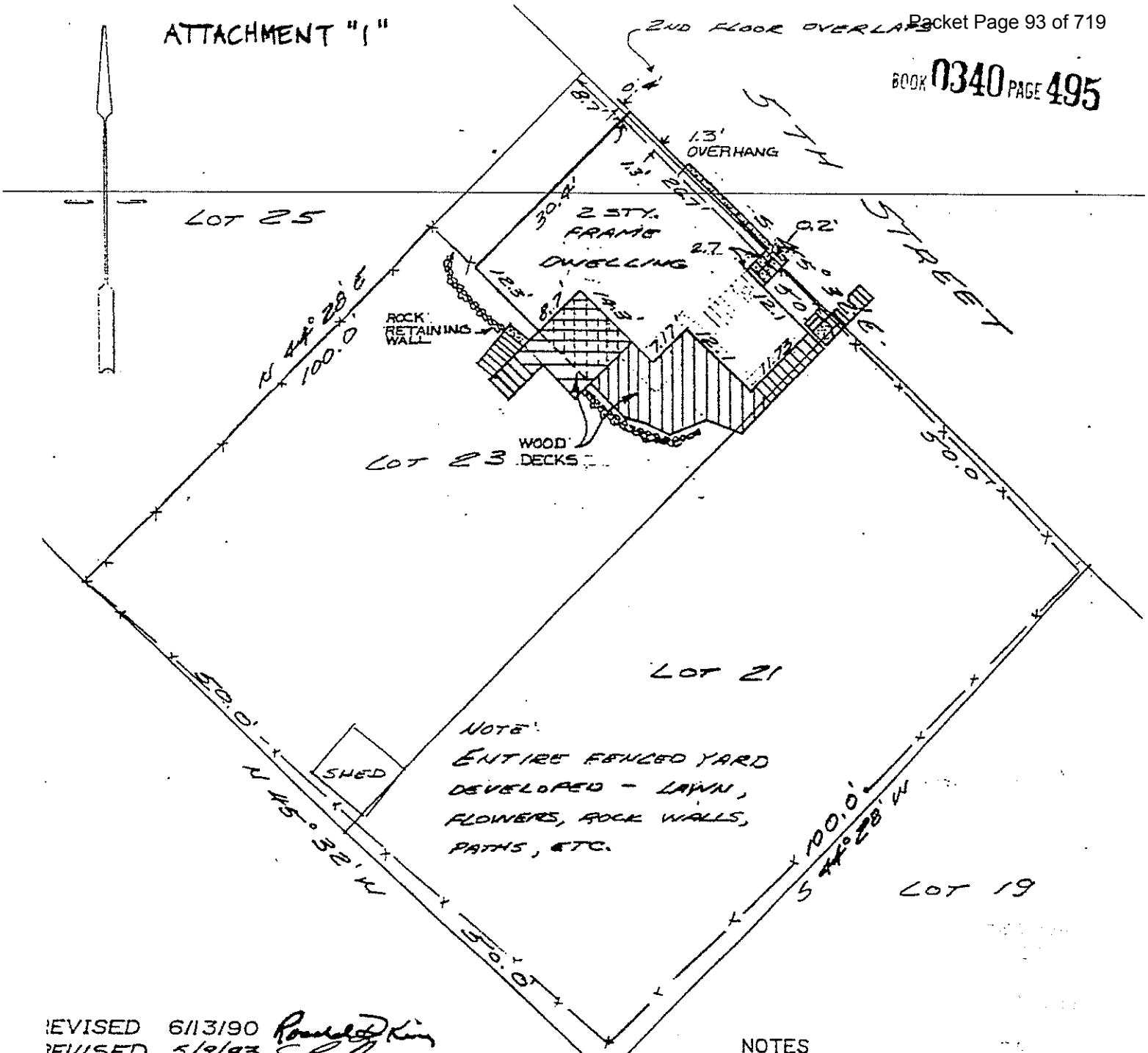
Comments:

Permit Intake Initials: TAR

NOTE: DEVELOPMENT PERMIT APPLICATION FORMS MUST ACCOMPANY ALL OTHER COMMUNITY DEVELOPMENT DEPARTMENT APPLICATIONS

ATTACHMENT "1"

BOOK 0340 PAGE 495



REVISED 6/13/90
REVISED 5/9/83 C.R.N.

I hereby certify that this is a true and correct plat of Lots 21 & 23, Block 39, Tyee Millsite Addition to the Townsite of Douglas; that all walks, roads, easements and improvements thereon are as shown and that all overlaps and encroachments are as shown to the best of my knowledge.

STATE OF ALASKA
49TH
C. R. NORDLING
No. 3076-S
REGISTERED PROFESSIONAL LAND SURVEYOR

NOTES

1) All distances are in U.S. Survey Feet.

2) Subject to easements and restrictions of record.

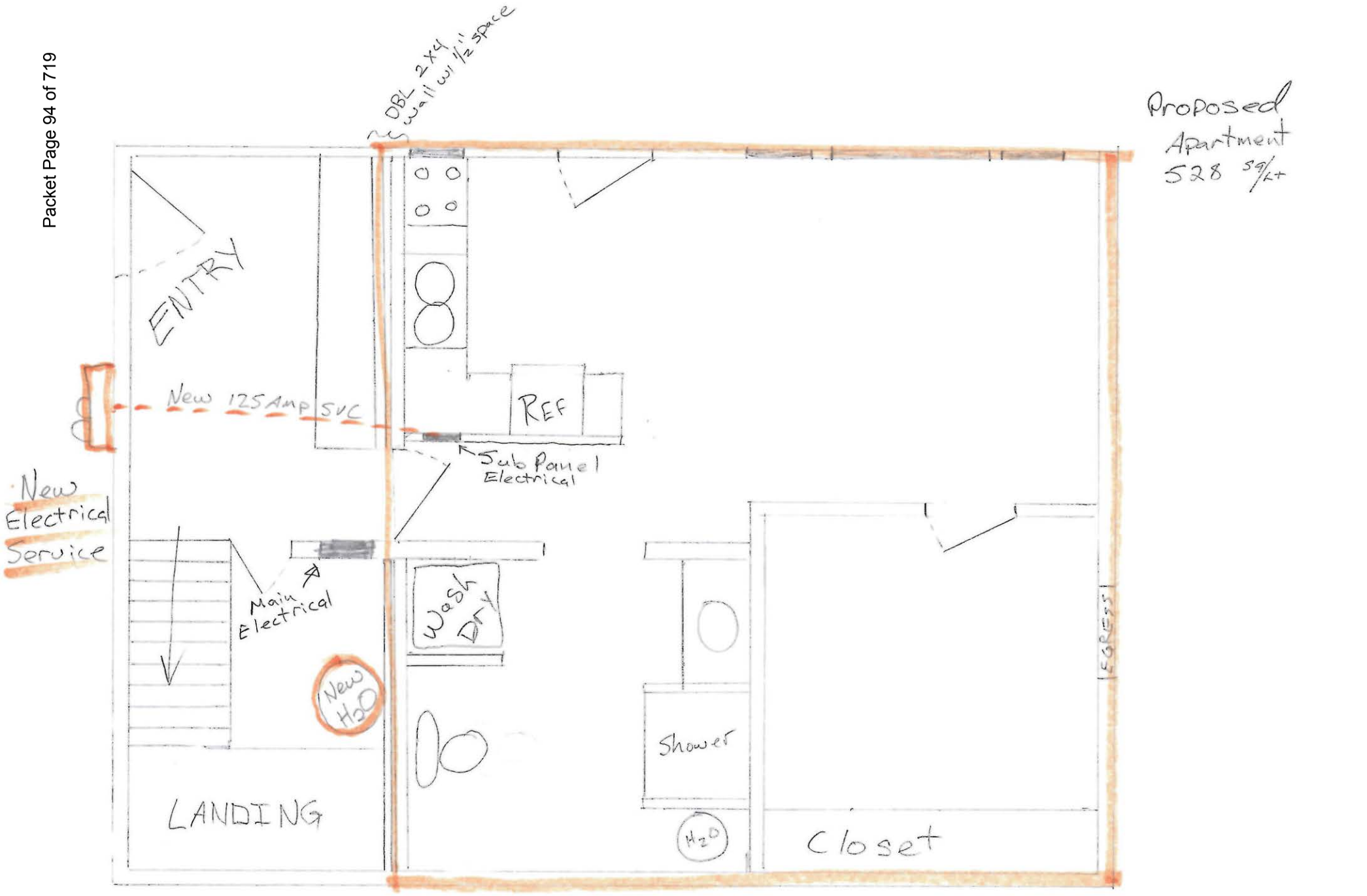
As Built
Plat of

Lots 21 & 23, Block 39
Tyee & Millsite Addition
to
Townsite of Douglas

Scale: 1" = 20'

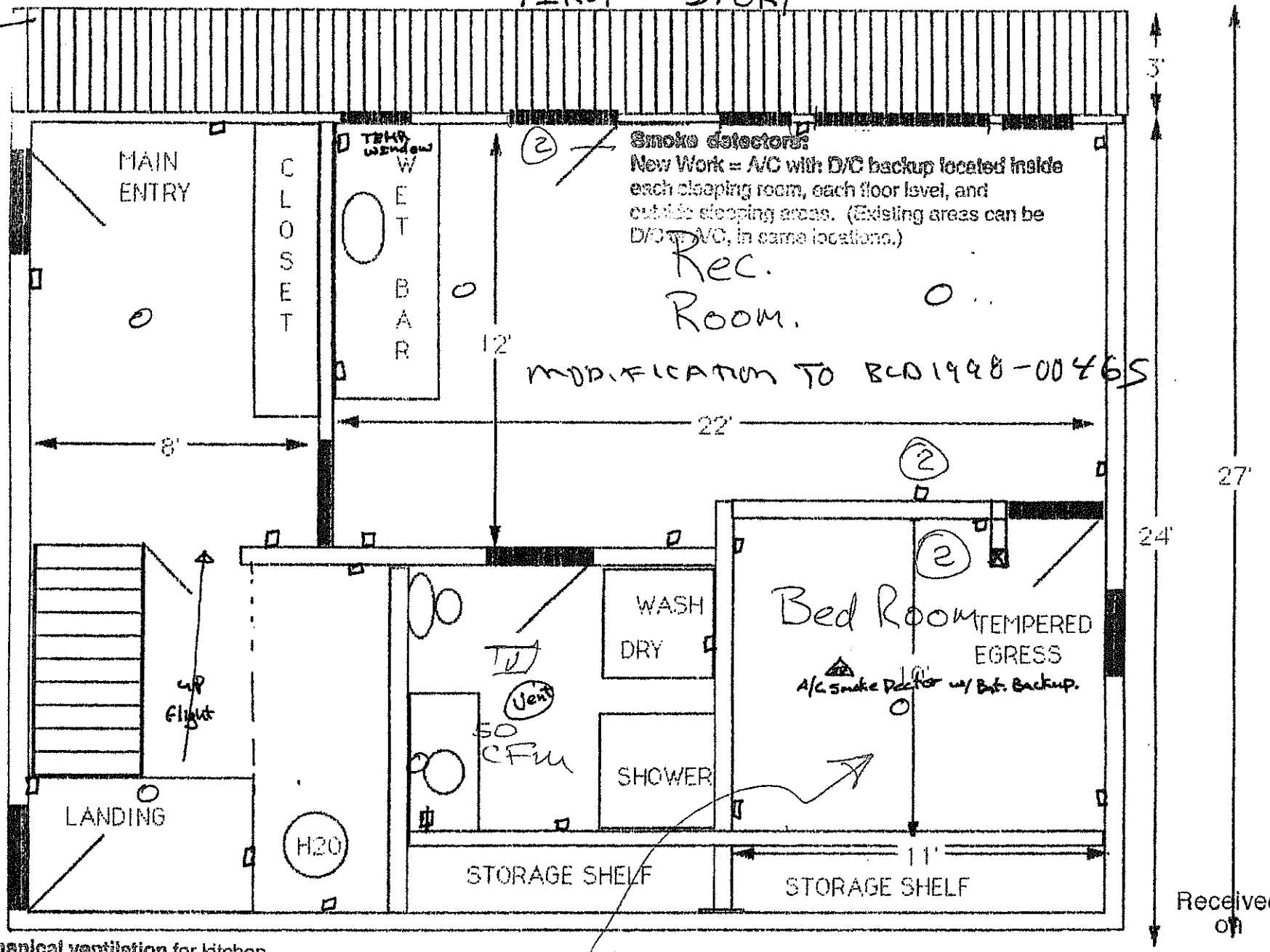
June 19, 198

Toner & Nordling, Regt. Engrs., Inc., Juneau


DBL 2x4 wall w/ 1/2" space
Proposed Apartment 528 sq/ft
ENTRY
New 125 Amp SVC
REF
Sub Panel Electrical
New Electrical Service
Main Electrical
Wash Dry
New H2O
Shower
H2O
Closet
LANDING
EGRESS

1/4 SCALE

FIRST STORY



[V] - Mechanical ventilation for kitchen all bathrooms & utility room. Vent fans to exterior in smooth metal duct. Vents must terminate minimum 3' from opening windows or doors.

GFI
Outlet
Light

[E] - Egress windows per UBC 1204:
- Min 5.7 sq. ft. net open area;
- Min net opening height = 24";
- Min net opening width = 20";
- Max finished sill height = 44"

Received on
MAY 15 2000
CBJ
Permit Center

Construction 2000
755 5th Street

Top: Kitchen Separation Wall. Two 2x4 walls ½ inch separation with R-11 insulation in both walls, 5/8 sheet rock either side.

Below: Sound mitigation between floors. R-21 insulation between joists, ½ inch sound board over joists, RC Channel applied perpendicular to joists, 5/8 sheet rock.

From: Brad Campbell
To: Tim Felstead
Subject: RE: AAP2015 0023: Accessory Apt application
Date: Friday, September 25, 2015 10:36:54 AM

Hi Tim,

Parking- There are 4 off street parking spaces in front of house.

Access- Apartment door is located on front of house second level off via the deck.

Lighting- Motion light provides entrance and stair lighting, upper right of door.

Building Works- All functions associated with the apartment are contained within the apartment on its portion of the second level. Space previously used as accessory living space. Currently vacant and being renovated under CBJ Building Permit to conform to CBJ standards as an accessory apartment. I know I still need approval from the Planning Commission to have this apartment, however the CBJ has identified additional housing as a priority for the community.

Current deed restriction- Apartment going to exist within the space currently associated with the deed restriction.

Thank You for your help.

Brad Campbell
(907) 209-8586

From: Tim Felstead [mailto:Tim.Felstead@juneau.org]
Sent: Thursday, September 24, 2015 5:34 PM
To: 'akbradcampbell@gmail.com'
Subject: AAP2015 0023: Accessory Apt application

Hi Brad,

I will be looking after your application for an accessory apartment on an undersized lot – we have this listed as AAP2015 0023 in our files. I have scheduled the case to be heard by the Planning Commission on Oct 27th 2015 at 7pm, Assembly Chambers, City Hall.

I'd like to get some more information to complete my review of the proposal.

Parking – You are required to provide parking for three vehicles (two for the main house and one for the accessory apartment). I will ask for comments from the CBJ Streets division regarding on-street parking in that neighborhood as it appears to be allowed and your current parking situation may be considered adequate.

Access to the apartment – can you show me on the site plan which side of the building the apartment will be accessed from.

Lighting – Will the entrance to the apartment be lit?

Building works associated with the apartment – please confirm that all building works will be internal to the apartment and nothing will be done externally. What was the space used for previously? The application indicates it will be on the 1st floor. Can you show me on a photo or describe which is the 1st floor (it looks like you have 4 floors from the photo I have seen but I'm not sure if you consider the lowest floor to be a basement).

Current deed restriction – is this apartment going to exist within the space currently associated with the deed restriction or is it somewhere else?

When I receive your reply I'll be able to circulate your plans for comments from the relevant departments in CBJ.

Best regards

Tim

Tim Felstead
Community Planner
Community Development Department
City and Borough of Juneau
155 S. Seward
Juneau, AK 99801

Tel: (907) 586 0466
http://www.juneau.org/cddftp/

BOOK 0540 PAGE 376

NOTICE OF AGREEMENT OF RESTRICTION ON USE OF EXTRA KITCHEN

CBJ Permit No: BLD1998-00465 at APN: 2-D04-0-T39-007-0

PROPERTY INVOLVED:

Lot 19, Block 39, Douglas Townsite located at 755 5th Street, Douglas, Alaska in the Juneau Recording District, State of Alaska.

PARTIES TO THIS AGREEMENT OF RESTRICTION:

Brad O. Campbell, whose mailing address is 755 5th Street, Douglas, Alaska 99824; or other owners or other parties that have security interest in the real property described above; and the City and Borough of Juneau, Community Development Department, of 155 South Seward Street, Juneau, Alaska 99801 all agree to this restriction and the conditions for releasing the restriction.

AGREEMENT OF RESTRICTION:

Only one dwelling unit is allowed on the real property described above under current zoning however, both kitchens will be allowed to remain under the terms of this agreement. There are presently two kitchens located in the structure which contains three floor levels and a basement as shown on the revised drawings submitted May 15, 2000 with building permit application BLD1998-00465. The primary kitchen is on the second level of the residence and the accessory kitchen is on the first level of the residence. The CBJ Community Development Department has determined that due to the existence of two areas in the building which provide complete and independent living, cooking and sleeping facilities, this structure contains two dwelling units. The kitchen on the second level will be considered the primary kitchen and the kitchen on the first level will be considered an accessory kitchen to the primary dwelling unit. The extra kitchen on the first level and associated rooms are to be used as a family room, play room, party room, recreation room, wet bar or other similar uses, but are not to be used for any rental of space to another party for any fees or compensation, or to be used as a separate dwelling unit for another family.

No transfer, sale, or encumbrance of Lot 19, Block 39, Douglas Townsite is allowed unless a new agreement of restriction is executed with the City and Borough of Juneau; or the additional kitchen is removed, inspected and approved by the City and Borough of Juneau; or if current Land Use Code zoning will allow an extra dwelling with the approval of a conditional use permit and the conditional use permit is approved by the Planning Commission and a building permit for the work is obtained, inspected and approved.

This agreement is perpetual and runs with the property, and is binding upon the heirs and assigns of the owner.

CONDITIONS FOR RELEASE OF RESTRICTION:

Upon changes, modifications, or updates in City and Borough of Juneau Land Use Code with respect to density which would allow additional dwelling units, this deed restriction may be terminated by the written release of the City or if at time of the release request the current Land Use Code zoning will allow an extra dwelling with the approval of a conditional use permit and the conditional use permit is approved by the Planning Commission and a building permit for the work is obtain, inspected and approved.

Attachment B - Current deed restriction on use of living space in which accessory apartment is proposed

The restriction may be terminated if the additional kitchen has been removed, inspected and approved by the City and Borough of Juneau, Community Development Department, Building Division, using the building permit process. Removal of a kitchen consists of removal of the kitchen cabinets, counter tops, sink, and capping of plumbing to the sink and 220 wiring for the range. Once the kitchen has been removed and work approved by the City and Borough of Juneau this restriction may be terminated by the written release of the City.

Dated this 1st day of June, 2000.

Brad O. Campbell, Owner

STATE OF ALASKA)
) : SS.
FIRST JUDICIAL DISTRICT)

THIS IS TO CERTIFY that on this 1st day of June, 2000, before me, a Notary Public in and for the State of Alaska, duly commissioned and sworn, personally appeared Brad O. Campbell, to me known and known to me to be the persons whose names are subscribed to the foregoing instrument freely and voluntarily for the stated purposes and reasons set forth therein.

STATE OF ALASKA
OFFICIAL SEAL
Lori C. Scott
My Commission Expires January 30, 2002

Lori C. Scott
Notary Public in Alaska;
My commission expires 1/30/02

AND

CITY AND BOROUGH OF JUNEAU
COMMUNITY DEVELOPMENT DEPARTMENT

May 31, 2000
Dated

Cheryl Easterwood, Director

RELEASE OF AGREEMENT
(To be executed when all conditions have been met for release)

The City and Borough of Juneau, Community Development Department, agrees that the restrictions with regard to Lot 19, Block 39, Douglas Townsite are released for the following reason:

_____

_____

Dated: _____ CITY AND BOROUGH OF JUNEAU
COMMUNITY DEVELOPMENT DEPARTMENT

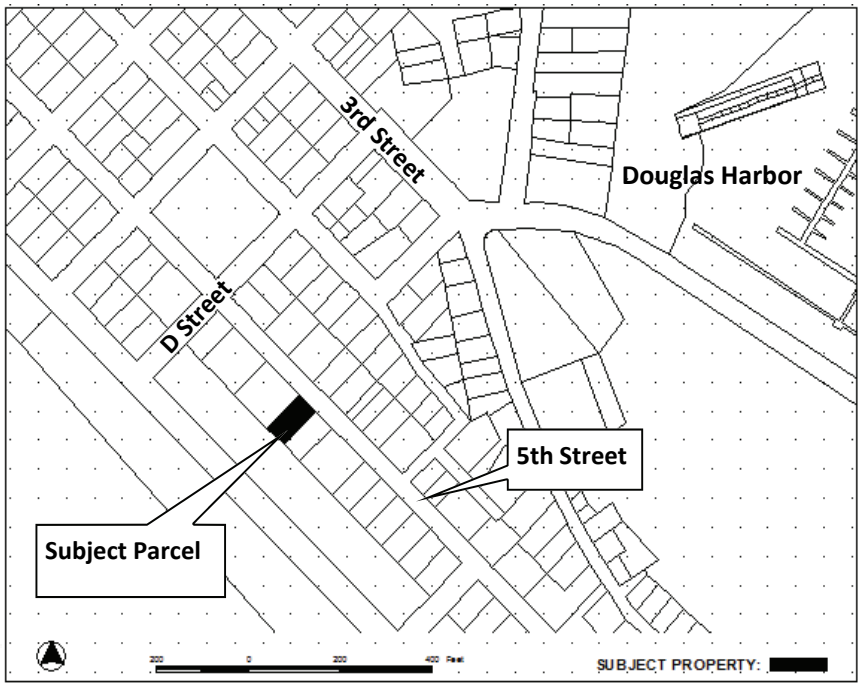
By: _____ Title: _____

2000 JN-1 AM 11:07
REQUESTED BY Brad Campbell
JUNEAU RECORDING DISTRICT
003110

When recorded, return to:

City and Borough of Juneau
Community Development Department
155 S. Seward Street
Juneau, Alaska 99801

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

SHIP TO:

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PROPOSAL: A Conditional Use Permit for accessory apartment on an undersized lot.

File No:	AAP2015 0023	Applicant:	Brad Campbell
To:	Adjacent Property Owners	Property PCN:	2-D04-0-T39-007-0
Hearing Date:	October 27, 2015	Owner:	Brad Campbell
Hearing Time:	7:00 PM	Size:	5,000 Square Feet
Place:	Assembly Chambers	Zoned:	D-5
	Municipal Building	Site Address:	755 5th Street
	155 South Seward Street	Accessed Via:	5th Street
	Juneau, Alaska 99801		

PROPERTY OWNERS PLEASE NOTE:

You are invited to attend this Public Hearing and present oral testimony. The Planning Commission will also consider written testimony. You are encouraged to submit written material to the Community Development Department 14 days prior to the Public Hearing. Materials received by this deadline are included in the information packet given to the Planning Commission a week before the Public Hearing. Written material received after the deadline will be provided to the Planning Commission at the Public Hearing.

If you have questions, please contact Tim Felstead at tim.felstead@juneau.org or at 586-0466.

CITY/BOROUGH OF JUNEAU

Planning Commission Agendas, Staff Reports and Meeting Results can be viewed at http://www.juneau.org/assembly/novus.php

Attachment C - Notice of public hearing

Date notice was printed: September 25, 2015

Attachment D – Photos of current building including off-street parking

Entry to proposed accessory apartment
Proposed 2nd floor accessory apartment with main dwelling above
755
SALE

Entry to main dwelling
Entry to proposed accessory apartment

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION
Date: October 27, 2015
File No.: AAP2015 0023

Brad Campbell
6270 Ocean View Drive
Juneau, Alaska 99801

Application For:	A Conditional Use Permit for accessory apartment on undersized lot.
Legal Description:	Douglas Townsite Block 39 Lot 19
Property Address:	755 5th Street
Parcel Code No.:	2-D04-0-T39-007-0
Hearing Date:	October 27, 2015

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated October 13, 2015, and **APPROVED** the Conditional Use Permit for accessory apartment on undersized lot to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. The open building permit related to construction of the single family dwelling (BLD1998-00465) be finalized. This includes submission of an as-built survey showing the required 20 foot front yard setback is met. The deed restriction should be released by CBJ once this condition is met.

Attachments: October 13, 2015, memorandum from Tim Felstead, Community Development, to the CBJ Planning Commission regarding AAP2015 0023.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date: The permit is effective upon approval by the Commission, October 27, 2015.

Expiration Date: The permit will expire 18 months after the effective date, or April 27, 2017, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner: Tim Felstead

Tim Felstead, Planner
Community Development Department

Michael Satre, Chair
Planning Commission

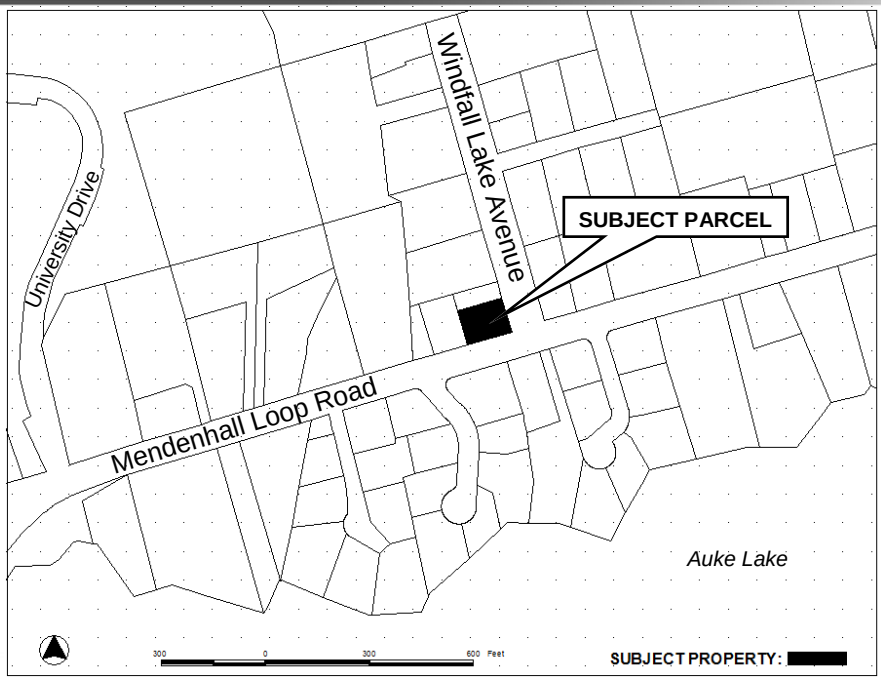
Filed With City Clerk

10/28/15
Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

NOTICE OF PUBLIC HEARING



City & Borough of Juneau
Community Development Department
155 S Seward Street • Juneau, Alaska 99801

SHIP TO:

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PROPOSAL: **Conditional Use Permit to convert a church into a child care center in a D-3 zoning district.**

File No:	USE2015 0008	Applicant:	Israa and Loren Gehring
To:	Adjacent Property Owners	Property PCN:	4-B27-0-103-004-3
Hearing Date:	October 27, 2015	Owner:	Israa and Loren Gehring
Hearing Time:	7:00 PM	Size:	13,414 Sq. Ft. (0.3079 Acres)
Place:	Assembly Chambers	Zoned:	D-3
	Municipal Building	Site Address:	4341 Windfall Avenue
	155 South Seward Street	Accessed Via:	Windfall Avenue
	Juneau, Alaska 99801		

PROPERTY OWNERS PLEASE NOTE:

You are invited to attend this Public Hearing and present oral testimony. The Planning Commission will also consider written testimony. You are encouraged to submit written material to the Community Development Department 14 days prior to the Public Hearing. Materials received by this deadline are included in the information packet given to the Planning Commission a week before the Public Hearing. Written material received after the deadline will be provided to the Planning Commission at the Public Hearing.

If you have questions, please contact Allison Eddins at Allison.Eddins@juneau.org or 586-0758.

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Planning Commission Agendas, Staff Reports and Meeting Results can be viewed at http://www.juneau.org/assembly/novus.php

Date notice was printed: September 22, 2015

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: October 15, 2015

TO: Planning Commission

FROM: Allison Eddins, Planner
Community Development Department

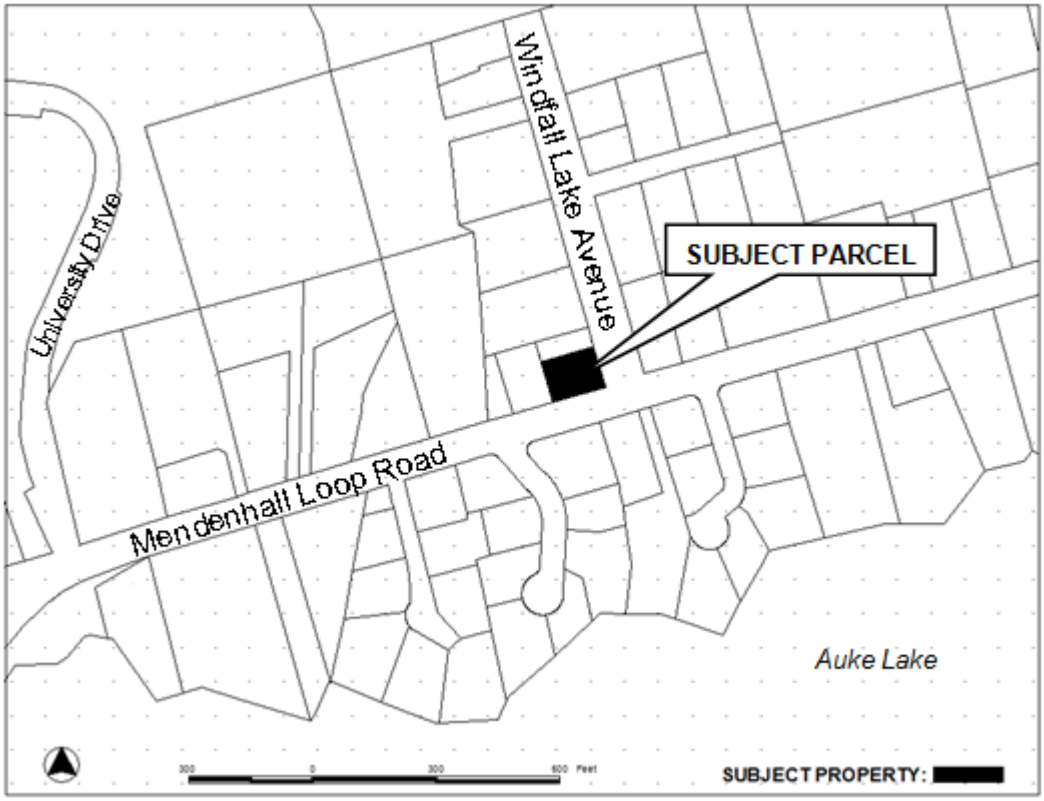
FILE NO.: USE2015 0008

PROPOSAL: Conditional Use Permit for a Child Care Center in a D3 neighborhood.

GENERAL INFORMATION

Applicant:	Gehring Nursery
Property Owner:	Loren and Israa Gehring
Property Address:	4341 Windfall Avenue
Legal Description:	Raymond 2 Lot 1
Parcel Code Number:	4-B27-0-103-004-3
Site Size:	13,414 square feet
Comprehensive Plan Future Land Use Designation:	Urban Low Density Residential (ULDR)
Zoning:	D3
Utilities:	Public Water and Sewer
Access:	Windfall Avenue
Existing Land Use:	Church
Surrounding Land Use:	North - (D3) Single Family Dwelling South - (D3) Single Family Dwelling; Mendenhall Loop Road East - (D3) Single Family Dwelling; Windfall Avenue West - (D3) Vacant Lot

Vicinity Map



ATTACHMENTS

Attachment A: Development Permit and Conditional Use Permit Applications
Attachment B: Project Narrative
Attachment C: Proposed Plans
Attachment D: Aerial Image
Attachment E: Site Pictures
Attachment F: Map of Juneau Child Care Centers

PROJECT DESCRIPTION

The applicant requests a Conditional Use Permit for the development of a child care center at 4341 Windfall Avenue, in conjunction with a previously approved church. The site is located in a D3 residential zone at the intersection of Mendenhall Loop Road and Windfall Avenue. The building was previously known as the New Apostolic Church. The applicant plans to provide licensed care for 15 to 21 children ranging in age from zero to three years old. According to the CBJ Table of

Permissible Uses 49.25.300, child care centers for 13 or more children under the age of 12 are allowed in a D3 district with an approved Conditional Use Permit.

BACKGROUND

The proposed child care center will be located in an existing building at the corner of Windfall Avenue and Mendenhall Loop Road. The church received a Conditional Use Permit in 1994 (USE94-51) to operate in a D3 zoned district. The applicants would like to change the use from "Church" to "Church/Child Care Center".

The New Apostolic Church congregation, who received the Conditional Use Permit in 1994, no longer holds services in the church building. Currently, a small congregation rents the church space from the applicants. Church services are held at the location on Wednesday nights, and Saturday and Sunday mornings. The child care center's hours of operation will not interfere with the church services.

In 2014, the applicants purchased the church building and applied for a change of use. That application was withdrawn because at the time child care centers in D3 zoning districts were not allowed. In June 2015, the Planning Commission adopted the findings of the Title 49 Committee and recommended amending the Table of Permissible Uses to allow child care centers to be permitted with an approved Conditional Use Permit in RR, D1, D3, D5 and D10SF zoning districts. The Assembly agreed with the Planning Commission's recommendation and adopted Ordinance 2015-32, amending the Land Use Code relating to child care and day care facilities.

ANALYSIS

Project Site – The proposed child care center would use the existing church building. The building is a one story wooden structure that is approximately 1,125 square feet. The lot is approximately 13,414 square feet and is on the southwest corner of Mendenhall Loop Road and Windfall Avenue. Access to the site is from Windfall Avenue. (See Attachment D)

Project Design – The interior of the building consists primarily of one large room that currently serves as a sanctuary and will also be used as the child care center. The pews and pulpit were removed in order to provide more space for the child care center. There is also a small kitchen, an entry foyer and two ADA restrooms. (See Attachment C)

The outdoor play area is located in the front yard and is approximately 1,000 square feet. The applicants have installed a 4 foot tall, sight obscuring fence along the perimeter of the play area. The fence will provide safety for the children and will also serve as a noise and visual buffer.

Traffic – The hours of operations will be Monday through Friday, 7:30 am to 5:30 pm. The CBJ Land Use Code does not restrict the number of children that could be accepted by this application, although limits are placed on the number of children allowed based on number of qualified staff, indoor area available and fire standards through the State licensing process.

The center will be required to have three to four qualified caregivers; this number varies due to different age groups requiring different child to caregiver ratios. The applicant plans on having an average of 15 children and a maximum of 21 children at any one time. Based on four employees and 21 children, it is estimated a maximum of 50 vehicle trips will occur each day. As with many child care facilities, some of the children may be siblings so the number of trips maybe less than this estimate. The additional traffic does not require a Traffic Impact Analysis, per CBJ 49.40.300.

Parking and Circulation - The site is accessed from Windfall Avenue. The driveway is 100 feet from the Windfall Avenue/Mendenhall Loop Road intersection. The CBJ Engineering Code requires driveways to be at least 40 feet from an intersection. The driveway is 12 feet wide and approximately 130 feet long. The driveway extends to the back of the property and provides access to a small parking lot that will provide 3 parking spaces and a small turn around area for exiting traffic. Three additional parking spaces will be provided for visitors and parents picking-up and dropping-off their children. (See Attachment C) Rules regarding on-site traffic circulation should be included in the Child Care Policy Handbook and be agreed upon by all parents and employees. The Child Care Policy Handbook is a document that is required by the State Licensing Authority.

Lighting - The building has four flood lights installed at the front and the back of the building. The applicants will install six additional walkway lights on the either side of the building. (See Attachment C) This will provide suitable lighting for vehicle and pedestrian safety. The light fixtures will be located in such a way that will not produce glare on any public right-of-way or neighboring property.

Noise – There will be additional noise generated on-site from the increased traffic. The hours of operation will be Monday through Friday, 7:30am to 5:30pm. Pick-up and drop-off times will be from 7:30-8:30am and 4:30-5:30pm. Most of the additional noise will be generated during these times.

Outdoor play will occur several times a day, weather permitting. The applicants have installed a 4 foot sight-obscuring fence around the playground that will help buffer some of the noise. There have been no negative comments regarding noise from the neighbors.

Public Health or Safety - There is no evidence to suggest that a child care center will negatively affect public health or safety. In fact, Staff believes that the addition of a safe and licensed child care center will have a positive impact on the community's health and safety. The building is equipped with two smoke/carbon monoxide detectors, a fire extinguisher and two exit ways. The

applicants have provided an emergency evacuation plan. (See Attachment C) The State Licensing Authority will require a fire inspection upon approval of this Conditional Use Permit and prior to operation of the child care center. The CBJ Building Official did not have any concerns.

Habitat – No habitat regulated by the CBJ Land Use Code will be affected by the applicant's proposal.

Property Value or Neighborhood Harmony – There is no evidence to suggest that the child care center will have a negative impact on property values or neighborhood harmony. Approval of this permit would help increase the child care options available to families in the neighborhood and the wider Auke Bay/Mendenhall Valley area.

Conformity with Adopted Plans – The proposed development is located in Subarea 4 of the 2013 Comprehensive Plan maps and has a land use designation of Urban/Low Density Residential (ULDR). The Comprehensive Plan describes ULDR as:

"These lands are characterized by urban and suburban residential lands with detached single-family units, duplex, cottage and bungalow housing, zero-lot-line dwelling units and manufactured homes on permanent foundations at densities of one to six units per acre. Any commercial development should be of a scale consistent with a single-family residential neighborhood, as regulated in the Table of Permissible Uses CBJ 49.25.300."

Families with children are likely to live in this type of neighborhood. The use proposed is consistent with the needs of such a neighborhood and the wider Auke Bay/Mendenhall Valley area and is consistent with CBJ 49.25.300 Table of Permissible Uses.

The 2013 Comprehensive Plan specifically addresses the need for quality child care in the City and Borough of Juneau. Chapter 14 of the Plan states;

> "*There is a critical child care shortage in Juneau, and that lack of quality child care makes Juneau a less than attractive place – and even an untenable home – for young families*."

Chapter 14 goes on to state policies and procedures to encourage an adequate supply of child care in the City and Borough of Juneau;

> ***POLICY 14.3. TO SUPPORT THE PROVISION OF QUALITY CHILD CARE IN A SAFE LEARNING ENVIRONMENT BY WELL-TRAINED EDUCATORS AND CHILD CARE PROVIDERS.***
>
> *14.3 – SOP1 Work with child care providers, advocates, and other stakeholders to*

ensure that regulatory or permitting requirements do not unduly restrict the availability of affordable, quality child care in Juneau.

14.4 – SOP2 Provide support of child care providers as needed to ensure an adequate supply of available affordable, quality child care opportunities.

FINDINGS

CBJ §49.15.330 (e)(1), Review of Director's Determinations, states that the Planning Commission shall review the Director's report to consider:

1. Whether the application is complete;
2. Whether the proposed use is appropriate according to the Table of Permissible Uses; and,
3. Whether the development as proposed will comply with the other requirements of this chapter.

The Commission shall adopt the Director's determination on the three items above unless it finds, by a preponderance of the evidence, that the Director's determination was in error, and states its reasoning for each finding with particularity.

CBJ 49.15.330 (f), Commission Determinations, states that even if the Commission adopts the Director's determination, it may nonetheless deny or condition the permit if it concludes, based upon its own independent review of the information submitted at the public hearing, that the development will more probably than not:

1. Materially endanger the public health or safety;
2. Substantially decrease the value of or be out of harmony with property in the neighboring area; or,
3. Not be in general conformity with the comprehensive plan, land use plan, or other officially adopted plans.

Per CBJ 49.15.330 (e) & (f), Review of Director's & Commission's Determinations, the Director makes the following findings on the proposed development:

1. Is the application for the requested conditional use permit complete?

Yes. Staff finds the application contains the information necessary to conduct full review of the proposed operations. The application submittal by the applicant, including the appropriate fees, substantially conforms to the requirements of CBJ Chapter 49.15.

2. Is the proposed use appropriate according to the Table of Permissible Uses?

Yes. The requested permit is appropriate according to the Table of Permissible Uses. The permit is listed at CBJ 49.25.300, Section 7.310 Table of Permissible Uses for the D3 zoning district.

3. Will the proposed development comply with the other requirements of this chapter?

Yes. The proposed development complies with the other requirements of this chapter. Public notice of this project was provided in the October 16, 2015 and October 26, 2015 issues of the Juneau Empire's "Your Municipality" section, and a Notice of Public Hearing was mailed to all property owners within 500 feet of the subject parcel. Moreover, a Public Notice Sign was posted on the subject parcel, visible from the public Right of Way. (See Attachment E)

4. Will the proposed development materially endanger the public health or safety?

No. Based on the above analysis, the proposed development will not endanger the public health or safety.

5. Will the proposed development substantially decrease the value of or be out of harmony with property in the neighboring area?

No. Based on the above analysis, the proposed development will not substantially decrease the value of or be out of harmony with the property in the neighboring area.

6. Will the proposed development be in general conformity with the comprehensive plan, land use plan, or other officially adopted plans?

Yes. As discussed above, the proposed development is in general conformity with the 2013 Comprehensive Plan and Title 49.

Per CBJ §49.70.900 (b)(3), General Provisions, the Director makes the following Juneau Coastal Management Program consistency determination:

7. Will the proposed development comply with the Juneau Coastal Management Program?

N/A. This proposal will not impact habitat regulated by the Juneau Coastal Management Program.

RECOMMENDATION

It is recommended that the Planning Commission adopt the Director's analysis and findings and **APPROVE** the requested Conditional Use Permit. The permit would allow the development of a child care center in a D3 zoning district in conjunction with a previously approved church.

The approval is subject to the following conditions:

1. No more than 21 children at any one time are allowed to use the child care center on the subject lot.
2. No visitor or employee parking will occur within the Windfall Avenue right-of-way.
3. On-site lighting will not produce glare onto any public right of way or neighboring property.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received: 09/11/15
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION

Project Description: Conditional Use Permit for Childcare Facility

PROPERTY LOCATION

Street Address: 4341 Windfall St.
City/Zip: Juneau, AK 99801
Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot): Lot 1, Raymond Subdivision No. 2, USS 2392
Assessor's Parcel Number(s): 4B2701030043

LANDOWNER/ LESSEE

Property Owner's Name: Loren & Israa Gehring
Contact Person: Israa Gehring
Work Phone: 907-723-1173
Mailing Address: PO Box 211044 Auke Bay AK 99821
Home Phone: Same
Fax Number:
E-mail Address: israakako@gmail.com
Other Contact Phone Number(s): Loren Gehring 907 321-0219

LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****

I am (we are) the owner(s)or lessee(s) of the property subject to this application and I (we) consent as follows:

A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.
B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.

X _____ Landowner/Lessee Signature — Date: 9/11/15

X _____ Landowner/Lessee Signature — Date: 9/11/15

NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.

APPLICANT If the same as OWNER, write "SAME" and sign and date at X below

Applicant's Name: Same
Contact Person:
Work Phone:
Mailing Address:
Home Phone:
Fax Number:
E-mail Address:
Other Contact Phone Number(s):

X _____ Applicant's Signature — Date of Application: 9/11/15

----OFFICE USE ONLY BELOW THIS LINE----

STAFF APPROVALS

✓	Permit Type	***SIGN	Date Received	Application Number(s)
	Building/Grading Permit			
	City/State Project Review and City Land Action			
	Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
	Mining Case (Small, Large, Rural, Extraction, Exploration)			
	Sign Approval (If more than one, fill in all applicable permit #'s)			
	Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
✓	Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)		09/11/15	USE20150008
	Variance Case (De Minimis and all other Variance case types)			
	Wetlands Permits			
	Zone Change Application			
	Other (Describe)			

***Public Notice Sign Form filled out and in the file.

Comments:

Permit Intake Initials

NOTE: DEVELOPMENT PERMIT APPLICATION FORMS MUST ACCOMPANY ALL OTHER COMMUNITY DEVELOPMENT DEPARTMENT APPLICATIONS

ALLOWABLE/CONDITIONAL USE PERMIT APPLICATION

Project Number	Project Name (15 characters)	Case Number	Date Received
		USE20150008	09/11/15

TO BE COMPLETED BY THE APPLICANT

TYPE OF ALLOWABLE OR CONDITIONAL USE PERMIT REQUESTED

☐ Accessory Apartment*** (AAP) ☐ Driveway in Right-of-Way (ADW)

☒ Use Listed in §49.25.300 (Table of Permissible Uses) (USE)

Please list the Table of Permissible Uses Category: Day care facilities

***An Accessory Apartment Application will also be required.

DESCRIBE THE PROJECT FOR WHICH AN ALLOWABLE OR CONDITIONAL USE APPROVAL IS NEEDED.

Conditional use is required for Child Day care Centers in a residential zone.

IS THIS A MODIFICATION OF AN EXISTING APPROVAL? ☒ NO ☐ YES – Case #

CURRENT USE OF LAND OR BUILDING(S): Used as a "Church" under an existing conditional use permit.

PROPOSED USE OF LAND OR BUILDING(S): Child Day Care Facility

UTILITIES PROPOSED: WATER: ☒ Public ☐ On Site SEWER: y Public ☐ On Site

SITE AND BUILDING SPECIFICS:

Total Area of Lot 13,414 square feet Total Area of Existing Structure(s) 1,125 square feet

Total Area of Proposed Structure(s) N/A square feet

EXTERNAL LIGHTING:

Existing to remain ☐ No ☒ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

Proposed ☐ No ☐ Yes – Provide fixture information, cutoff sheets, and location of lighting fixtures

PROJECT NARRATIVE AND SUBMITTAL CHECKLIST:

- ☒ Site Plan
- ☒ Floor Plan of proposed buildings
- ☐ Elevation view of existing and proposed buildings
- ☒ Proposed Vegetative Cover
- ☒ Existing and proposed parking areas (including dimensions) and proposed traffic circulation
- ☒ Existing Physical Features of the site (drainage, habitat, hazard areas, etc.)

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

ALLOWABLE/CONDITIONAL USE FEES

	Fees	Check No.	Receipt	Date
Application Fees	$ 350.00			
Admin. of Guarantee	$			
Adjustment	$			
Pub. Not. Sign Fee	$ 50.00			
Pub. Not. Sign Deposit	$ 100.00			
Total Fee	$ 500.00	7109 →		09/11/15

NOTE: MUST BE ACCOMPANIED BY DEVELOPMENT PERMIT APPLICATION FORM

Attachment A

CONDITIONAL USE PERMIT APPLICATION FOR GEHRING NURSERY SCHOOL

4341 WINDFALL ST., JUNEAU, ALASKA

(LOT 1, RAYMOND SUBDIVISION NO. 2, USS 2392)

Table of Contents:

Item:	Pages:
Permit Application Form	1
Development Permit Application Form	2
Attachments:	
As-built survey	A
Floor Plan	B
Emergency Evacuation Plan	C
Vegetative Cover Plan	D
Parking Plan and Traffic Flow Plan	E
Exterior Lighting and Fencing Plan	F
Drainage Plan	G

Project Narrative:

This application is for a conditional use permit for a childcare facility to operate in a residential zone. The property is currently operating under a "church" conditional use permit, which we request to retain for future use. The facility meets all state childcare requirements and once this permit is obtained we will be able to receive all appropriate certification. We need conditional use approval to begin operating as a childcare facility. Please call if there are any questions.

Sincerely, Israa Kako-Gehring

Gehring Nursery School

Israa (Issie) Gehring
Owner

4341 Windfall Ave, Juneau, AK 99801
PO BOX 210695, Auke Bay, AK 99821

907-723-1173
israakako@gmail.com
gehringnursery.com

City and Borough of Juneau
Community Development Department
155 South Seward Street
Juneau, Alaska 99801
Telephone: 586-0715 Facsimile: 586-3365

Project Name:

Case Number: N/A

Project Description: Gehring Childcare Center

Applicant: Loren and Israe Gehring

Property Owner: Loren and Israe Gehring

Property Address: 4341 Windfall Avenue, Juneau, AK 99801

Parcel Code Number: 4-B27-0-103-004-3

Site Size: 13,414 square feet

Zoning: D3

Existing Land Use: Church

Conference Date: April 15, 2015

Conference Summary

Questions/issues/agreements identified at the conference that were not already identified in the attached reports.

The following is a list of issues, comments and proposed actions, and requested technical submittal items that were discussed at the pre-application conference.

1. Zoning
   - This lot is zoned D3. The current Land Use Code, Title 49, does not allow childcare centers in D3 districts. Title 49 defines childcare centers as a building or portion thereof, used for the purpose of caring for 13 or more children under the age of 12, any of whom are nonresident.
2. Setbacks
   - The current structure that is on the lot conforms to all setbacks requirements for the D3 district, as directed by Title 49.
3. Height
   - The current structure that is on the lot conforms to the height requirements for the D3 district, as directed by Title 49.
4. Parking
   - The state Childcare Licensing Office will need to conduct a preliminary site visit to determine how many children the center can have and how many employees will be required. The Community Development Department will determine the parking requirements after the Licensing Office completes their site visit. The applicant will need to provide a site plan to the Community Development Department.
5. Landscaping
   - According to the applicant, there is a fence that goes around the perimeter of the lot. This will help ensure the safety of children when they are outside.
6. Building
   - The current structure that is on the lot conforms to the current building codes. No issues have been found.
7. Fire District
   - The Fire Marshall will conduct a courtesy inspection because there are currently four children being cared for in the building. This will not be an official fire inspection.
8. Lighting
   - All outdoor lighting needs to be shown on the site plan. Outdoor lighting is recommended around entrances and exits, driveways and walkways. The light should shine down toward the ground and not disturb the surrounding properties.
9. Habitat Issues
   - There are no known habitat issues with this lot.
10. Lot Coverage
    - In the D3 district the maximum lot coverage is 35%. There are no lot coverage issues on the subject lot at this time.

11. Traffic
    - The Community Development Department may need to conduct a traffic analysis. This will be determined after the State has determined the maximum number of children allowed and the minimum number of staff required. This information will allow CDD staff to estimate average daily vehicle trips which will determine whether or not a TIA is required per 49. 30.300.
12. Engineering
    - There are no engineering issues for this structure at this time.
13. Noise
    - A noise buffer, such as fencing, trees and other vegetation, may need to be installed to minimize the noise impacts to surrounding properties. This will be determined at a later date.
14. Drainage
    - There are no drainage issues on this lot at this time.
15. Utilities
    - There are no utility issues for this structure at this time.
16. Wetlands
    - There are no wetlands issues on this lot at this time.
17. Hazard/Avalanche/Hillside Endorsement
    - There are no hazard, avalanche or hillside endorsement issues on this lot at this time.
18. Flood
    - There are no flooding issues on this lot at this time.
19. Other Agency Reviews -

List of required applications

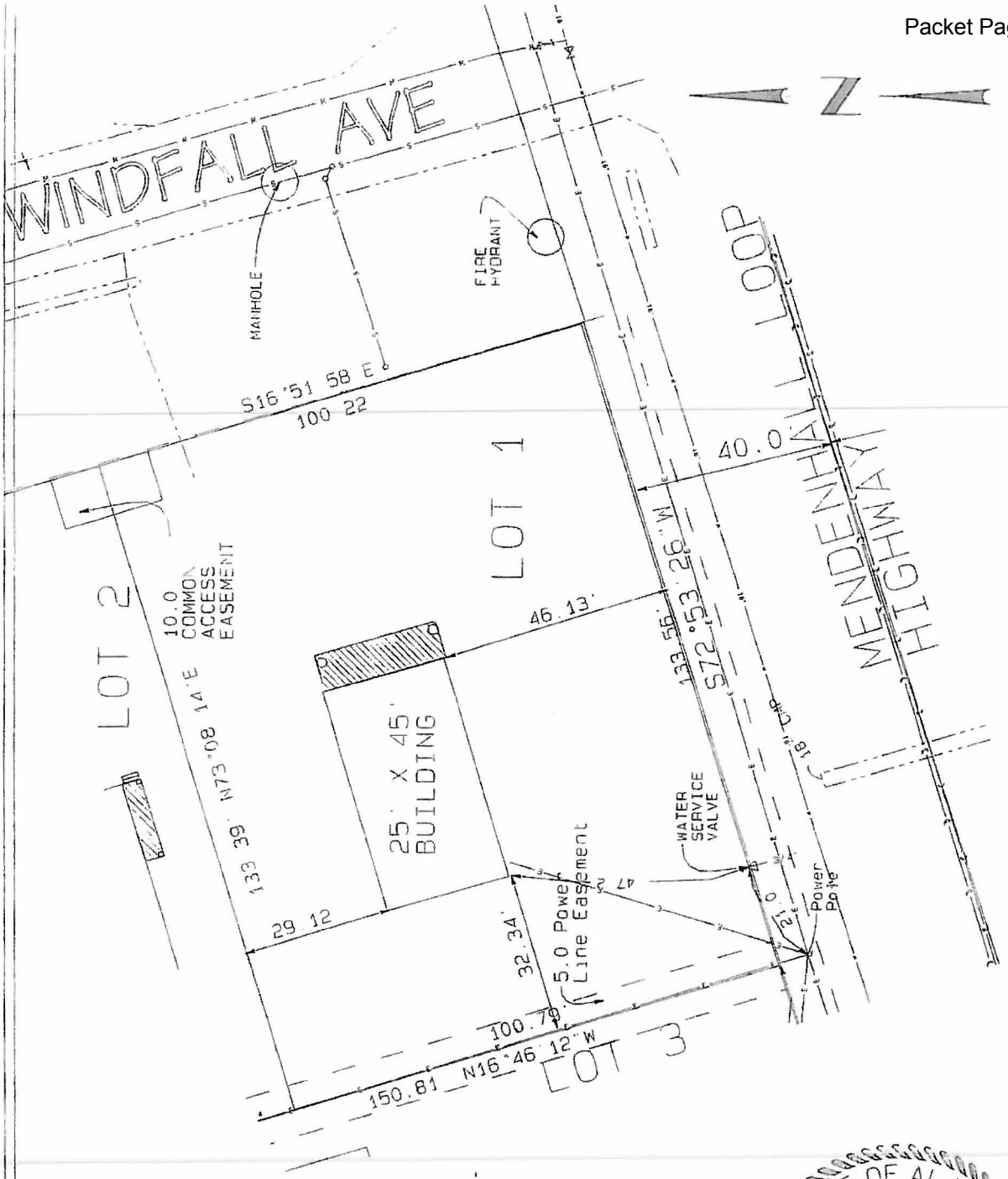
Based upon the information submitted for pre-application review, the following list of applications must be submitted in order for the project to receive a thorough and speedy review.

1. **No applications are required at this time.**

Additional submittal requirements:

Submittal of additional information, given the specifics of the development proposal and site, are listed below. These items will be required in order for the application to be determined Counter Complete.

1. **A copy of this pre-application conference report.**
2. **This applicant will submit a site plan. This site plan will show the location for vehicle ingress and egress, pick-up and drop-off locations, parking, walkways, building entrances, lighting and outdoor fencing.**
3. **The applicant will provide an estimate of the maximum number of children to be cared for on-site and the maximum number of adults working on-site. The applicant will provide the hours of operation and days of operation.**



SCALE 1" = 20'

0 20 40

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT PLAT, THAT ALL WALKS, ROADS, EASEMENTS AND IMPROVEMENTS THEREON ARE AS SHOWN AND THAT ALL OVERLAPS AND ENCROACHMENTS ARE AS SHOWN TO THE BEST OF MY KNOWLEDGE

STATE OF ALASKA 49TH J.W. BEAN No. 3650-S REGISTERED PROFESSIONAL LAND SURVEYOR

J.W. BEAN
PROFESSIONAL SURVEYOR
TDS 12309
F.B. _____ JOB No 11644-1
SCALE AS SHOWN
DATE 9-30-14

AS-BUILT SURVEY OF
LOT 1
RAYMOND SUBDIVISION NO. 2
WITHIN U.S.S. 2392

ATTACHMENT A

Attachment C

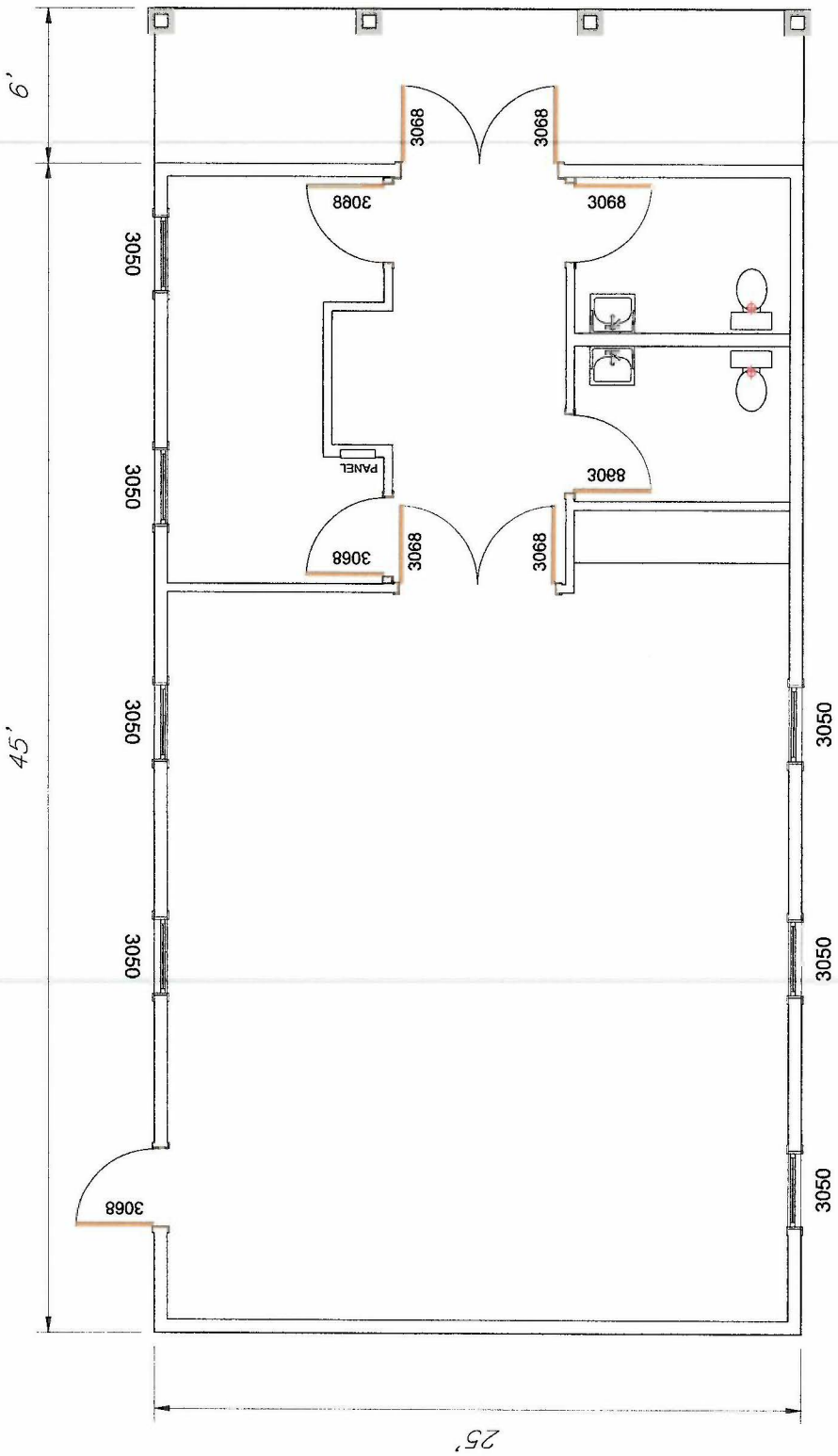
GEHRING DAYCARE
4341 WINDFALL ROAD, JUNEAU, AK
GENERAL LAYOUT

No.	Description	Date

SHEET TITLE:
GENERAL LAYOUT

DATE: 11/21/2014
SCALE:
DRAWN: LG
CHECKED: LG

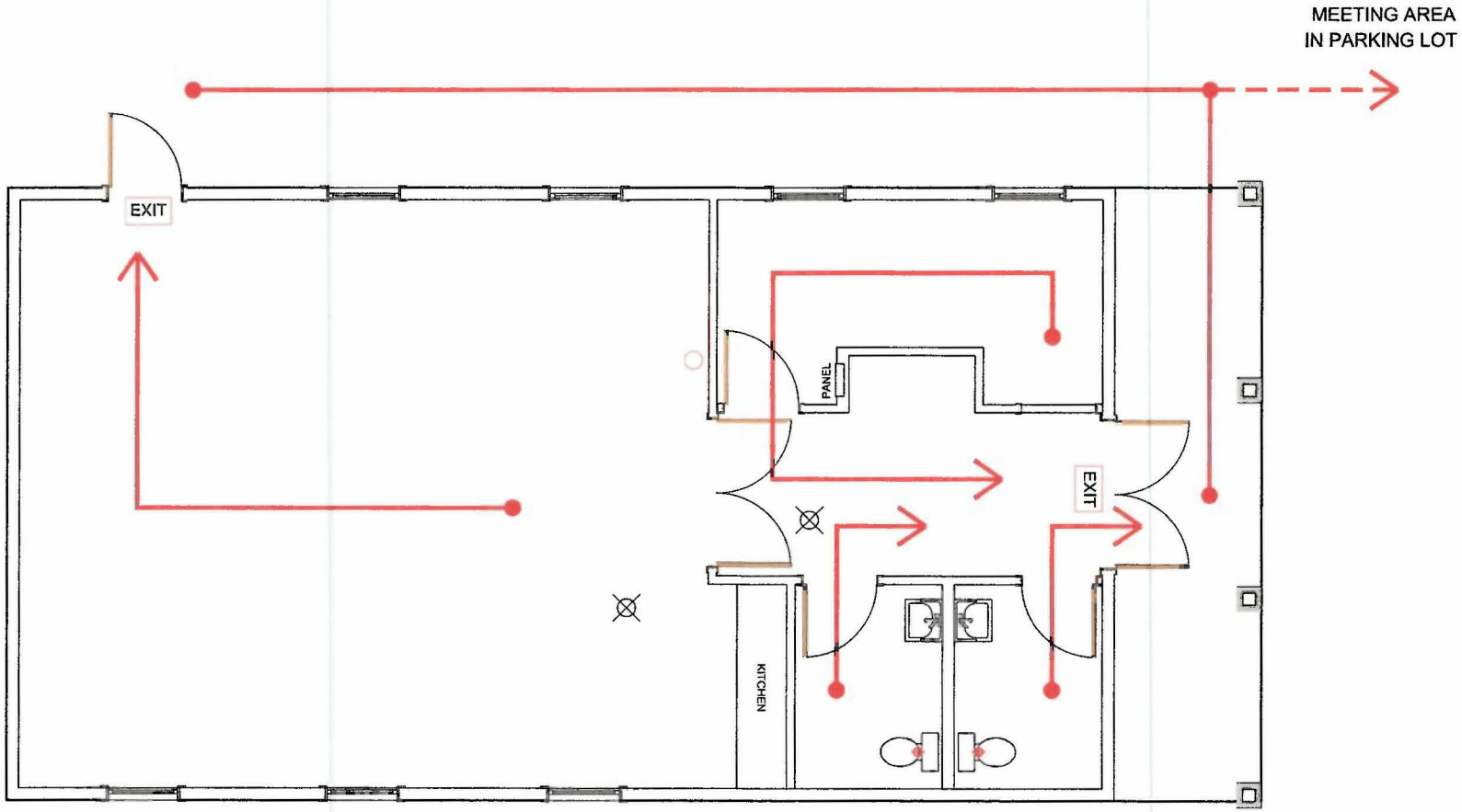
SHEET NO. 1 OF 1



EXISTING FLOOR PLAN
1125 SQ. FT.
GRAPHIC SCALE

ATTACHMENT B

EMERGENCY EVACUATION PLAN



LEGEND

Evacuation Route: →

Emergency Exit Sign: EXIT

Fire Extinguisher: ○

Smoke Alarm: ⊗

FLOOR PLAN

1125 SQ. FT.

GRAPHIC SCALE

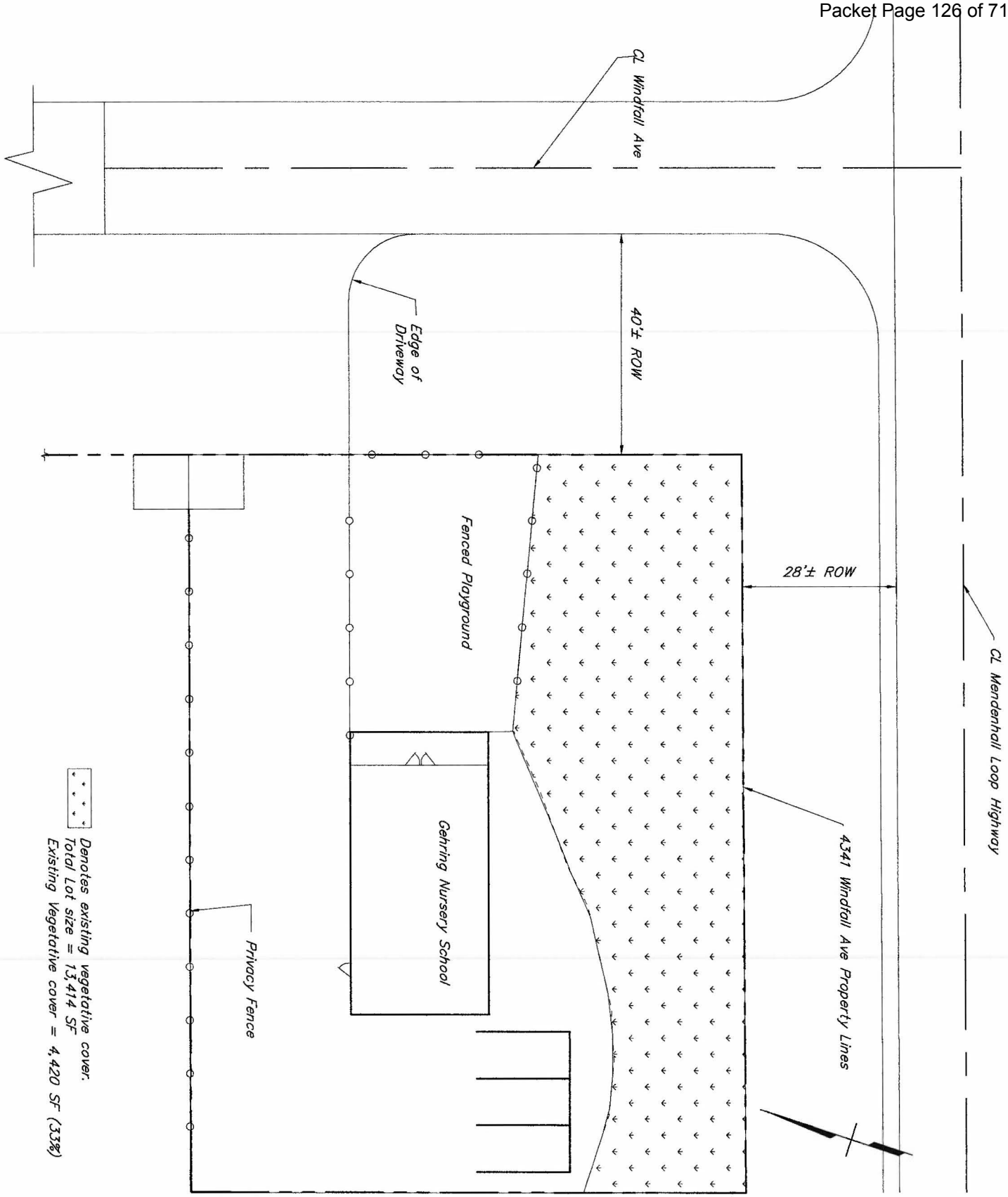
0' 4' 8'

EVACUATION PROCEDURES:

1. In the event of an evacuation follow designated evacuation route.
2. Once outside, go to designated meeting area.

GEHRING DAYCARE 4341 WINDFALL ROAD, JUNEAU, AK

ATTACHMENT C



GEHRING NURSERY SCHOOL
4341 WINFALL ST
JUNEAU, AK 99801

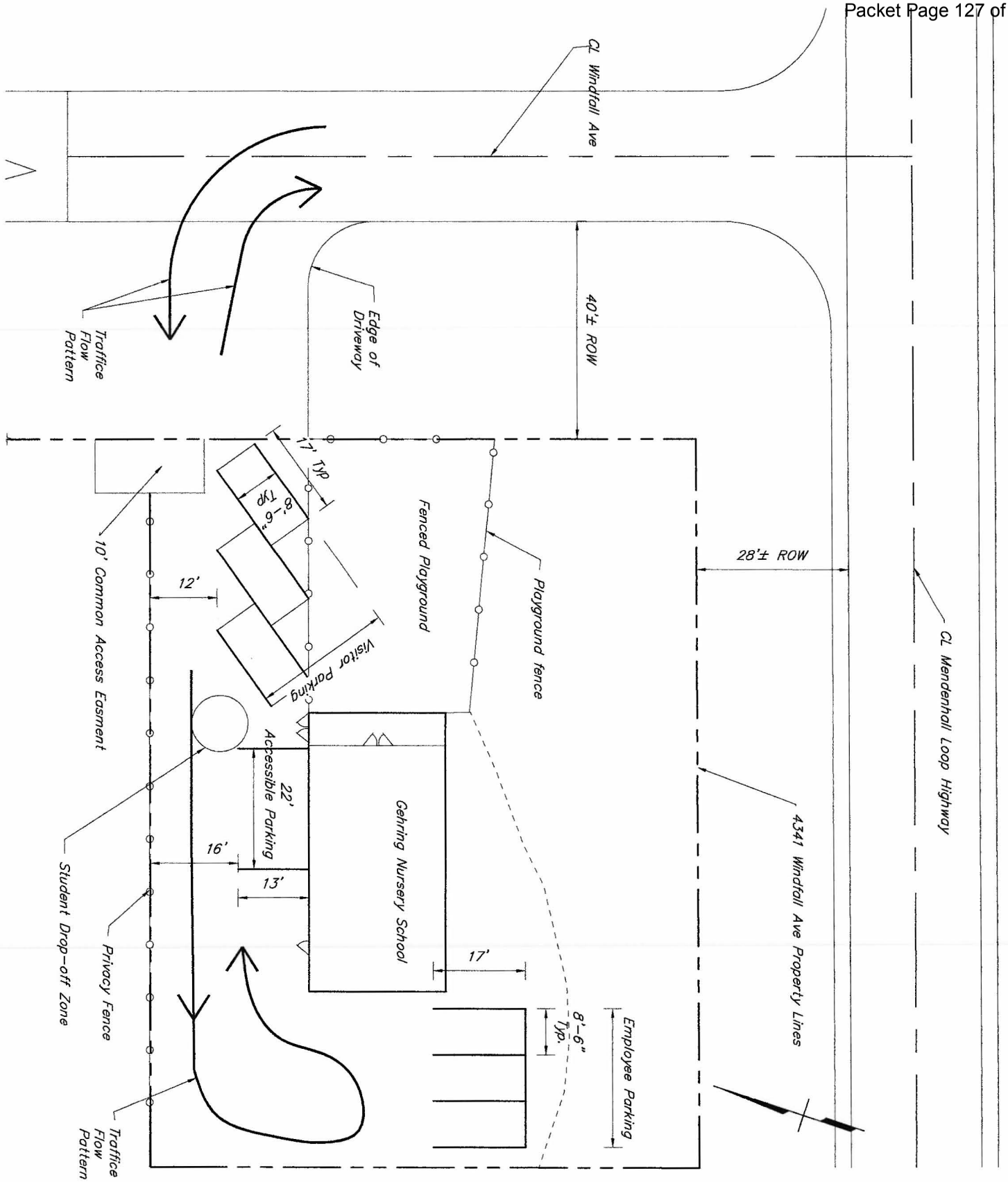
VEGETATIVE COVER PLAN

Israa Kako-Gehring

Date: 08/13/2015

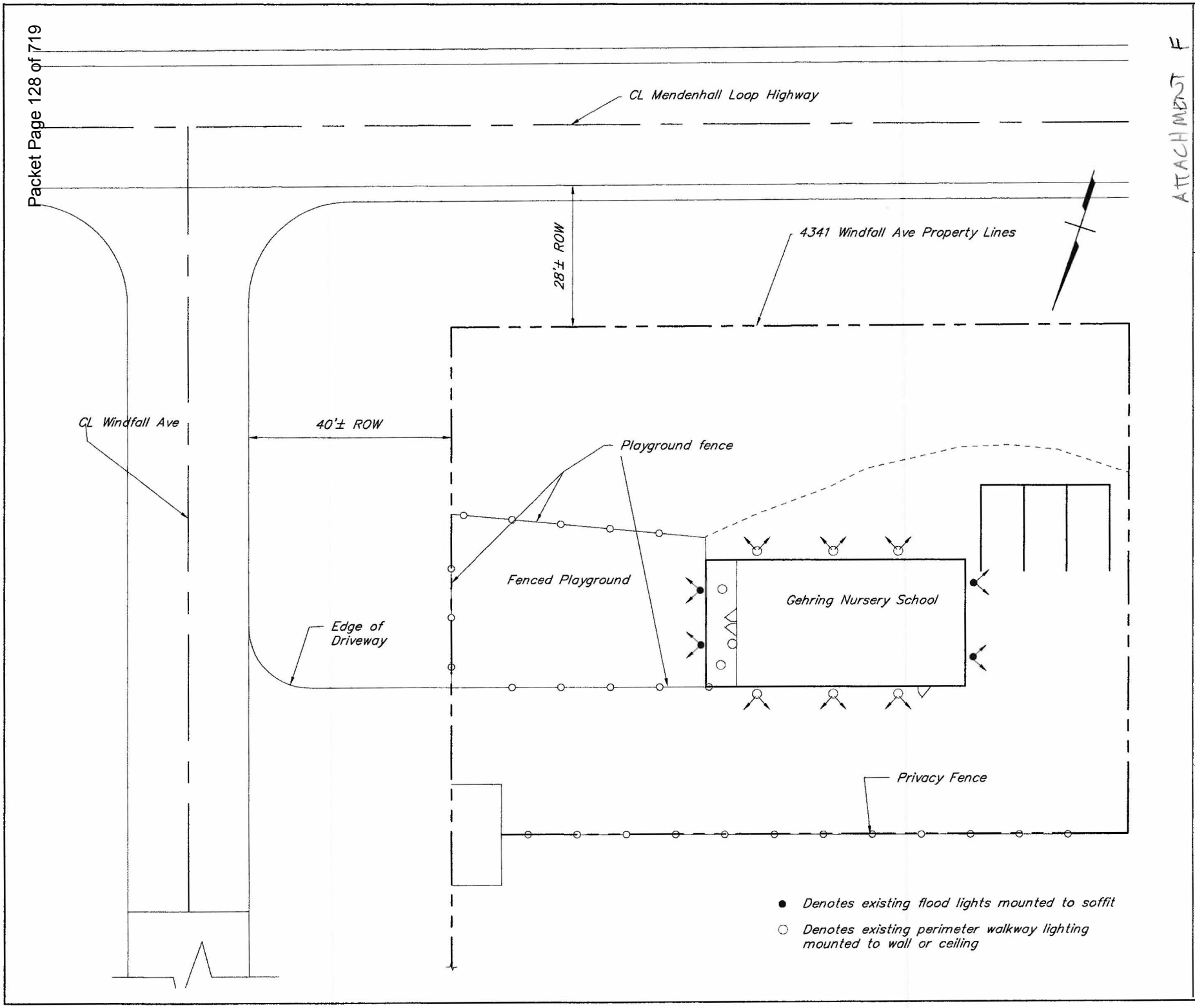
Revisions:

Sheet 1 of 1 ATTACHMENT D



ATTACHMENT E

GEHRING NURSERY SCHOOL 4341 WINFALL ST JUNEAU, AK 99801	**PARKING PLAN & TRAFFIC FLOW PLAN**	Israa Kako-Gehring Date: 08/13/2015 Revisions: Sheet 1 of 1



ATTACHMENT F

Israa Kako-Gehring

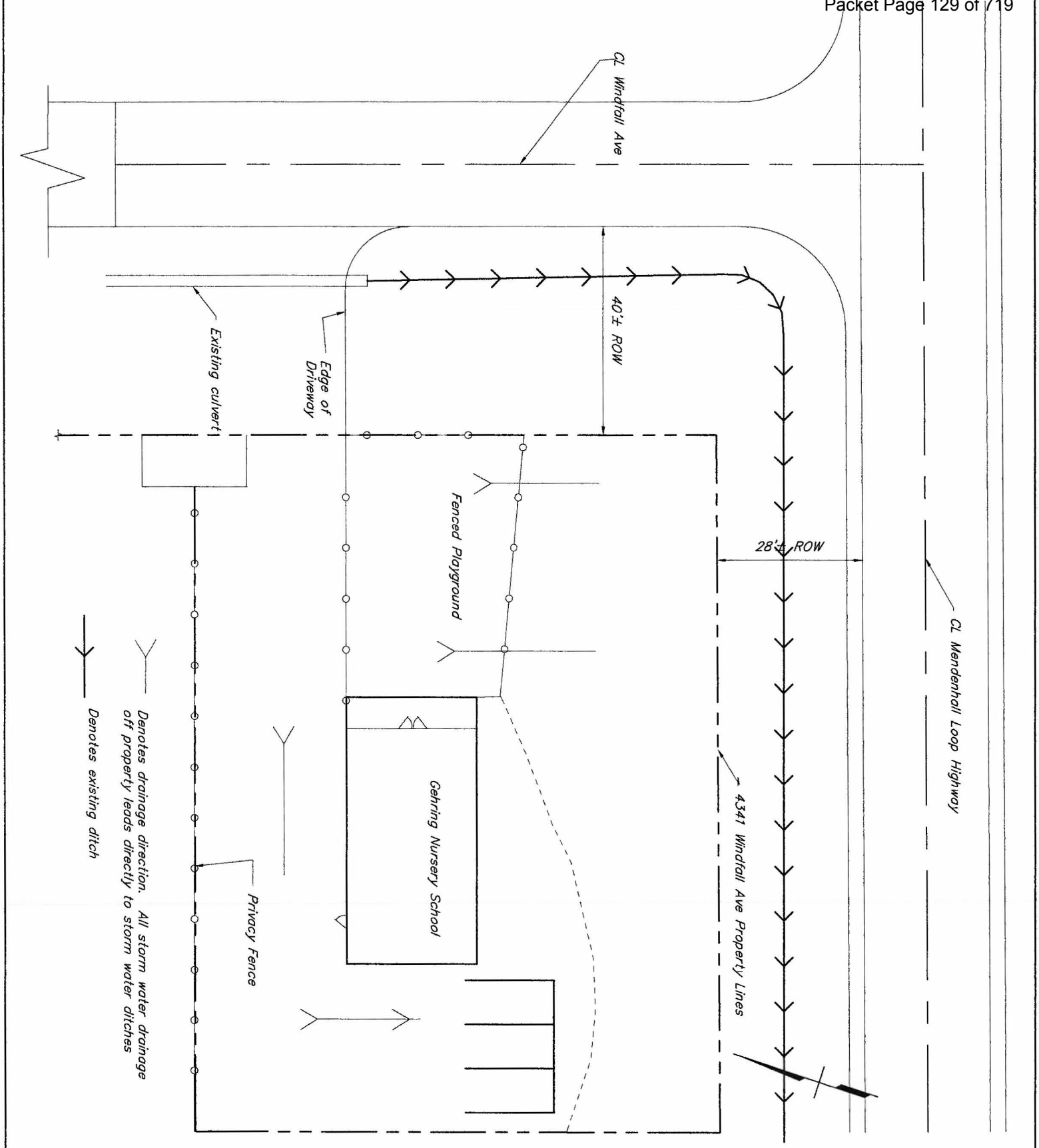
Date: 08/13/2015

Revisions:

Sheet 1 of 1

EXTERIOR LIGHTING AND FENCING PLAN

GEHRING NURSERY SCHOOL
4341 WINFALL ST
JUNEAU, AK 99801



ATTACHMENT G

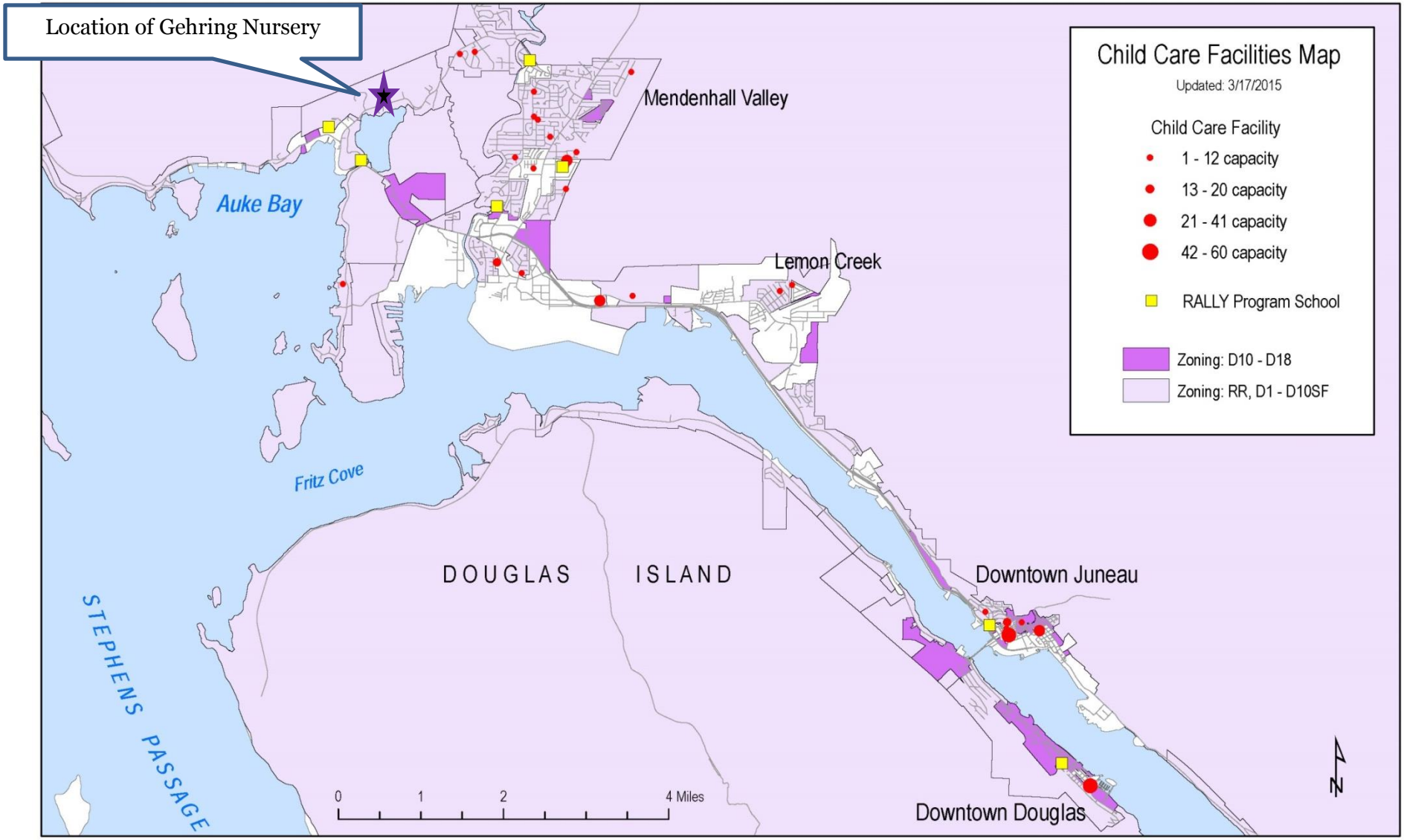
GEHRING NURSERY SCHOOL 4341 WINFALL ST JUNEAU, AK 99801	**DRAINAGE PLAN**	Israa Kako-Gehring
		Date: 08/13/2015
		Revisions:
		Sheet 1 of 1

Exterior photo of Gehring Nursery taken October 13, 2015.

Attachment E

Exterior photo taken from Mendenhall Loop Road on October 13, 2015.

Attachment E



Attachment F: Map showing location and capacity of Juneau Child Care Facilities (March 2015)

Jess Sarsfield

4345 Windfall Ave

Juneau, AK 99801

10/5/2015

Re: Gehring Nursery School

To Whom It May Concern,

I am immediate neighbors of Gehring Nursery School, sharing a fence and part of a driveway and our house being approximately 20 feet away from their Nursery.

There have been no issues regarding parking or noise or anything else I can reasonably think of.

We are happy to have them in the neighborhood and wish them all success in their Nursery School.

Sincerely,

Jess Sarsfield

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF DECISION
Date: October 27, 2015
File No.: USE2015 0008

Loren and Israa Gehring
4341 Windfall Street
Juneau, Alaska 99801

Application For:	Conditional Use Permit for a Child Care Center in a D3 zoning district in conjunction with a previously permitted church
Legal Description:	RAYMOND 2 Lot 1
Property Address:	4341 Windfall Street
Parcel Code No.:	4-B27-0-103-004-3
Hearing Date:	October 27, 2015

The Planning Commission, at its regular public meeting, adopted the analysis and findings listed in the attached memorandum dated October 15, 2015, and approved the development of a child care center and the change of use from "Church" to "Church/Child Care Center" to be conducted as described in the project description and project drawings submitted with the application and with the following conditions:

1. No more than 21 children at any one time are allowed to use the child care center on on the subject lot.
2. No visitor or employee parking shall occur within the Windfall Avenue right-of-way.
3. On-site lighting shall not glare onto any public right-of-way or neighboring property.

Attachments: October 15, 2015, memorandum from Allison Eddins, Community Development, to the CBJ Planning Commission regarding USE2015 0008.

This Notice of Decision does not authorize construction activity. Prior to starting any project, it is the applicant's responsibility to obtain the required building permits.

This Notice of Decision constitutes a final decision of the CBJ Planning Commission. Appeals must be brought to the CBJ Assembly in accordance with CBJ §01.50.030. Appeals must be filed by 4:30 P.M. on the day twenty days from the date the decision is filed with the City Clerk, pursuant to CBJ §01.50.030 (c). Any action by the applicant in reliance on the decision of the Planning Commission shall be at the risk that the decision may be reversed on appeal (CBJ §49.20.120).

Effective Date: The permit is effective upon approval by the Commission, October 27, 2015.

Expiration Date: The permit will expire 18 months after the effective date, or April 27, 2017, if no Building Permit has been issued and substantial construction progress has not been made in accordance with the plans for which the development permit was

authorized. Application for permit extension must be submitted thirty days prior to the expiration date.

Project Planner: A Eddins

Allison Eddins, Planner
Community Development Department

Dennis Watson, Vice Chair
Planning Commission

Filed With City Clerk

10/28/15
Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ-adopted regulations. Owners and designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: October 14, 2015

TO: Planning Commission

FROM: Allison Eddins, Planner
Community Development Department

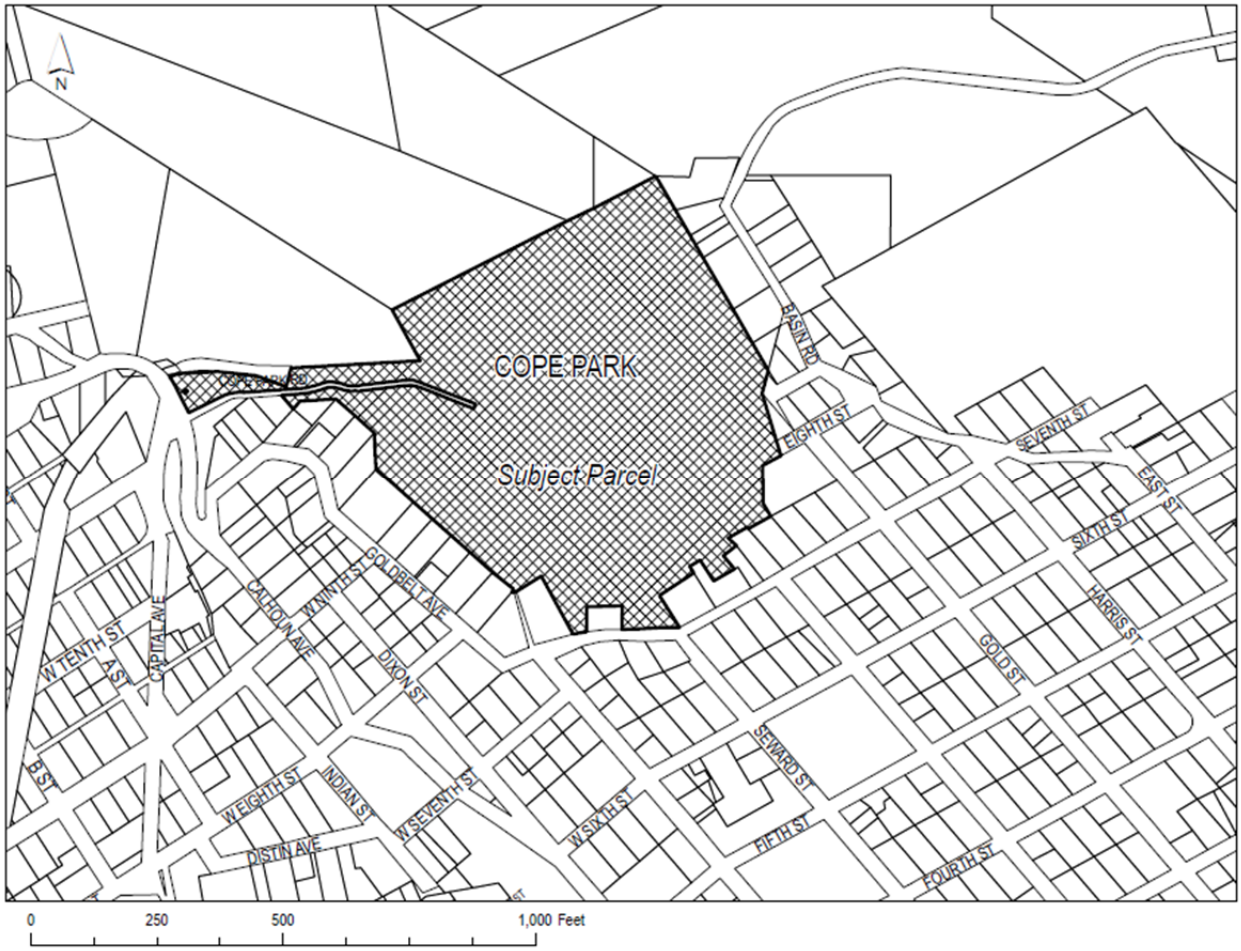
FILE NO.: CSP2015 0014

PROPOSAL: Cope Park Improvements Phase II

GENERAL INFORMATION

Applicant:	City and Borough of Juneau
Property Owner:	City and Borough of Juneau
Property Address:	1001 Calhoun Ave
Legal Description:	USMS 761, 926 and USS 2348 [Cope Park]
Parcel Code No.:	1-C04-0-CR1-007-0
Site Size:	9.51 acres
Comprehensive Plan Future Land Use Designation:	CBJ Recreational Service Park (RS)
Zoning:	D10; Multi-family
Utilities:	City water and sewer
Access:	Calhoun Avenue
Existing Land Use:	CBJ Park Land
Surrounding Land Use:	North - Rural Reserve; Vacant Land South - D18; Multi Family East - D18; Multi Family West - D10; Multi Family

VICINITY MAP



ATTACHMENTS

Attachment A: Development Permit Application and CSP Application
Attachment B: Project Narrative
Attachment C: Cope Park Master Plan
Attachment D: Phase II Improvements

PROPOSAL

The City is proposing to begin implementation of Phase II of the Cope Park Master Plan Improvement Project. The improvements will include replacing the main water and sewer lines that run under the main entrance road, repaving the main entrance road, relocating and reconfiguring the parking lot, relocating the tennis courts, and relocating and improving the existing playground.

BACKGROUND

The City and Borough of Juneau Parks and Recreation Department began work on implementing the Cope Park Master Plan in 2003. Phase I included improved drainage around the baseball field, installation of a fence around the ball field and the relocation and reconstruction of the restroom facilities.

The latest update of the Cope Park Master Plan was started in 2011. Part of this work included a survey in which Parks and Rec received over 300 responses. Most of the respondents listed safety, improved tennis courts, better lighting, dog amenities and swings as most important for Cope Park. The Parks and Recreation Advisory Committee approved the updates in July 2013. (See Attachment C)

ANALYSIS

Phase II of the Cope Park Master Plan implementation proposes significant changes to the park's design and amenities. The largest portion of the Phase II improvements will be the replacement of the main water and sewer lines. The utilities run under the main entrance driveway and through the existing parking lot. Phase II also calls for the existing parking lot to be relocated and reconfigured. The new location and design would place the parking area further into the park and provide a turn-around that would help improve traffic circulation within the park. (See Attachment C) The relocation of the parking lot frees up a portion of land that runs along Gold Creek. This would allow for the installation of a fire pit and picnic tables. In the future, a picnic shelter is also planned for this area.

Another important aspect of Phase II implementation is the relocation of the tennis courts further into the park. The proposed relocation will require the demolition of the existing playground equipment. Relocating the tennis courts will open up space for the parking lot relocation and will help to improve safety with increased lines of sight into the park.

Other features of the Phase II Improvement Plan include installing light fixtures in the parking lot, replacing the light fixtures at the restroom facilities, creating bocce courts near the baseball field/dog park, and adding swings and new playground equipment behind the ball field/dog park. Power will be extended to the new tennis court location for the future installation of light fixtures around the courts.

As with any city project, the timing of the Phase II improvements will depend heavily on finances. There will be a base bid and two alternate bids. The base bid will include the replacement of the water and sewer lines, repaving the entrance road, patching the parking lot, replacing and relocating the tennis courts, adding swings and new playground equipment and adding new light fixtures in the center of the park. Alternate bid 1 will include all of the features of the base bid as well as the proposed parking lot

relocation and reconfiguration with curb and gutter, the picnic features along Gold Creek, and the addition of light fixtures to the new parking lot. Alternate bid 2 will include all of the features of the base bid but instead of just patching the existing parking lot this alternative will repave the parking lot and add new light fixtures to the south side of the lot. (See Attachment B)

The total construction cost is estimated to be $1.3 million which will come from the 1% sales tax. CBJ has already set aside $550,000 for the utility work in the FY2016 Capital Improvements Projects. The project is scheduled to begin in the summer of 2016.

CONFORMITY WITH ADOPTED PLANS

This project was reviewed for conformance with the 2013 Comprehensive Plan and the Parks and Recreation Comprehensive Plan.

2013 Comprehensive Plan

POLICY 9.1 TO PROVIDE QUALITY DISPERSED OUTDOOR RECREATIONAL OPPORTUNITIES AND TO ACQUIRE AND DEVELOP SUFFICIENT LOCAL PARKS AND RECREATIONAL FACILITIES IN LOCATIONS CONVENIENT TO ALL AREAS OF THE CBJ. PLACES GIVEN PRIORITY FOR NEW FACILITIES INCLUDE RAPIDLY DEVELOPING AREAS AND CURRENTLY DEVELOPED AREAS THAT LACK ADEQUATE PARKS AND RECREATIONAL FACILITIES.

9.1 – IA17 Plan park renovation projects to address changing recreational needs.

2007 Parks and Recreation Comprehensive Plan Update

Chapter 8 of the Parks and Recreation Comprehensive Plan laid out specific recommendations for Subarea 6: Downtown Juneau, Thane, and Last Chance Basin.

1. Implement the Cope Park Master Plan
2. Construct new restrooms and play areas in Cope Park that are consistent with the Master Plan approved in 2004.

The Parks and Recreation Comprehensive Plan was updated in 2007 and the Cope Park Master Plan was updated in 2013. The updated version can be found in Attachment C.

2013 Updated Cope Park Master Plan

In 2011, the CBJ Parks and Recreation Department conducted a survey asking residents near Cope Park what improvements they would like to see. Over 300 residents participated and the top five suggestions were: improve sight lines throughout the park, improve the existing tennis courts, install more efficient lighting throughout the park, create a fenced in area for dogs, and install more swings. When the Cope Park Master Plan was updated in 2013 all of the

suggestions were incorporated and are beginning to be implemented. This project will improve the sight lines into the park and will improve the park's tennis court facilities.

HABITAT

According to the Alaska Department of Fish and Game, the nearest anadromous stream is 0.4 miles from the Cope Park entrance at the mouth of Gold Creek, where the creek meets Gastineau Channel. This exceeds the Title 49 requirement of a 50 foot setback. The nearest active eagle's nest is 0.3 miles away from the boundaries of Cope Park. This exceeds the Title 49 requirement of a 330 foot setback.

FINDINGS

Staff finds the proposed Cope Park Phase II improvements to be consistent with adopted plans.

RECOMMENDATION

Staff recommends that the Planning Commission adopt the findings in this staff report and recommend to the Assembly that CSP2015 0014 is consistent with adopted local plans and policies, as required by CBJ 49.15.540.

DEVELOPMENT PERMIT APPLICATION

Project Number	CITY and BOROUGH of JUNEAU	Date Received: 09/02/15
Project Name (City Staff to Assign Name)		

PROJECT / APPLICANT INFORMATION

Project Description
Cope Park Improvements Ph II continues to reconstruct Cope Park to follow the Cope Park Master Plan approved in 2013. This phase of work includes building new tennis courts (relocated), new playground elements (swings and a spinner/climber), bocce court, new parking lot layout, new lighting, replacing the main water line and sewer line from Calhoun through the park, and re paving the entrance road.

PROPERTY LOCATION

Street Address	City/Zip
1001 Calhoun Ave	Juneau, AK 99801

Legal Description(s) of Parcel(s) (Subdivision, Survey, Block, Tract, Lot): USMS 761, 926 & USS 2348 [COPE PARK

Assessor's Parcel Number(s): 1C040CR10070

LANDOWNER/ LESSEE

Property Owner's Name	Contact Person:	Work Phone:
CBJ	Skye Stekoll	586-0887
Mailing Address	**Home Phone:**	**Fax Number:**
155 S. Seward St Juneau, AK 99801		
E-mail Address	**Other Contact Phone Number(s):**	
Skye.Stekoll@juneau.org		

LANDOWNER/ LESSEE CONSENT ****Required for Planning Permits, not needed on Building/ Engineering Permits****

I am (we are) the owner(s)or lessee(s) of the property subject to this application and I (we) consent as follows:

A. This application for a land use or activity review for development on my (our) property is made with my complete understanding and permission.
B. I (we) grant permission for officials and employees of the City and Borough of Juneau to inspect my property as needed for purposes of this application.

X _____ Landowner/Lessee Signature — Date: 8/27/15

X _____ Landowner/Lessee Signature — Date: _____

NOTICE: The City and Borough of Juneau staff may need access to the subject property during regular business hours and will attempt to contact the landowner in addition to the formal consent given above. Further, members of the Planning Commission may visit the property before the scheduled public hearing date.

APPLICANT If the same as OWNER, write "SAME" and sign and date at X below

Applicant's Name	Contact Person:	Work Phone:
SAME		
Mailing Address	**Home Phone:**	**Fax Number:**
E-mail Address	**Other Contact Phone Number(s):**	

X _____ Applicant's Signature — Date of Application: 8/27/15

----------OFFICE USE ONLY BELOW THIS LINE----------

STAFF APPROVALS

✓	Permit Type	***SIGN	Date Received	Application Number(s)
	Building/Grading Permit			
✓	City/State Project Review and City Land Action		09/02/15	CSP20150014
	Inquiry Case (Fee In Lieu, Letter of ZC, Use Not Listed)			
	Mining Case (Small, Large, Rural, Extraction, Exploration)			
	Sign Approval (If more than one, fill in all applicable permit #'s)			
	Subdivision (Minor, Major, PUD, St. Vacation, St. Name Change)			
	Use Approval (Allowable, Conditional, Cottage Housing, Mobile Home Parks, Accessory Apartment)			
	Variance Case (De Minimis and all other Variance case types)			
	Wetlands Permits			
	Zone Change Application			
	Other (Describe)			

***Public Notice Sign Form filled out and in the file.

Comments:

Permit Intake Initials: JKL

NOTE: DEVELOPMENT PERMIT APPLICATION FORMS MUST ACCOMPANY ALL OTHER COMMUNITY DEVELOPMENT DEPARTMENT APPLICATIONS

CITY/STATE PROJECT AND LAND ACTION REVIEW APPLICATION

Project Number	Project Name (15 characters)	Case Number	Date Received
		CSP 20150014	09/02/15

TO BE COMPLETED BY THE APPLICANT

TYPE OF PROJECT REVIEW:

☑ City Project Review ☐ City Land Acquisition /Disposal ☐ State Project Review

DESCRIPTION OF PROJECT

Cope Park Improvements Ph II continues to reconstruct Cope Park to follow the Cope Park Master Plan approved in 2013. This phase of work includes building new tennis courts (relocated), new playground elements (swings and a spinner/climber), bocce court, new parking lot layout, new lighting, replacing the main water line and sewer line from Calhoun through the park, and re-paving the entrance road.

Please attach a cover letter to fully explain the project if there is not adequate space on this form.

CURRENT USE OF LAND OR BUILDING(S):

Park Area: Playground, retrooms, parking, tennis courts, site amenities, ballfield

PROPOSED USE OF LAND OR BUILDING(S):

Playground features (swings, climber), restrooms, parking, tennis courts, site amenities (benches, tables, bench swings), ballfield, lighting, and bocce.

PROJECT NUMBERS ASSOCIATED WITH PROPOSAL:

Is this project associated with any other Land Use Permits? ☑ No ☐ Yes Case No.: _____

Capital Improvement Program # (CIP) P41-059

Local Improvement District # (LID) _____

State Project # _____

ESTIMATED PROJECT COST: $ 1,111,665 base bid

For more information regarding the permitting process and the submittals required for a complete application, please see the reverse side.

If you need any assistance filling out this form, please contact the Permit Center at 586-0770.

CITY/STATE PROJECT FEES

	Fees	Check No.	Receipt	Date
Application Fees	$ Ø			
Total Fee	$ Ø			

NOTE: MUST BE ACCOMPANIED BY* DEVELOPMENT PERMIT APPLICATION *FORM

&

EVEN IF THE PROPOSED PROJECT IS ASSOCIATE WITH OTHER LAND USE PERMITS, THIS APPLICATION MUST BE FILLED OUT

Cope Park Phase II Improvements:

The Cope Park Phase II Improvements project takes the next step towards the Cope Park Master Plan.

Background:

The last edition of the Cope Park Master Plan was completed in 2003, as an effort to locate new restrooms. The goal was to locate them in a way that didn't require the restrooms to be relocated when future work was done.

The recent Cope Park Master Plan was started in 2011. A survey was put out by Parks & Rec and they received over 300 responses. The main issues with the park were:

- Safety: Site lines need to be improved throughout
- Improved Tennis Courts: The courts are cracking again and need to be replaced. CBJ had resurfaced them a few times in the past but they need to be taken out to the foundation
- Better Lighting: Too many dark spaces and current lighting on the restrooms has too much glare.
- Dog Amenities: This park is heavily used by dog owners. A fenced in area for dogs to be off leash was a goal for both dog and non dog owners.
- Swings: Most desired play component of the park

The Cope Park Master Plan went through PRAC, JPD, CDD, public meetings, and was approved in July 2013. Phase I of the project improved drainage in the ballfield and park area, added a fence to the ballfied, and demolished the old restroom and shelter.

Phase II:

Phase II of Cope Park takes on the next phase of the master plan, as funding allows. A big portion of this project is the main water line and sewer line replacement. The water main runs from the park entrance, along the drive, through the existing parking lot and into the center of the park. The work will require the entrance drive to be repaved. Funding from the Water and Wastewater has been added to the project to cover the costs.

Another important aspect of the project is to relocate the tennis courts. They will be moved up where the old pool foundations are, which will require the demolition of the existing playground structure. The tennis courts will have a black chainlink fence surrounding it. Relocating the tennis courts will allow the parking lot to push further into the park, improving sitelines into the park both for pedestrians and from vehicles.

By reconfiguring the parking, we create a much more efficient layout and turnaround area (large enough to accommodate trolley use). The new parking lot layout also allows for the park area along the creek to

turn into park amenities. The area includes a fire pit and picnic areas. Eventually, in future phases, a picnic shelter is planned for this area.

The center of the park has been re-configured from the master plan to accommodate the chosen play equipment. A 3 bay swingset and a spinning climber were selected for the park. A small bocce area will also be installed.

Lighting will be added to the parking lot through the center of the park. Power will be brought to the tennis courts in the event there is a desire/ funding to add lighting in that area of the park as well. The light fixtures are the same as the pedestrian path lights on the UAS campus (to give a sense of style). The light fixtures on the restroom building will be replaced with more appropriate fixtures.

There is a base bid and two alternates, so how far we get in this phase depends on the bid prices.

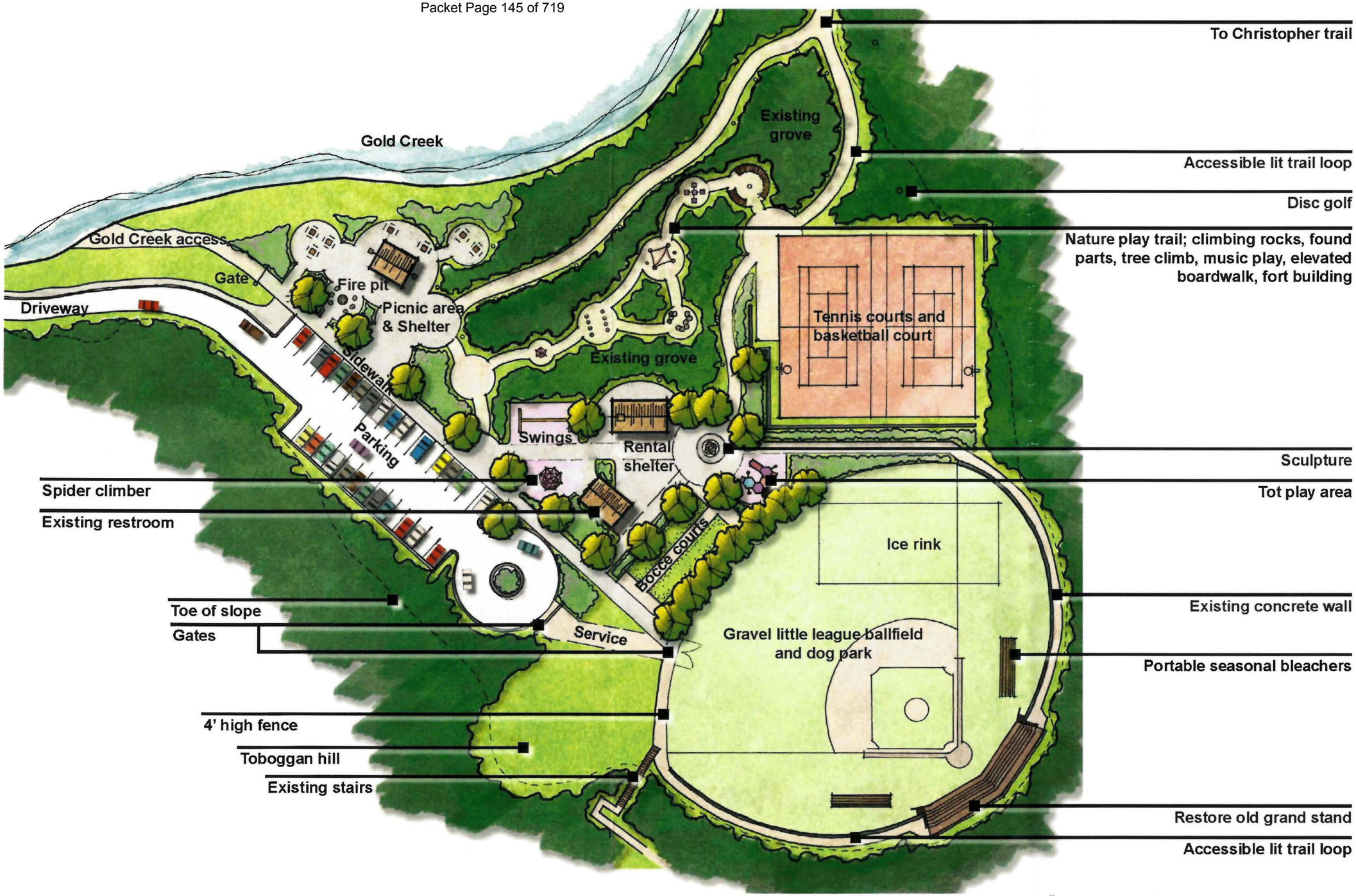
Base Bid: The base bid includes utility work, paving the entrance road, patching the parking lot, removing existing tennis court fencing and surfacing (part of the surfacing may be kept if it can be cut cleanly), relocate new tennis courts, add swings and new play equipment, and lighting in the center of the park.

Add Alt 1: Add Alt 1 adds the new parking lot configuration, conc curb and gutter around it, the picnic area by the creek (demolish the existing parking lot and replace with gravel surfacing), and add lighting along the parking lot.

Add Alt 2: Add Alt 2 paves the new parking lot with asphalt and adds lighting along the S side of the parking lot.

The construction estimate for the project is approximately $1.3 million. Funding comes from Temporary 1% Sales Tax and Sales Tax.

Attachment C



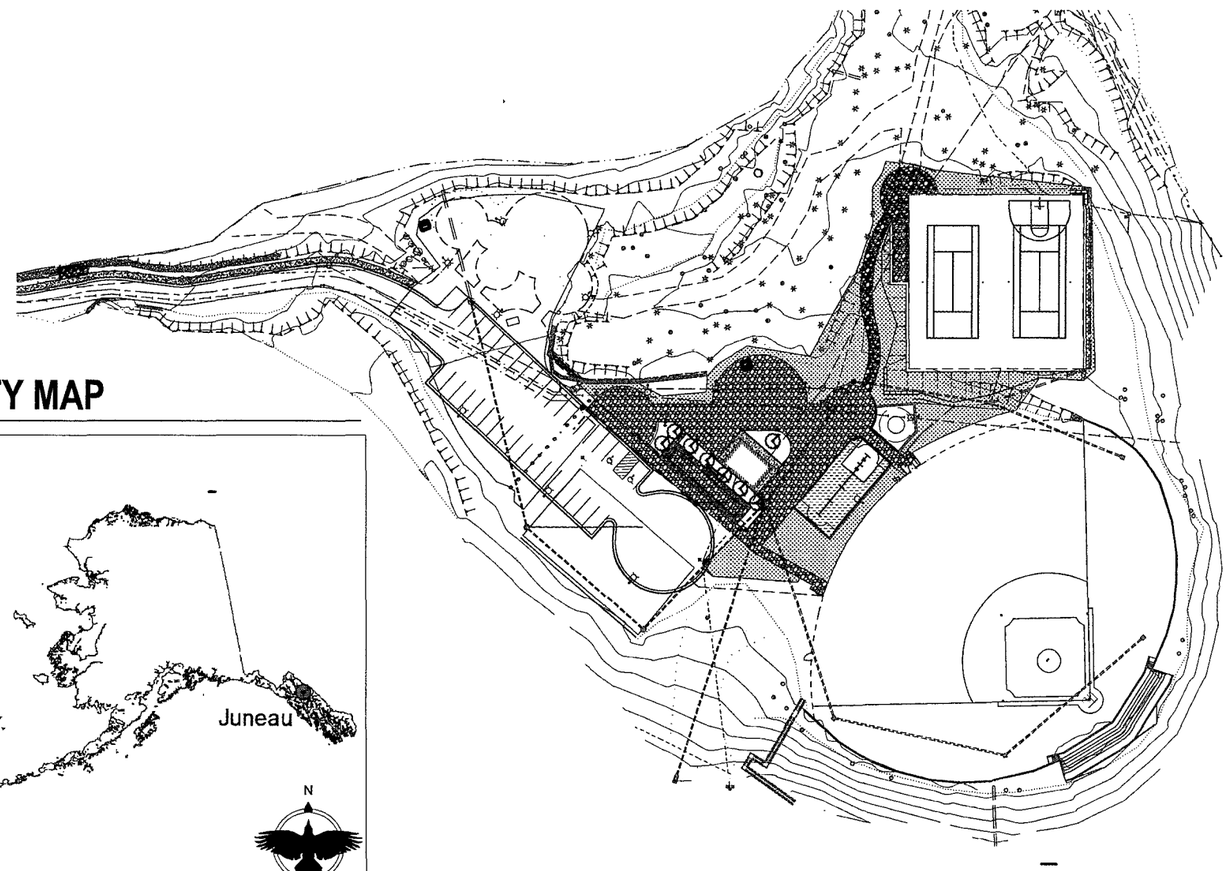
Cope Park Master Plan

September 2013

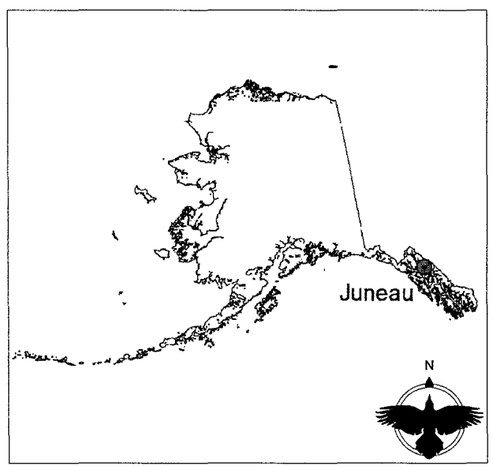
Cope Park Phase 2 Improvements

City and Borough of Juneau

100% SUBMITTAL
August 17, 2015



VICINITY MAP



PROJECT TEAM

OWNER

City and Borough of Juneau
Skye Stekoll
155 South Seward Street
Juneau, Alaska 99801
p: (907) 586-5226
Skye.Stekoll@juneau.org

LANDSCAPE ARCHITECT

Corvus Design, Inc
Chris Mertl
119 Seward Street, Suite 15
Juneau, AK
p: (907) 988-9000
cmertl@corvus-design.com

CIVIL ENGINEER

R & M Juneau
Mark Pusich
6205 Glacier Hwy
Juneau, AK 99801
p: (907) 780-6060
mpusich@rmjuneau.com

ELECTRICAL ENGINEER

Begenyi Engineering, LLC.
Barry Begenyi
217 2nd Street, STE 208
Juneau, AK 99801
p: (907) 586-5900
barry@begenyiengineering.com

SHEET INDEX

GENERAL

G001	COVER SHEET, VICINITY MAP, AND SHEET INDEX
G002	ABBREVIATIONS, REFERENCES, AND GENERAL NOTES

CIVIL

C100	General Notes
C101	Sheet Key Map
C102	Survey Control Diagram
C200	Existing Conditions and Demolition Plan
C201	Existing Conditions and Demolition Plan
C201-A1	Existing Conditions and Demolition Plan
C202	Existing Conditions and Demolition Plan
C300	Plan View
C301	Plan View
C302	Plan View
C302-A1	Plan View
C302-A2	Plan View
C303	Plan View
C303-A1	Plan View
C303-A2	Plan View
C304	Plan View
C305	Plan View
C306	Plan View
C400	Construction Details
C401	Construction Details
C402	Construction Details
C403	Construction Details
C404	Construction Details
C405	Construction Details
C406	Construction Details
C407	Construction Details
C500	Typical Sections
C501	Typical Sections
C502	Typical Sections
C503A	Typical Sections
C504	Cross Sections
C505	Cross Sections
C600	Water Line Profile
C601	Water Line Profile
C602	Water Line Profile
C700	Paving Layout Plan
C701	Paving Layout Plan
C702	Paving Layout Plan
C702-A1	Paving Layout Plan
C702-A2	Paving Layout Plan
C703	Paving Layout Plan
C703-A1	Paving Layout Plan
C703-A2	Paving Layout Plan
C704	Tennis Court Plan View
C800	Temporary Water Plan
C801	Erosion & Sediment Control Plan
C802-A2	Parking Lot Signing and Striping Plan
C803	Signing and Striping Details

LANDSCAPE

L100	KEY PLAN
L101	SOILS AND LAYOUT - BASE BID
L102	SOILS AND LAYOUT - BASE BID
L103	SOILS AND LAYOUT - BASE BID
L104	PLANTING PLAN - BASE BID
L105	ADDITIVE ALTERNATE No. 1
L106	ADDITIVE ALTERNATE No. 1
L401	ENLARGEMENTS
L402	ENLARGEMENTS
L501	DETAILS
L502	DETAILS

ELECTRICAL

E001	LEGEND
E100	PARTIAL DEMOLITION PLAN
E101	PARTIAL DEMOLITION PLAN
E102	PARTIAL DEMOLITION PLAN
E200	PARTIAL ELECTRICAL PLAN
E200A	PARTIAL ALTERNATE ELECTRICAL PLAN
E201	PARTIAL ELECTRICAL PLAN
E201A	PARTIAL ALTERNATE ELECTRICAL PLAN
E301	DIAGRAMS AND DETAILS
E302	FOUNDATION DETAILS
E303	HANDHOLD DETAILS
E401	SCHEDULES

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Juneau - 907.988.9000
119 Seward St. 99801

CLIENT INFORMATION:

City and Borough of Juneau
Parks and Recreation
155 South Seward Street
Juneau, Alaska 99801

PROJECT LOCATION:

Cope Park Road
Juneau, Alaska 99801

ISSUED:

2015-08-17 - 100% SUBMIT

PROJECT NUMBER:

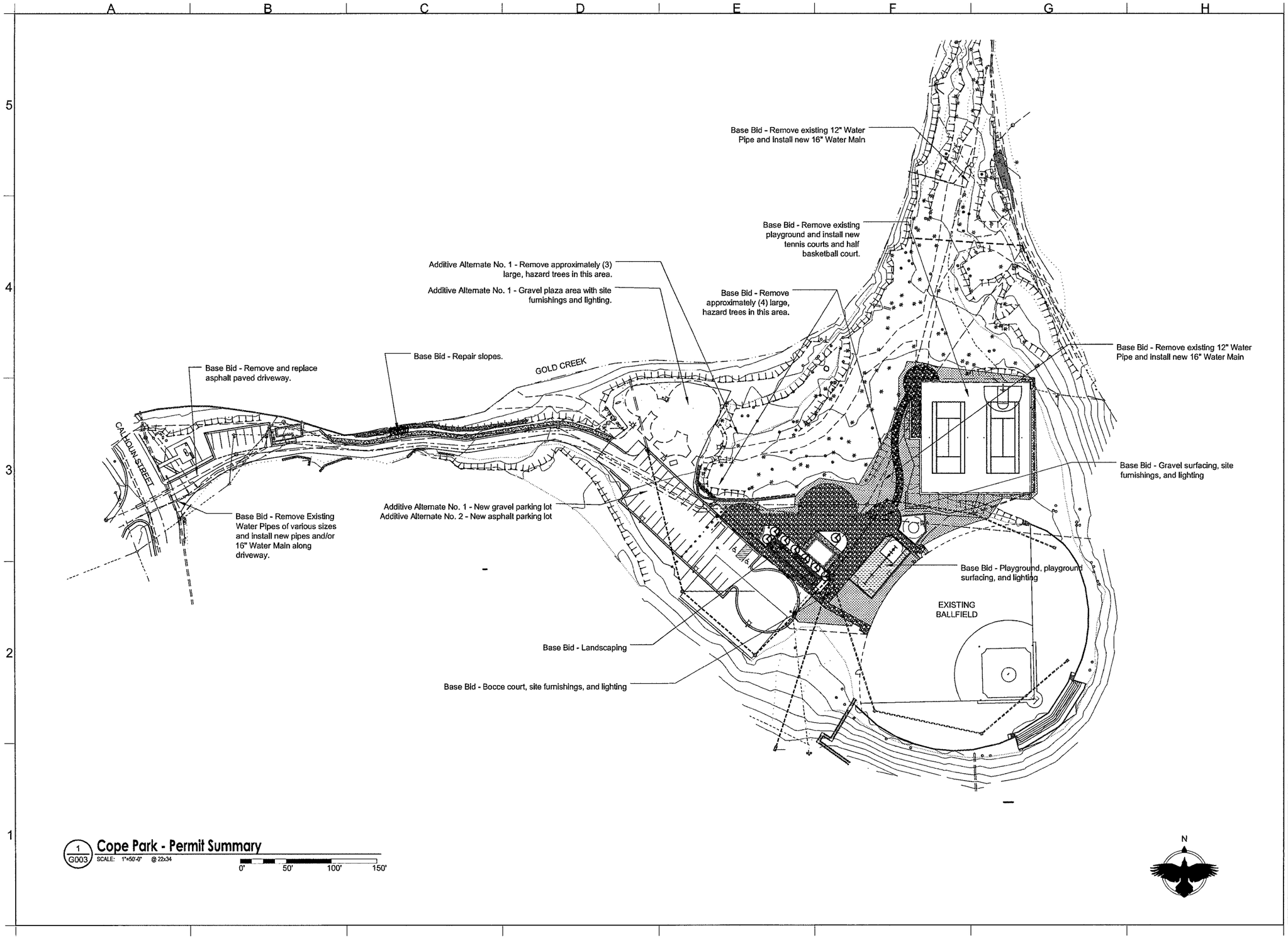
CBJ-13-02

CLIENT PROJECT NUMBER:

Bid No. E15-237

Cover

G001



1 G003 **Cope Park - Permit Summary**
SCALE: 1"=50'-0" @ 22x34
0' 50' 100' 150'

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SEAL:

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

1" ACTUAL
If the above dimension does not measure one inch (1") exactly, this drawing will have been enlarged or reduced, affecting all labeled scales.

DATE: August 17, 2015
JOB NUMBER: CBJ-13-02
DRAWN BY: NF
CHECKED BY: CM

Permit Summary
SHEET #:
G003

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PARKING STALL SUMMARY

10'x18' ACCESSIBLE STALLS = 2 EACH
WITH 9'x18' ACCESS AISLE

9'x18' PARKING STALLS = 33 EACH

STRIPING LEGEND

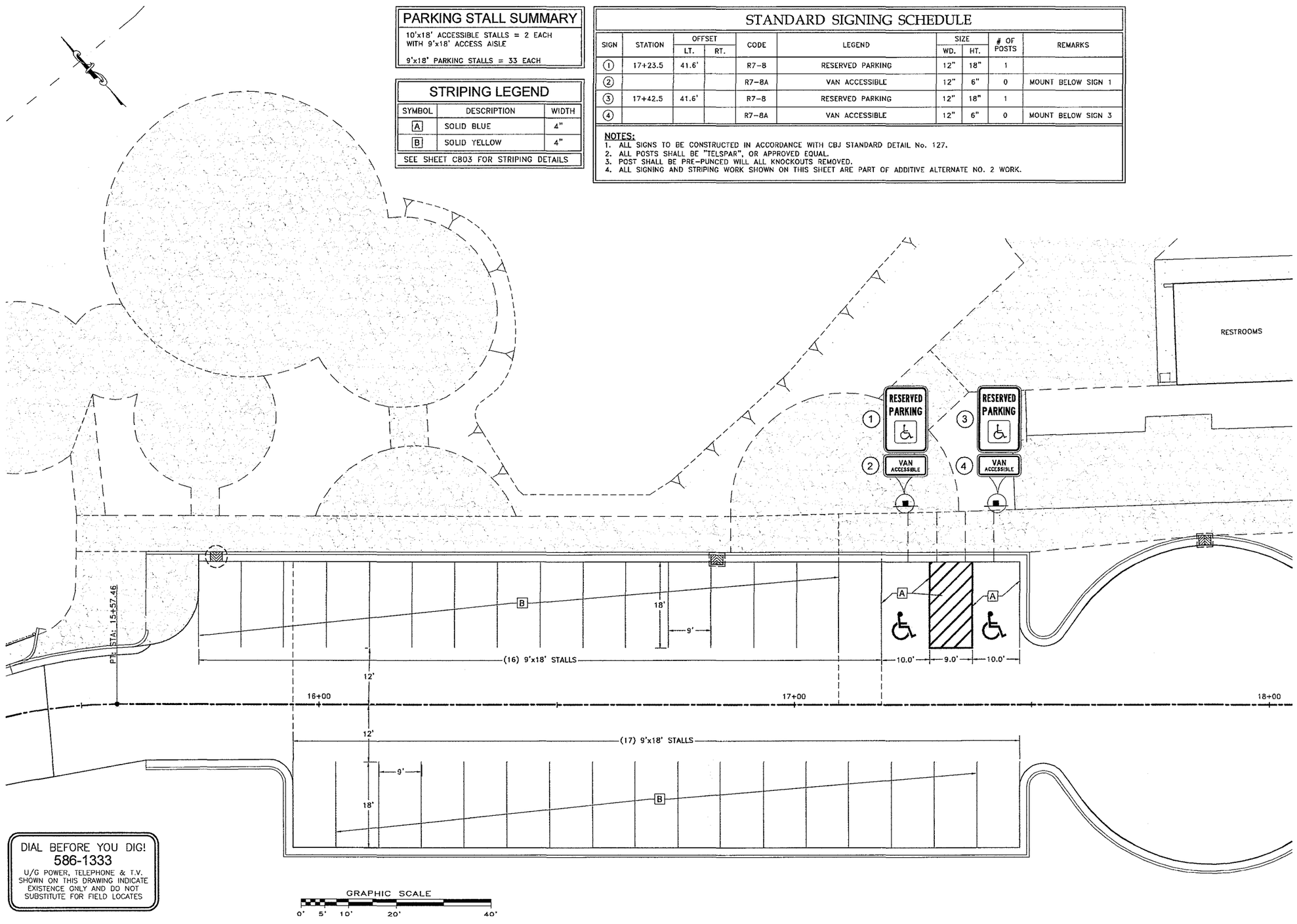
SYMBOL	DESCRIPTION	WIDTH
A	SOLID BLUE	4"
B	SOLID YELLOW	4"

SEE SHEET C803 FOR STRIPING DETAILS

STANDARD SIGNING SCHEDULE

SIGN	STATION	OFFSET LT.	OFFSET RT.	CODE	LEGEND	SIZE WD.	SIZE HT.	# OF POSTS	REMARKS
1	17+23.5	41.6'		R7-8	RESERVED PARKING	12"	18"	1	
2				R7-8A	VAN ACCESSIBLE	12"	6"	0	MOUNT BELOW SIGN 1
3	17+42.5	41.6'		R7-8	RESERVED PARKING	12"	18"	1	
4				R7-8A	VAN ACCESSIBLE	12"	6"	0	MOUNT BELOW SIGN 3

NOTES:
1. ALL SIGNS TO BE CONSTRUCTED IN ACCORDANCE WITH CBJ STANDARD DETAIL No. 127.
2. ALL POSTS SHALL BE "TELSPAR", OR APPROVED EQUAL.
3. POST SHALL BE PRE-PUNCED WILL ALL KNOCKOUTS REMOVED.
4. ALL SIGNING AND STRIPING WORK SHOWN ON THIS SHEET ARE PART OF ADDITIVE ALTERNATE NO. 2 WORK.



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SEAL:

STATE OF ALASKA 49TH
Joseph M. Pusich
CE 8152
REGISTERED PROFESSIONAL ENGINEER
8-17-2015

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

1" SCALE
If the above dimension does not measure one inch (1") exactly, the drawing will have been enlarged or reduced, affecting all labeled scales

DATE: August 17, 2015
JOB NUMBER: CBJ-13-02
DRAWN BY: NF
CHECKED BY: CM

PARKING LOT SIGNING AND STRIPING PLAN

ADD. ALT. NO. 2 SHEET #:

C802-A2

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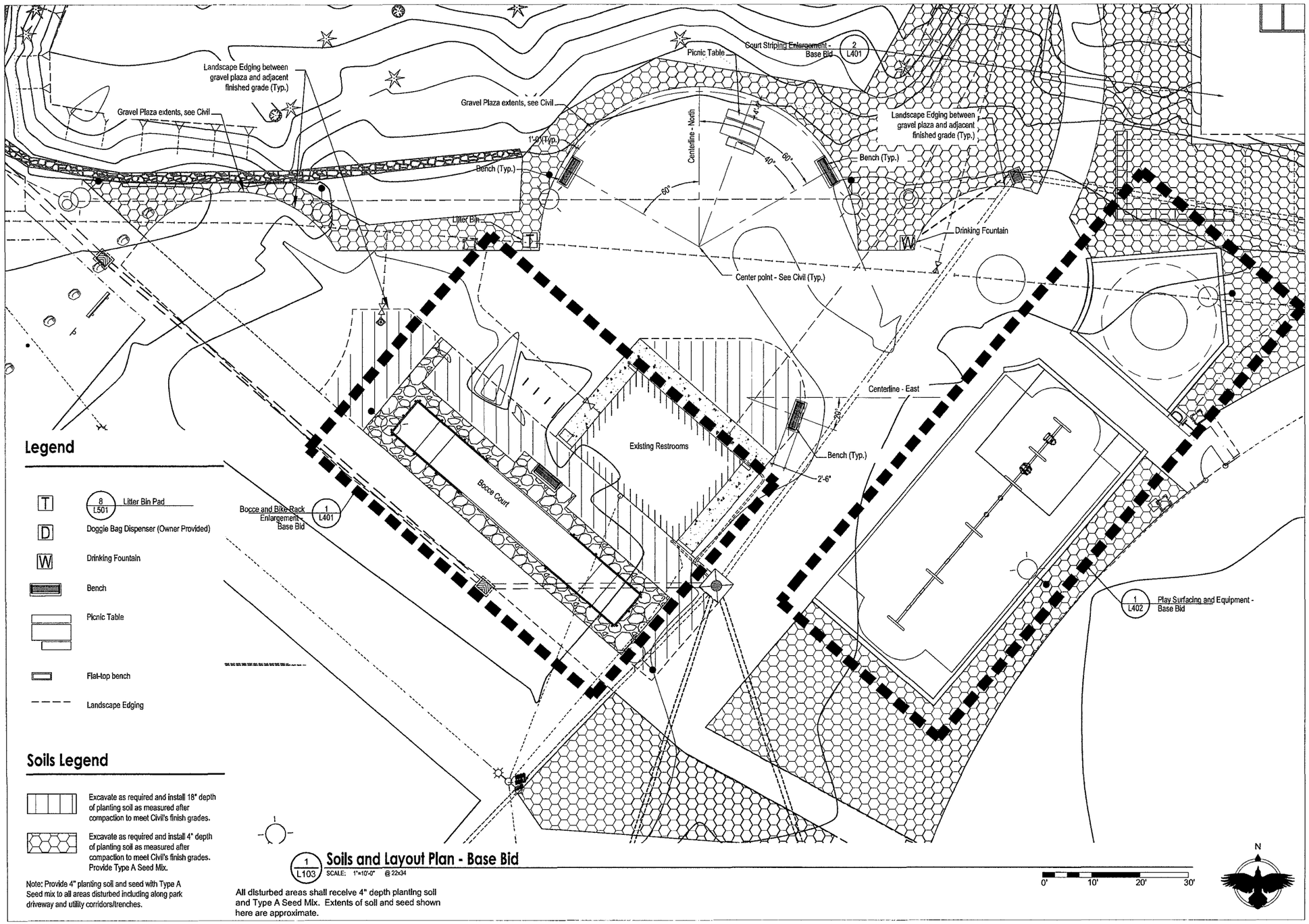

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SEAL:

STATE OF ALASKA 49TH Christopher R. Merli Aug 16, 2015 No.10440 REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

1" ACTUAL
If the above dimension does not measure one inch (1") exactly, this drawing will have been enlarged or reduced, affecting all labeled scales.

DATE: August 17, 2015
JOB NUMBER: CBJ-13-02
DRAWN BY: NF
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Soils and Layout Plan Base Bid

SHEET #:
L103

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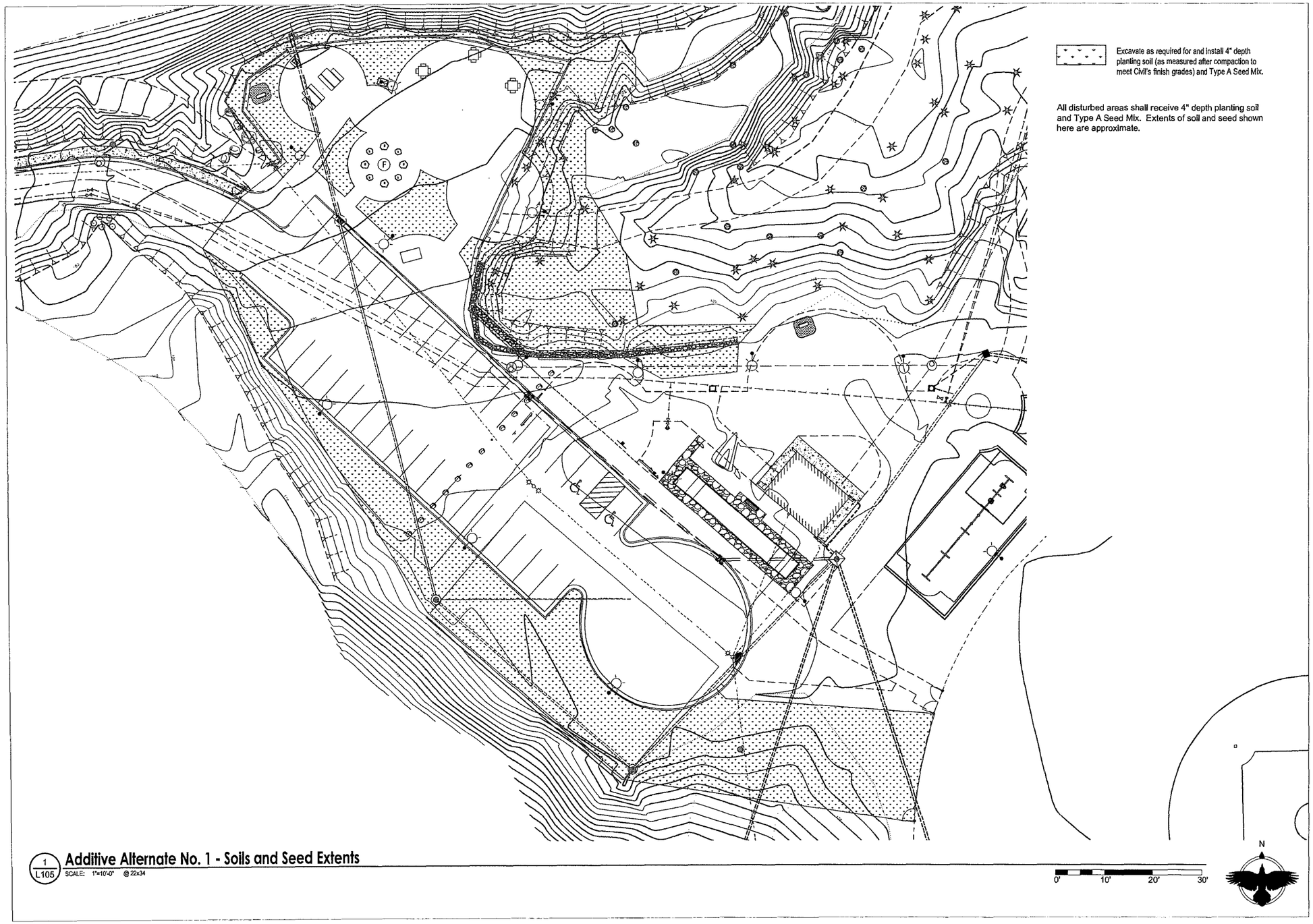

Excavate as required for and install 4" depth planting soil (as measured after compaction to meet Civil's finish grades) and Type A Seed Mix.

All disturbed areas shall receive 4" depth planting soil and Type A Seed Mix. Extents of soil and seed shown here are approximate.

1 / L105 **Additive Alternate No. 1 - Soils and Seed Extents**
SCALE: 1"=10'-0" @ 22x34

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SEAL:

STATE OF ALASKA 49TH
Christopher R. Merrill
Aug 16, 2015
No.10440
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

1" ACTUAL
If the above dimension does not measure one inch (1") exactly, this drawing will have been enlarged or reduced, affecting all labeled scales.

DATE: August 17, 2015
JOB NUMBER: CBJ-13-02
DRAWN BY: NF
CHECKED BY: CM

Additive Alternate No. 1

SHEET #:
L105

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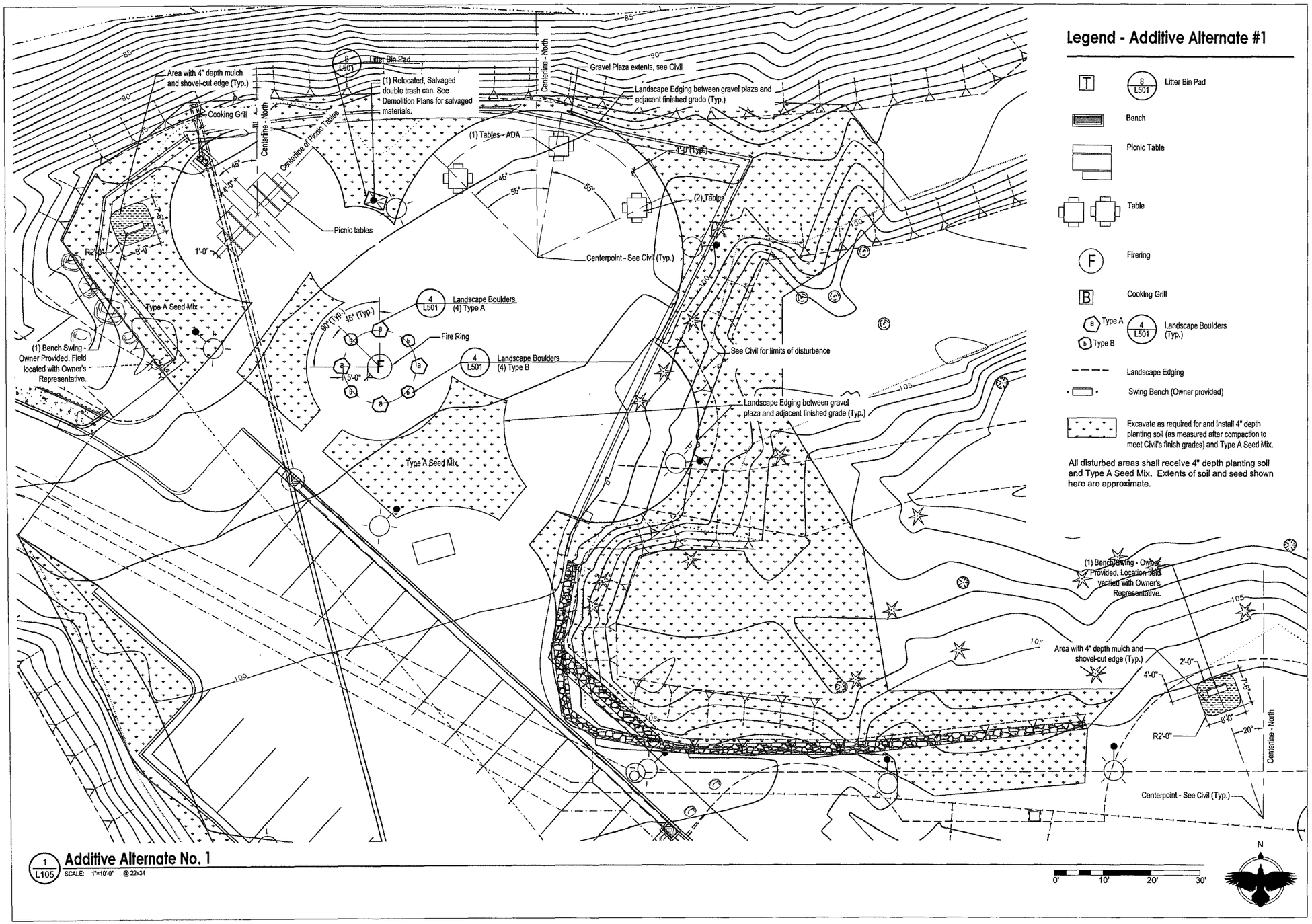

Legend - Additive Alternate #1

- Litter Bin Pad
- Bench
- Picnic Table
- Table
- Firering
- Cooking Grill
- Type A / Type B — Landscape Boulders (Typ.)
- Landscape Edging
- Swing Bench (Owner provided)
- Excavate as required for and install 4" depth planting soil (as measured after compaction to meet Civil's finish grades) and Type A Seed Mix.

All disturbed areas shall receive 4" depth planting soil and Type A Seed Mix. Extents of soil and seed shown here are approximate.

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SEAL:

STATE OF ALASKA 49TH Christopher R. Merli Aug 16, 2015 No.10440 REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

1" ACTUAL
If the above dimension does not measure one inch (1") exactly, this drawing will have been enlarged or reduced, affecting all listed scales.

DATE: August 17, 2015
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Additive Alternate No. 1

SHEET #: **L106**

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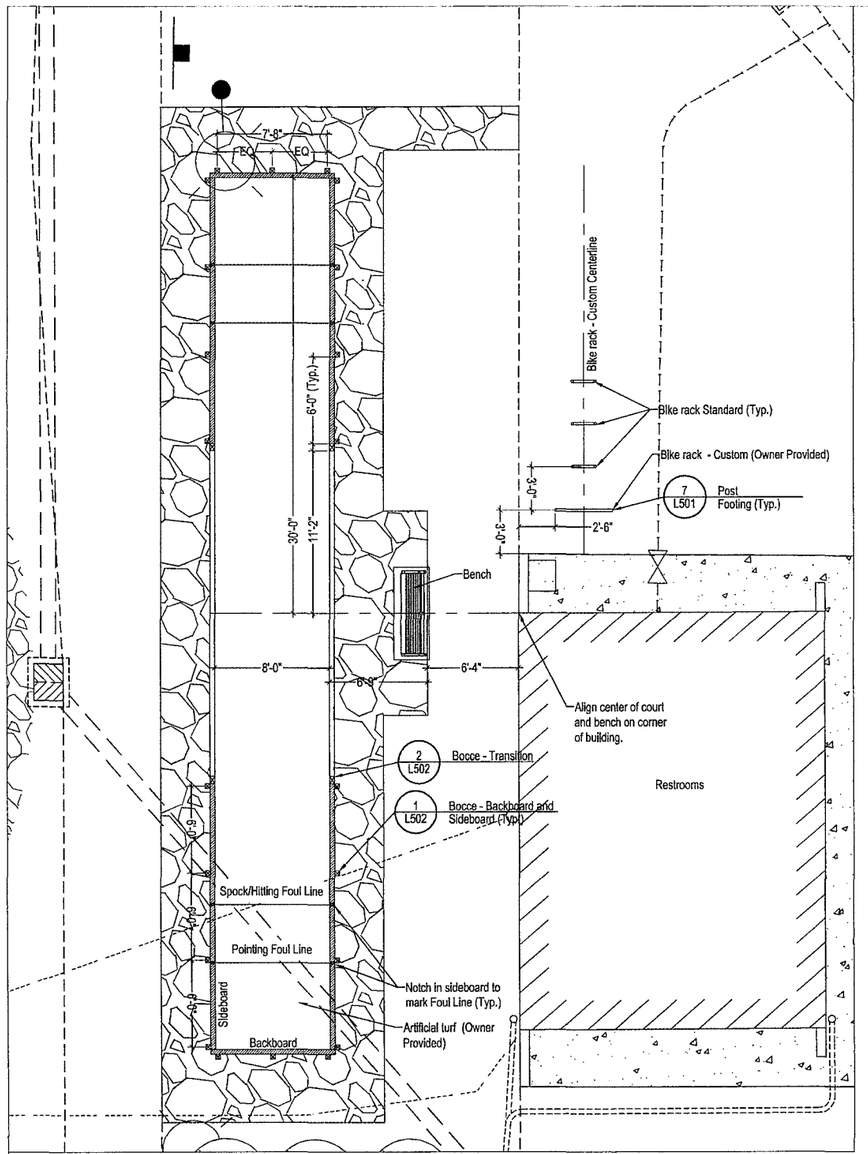

1 L401 **Bocce Court and Bike Rack Enlargement - Base Bid**

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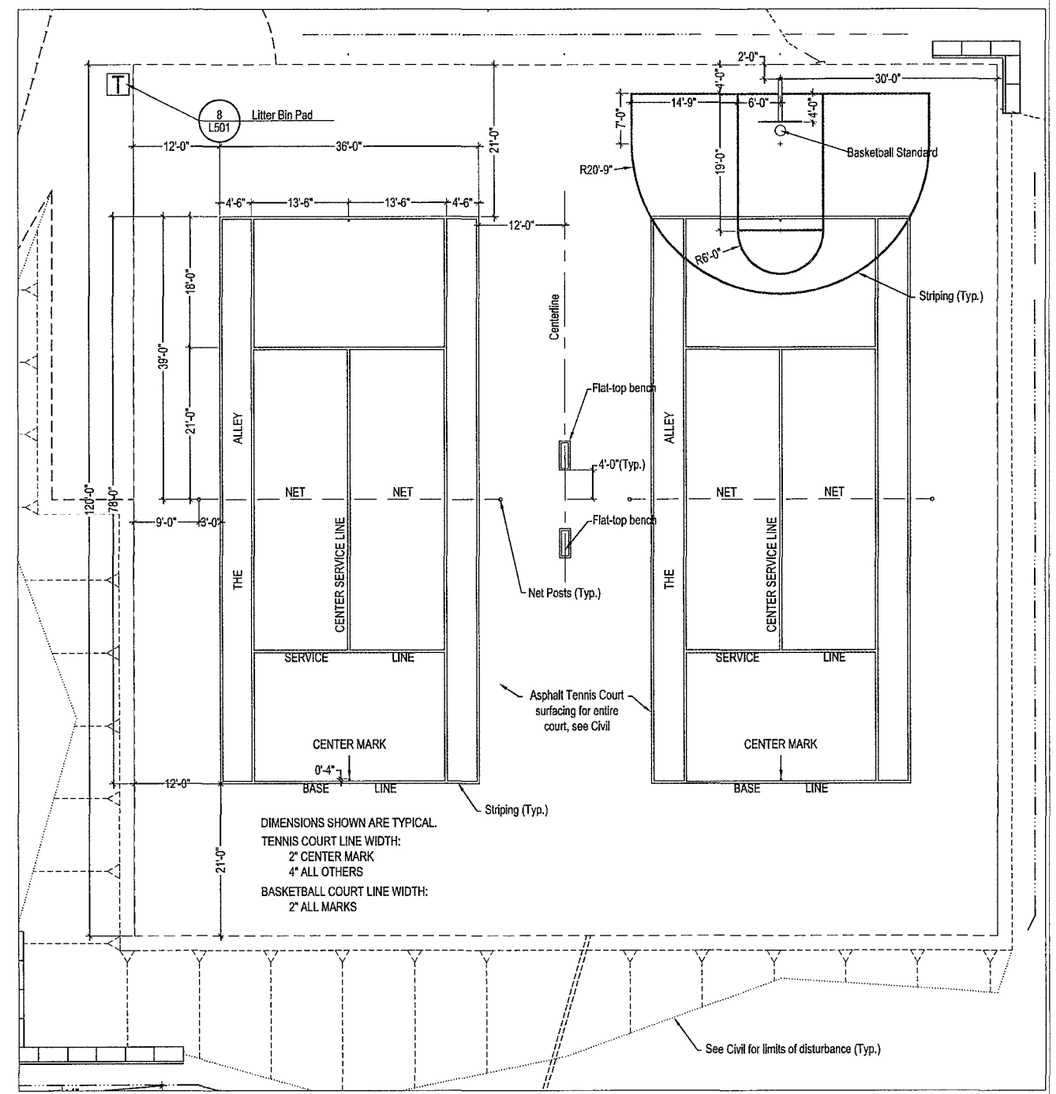
0' 5' 10' 15'



DIMENSIONS SHOWN ARE TYPICAL.
TENNIS COURT LINE WIDTH:
2" CENTER MARK
4" ALL OTHERS
BASKETBALL COURT LINE WIDTH:
2" ALL MARKS

2 L401 **Court Striping Enlargement - Base Bid**

SCALE: 1"=10'-0" @ 22x34

0' 10' 20' 30'

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Juneau - 907.988.9000
119 Seward St. 99801

SEAL:

STATE OF ALASKA 49TH Christopher R. Merli Aug 14, 2015 No.10440 REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

City and Borough of Juneau
Bid No. E15-237
Cope Park
Phase Two Improvements - 100%
Juneau, Alaska

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DATE: August 17, 2015
JOB NUMBER: CBJ-13-02
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Enlargements

SHEET #:
L401

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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

PLANNING COMMISSION
NOTICE OF RECOMMENDATION
Date: October 27, 2015
File No.: CSP2015 0014

City and Borough of Juneau
CBJ Assembly Members
155 S Seward Street
Juneau, AK 99801

Application For:	Planning Commission Recommendation to the City and Borough Assembly regarding Cope Park Improvements Phase II.
Legal Description or ROW name:	USMS 761, 926 and USS 2348 [COPE PARK]
Property Address:	1001 Calhoun Avenue
Parcel Code No.:	1-C04-0-CR1-007-0
Hearing Date:	October 27, 2015

The Planning Commission, at a regular public meeting, adopted the analysis and findings listed in the attached memorandum dated October 14, 2015, and recommended that the City Manager direct CBJ staff to design and build the project.

Attachments: October 14, 2015 memorandum from Allison Eddins, Community Development, to the CBJ Planning Commission regarding CSP2015 0014.

This Notice of Recommendation constitutes a recommendation of the CBJ Planning Commission to the City and Borough Assembly. Decisions to recommend an action are not appealable, even if the recommendation is procedurally required as a prerequisite to some other decision, according to the provisions of CBJ §01.50.020(b).

Project Planner: A Eddins
Allison Eddins, Planner
Community Development Department

Dennis Watson, Vice Chair
Planning Commission

Laurie J Sica
Filed With City Clerk

10/28/15
Date

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ - adopted regulations. The CBJ and project designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

Community Development

City & Borough of Juneau • Community Development
155 S. Seward Street • Juneau, AK 99801
(907) 586-0715 Phone • (907) 586-4529 Fax

DATE: October 15, 2015

TO: Planning Commission

FROM: Teri Camery, Senior Planner
Community Development Department

CASE NO.: AME2015 0014

SUBJECT: Comments from Planning Commission requested at the October 27, 2015 Regular Meeting

Comments from Planning Commission requested at the October 27, 2015 Regular Meeting; focus on Volume 1 and the Implementation Chapter.

Three questions to focus review:

1. Do we want to use the document strictly as an information resource, or do we want to categorize wetlands? (If we choose to categorize wetlands, there are many different ways to do that, which CDD will evaluate at a later time.)

2. Are there areas of the document that need additional explanation or additional information?

3. Are there ways to make the document more user-friendly?

Community Development

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DATE: October 8, 2015

TO: Planning Commission

FROM: Teri Camery, Senior Planner
Community Development Department

CASE NO.: AME2015 00014

SUBJECT: Preliminary Draft Juneau Wetlands Management Plan Update
Summary of Wetlands Review Board recommendations and staff update

The Wetlands Review Board had a presentation from Bosworth Botanical Consulting on September 24, 2015 and held a follow-up meeting on October 8, 2015 to develop comments on the draft. Draft minutes are attached.

Board Recommendations. The Board made two recommendations. First the Board recommended developing a subcommittee to develop questions for Dr. Adamus regarding the WESPAK-SE methodology used to develop the wetland assessments, and to look at wetland categorization options. The motion passed with seven in favor, one opposed.

The Board's second recommendation was to approve the document as an additional tool for analysis of wetlands during the planning process. The motion passed unanimously.

Board Discussion. The Board supported development of goals and objectives for the document, noting that it is not currently a Plan; it is a wetland resource inventory. The Board had a number of questions regarding the methodology.

CDD Response. Regarding recommendation #1, CDD will be developing an additional contract with Dr. Adamus with remaining federal grant funds to address board questions on the methodology. CDD will include investigation of wetland categorization options in a new list of goals and objectives to be added to the document. (These goals and objectives will come back to the Planning Commission for review at a later date.) CDD recommends deferring analysis of wetland categorization options until the Board's

additional training on the wetland methodology is complete, and until we receive more information regarding the Army Corps of Engineers' response to the Southeast Alaska Land Trust's categorization proposal, which also utilizes the WESPAK-SE method.

CDD agrees with the Board that the document as presented does not have the elements of a plan, such as goals, objectives, and methods of implementation. Our intent is to develop goals and objectives to transform it into a plan during later stages of review. CDD recommends adopting the document at this stage as an information resource and changing the title to: "Juneau Wetlands Assessment Inventory" or something similar.

The WRB minutes also describe the intent of the Board to approve the document as an addition to the current wetlands management plan, because the Board wants management elements to continue. CDD supports the document as a valuable planning resource. However at a later stage CDD will request repeal of the existing 2008 Wetlands Management Plan. The 2008 Wetlands Plan contains the same wetland policies, maps, and categories as the 1992 Plan, and contains outdated information and policies that can no longer be enforced because those policies conflict with federal law.

DRAFT MINUTES
WETLANDS REVIEW BOARD
SPECIAL MEETING
October 8, 2015, 5:15 p.m. Downtown Library Large Conference room

Meeting Summary

Roll Call

Board Members Present:	Amy Sumner, Brenda Wright, Andrew Campbell, Lisa Hoferkamp Hal Geiger, Dan Miller, Jerry Medina, Nina Horne
Board Members Absent:	Ben Haight

A quorum was present.

Staff Members Present:	Teri Camery, Allison Eddins, CBJ Planners
Public Present:	Koren Bosworth and Richard Carstensen, Bosworth Botanical Consulting; Dennis Watson, Vice-Chair CBJ Planning Commission

Meeting called to order at 5:18 p.m.

II. Agenda approved

III. Public Participation on Non-Agenda Items**.**
None

IV. Board Comments.
None

V. <u>Agenda Items</u>

1) Review of Preliminary Draft Juneau Wetlands Management Plan

Ms. Camery apologized for the last-minute change on the meeting location. She said the software that keeps the doors open in the Marine View Building after hours had failed, so CDD could not hold the meeting there and still comply with public notice requirements.

Ms. Camery said that the purpose of tonight's meeting was to develop Board comments on the preliminary draft JWMP as a follow-up to the presentation on the JWMP by the consultants, Dr. Paul Adamus and Francis Naglich, at the Board's September 24, 2015 meeting.

She thanked Ms. Bosworth and Mr. Carstensen for attending and said that she had asked them to come so they could respond to any board questions regarding the JWMP field work. She said that she had received Mr. Geiger's analysis the previous evening and tried to send it to the board that night from home, but she could not access the WRB email list off-site, so she sent it to the board this morning instead. She said that she received Dr. Adamus' response to Mr. Geiger's analysis that afternoon and also emailed that information to the board. She provided copies of both reports to the board.

Ms. Camery said that she had written a memo for the board with the history of the board's review of the JWMP WESPAK-SE methodology. She said that the board had approved the WESPAK-SE methodology in January 2014 without objection after CDD staff provided a binder with the detailed history of scientific peer review, repeatability testing in Alaska and Oregon, and letters of support from resource agencies. She noted that a different version of the WESPAK-SE methodology has been adopted by the State of Oregon. She provided a binder with the minutes for each of the Board's 19 meetings on the subject.

Lastly, Ms. Camery referred to questions that she had sent to the Board to help focus their review on the preliminary draft JWMP, and read them as follows:

1) How do we want the JWMP Update to be used, and by whom? Do we want more coordination with the U.S. Army Corps of Engineers and/or the Southeast Alaska Land Trust, or just use by the CBJ Lands Division? (CBJ Lands has already used the assessments on two major subdivisions, and the assessments address approximately 90 percent city property.)
2) Based on question number one, is it necessary to rank, average, and/or categorize wetlands, or are the existing scores sufficient as an information source? If we choose to rank them, are policies and/or regulations needed for implementation?
3) Are there areas of the plan that need additional explanation or additional information?
4) Are there ways to make the plan more user-friendly?

Ms. Camery said that CDD's current recommendation on an implementation option is to use the plan as an information resource to support city planning efforts. She noted that there seems to be tremendous complexity around the question of averaging scores. She said that the Southeast Alaska Land Trust is evaluating different wetland ranking/categorization options with its Inter-Agency Review Team, and though the Corps of Engineers strongly supports the WESPAK-SE methodology, it is unknown at this time whether the Corps will support SEALTrust's categorization strategy with the method. She said that CDD believes it is prudent to wait for more information from SEALTrust's process before developing categorization methods, and noted that categorization is not necessary for the information to be useful; she said that the CBJ Lands Division is actively using the information right now in the development of two major subdivisions. She said that it would make more sense to look at categorization options in the future after seeing the results and comments from SEALTrust's process.

Mr. Campbell thanked Mr. Geiger for his extensive analysis and invited him to present his findings. Mr. Geiger went through the 26-page written analysis that was emailed to the board, which he presented on screen.

Mr. Geiger referred to his discussion with Dr. Adamus regarding Principle Components Analysis at the end of the last board meeting. He said that dissimilar information should not be averaged. He said he looked for variables in the methodology that were similar that might make sense to average, and what did not make sense to average. He provided the example of not averaging dissimilar household uses.

Mr. Geiger said that it was essential to put the information into categories, but it should not be done through averaging. He said he had three recommendations. He said the board needed a greater understanding of the calculation of the values and functions, particularly the values rating. He noted that there were 22 function variables and 18 value variables. He said he was not happy with the value variables. He said that his other recommendation is that none of these variables should be averaged, particularly the functions. His third recommendation is to adopt a system to develop categories based on percentiles.

He said that the first thing he did was reformat the data. He recommends that the data be presented in this format in the plan for use by technical engineers. He said that his goal was to come up with the best way to summarize the data into categories. He said that all the data analysis he did was in support of that.

He said he looked at the functions without paying attention to what they meant, and just looked at the two-letter codes. Then he started graphing them in ways that were similar to what Ms. Bosworth did. He pointed to box plots on the screen and pointed toward the median point (different from the mean, which is what is typical), where 50 percent are above and 50 percent are below. He pointed to points below 25 percent and above 75 percent on a particular chart. He pointed toward “whiskers” and other points farther out on the edges. He stated again that dissimilar items should not be averaged.

Ms. Hoferkamp asked what the chart would look like if it would have been perfect to average. Mr. Geiger said that in that case, the chart would show correlations, which this does not. Mr. Geiger discussed weighted averages involved in Principle Components Analysis.

He said he looked at the correlations, and pointed toward a matrix of plots. He said that the dark blue shows a correlation of plus one, while the area closer to red shows a negative correlation. He said that FA and FR are the only variables that appear correlated at all; many variables show no correlation. He said this shows that the variables measure things that are different and statistically independent, and therefore should not be averaged.

He said that he was looking for numbers that lined up. He said that he took the ones that had at least a moderate correlation, and he plotted those. He pointed toward another chart with the CS variable on a plot with everything else. He said that none of these lined up on a line, which again meant that the items should not be averaged. He said that he had found no variables that made sense to average. He said that these functions were capturing either random numbers or independent features.

He said he then looked at values and did the same analysis, and found the same pattern. He said the values did not correlate and therefore should not be averaged. He said that values were typically either zero or large, with no correlations and nothing lining up on a line, and therefore should not be averaged.

Mr. Geiger said that he understood the functions; however he said he did not understand the values. He said he thought that functions and values should be highly correlated and line up, but they did not. He said what he found was a banding phenomenon. He pointed toward a function. He said that if the function was zero the value was always zero, however with a function of two or eight, the values turned up as bands. He pointed toward a function score of four with a value of 10. He pointed toward other functions rated as 6.5 with a value of 0.

He said the one that he explored the most was the anadromous fish score, and referred again to the banding. He said he tried to figure out how it received the value. He said that the scores seemed to reflect Willamette Valley conditions with remnant pockets of fish. He said that the values show that it gets a higher score if it's in an administrative unit, not because it's more valuable spawning habitat. The other part of the score is based on proximity to or within a subsistence fishery. He said that the most important subsistence fisheries are sockeye, and sockeye are lacustrine species that do not utilize wetlands, so this seems misplaced. He said the other point that comes into play is evidence of fishing. He said that what's missing is an assessment of our saltwater fisheries. He said that this particular value has been calculated incorrectly, and he is waiting for an explanation of how he is incorrect.

He stated again that the relationship between functions and values is not intuitive, and that values should be placed on the shelf until we understand them better, and instead work on the functions. He said that he has only looked at one of the values, and it's possible that he would agree with the rest of them.

Mr. Geiger suggested using the functions as a basis for categories. He used the example of which shoes to choose for a particular activity, which can't be done through averaging. He suggested going through one function at a time to look at where 80 percent of values lie to show a high value wetland for anadromous fish. He suggested going through the first variable to find all the wetlands that can be called high value based on that variable, then go through the next variable and find all the high value wetlands for that variable, then take another percentile and continue to go through it one variable at a time.

He said that if we do this one variable at time, we might find that we put all the wetlands into high value, and that would not be helpful. If that happens, then we would need to go back and adjust the percentiles, and we might use different percentiles for different variables. He stated again that categories were necessary to compare one wetland to another.

Mr. Medina asked Mr. Geiger why he did not bring up his concerns earlier, noting that the methodology was approved by the Board in January 2014. Mr. Geiger said this was the first time he had to look at the data, and that the board had not approved how we would develop categories. He said this was his first opportunity to look at the hundreds of calculations involved.

Mr. Miller asked Mr. Geiger to go over the values and functions again, noting that it's the value assessment that Mr. Geiger did not agree with.

Mr. Campbell said that Dr. Adamus has said many times that the values are subjective and based on the bias of the community, and therefore Dr. Adamus himself did not rank wetlands.

Mr. Geiger said that Dr. Adamus created the 18 values through some process, and we are tripping over this, and said that he feels Dr. Adamus is off-base on the values for anadromous fish. He said that the Board needs to talk about how we want to place value on functions when we develop a categorization scheme.

Ms. Camery noted that Dr. Adamus had addressed the functions and values issue in his emailed response to the Board that afternoon, and that he had spoken about the values issues extensively in many presentations to the Board and SEALTrust in the past. She said that Dr. Adamus had been clear that these were not his values, that these were values widely accepted by society. She said that she would be happy to compile information from the presentations and from SEALTrust's evaluation of the method, and that the information was also noted in the board minutes.

Mr. Geiger said that board members should determine for themselves how the values were calculated, and that it was not sufficient to defer to other groups who had endorsed the method. Ms. Camery noted the board itself had endorsed the method in January 2014, and the contract for the 360 assessments had gone forth based on that endorsement. Mr. Geiger said that the board had never gotten into the details of how those values were calculated.

Mr. Campbell said that it was difficult because the Board had limited time at the meetings. He thanked Mr. Geiger for his analysis. He said that the Board needed to achieve the result of either recommending a ranking system or not. He said that Ms. Camery's questions were helpful for keeping the board on track to generate the comments needed from the board within the limited time frame that evening. He said that it was important to provide the Planning Commission with something helpful to their review of the plan. He asked for board responses on how to rank wetlands or responses to Ms. Camery's questions.

Mr. Medina asked Ms. Camery when the project was scheduled to go to the Planning Commission. Ms. Camery said that the Planning Commission would have a presentation from Bosworth Botanical Consulting on October 13, and would have a second meeting to develop comments on October 27. Mr. Medina said that the Board needed to come up with a recommendation. He said that he appreciated Mr. Geiger's work, however he said that the Board did not have time to revisit the methodology, that it's too far past to go back and re-evaluate everything and it was necessary to move on.

Mr. Campbell noted that tonight is not the Board's only opportunity for comment and said that he would be willing to spend more time in the future with an appropriate meeting framework.

Mr. Geiger said that he recommended that the Board go forward with a firm recommendation to develop a categorization system based on ranks of the individual functions. He said it would take

time to come up with that system and he didn't intend to come up with that system within an hour. He said the system should not be based on averaging.

Ms. Hoferkamp asked about including the values. Mr. Geiger said that the values should not be included until the Board is certain that the values are doing what the Board wants. Mr. Campbell confirmed that Mr. Geiger wanted a more in-depth discussion of the values and then if the board could come to some agreement on their role in the ranking system then we would use them, and if not we would just use the functions. Mr. Geiger said that was correct.

Ms. Wright said she was unsure of how to use values and preferred to review the functions first and review the values later.

Planning Commission Vice-Chair Watson said that he understood that the Board would make a recommendation and then come back and re-visit it. He said if that's the case, it would come to the Planning Commission on Tuesday October 13 and then come back on October 27. He said that it didn't seem that the Commission would have anything to look at or talk about on October 27 if the Board was still evaluating and coming up with categorization.

Mr. Campbell said he understood that the Commission would hear the same fine presentation that the Board had heard from the consultants regarding the huge amount of data, and the Commission would have the opportunity to ask questions. He said that from what he heard so far, people had different views on where to go with that. He said that he doubted that the Board would finish their review before the Commission's second meeting. Mr. Watson said that he didn't know if this was the best use of time for the meeting on the 27th.

Ms. Camery said that Dr. Adamus would be back in town to attend the Planning Commission on Tuesday, and the 27th was reserved for in-depth discussion and development of Planning Commission comments.

Ms. Camery noted that CDD comments on the preliminary draft are due to the consultant on November 15. She said that the consultant would provide a second draft of the plan in February. She said that the grant expires in June. She said that CBJ did not have to have the plan finalized and approved by the end of the granting period. She said that the more thorough the comments are to present to the consultants by November 15, the more CDD would get from the consultants during the grant period. She said that the review could continue as long as necessary, however she noted that this is the primary period to get additional information from the consultant before the grant expires.

Mr. Watson noted that the Commission gets a lot of consternation from the public regarding wetlands. He said that if the public can understand it, it makes life a lot easier. He said that he was still confused about what the Commission would talk about on the 27th, and he didn't want to go over the same thing two weeks in a row.

Mr. Campbell said that he was trying to figure out how to make this information and analysis more useful to planners and developers. He said that if a person was looking at development in a specific area, they could go to that area in the plan and look at the functions and values and get

that information out of what has already been done. He said that ranking would be nice at some point but he did not feel it was essential at this time, and that a lack of rankings would not diminish the work that had already been done. He said that if the Board rushed into a ranking system that it hadn't thoroughly considered and developed consensus on, it would not be useful to anyone. He said that he shared Ms. Camery's view that we do nothing at this point except to say that we do see potential value in a ranking system but it will take us awhile to develop it. He said that the Board needs to work through the values and whether or not those should have any contribution to the ranking system, then work on how to use the function analysis that has been presented to correlate that. He concluded that he didn't know if the Board should do anything.

Mr. Geiger said that he did not want to get into an examination of who said the values were okay. He said that the board needed to do an analysis of how the values were determined, and he said he wanted someone to look at this very complicated calculation and see if it passes muster.

Mr. Campbell noted that would take more time than the Board has.

Mr. Miller said that even if every board member agreed to take one value each, it would take a long time. He said that maybe a subcontractor could do that work, to come back and legitimize each value. He said that the methodology had been approved on a conceptual basis, and that it was hard to understand the methodology in narrative form. He said that Mr. Geiger's analysis was helpful. He said he agreed with Mr. Campbell that we didn't necessarily need to have wetland categories to move forward. He said that categories could be an implementing action of the plan as a next step. He said that the plan has true and valuable information, and the question is what to do with it. He said the Board could develop implementing actions regarding whether a ranking system was necessary, and if so, how, and then determine if values would be part of that ranking, or just functions. He said that would be two or three implementing actions.

He said that the Planning Commission would not pass the plan off to the Assembly after two meetings without firm approval from the Board. Mr. Campbell confirmed that he was talking about the ranking system, and Mr. Miller agreed.

Mr. Miller said that the Board should take more time and as many meetings as necessary to get information from the contractor, and then forward to the Planning Commission with a firm recommendation. He said that if the plan is good right now, the Board could pass it along with implementing actions and work to be done after it's adopted. He said he would accept that, noting that's how the Comprehensive Plan and other plans work. He said that the work doesn't need to be done before the plan is adopted. For example, the Juneau Economic Development Plan was an implementing action in the Comprehensive Plan, and it was completed that way. He said that the Board needs to tell the Planning Commission that this is ready to go to the Assembly to be adopted.

Ms. Camery thanked the Board for the discussion. In response to the Board's concerns on values, she said she could look into the possibility of a contract amendment to ask Dr. Adamus to come back for additional board meetings. She noted that Dr. Adamus had been working on these issues for 40 years and said that it was not realistic to expect even the most knowledgeable board members to address these issues themselves. She said there were additional funds left in the

grant, and she would check into using those funds specifically for an in-depth discussion of the values and how those are determined, and how the formulas are used. She said she believed that this information had already been presented to the Board, but noted that not every board member attends every meeting and that it is sometimes difficult to consolidate the information. She said that she would put together all the paper documentation that she could find regarding the values issues.

She said that she supports what Mr. Campbell and Mr. Miller said regarding moving forward with the plan in a format similar to the Comprehensive Plan with goals and objectives and implementing actions. She noted that this is standard practice with many plans including the existing JWMP, rather than having everything finalized. She said this would give the city the time to see what happens with the SEALTrust proposal for working with the information, and said that the city could learn a lot from their process. She said that plans are always a work in progress and CDD could continue to update the plan along the way as more information was obtained.

She said that the plan has already proven itself to be useful in the form that it is currently presented. She said that the CBJ Lands Division has already used the assessments for two major subdivisions. She said that Lands presented the assessments to the U.S. Army Corps of Engineers, and it has been a useful and needed tool for them even without the categories. She said it was important to keep in mind that the plan was approximately 90 percent city land.

Ms. Horne said that there seemed to be a need to discuss the issues in more detail. She suggested a subcommittee meeting in a workshop format to meet on the weekend to write down questions that needed to be answered. Mr. Geiger agreed with Ms. Horne and said that it was impossible to get into the nuts and bolts within two hours. He said that the Board needed to have a focused group of people at their computers looking at the issues. He referred to the sparse material he had received regarding values.

Mr. Campbell said that the information was called a plan, however he viewed it as data, an analysis of the wetlands. He said that the recommendation could be not adoption of a plan, but could be adoption of data so it could be used by staff and professionals to benefit the community. He said that this document does not have the elements of a plan. He said it has good value, but it's not a plan, and it's not management. He noted the objectives on page 45, and said that that is not what the plan has done. He said the plan is an assessment, a fantastic assessment, and the information is useful. He suggested that the board stand by the assessment that was done and put it forward to the community with a strong recommendation as a valuable document. He said that the board may or may not agree on values, and the board could use that discussion to move forward with a future ranking. He said he would be willing to spend more time doing that.

Ms. Horne agreed that the plan was a tool, not a management plan.

Mr. Miller suggested a Committee of the Whole meeting with the Board and the Commission on October 27 with Dr. Adamus, as another way to discuss specific issues and ideas. However Mr. Miller supported Mr. Campbell's recommendation to adopt the document as an assessment. He said that it has the foundation of a management plan but it's not one yet.

Ms. Camery said that the plan is essentially an information resource at this point. Mr. Miller agreed.

Mr. Miller asked Ms. Camery what she was asking the Planning Commission to do with the document.

Ms. Camery said she presented the same questions to the Planning Commission as to the Board. She requested that the Commission look at the implementation options; to look at the question on whether to accept it as is as a planning tool and information, or develop rankings; and if rankings or categories are developed, whether it's necessary to develop policies or regulations. She said that from staff's perspective categories and rankings are not necessary for the document to be useful. She said that the city could do that later, however that data could be actively used right now. She reiterated that there were benefits to waiting for the outcome of SEALTrust's process so the city could learn from those results and know what categorization system the Corps of Engineers would accept.

Ms. Wright asked for clarification regarding how the information had been used.

Ms. Camery said that the CBJ Lands Division had presented the assessment information to the Corps of Engineers for development of two major subdivisions, using the wetland scores for the two city properties. She referred to Volume II for an example of a WESPAK assessment score sheet, which shows the raw data without an overall ranking or category.

Mr. Geiger said that he was uneasy with a strong recommendation because he didn't believe that the plan had been evaluated with the care it needs. He said that chemistry was not his area of expertise, however he said that some things that he thought should be correlated were not, such as carbon sequestration and organic export. He said that these two things should be strongly negatively correlated

Ms. Camery said that Dr. d'Amore had specifically worked with Dr. Adamus regarding the carbon sequestration function, and that this information was in the binder provided to the board when the board approved the methodology in January 2014. She said that she took notes for the peer review process under CBJ's contract with Dr. Adamus and wrote the minutes so she knew it well. She said that there was a large background of study on that topic and others integrated into the methodology. She said that the peer review process with southeast scientists, funded by federal grants obtained by both SEALTrust and CBJ, ensured that the method was tailored to southeast conditions. She said that this tailoring process was on top of the tremendous background of research with the previous version of the method, ORWAP, which has been adopted by the entire state of Oregon.

She said that she appreciated that that Mr. Geiger was looking at this from an outside perspective and understood that it did not correlate with how he looks at things. She said that from a public policy perspective, you would never have any absolute guarantees and you would never have 100 percent certainty. She said there is a tremendous amount of scientific research behind the

methodology and a tremendous amount of support for the method by scientific researchers and agency representatives.

Mr. Geiger said he keeps hearing that someone else has done this careful review, but that he sees surprising results. Ms. Hoferkamp agreed that there were some missing correlations. She said that nitrate retention and phosphate retention should be positively correlated. Mr. Geiger disagreed with deferring to other experts and believed the board should do its own review.

Mr. Campbell asked Mr. Geiger if he had looked at the old wetlands maps, and if he could agree that what was presented here was significantly better than the previous version, and that this plan takes a big leap forward. He said that he did not want to see the information stagnate because the Board was not willing to put it forward to the community. He said that the Board does not necessarily need to go any farther than that. He said that the remainder of the existing plan could be left in place and the Board should recommend providing this updated mapping information for future analyses. He asked Ms. Camery if this approach would be useful.

Ms. Camery said that she agreed with Mr. Campbell but needed to make a clarification. She said that the existing plan is woefully outdated and inaccurate and CDD wants to get rid of it. She said the plan does not conform with federal regulations and that CDD therefore has a difficult time implementing the code. She said that the methodology and the code for the existing plan was developed in the 1980s and both are out of date. She further noted that the wetland assessments in that plan were done primarily from imagery, rather than the ground-truthing in the preliminary draft presented here. She reminded the Board that even though there are different versions of the old, existing plan—1992, 1996, and 2008—the wetland maps, assessments, and policies have not changed since 1992. Therefore CDD does not want to carry it forward. She said that the existing plan also reviews very different areas from the new draft plan, because it assessed the developing area of the borough in 1992. She said there are very few overlapping areas between the old existing plan and the new plan, which looks at developing areas along the road system where the city is likely to develop in the next 20 years.

Mr. Campbell said that the Board can't put forward what was presented because the plan portion isn't included. He requested confirmation that this wasn't what we hired the consultants to do; we hired them to do an assessment. He said that developing a plan is a separate process.

Ms. Camery concurred and confirmed the plan was a work in progress. She said that with the data the consultants provided to CDD, CDD would go forward with the public process with the Board, Planning Commission etc. and then decide if CDD wanted to develop the rankings and categories and regulations and policies that were not part of the contract. She said that ranking, categorization, and policy development was specifically not part of the contract because it was acknowledged that this is a public process and not the role of the contractor to decide. She said that categorization brings with it value judgements and what the community believes is most valuable. She stated that it was not necessary to go that direction now, because the assessments could stand separately from categorization.

She reiterated that the plan is predominantly on city land, and that the city provides a good test case on how to use the information for development purposes. She suggested waiting to see how

the assessment information could lead to identifying areas for mitigation; to see how the Corps of Engineers will use the assessment information; and then see how we might develop policies and regulations from there, and also see how we might expand the plan to include more private properties.

Ms. Camery said that the city could use the assessment information to identify a large target area for development and prepare a development and mitigation plan in advance with the approval of a new Corps of Engineers General Permit that would be used just for one specific area. She said that the General Permit could identify development sites with all the planning and mitigation established ahead of time for a large area that would be developed over perhaps a 10-year timeline. She said that with a General Permit there would be an agreed upon way of how the permitting would proceed ahead of time, and then the permitting process would be expedited and predictable and consistent. She said that the Board is most familiar with how the General Permit process worked with the Board's previous General Permit authority from the Corps to issue permits on low-value wetlands in the old plan, but there are many other ways to use a General Permit. She said this is explained in Option Two in the Implementation Chapter in the new draft Volume I. She said she is interested in researching this as a way to use the information for management, and said it could be another goal or objective to add to the plan.

Mr. Campbell said that before developing a new contract with grant funds, the Board would need to work on questions to ask Dr. Adamus before it would be worthwhile. He said that the leftover money in the grant would also be well spent to work more on the plan aspect of the update and how the information would be used.

Mr. Campbell asked if the Board wanted to replace the existing maps with the new assessments. He said he thought that would be a step in the right direction, but noted that the Board would be removing the categories from mapping, because right now we don't have categories.

Ms. Hoferkamp noted that all the current draft does is identify wetlands with the assessments.

Ms. Camery reiterated that there is almost zero overlap between the old and new plans, and said that CDD is not implementing the wetland regulations in the current plan anymore because they do not match Corps of Engineers mitigation regulations. She said that in the presentation to the Board, the consultant referred to the 2008 Corps of Engineers mitigation rule with the mitigation hierarchy, which requires mitigation to first go to mitigation banks, then to fee in-lieu providers, and that permittee-responsible on-site mitigation is the last item in the hierarchy. She said that is a direct contradiction to the Category A wetland regulations in CBJ's current plan. She said that the Category A wetland regulations, as just one example, directly contradict these requirements because Category A wetlands in CBJ Code require on-site, in-kind mitigation. She said that CBJ cannot and does not enforce these regulations anymore.

Mr. Miller said again that the plan is not a plan, but an excellent analysis of a bunch of sites and a testing ground of that analysis. He said that the Board understood that it would be proofed, and when the board had the results on the paper, the board would look at it to see if made sense. He noted that we have one board member who says it doesn't make sense. He said we need to have questions answered to make sure that Dr. Adamus is not incorrect.

Ms. Camery said she supports this but said that the board needs to be aware of timelines. She said that the CBJ's contract process takes typically takes two months even after the scope of work has been developed, and this assumes that Dr. Adamus has time for the work. She said that with that path she would need a list of questions from the board as soon as possible to ensure that the work can be done within the limited remaining grant period.

Mr. Geiger said that he moved to form a committee to look at a proposed classification scheme with Ms. Horne as the chair and leave it to her to schedule the meetings. Ms. Hoferkamp seconded.

Ms. Camery requested clarification and said that she thought that the committee purpose was to discuss values, not classifications.

Ms. Horne said that the workshop could be used to develop questions for Dr. Adamus or what needs to be clarified to make a recommendation, whatever that might be.

Mr. Medina said he wanted to hear from the consultants.

Ms. Bosworth said that she didn't develop the methodology or run the scores; she said she did the field work. Mr. Medina asked if they had concerns. She said there were a few issues, especially fish issues, and that Dr. Adamus had been good with dealing with those as they came up. She said that they were limited in changes that could be made.

Ms. Hoferkamp asked if the consultants assigned the scores. Ms. Bosworth said she answered questions in the field and the model assigned the scores in the spreadsheet. Ms. Bosworth said it's a rapid assessment method and there were not any measurements made.

Ms. Hoferkamp asked if their results agreed with what they saw in the field. Ms. Bosworth said that she hadn't looked through the scores to analyze the results.

Mr. Carstensen said that final scores were not available until last month and he thanked Mr. Geiger for taking a look. He said that the mapping was magnitudes better than the previous plan. He said that we know where the wetlands are and we can stand behind the units and what kind of wetlands they are, and he said that the answers to the questions are valuable. He explained that they use a field form to fill out on site, then an office form to fill out off-site. He said that the GIS and geography on the project is very solid. He said that they fill out hundreds of questions for every unit and they go under the hood and churn through these formulas to come up with a score.

Mr. Campbell returned to the motion to request that Ms. Horne organize a workgroup meeting of interested individuals that she would chair, and she would select the members, who would analyze the data in an in-depth fashion.

Mr. Geiger said that we have many unanswered questions. He said that the board needs to look at values, come up with a more specific plan for categorization, and come up with questions for Dr.

Adamus. He said that board should leave the terms of reference loose, let the chair capture key things from this meeting that need to be done, and then give it more focused time.

Mr. Campbell said it was hard for him to support the motion without a specific set of guidelines and not knowing what would be generated.

Ms. Horne said she was glad to schedule but did not want to appoint anyone. She said she wanted to have volunteers from the board who wanted to spend the extra time for a few hours on the weekend. She said that some people need more time to formulate questions and exchange ideas, and then as a full board we would look at it. She said she preferred a workgroup to leave it open to whoever wants to be there.

Mr. Geiger modified the motion to clarify that the terms of reference include the question on values, the potential for summarizing scores into categorization, and future questions for Dr. Adamus, and the workgroup would be open to any board members who want to attend.

Ms. Camery said that that sub-committee would need to comply with the Open Meetings Act, and the same requirements would probably apply to a working group. She said she would need to check with the CBJ Deputy Clerk regarding requirements.

Mr. Campbell said that the Board could vote for a working group/sub-committee if it was possible. Ms. Camery that the sub-committee recommendations would need to come back to the full board for approval.

Mr. Campbell asked for a vote on the motion.

In Favor: Campbell, Miller, Horne, Sumner, Wright, Hoferkamp, Geiger

Opposed: Medina

Mr. Medina said that he voted against the motion because no time frame was given. He said that he had no problem with the workgroup, and agreed that issues needs to be reviewed, and that the plan is a work in progress, however the next board meeting is not until November which is past the Planning Commission timeframe. He said that he was unsure that Mr. Geiger would be willing to make any kind of recommendation until the committee had answered these questions.

Mr. Campbell suggested getting back to that recommendation, and acknowledged that the sub-committee could not happen before the next meeting because the board needed to know what the rules were.

He said that if the Board were to recommend that the Planning Commission take this document and replace the current maps with it, then we might be using some of the value of the current maps because they categorize the wetlands, and there is not any overlap between the two documents. He therefore suggested that the Board could ask that this be added to the current maps as an additional tool for analysis for planning purposes.

Mr. Geiger moved the idea as a motion for further discussion. Mr. Medina seconded the motion. Mr. Geiger said he supported the motion.

Mr. Campbell said that they could mention to the Planning Commission that the Board would continue to analyze the document and modernize and update the plan and bring it forward at a future date.

Ms. Camery said she was unsure about adopting the document on top of the current plan and she would need to check into it how that would work. Mr. Campbell said it was either that or do nothing.

Ms. Sumner suggested using the WESPAK assessment for the remaining wetlands. She said that as an example, if someone was going to develop in one of the old wetlands using a category ABCD wetland, the owner would need to do a new assessment with WESPAK, since the city can't implement the ordinances. She said there would be no combination of the scores; no determination of a ranking, just a raw score for consideration if they were going to develop in the designated wetlands.

Mr. Campbell reiterated the intent of the Board of providing the information to the community as a useful tool.

Ms. Camery said she strongly supported using the information as tool but she was uncertain of the rest of the discussion.

Mr. Geiger said that he was in principle opposed to asking the public to go gather expensive data.

Ms. Camery said that Ms. Sumner's idea seemed to match Option Three in the Volume I Implementation Chapter that the consultant presented regarding regulation of all city wetlands and requiring WESPAK for all wetlands. She noted that this was described as an aggressive approach with a mandate for all wetland areas to utilize WESPAK. She noted that this approach was moving far from the Board's first comment of using the document as an information resource.

Ms. Sumner said she was unsure of how it would be used for wetlands outside of that mapped area. Mr. Campbell said that we could discuss that in the board analysis of the plan. He said that the Planning Commission should have something from the board with some motion of support on how it might be used. He thanked Ms. Camery for her original questions to keep the Board on target.

Mr. Miller spoke in favor of the motion. He said that the information in the assessment is very valuable and a good example of the type of the information that WESPAK provides. He said that after further analysis by this board and others and SEALTrust and everyone we would be ready to include WESPAK in a JWMP plan that is yet to be written, so in the future all lands will be able to use this assessment tool. He said that this is the path we are on, and because of all that, he supports the motion.

Mr. Campbell asked to refine the motion. He summarized the motion to state that the assessment that has been completed should be added to the existing plan as an additional tool for analysis of wetlands during the planning process.

Ms. Hoferkamp confirmed that the intention is to later categorize wetlands

Mr. Campbell asked Ms. Camery to provide the recommendation to the Planning Commission with a note that the board is working on refining its analysis with the hope of coming up with a ranking system for the wetlands with WESPAK's tool.

Ms. Hoferkamp said that the board needs to look at the information in more detail in more depth

Motion unanimously approved.

Ms. Horne requested calling the subcommittee a workgroup. Ms. Camery said she would have to call it whatever the clerk's office tells her it has to be called, and she would let the board know.

Ms. Sumner said that she had had some wordsmithing edits to offer on the plan, and Ms. Camery said that would be very helpful.

Mr. Campbell asked Ms. Camery if we had answered her questions.

Ms. Camery said that she would like to know if the board felt that the information in the plan was sufficient. She said she would appreciate ways to make the document more user friendly, and she would like to know if there were sections that need more explanation or information, areas to be elaborated on. She said she would appreciate comments regarding the usefulness of the maps and the organization of the plan.

Mr. Campbell said he had more questions on values but did not find any errors in the document. Ms. Hoferkamp requested labeling the tables and to add an acronym list.

Ms. Camery said she would get a color copy of the preliminary draft to Ms. Horne and asked if any other board members needed a printed copy.

Mr. Campbell said that everyone agrees that the board would make recommendations on updating the plan.

Ms. Camery clarified said that the preliminary draft is the update and reiterated that CDD needed to throw the other one out because of its outdated methodology and policies. She said that it did not matter to her what the plan was called, and suggested calling it a wetlands inventory instead. She said that CDD could not use the 2008 plan any more.

Ms. Horne said that it needed to be a management plan. Ms. Camery clarified that it's a question of order; she said that the management part could come after we develop categories, if and when we decide to develop categories. She said that it seems the board is in agreement of the resource

inventory as an informational resource for the CBJ Lands Division to do subdivision planning and for the private property owners to utilize the information. She said that from there the city would go forward to see how or if we choose to categorize and rank, and based on that the city would choose how or if to develop policies or regulations.

Mr. Campbell questioned that this could happen before the grant ended in June 2016.

Ms. Camery explained that CBJ would see how far we could go with the contractors within the limits of the existing timelines and the budget and the contract. She said that after the grant expires it's up to staff, CDD, essentially herself, with the board to keep refining the plan unless another grant can be obtained. She said that virtually every plan is a work in progress. She said that the plan could be finalized tomorrow and then CBJ would continue working on it, because it would be laid out with goals and objectives. She said that it's a just a question of what point the plan is taken forward for approval. She said we could take the plan forward for approval after everything is figured out, or forward it with a list of goals and objectives, and as those goals and objectives are accomplished, update the plan.

She said that the Bosworth Botanical Consulting contract was to complete the assessments with a detailed explanation, and to provide implementation options. She said that BBC has met the terms the contract and confirmed that CBJ did not ask them to do the rest, understanding that categories and policies are regulations are part of a public decision making process and not the role of consultants. She said that she could check into contract options with Dr. Adamus for more details on how categorizing can be done and for more information on values.

Mr. Campbell asked if the granting agency expected a new plan with direction. Ms. Camery said that the grant calls for a draft, not final, knowing that the public process can take a long time. She said that the grant called for development of wetland policies, based on the grant applications that she wrote in 2009. She said that she would explain to the agency that the policies are developed through a public process that goes beyond the contractual period of the grant. She did not see any problem.

IX. Next meeting: Thursday November 19, 5:15 p.m., in City Hall room 224.

The meeting was adjourned at approximately 7:30 p.m.

Community Development

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DATE: September 29, 2015

TO: Planning Commission

FROM: Teri Camery, Senior Planner
Community Development Department

FILE NO.: AME2015 0014

SUBJECT: Preliminary Draft Juneau Wetlands Management Plan Update

Introduction and Overview

CDD has received the preliminary draft Juneau Wetlands Management Plan Update from Bosworth Botanical Consulting. This Plan, funded entirely through a federal grant, represents the culmination of the wetland assessment field work conducted in the 2014 and 2015 field seasons.

The initial stage of CDD efforts on the update began in 2009. In 2009 the Planning Commission and Assembly re-evaluated CBJ's former goal of developing a wetland mitigation bank to lower wetland mitigation costs within the borough. The Commission and Assembly concluded that an update to the existing Juneau Wetlands Management Plan was a better option. This is because an update to the plan could provide advance planning information on wetlands to identify low-value wetlands and upland areas suitable for development, and also because a mitigation bank did not appear to be a practical option.

Following this determination, CDD staff sought grant funds to the support the update. The multi-stage application period for the federal Coastal Impact Assistance Program (CIAP) grants began in 2010. In 2012, CBJ was officially awarded a $1.6 million Habitat Mapping Grant. The grant provided for new LiDAR (light detection and ranging, which provides detailed topographical data) and imagery, an updated wetland assessment methodology, new stream maps, and the Wetlands Management Plan. This is described in more detail in the Background section of this memo.

The report includes 345 wetland assessments. Of these 345 assessments, approximately 18 assessments are on private land and the remaining 327 assessments are on city land. The Plan also includes 48 off-site assessments on private properties where CDD did not obtain permission for on-site assessment. This is explained in greater detail later in this memo. Each assessment includes detailed wetland maps, LiDAR (topographical data), photographs, and wetland function scores.

The CBJ Lands Division has already been actively using the assessment information for subdivision planning. For example, the Renninger Major Subdivision used the wetland assessment information to determine areas most suitable for development and for wetland mitigation. CBJ Lands is also using the information in the plan for development of the Pederson Hill subdivision. This information has already saved the CBJ Lands Division tens of thousands of dollars. Similarly, the private property assessments in the Plan potentially save individual property owners many thousands of dollars by providing assessment information in advance and identifying non-wetland (upland) areas to focus development. This information also shortens permitting time when wetland permits are required.

The JWMP Update is largely constructed from a series of bi-weekly field progress reports and the 2014 Field Season Report required in earlier stages of the project, with added chapters regarding implementation options to inform the Assembly and Planning Commission about how this information may be used to develop a wetland management strategy. The report is preliminary, the earliest stage of public review. CDD staff received the documents on September 16, 2015 and have not yet completed a full evaluation. CDD is not providing recommendations on management strategies or other Plan revisions at this time. We expect to complete our internal review and potentially have a recommendation before the Planning Commission meeting, however that is not possible before the staff report deadline.

The draft Plan has two volumes. Volume I includes a description of the project history, wetland methodology, distribution of wetland scores, and implementation options (potential wetland management strategies). Volume II includes detailed scores, maps, and photographs for each of the 345 on-site wetland assessments and 48 off-site assessments. The off-site assessments use only the 2013 LiDAR and imagery acquired in an earlier stage of the federal grant. These assessments were conducted on large vacant private parcels where CBJ could not obtain permission from private property owners to conduct on-the-ground wetland assessments.

Comments and Focus of Review. CDD encourages the Planning Commission to focus review and comments on Volume I, with a special focus on the implementation section. CDD requests Planning Commission comments no later than October 30, 2015. CDD Staff are available at any time for questions or for follow-up meetings.

Project Timelines. The preliminary draft JWMP is the first and earliest stage of public review on the project. Bosworth Botanical Consulting will give presentations to the Habitat Mapping Working Group (comprised of state and federal resource agencies to provide technical support for the project), Wetlands Review Board, Assembly Lands Committee, and the Planning Commission at public meetings from September 24 through October 13, 2015. Each entity is invited to submit comments by October 30, 2015. CDD will combine these comments with a detailed internal review of the Plan, and submit a revision request to the consultant by November 15, 2015.

The next draft of the Plan is due from the consultant on February 15, 2016, which will be followed by a second round of presentations to the entities listed above. Revisions from CDD will be due to the consultant on March 15. The final draft is due from the consultant on April 8, 2016. The grant and contract must be closed out by June 2016. CDD expects that additional revisions will be needed before the Plan is adopted. These final revisions will be the responsibility of CDD.

Background

The goal of the JWMP Update is to develop a long-range planning document that will assist public land managers and interested private landholders with practical management of their properties. The update identifies wetland areas within designated priority areas and applies the WESPAK-SE wetland assessment method to these areas to produce assessment scores, maps, and supplementary documentation. Priority areas are based on large vacant public and private parcels in areas within the CBJ that are likely to be developed within 20 years.

Identifying and assessing wetlands using a consistent, standard scientific method provides information to public and private developers so they may determine if additional wetland review and delineation is needed when a specific project is proposed. The Plan provides wetland maps and wetland scores so land managers/owners have advance information on high scoring wetlands (which may be suitable for mitigation) and low scoring wetlands (which may be suitable for development).

Federal Grant Funding. The project is the largest element of the $1.6 million Habitat Mapping Project, a 3.5 year project funded through the federal Coastal Impact

Assistance Program (CIAP). The Habitat Mapping Project, which began in 2012, also included acquisition of new LiDAR and imagery (completed in 2013), peer-reviewed revision of the WESPAK-SE wetland methodology for adaptation to Southeast Alaska conditions (completed in 2013), and development of new stream maps (under way and scheduled for Lands Committee review at the October meeting).

Original Juneau Wetlands Management Plan. The CBJ has a long history of local involvement in wetland management. In the 1980s the CBJ conducted wetlands studies in the developing area of the Borough, and commissioned wetland evaluation based on the Adamus Wetlands Evaluation Technique (WET method). This resulted in adoption of the 1992 Juneau Wetlands Management Plan, which classified wetlands into five categories (A, B, C, D, and EP, Enhancement Potential) with supporting regulations and extensive appendices and documentation. The Plan identified approximately 160 wetland units and provided maps, descriptions, and functional analysis corresponding to each unit. The assessment method applied only to freshwater wetlands, therefore large areas of estuarine wetlands were not evaluated. In the original JWMP, wetlands comprised 54 percent of the study area.

The JWMP has been updated several times since 1992. (The most recent is dated February 2008.) However, these revisions changed the text and formatting only, to address the requirements of the former Alaska Coastal Management Program. The wetland units, functional assessments, and policies from the 1992 Plan remain unchanged. The JWMP maps and analysis are now nearly 23 years old and include a limited area of the Borough that addresses only freshwater wetlands. Though the Plan was nationally recognized when it was first completed, it is now outdated and in some cases inaccurate. The JWMP is largely based on analysis of aerial imagery from the late 80s; the Plan involved only limited “ground-truthing” on-site, and therefore did not require individual private property owner permission for assessments.

For these reasons, and following Planning Commission and Assembly direction, CDD sought and successfully obtained grant funds to support development of a new Plan. At the same time, the new WESPAK-SE assessment method was under scientific revision for Southeast Alaska conditions, and now has strong support from State and Federal resource agency professionals. The WESPAK-SE method was developed by Dr. Paul Adamus. An earlier version of this method, WESPUS, has been formally adopted as the required wetland assessment method in the State of Oregon. Dr. Adamus has been the lead scientist providing scientific quality control and evaluation in the current update, building on over 25 years of wetland analysis within CBJ and throughout Southeast Alaska.

Changes in the new Plan

The new JWMP Update provides wetland assessments for both freshwater and estuarine wetlands. While the old Plan was based primarily on imagery with minimal "ground-truthing," the new plan has utilized the new 2013 LiDAR and aerial imagery as well as extensive on-site analysis of each wetland area. CDD identified large vacant parcels along the road system to establish priority areas for the assessment work. CDD then contacted individual property owners within these priority areas—by phone, email, and a mailing—to offer free wetland assessment services conducted by the consultant with grant funding. Four property owners, with approximately 12 parcels total, accepted CDD's offer. For the remaining private properties where CDD did not obtain permission for on-site assessments, the consultant conducted off-site assessments utilizing only the 2013 LiDAR and imagery, with extrapolation for adjacent properties when relevant. Off-site assessments are clearly noted in the plan as having a much lower accuracy rate than on-site assessments.

As noted earlier, the Plan includes a total of 345 on-site wetland assessments. (Earlier reports note 360 assessments, but some areas were later combined after further evaluation.) Of these 345 assessments, approximately 18 assessments are on private land and the remaining 327 assessments are on city land. The Plan also includes 48 off-site assessments, which are primarily on private properties where CDD did not obtain permission for on-site assessment.

The new Plan has not categorized wetlands into high-value and low-value wetlands, nor does it offer wetland policies or regulations for consideration. Understanding that these are policy decisions made by the Planning Commission and Assembly, CDD did not include this requirement in the contract. The JWMP Update Volume I Implementation Chapter outlines different options for wetland management for the Assembly and Planning Commission to consider. As noted earlier, staff has not had sufficient time to review the preliminary draft to offer a recommendation at this stage. However it is clear that even if the Assembly and Planning Commission choose not to develop wetland policies and/or regulation, the advance wetland and topography information acquired with the Plan will continue to be very useful for city land management efforts.

As a final note, Bosworth Botanical Consulting has noted several items that are missing in the preliminary draft and will be added in the next draft, which is due in February 2016. These missing items include the following:

Volume I:

1. In section 4.5, tables for on-site non-tidal, showing highest and lowest ranking Assessment Areas (AAs) for various functions.
2. In section 4.6, similar tables for off-site non-tidal (tables are in place, but they haven't been normalized reflecting scores for the West Douglas sites).

Volume 2:

1. Final scores for anadromous fish habitat for approximately a dozen sites, recently determined to be in error (red-highlighted in draft.)
2. On-site photos for 4 AAs still to be collected (the draft has pink-box placeholders).
3. Score tables for off-site non-tidal AAs.

DRAFT

Juneau Wetland Management Plan Update

Final Report • Volume 1

for:

Community Development Department, City and Borough of Juneau, Alaska

Bosworth Botanical Consulting

with:

Adamus Resource Assessment

Ecological Land Services

Catherine Pohl Biological Consulting

Discovery Southeast

September, 2015

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Cover: View east-southeast over Lawson Creek and Crow Hill to Douglas, September, 2014. We assessed forested and open peatlands in this area.

This contract was funded by the Coastal Impact Assistance Program through the Alaska Dept of Commerce, Community and Economic Development as part of Grant #10-CIAP- 0009, "Habitat Mapping and Analysis Project."

Assessing unit NV06 on Montana Creek, first week of 2014 field season.

1.0 INTRODUCTION

This document, Volume 1, provides project background and the methods and results of two seasons of wetland mapping and assessment. Volume 1 also presents several potential approaches to using the resulting information in an updated wetland management plan. Rapid assessment scores and maps for each site are found in the accompanying Volume 2.

1.1 Study Purpose

The wetland mapping and assessment project reported here was conceived to provide accurate information about the location and characteristics of wetlands on large and mostly undeveloped parcels in the Juneau area. The information is intended to make land use decisions more objective, science-based, and efficient. providing key information for update of the wetland management plan for the City and Borough of Juneau.

1.2 Scope

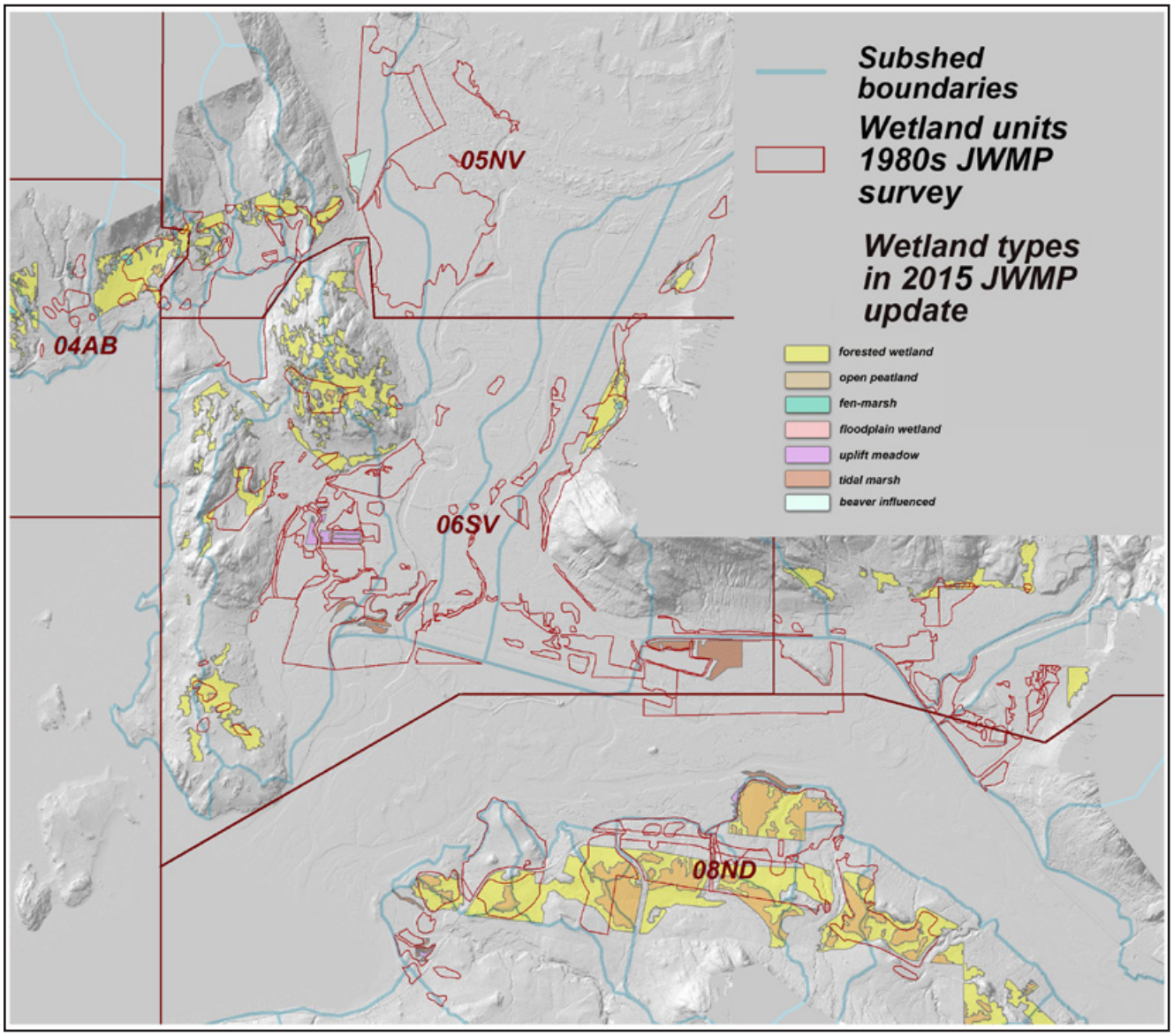
The project consists of the following primary tasks, outlined in RFP 14-132 (Juneau Wetlands Management Plan Update):

- Preliminary mapping of wetlands and Assessment Areas (AAs) to plan and guide field efforts.
- Documentation of wetland boundaries via GPS (Global Positional System).
- Post-field processing of GPS data: differential correction, archiving, export to shapefile.
- Wetland boundary mapping in GIS (Geographic Information System) using GPS results.
- Field and office-based assessment of wetland functions and values.
- Calculation of raw and re-scaled wetland assessment scores.
- Reports: Bi-weekly progress reports, draft final report in 2015, including a section on implementation/planning options, with a final report in 2016.

The mapping and assessment were conducted only in parts of the City-Borough of Juneau designated by the CDD as a priority for this study. The study area, encompassing about 1% of the area of the City-Borough, was conducted within "Priority Areas," shown on maps throughout this document. Most are on undeveloped public land, but several are privately owned. When CDD staff drew the priority area boundaries, the proportion of those areas containing wetlands was not accurately known. The boundaries included areas that CDD staff believe are likely to be a main focus of wetland permit applications during the next 20 years.

1.3 History

In 1985, the CBJ formed a Wetlands Interagency Advisory Committee, which recommended a study (Adamus Resource Assessment 1987a, b, c) to analyze and prioritize public and private wetlands within the CBJ for development and conservation. In 1992, the



The 1980s JWMP surveys covered only the extent shown here, Auk Bay to Lemon Ck and North Douglas.

CDD used the results to formulate the Juneau Wetlands Management Plan (JWMP), one of the first of its kind in the United States. The JWMP was adopted in November 1992 and reissued with minor revisions in 1997.

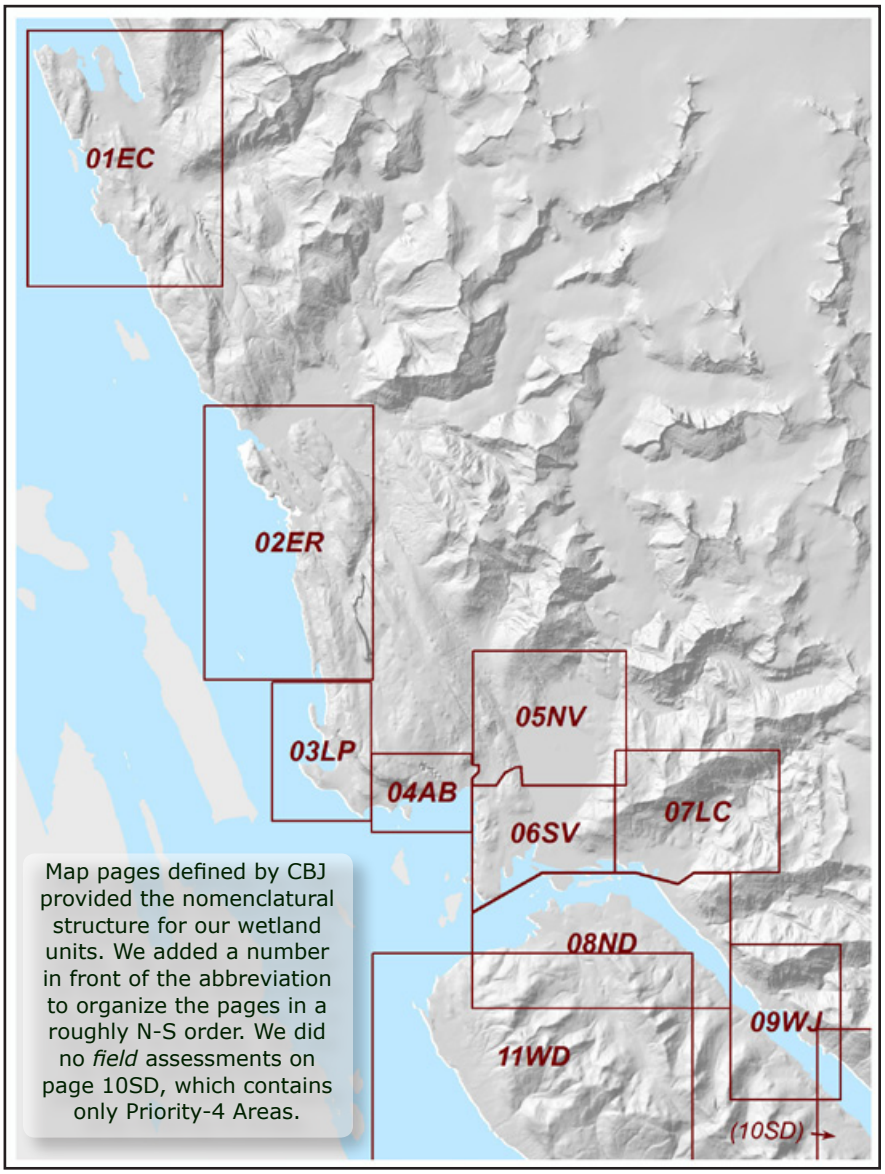
Results of the present study will be used by CBJ to expand the area covered by the JWMP and to update it with more rigorous mapping and assessment methods. The study uses an assessment method developed under a federal grant to the Southeast Alaska Land Trust (Adamus 2012) and later refined (Adamus 2015) through a federal grant to CBJ. The CBJ Wetlands Review Board and the project's Habitat Mapping Working Group (a state and federal agency group advising CDD) have formally approved the WESPAK-SE method for the project.

About 8% of the study area had been assessed in the prior Juneau survey, as shown above. Results from the present study supplant those of the earlier document.

1.4 Project Area

The project area consists of a set of 78 tracts, each assigned one of four levels of priority for mapping and assessment. The majority of the "Priority Areas" (PAs) are lower elevation landscapes with low or moderate slope, but some steep and/or higher elevation sites are also included. They span from Cowee Creek at the northern end of Glacier Highway to southern Douglas Island. Vast and varied lowland wetlands on both sides of the Douglas highway are included, as well as large tracts along Fish Creek, at Eaglecrest, and on west Douglas Island.

In this report, the areas we mapped and assessed are clustered within 10 "map pages." North to south, these are Echo Cove (01EC), Eagle River (02ER), Lena Point (03LP), Auk Bay (04AB), North Valley (05NV), South Valley (06SV), Lemon Creek (07LC), North Douglas (08ND), West Juneau (09WJ), and West Douglas (11WD). (Areas within CBJ's map page 10, South Douglas Island, were assigned lower priority for field efforts so were not included in the field surveys). Instead, they were mapped and assessed using a somewhat different, "off-site" method, described below in Section 2.3.4



1.5 Wetland Functions and Values

Rules legally adopted for implementing the Federal Clean Water Act require regulatory agencies to consider a wetland's *functions* when reaching decisions about whether to grant a permit to a developer and/or whether mitigation needs to be done under Section 404 of the Act. "Functions" are what wetlands can do naturally, such as store water, purify runoff, and provide habitat. Dozens of functions could be described for any given wetland, but some are of unknown or limited importance to society and/or ecological resources, and others are difficult to assess. Therefore, most wetland assessments focus on a limited set of generally-recognized functions that are most relevant in a given region. Those considered to have the greatest potential relevance to Southeast Alaska, and which therefore were assessed in this study and could be used to prioritize Juneau wetlands, are defined in Table 1, below.

Table 1. Definitions of functions, values, and other attributes scored by this study.

Function or Attribute	Definition	Values
Water Storage & Delay	The effectiveness for storing runoff or delaying the downslope movement of surface water for long or short periods.	Flood control, maintain ecological systems
Stream Flow Support	The effectiveness for contributing water to streams during the driest part of a growing season.	Support fish and other aquatic life
Water Cooling	The effectiveness for maintaining or reducing temperature of downslope waters.	Support coldwater fish and other aquatic life
Water Warming	The effectiveness for increasing the temperature of downslope waters.	Maintain late-season ice-free conditions
Sediment Retention & Stabilization	The effectiveness for intercepting and filtering suspended inorganic sediments thus allowing their deposition, as well as reducing energy of waves and currents, resisting excessive erosion, and stabilizing underlying sediments or soil.	Maintain quality of receiving waters. Protect shoreline structures from erosion.
Phosphorus Retention	The effectiveness for retaining phosphorus for long periods (>1 growing season)	Maintain quality of receiving waters.
Nitrate Removal & Retention	The effectiveness for retaining particulate nitrate and converting soluble nitrate and ammonium to nitrogen gas while generating little or no nitrous oxide (a potent greenhouse gas).	Maintain quality of receiving waters.
Carbon Sequestration	The effectiveness for retaining both incoming particulate and dissolved carbon, and converting carbon dioxide gas to organic matter (particulate or dissolved), and then retaining that organic matter on a net annual basis for long periods while emitting little or no methane (a potent "greenhouse gas").	Reduce risk of global climate warming.
Organic Nutrient Export	The effectiveness for producing and subsequently exporting organic nutrients (mainly carbon & iron), either particulate or dissolved.	Support food chains in receiving waters.
Anadromous Fish Habitat	The capacity to support rearing or spawning habitat of fish species that migrate from marine waters into freshwater streams to spawn, e.g., coho and sockeye salmon.	Support commercial, subsistence, sport, and ecological values. Infuse uplands with marine nutrients.
Resident Fish Habitat	The capacity to support an abundance and diversity of native fish (both resident and visiting species) that are not anadromous, e.g., Dolly Varden, cutthroat trout.	Support commercial, subsistence, sport, and ecological values.
Invertebrate Habitat	The capacity to support or contribute to an abundance or diversity of invertebrate animals which spend all or part of their life cycle underwater or in moist soil. Includes dragonflies, midges, clams, snails, water beetles, shrimp, aquatic worms, and others.	Support salmon and other aquatic life. Maintain regional biodiversity.
Amphibian Habitat	The capacity to support or contribute to an abundance or diversity of native frogs, toads, and salamanders.	Maintain regional biodiversity.
Waterbird Feeding Habitat	The capacity to support or contribute to an abundance or diversity of waterbirds that migrate or winter but do not breed in the region.	Support subsistence, sport, and ecological values. Maintain regional biodiversity.
Waterbird Nesting Habitat	The capacity to support or contribute to an abundance or diversity of waterbirds that nest in the region.	Maintain regional biodiversity.
Songbird, Raptor, & Mammal Habitat	The capacity to support or contribute to an abundance or diversity of native songbird, raptor, and mammal species and functional groups, especially those that are most dependent on wetlands or water.	Maintain regional biodiversity.
Pollinator Habitat	The capacity to support pollinating insects, such as bees, wasps, flies, butterflies, moths, and beetles.	Maintain forest productivity and food chains.
Native Plant Habitat	The capacity to support or contribute to a diversity of native, hydrophytic, vascular plant species, communities, and/or functional groups.	Maintain regional biodiversity and food chains.
Public Use and Recognition	Prior designation of the wetland, by a natural resource or environmental protection agency, as some type of special protected area. Also, the potential and actual use of a wetland for low-intensity outdoor recreation, education, or research.	Commercial and social benefits of recreation. Protection of prior public investments.
Wetland Ecological Condition	The integrity or health of a wetland, as defined operationally by its vegetation composition and richness of native species. More broadly, the similarity of a wetland's structure, composition, and function with that of reference a wetland of the same type and landscape setting, operating within the bounds of natural or historical disturbance regimes.	
Wetland Sensitivity	A wetland's lack of intrinsic resistance and resilience to human and natural stressors (higher score = more sensitive).	
Stress Potential	The degree to which a wetland is, or has recently been altered by or exposed to, risk from factors capable of reducing one or more of its functions and which are primarily human-related.	

Toads were observed here during the first-week calibration session with Paul Adamus. Beaver-dredged channel, tidal unit ND09, Fish Creek Estuary, Douglas Island.

2.0 METHODS

This section summarizes methods used to accomplish this study's three major objectives:

2.1 Mapping Wetland Boundaries

Whenever a developer applies for a permit to alter a wetland, by law a determination must be made regarding the exact location of the boundary between what is wetland and what is non-wetland -- generally areas termed "upland" that are drier, and areas termed "deepwater" that have no emergent vegetation. Formal standardized procedures for making that determination have been adopted by regulatory agencies (US Army Corps of Engineers 1987, 2007).

Areas delineated as wetlands are dominated by vegetation, soil indicators, and hydrologic conditions that differ noticeably and in characteristic ways from those present in adjoining upland areas.

For drawing boundaries of wetlands for the study described in this document, the above criteria and procedures were referenced. Although federal wetland delineation criteria served as a guide for our field mapping of wetland-upland boundaries, we were not required to delineate with the level of formal documentation that regulatory agencies usually require in applications for wetland alteration permits. Doing so over such a large area was not possible within the time and funding constraints of the grant that supported this project. Moreover, formal wetland delineations must be specific to a particular development application and are considered valid for only a limited time. Therefore, the teams did not record the presence or percent cover of each indicator plant species at each wetland, nor prepare detailed documentation of soil and hydrologic conditions in each wetland. Rather, team members with prior training and experience in wetland delineation in Southeast Alaska determined the boundary between wetland and upland, much of it while moving rapidly, often through brush and rough terrain in remote forested landscapes distant from roads. Boundaries were documented using sub-meter precision GPS equipment. Although not required to do so, we also recorded stream locations and their characteristics (such as "perennial," "seasonal," "intermittent," or width) where they crossed the wetland boundaries.

Before we visited an assessment area, we used ArcGIS software to draw predicted boundaries, using digital orthophotography and LiDAR products to detect vegetation height, color, and texture, as well as topography and the presence of water. We found the CBJ's recent high resolution (6 inch pixels) four-band aerial imagery and LiDAR-derived digital elevation model extremely helpful for predictive mapping of wetlands. Color-infrared imagery and LiDAR derivatives such as hillshades, 2- and 10-foot elevation contours, and keyed vegetation height (from the LiDAR-derived "normalized vegetation" layer) helped us discover and efficiently target potential wetlands. Tidal extreme and mean high water lines were also helpful, as were other GIS layers (roads, trails, parcel

boundaries, LiDAR point clouds). We converted the resulting maps to *.jpg* format for viewing on smartphones and tablets. We uploaded geo-referenced priority-area and predicted wetland boundaries to GPS units and Android tablets for real-time navigation.

In the field, we documented wetland-upland boundaries using Trimble GeoXH 6000-series receivers with GLONASS and Floodlight technology and the internal, integrated antenna. GPS wetland boundary data collected in the field were downloaded, archived, and post-processed or 'corrected' daily using the Trimble Pathfinder Office program's multiple base station option. We used online data from three base stations for the post-processing, including two in Juneau and one in Whitehorse. The latter was needed to process data from the high-latitude Russian GLONASS satellites that were particularly helpful where thick canopy or steep hillsides limited GPS reception. While actual precision under thick canopy or near steep slopes was rarely sub-meter, reception was consistently adequate for planning-level mapping.

We then exported the corrected GPS files to ESRI ArcGIS shapefiles in the NAD 2011 State Plane projection. We used that to draw the smoothed wetland map units displayed in our bi-weekly progress reports to the CDD and compiled in volume 2 of this document.

2.2 Mapping Wetland Assessment Areas (AAs)

The CDD requested that entire wetlands—areas surrounded on all sides by drier upland or deep water—be divided into multiple wetland assessment areas (AAs) if they were larger than 1 acre and met criteria that will be described below. This was requested partly for logistical reasons because some Juneau wetlands extend for many miles, which potentially reduces the accuracy and utility of scores that might be assigned to the entire wetland.

Although boundaries between wetlands and non-wetlands were GPS'd in the field, the boundaries between adjacent AAs of different wetland types were not, so they were mapped using GIS. Wetland assessment area boundaries could be determined more efficiently using imagery and LiDAR-based products.

Dividing an entire wetland into separate AAs is potentially a subjective process, but an important one because boundary locations can dramatically influence the resulting scores. The CDD specified that guidelines in the WESPAK-SE manual (Adamus 2012) be used as the basis for that splitting, and that no individual AA smaller than 1 acre be mapped or separated from its contiguous wetland. The study team's proposal, in an effort to honor those guidelines but also to provide additional detail essential to enhance consistency, stated that AAs would be distinguished as follows:

a. Different wetland type using definitions in Form F of WESPAK-SE.

b. Different wetland system, class, or subclass as mapped by the National Wetlands Inventory using the Cowardin classification.

c. Road crossing or other persistently non-vegetated area.

d. Pre-existing data that show clear differences in one or more functions within a possible wetland, e.g., anadromous fish in one intersecting stream but not another.

e. Convex topography or watershed boundary, e.g., half the precipitation hitting the wetland would flow in one direction and the rest would flow in the opposite direction due to a topographic mound within the wetland.

It was never intended that all the above rules be applied in all cases; rather, only that they be used as a guide. If *all* of the above criteria had been applied to the wetlands in the study area, the number of resulting AAs would likely have exceeded 1000, and visiting and assessing that number would have been impossible within the project's time and budget. As a more realistic target, the CDD had suggested that 400 AAs within the study area be visited and assessed. This was only an estimate because the AAs had not been mapped prior to this study. Based only on interpretation of aerial imagery (LiDAR and orthophotos provided by the CDD) , in the early phases of the project it was estimated that the number of AAs in the study area would come closest to matching the target number if they were delimited only by criteria (a) and (e). Those criteria also best reflect the WESPAK-SE manual's statement that *"boundaries of the AA should be based mainly on hydrologic connectivity."*

As relates to criterion (a), the following 7 wetland types were used to delimit separate AAs:

- Tidal Wetland (*td*)
- Forested Peatland (*fw*)
- Open Peatland (*op*)
- Fen/Marsh (*fm*)
- Uplift Meadow (*um*)
- Floodplain Wetland (*fl*)
- Beaver-influenced Wetland (*bi*)

Definitions are found in Table 2 and are illustrated in the WESPAK-SE *Short Guide* (Adamus 2013b) and manual (Adamus 2013), with one exception:

Table 2. Definitions of wetland types used in this survey.

Wetland Type	Definition
Forested Peatland fw	Nearly all the AA is moss-covered and/or with peat or muck soils to a depth of at least 4 inches, sometimes greater if not rocky. More tall (>3 ft) woody cover than herbaceous. Trees often hemlock or cedar. Often with skunk cabbage (at least in seasonal channels), blueberries. Little or no open water. Includes shrub fringes of open peatlands and fens. Not in active floodplain.
Open Peatland op	Nearly all the AA is moss-covered. Peat depth usually >16 inches except where bedrock near surface. Tree cover is <5% and cover of tall (>3 ft) shrubs is <30%. Shore pine, Labrador tea, crowberry often occur. Often with small (<25 sq ft) scattered stair-step pools with acidic, stained water. Some examples are flat bogs, floating bogs, and sloping muskeg.
Fen/ Marsh fm	Often with extensive surface water, at least seasonally. Usually with more emergent than tall (>3 ft) woody plant cover. Often sedges, deer cabbage, marsh marigold, horsetail, burreed, pond lily. If ground is moss-covered, the moss often is mostly obscured by sedges or other herbaceous plants. Soils often muck or peat, seldom coarse unless created by excavation. Often beaver-created, or at base of steep slopes, or in depressions or adjoining larger water bodies.
Floodplain Wetland fl	At least once annually, surface water in a channel that flows through or adjoins the AA causes the width of surface water in the AA (perpendicular to the channel) to more than double. The increased width is due mainly to that channel inflow, not to hillslope seepage or runoff. Soils are silt or coarser (little or no organic soil or peat). Vegetation can be woody or herbaceous: often alder, willow, devil's club.
Uplift Meadow um	Within a few miles of tidewater or a glacier, but nontidal, and mostly within 100 miles of Glacier Bay National Park. Little or no persistent surface water except in channels, which may be strongly downcut. Mostly sweetgale and/or herbaceous vegetation, e.g., silverweed, iris, Lyngbye's sedge. Tree cover usually <30%. Peat depth usually <16 inches. Resulted from uplift following isostatic rebound as a glacier receded within recent centuries.
Beaver Influenced bi	Active or recent beaver activity has altered the water regime and vegetation. These wetlands are typically episodic, with periods of flood-induced tree mortality alternating with periods of de-watering and vegetation recovery.
Tidal Wetland td	Inundated by tide at least once annually and dominated by emergent herbaceous or woody plants. The level of surface water fluctuates every ~6 hours on a daily basis in response to tides. Does not include areas of beachgrass (*Leymus* or *Elymus mollis,* also called ryegrass) unless they are inundated at that frequency. Does not include areas that are entirely eelgrass or seaweeds.

Beaver-influenced Wetland. A need for mapping and assessing that type and using it to define AAs became apparent once field work began. While similar to Fen/Marsh and Floodplain Wetland, it differs in several important ways functionally, and meets the objective of representing a dramatically different hydrologic regime.

It is recognized that considerable variation occurs within these types. For example, Forested Peatland could be split by form (shrub or tree) and/or foliage (deciduous or conifer), and Tidal Wetland could be split into low marsh (inundated daily) vs. high marsh. These distinctions are often important indicators of wetland functions and values, including the contribution of any single AA to the region's biodiversity. However, these and other important indicators of wetland functions and values are, Adamus believes, captured sufficiently by the 126 questions in the WESPAK-SE tool.

Subshed mapping As relates to watersheds (*criterion e*), those can be delimited at many spatial scales. For this study, models of stream networks were created by the Bosworth team and CBJ staff. These were adjusted to an appropriate level of detail and used to delimit the watersheds, which we termed "subsheds." That is, wherever a wetland of a particular type was intersected by a significant watershed divide, the portions of the wetland draining to each stream were delimited as separate AAs despite being contiguous with each other and of the same wetland type. However, where application of this watershed criterion would have resulted in an AA smaller than 1 acre, no splitting was done.

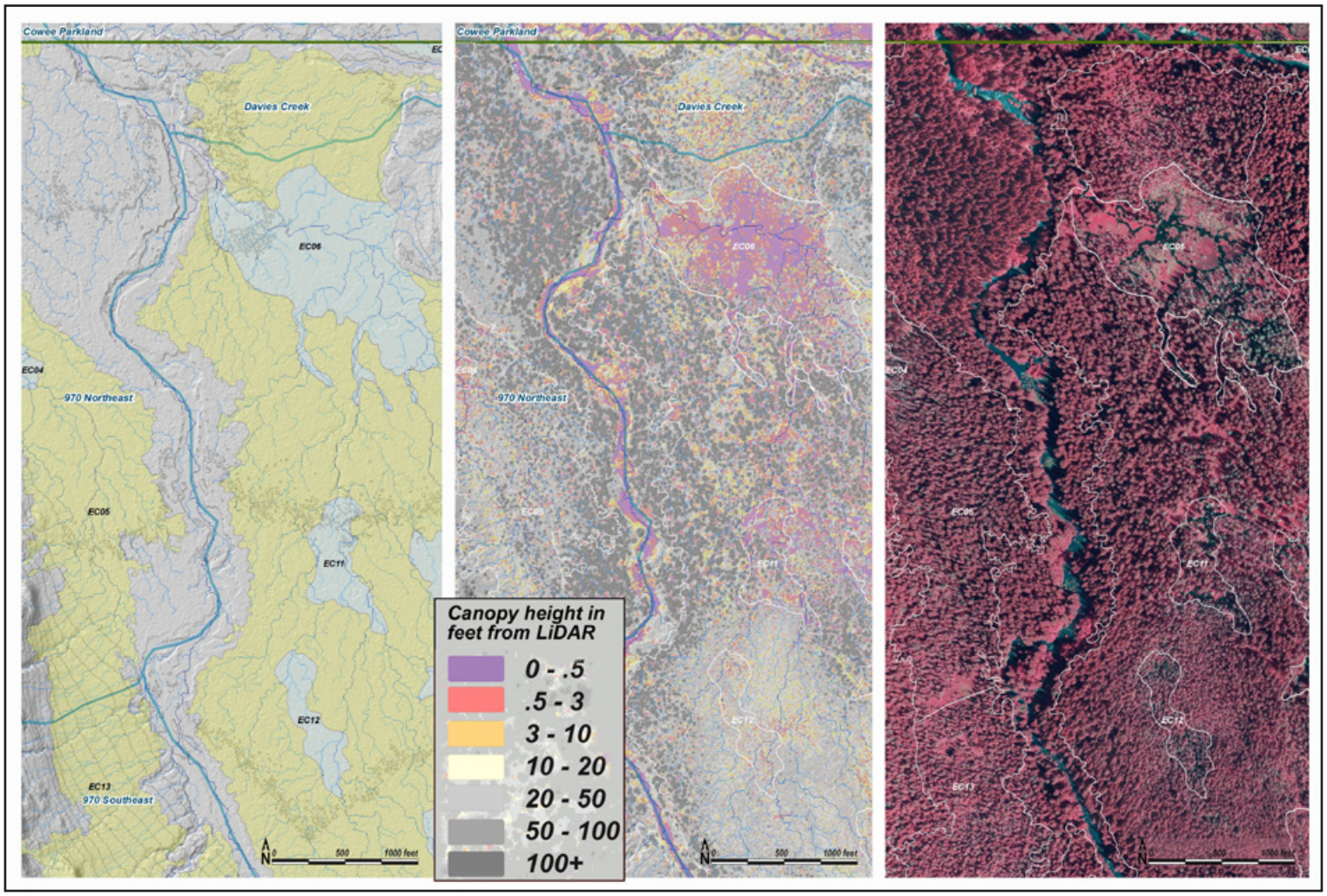
To use for mapping watershed sub-units for delineating AAs on West Douglas, we created a detailed predicted stream map for that area from the CBJ's LiDAR-based digital elevation data. Our stream map was created using ESRI ArcMAP Spatial Analyst software and then adjusting the displayed stream order, or level of detail, to match our observations of the smallest streams.

Subshed mapping was done at-need over the course of the 2014 field season. Near the end of that season, we received from CBJ a similar, but borough-wide, streams model that allowed fine-tuning of subshed boundaries. At that time, some of our wetland units were merged (subsumed) and others split along basin divides. For more information on our process and criteria, see our report entitled *subshedmapping.pdf*. (Bosworth, Carstensen & Pohl, 2014b)

2.3 Assessing Wetland Functions and Values

WESPAK-SE (Wetland Ecosystem Services Protocol for Alaska - Southeast) is a standardized tool for assessing a wetland's functions and values, and a few other attributes. It consists of data forms and a spreadsheet with cell formulas that compute a score for each function, value, or other attribute on a scale of 0 (lowest) to 10 (highest). The version used for this project does not combine these into a single overall score for an AA, but provides a foundation for doing so separately if desired.

Although many standardized tools are available for assessing wetland functions, the CDD selected WESPAK-SE mainly because it is the only rapid tool customized specifically for Southeast Alaska wetlands and it had previously been tested and reviewed in Juneau as well as elsewhere throughout the region. Additionally, dozens of consultants and agency personnel have been trained in its use.



Example of a map-collage for Cowee Creek valley. These composites were prepared on a daily basis for field use by our wetland assessors and boundary mappers, uploaded to tablets and smartphones. • **Left:** Hillshade with modeled streams and 10-foot contours—both generated from LiDAR-based DEM (digital elevation model). • **Center:** Normalized Vegetation, or height of trees, shrubs and herbaceous vegetation above "bare earth." This is one of many LiDAR derivatives, colored here by height class, in this case corresponding to thresholds on WESPAK field and office form questions. • **Right:** Color infrared output from the 6-inch pixel orthophotography. Wetland unit outlines shown here are actually the final, surveyed boundaries. Prior to those visits, we used the pre-field predicted outlines, shown in our May 6, 2014 report, titled *2014 Field Plan* (Bosworth, Carstensen & Pohl, 2014a). Preloading this predicted unit outlines into our Trimbles and other GPS devices ensured that a surveyor would get into all of the places we anticipated wetlands might occur.

It is important to understand that WESPAK-SE does not measure wetland functions and values directly. Rather, it uses rapidly observable "indicators" to build a case for the relative level of a given function that may exist in a specific wetland AA ("relative" meaning relative to other wetlands in the study area). Indicators are used because direct measurement of most wetland functions would be extremely expensive and require years of data.

WESPAK-SE calculates the wetland Value scores independently of scores for wetland Functions. For example, a wetland AA may have low function but if that function is scarce among local wetlands, WESPAK-SE will likely assign a moderate or high as the Value score. Or a wetland may have a high level of function but because of the wetland's location in the landscape the function may have limited value to people and ecosystems, so WESPAK-SE may assign it low Value score in that context. Other features of WESPAK-SE, including its strengths and limitations, detailed accounts of its models, and descriptions of how it computes scores, are presented in the WESPAK-SE manual (Adamus 2012).

WESPAK-SE has a field component and an office component. Completing both is essential in order for the tool to generate scores for Function and Value. The team's implementation of these components is described below.

Pohl, Allison and Bosworth *en route* to wetlands high on 'Hill 970' between Bridget Cove and Cowee Creek.

2.3.1 Field Component

The field team was comprised of Koren Bosworth, Andrew Allison, Rachel Allison, Catherine Pohl, and Richard Carstensen. All had previously attended WESPAK-SE training or were coached initially by team members who had. In addition, during the first week in the field, Dr. Paul Adamus (the author of WESPAK-SE) accompanied the team and reviewed the procedure for answering some of the more difficult questions on the data forms. He prepared an "interpretations" sheet for all team members which clarified and further standardized the use of some terms. This also was shared with the CDD. At intervals during the field season, he answered questions and reviewed data to help ensure consistency among team members' use of WESPAK-SE.

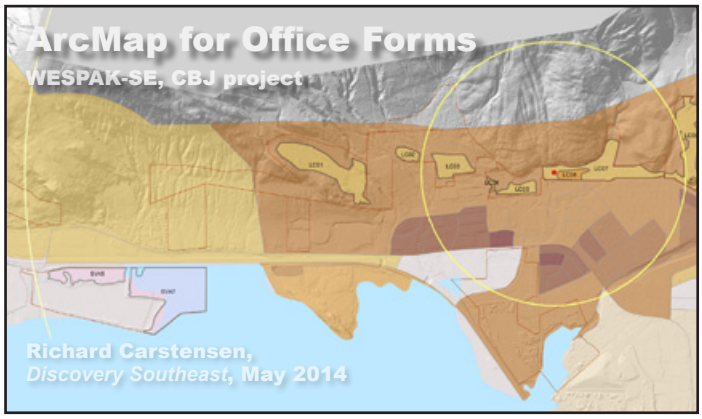
The orthophotos and derivatives of the LiDAR products provided by CDD helped with navigating to the AAs in the field, locating features within each AA to assess, finding inflow and outflow channels, and estimating gradients. Field data were collected by up to four or five team members, often in two teams. The field portion of the WESPAK-SE assessment typically required less than a couple of hours to complete during a single visit, while recording wetland-upland boundaries with GPS required from one to several days depending on size, remoteness, and character of the wetland area. Typically, one team member did a set of assessments and took photos of the AA while the other found and documented the wetland boundary with GPS. In the very large priority areas visited later in the first season, we obtained third Trimble XH unit so that three people could simultaneously document the extensive boundaries. Team membership and roles varied throughout the field season, which ran from May 8 to mid-October during 2014. A few remaining assessments were completed in June, 2015.

The accuracy of responses to some questions contained in the WESPAK-SE tool likely varied across the seasonal timespan of the survey. For example, some plant and bird species can be detected during only parts of the survey season.

Some AAs contain corridors or "islands" of drier land that would not be defined legally as wetland, and some AAs contain water-filled channels or ponds that lack wetland vegetation in their deeper parts. These are commonly termed "inclusions." We mapped any of these larger than 1 acre. If smaller, they were not mapped but their presence was documented in our notes if estimated to be larger than 1200 square feet. In the case of tidal wetlands, AAs did not include unvegetated subtidal waters except for narrow channels where those intersected the wetland.

The orthophotos and LiDAR provided by CDD were helpful in ensuring accurate estimation of several indicators of wetland functions. These images and data layers were reviewed before completing each AA's WESPAK-SE data forms. In particular, they were a great help for measuring wetland and stream gradient; locating small streams, beaver dams, and topographic indicators of groundwater discharge; and measuring tree heights and percentages of conifer vs. deciduous vegetation and tree vs. shrub cover.

Before leaving a given wetland, team members were unaware how WESPAK-SE would score it. Scores were generated only after the collected data had been entered from hard-copy field sheets and quality-checked. A batch-processing version of the WESPAK-SE spreadsheet calculated the scores simultaneously for all AAs after the field season ended.



Custom GIS prepared to support wetland assessments within the CBJ, available on request.

2.3.2 Office Component

The WESPAK-SE office forms were completed by Richard Carstensen and Koren Bosworth. This component normally requires a WESPAK-SE user to access and obtain many types of data from an internet portal assembled specifically for WESPAK-SE by the University of Alaska Southeast (*http://seakgis.alaska.edu/flex/wetlands/*). However, when large numbers of wetlands need to be assessed, efficiencies can be gained by using desktop GIS software to query the same or similar spatial data layers—as was done for this study. A set of improved and additional GIS layers tailored to the needs of this project was created by Richard Carstensen, along with a guide to its use (Bosworth, Carstensen & Pohl, 2014c).

2.3.3 Normalizing the Scores

Although each of the models WESPAK-SE uses to assign scores has a *theoretical* minimum score of 0 and a maximum of 10, in practice when WESPAK-SE is applied to a large number of wetlands the *actual* range for any given function, value, or other attribute is usually narrower. Depending on the function or value, the resulting range of the raw scores found among all sites may be broad (e.g., 1 to 9) or narrow (e.g., 3 to 8). After all field data had been collected and raw scores calculated, the raw scores were converted mathematically to a common 0 to 10 scale for ease of interpretation and rough comparison. This is termed "normalizing." The normalizing of scores for a given wetland AA was done by comparing its raw scores with the range of scores determined for all of the assessed AAs. To do this, the formula used widely by social science researchers for this purpose was employed:

$$\frac{(\text{raw score from "wetland x"} - \text{minimum score from all wetlands in study area}) \times 10}{\text{maximum score from all wetlands in study area} - \text{minimum score from all wetlands in study area}}$$

This formula was applied using the range of raw scores for *each* wetland function and each wetland value among the 330 non-tidal AAs and then separately for the 15 tidal AAs.

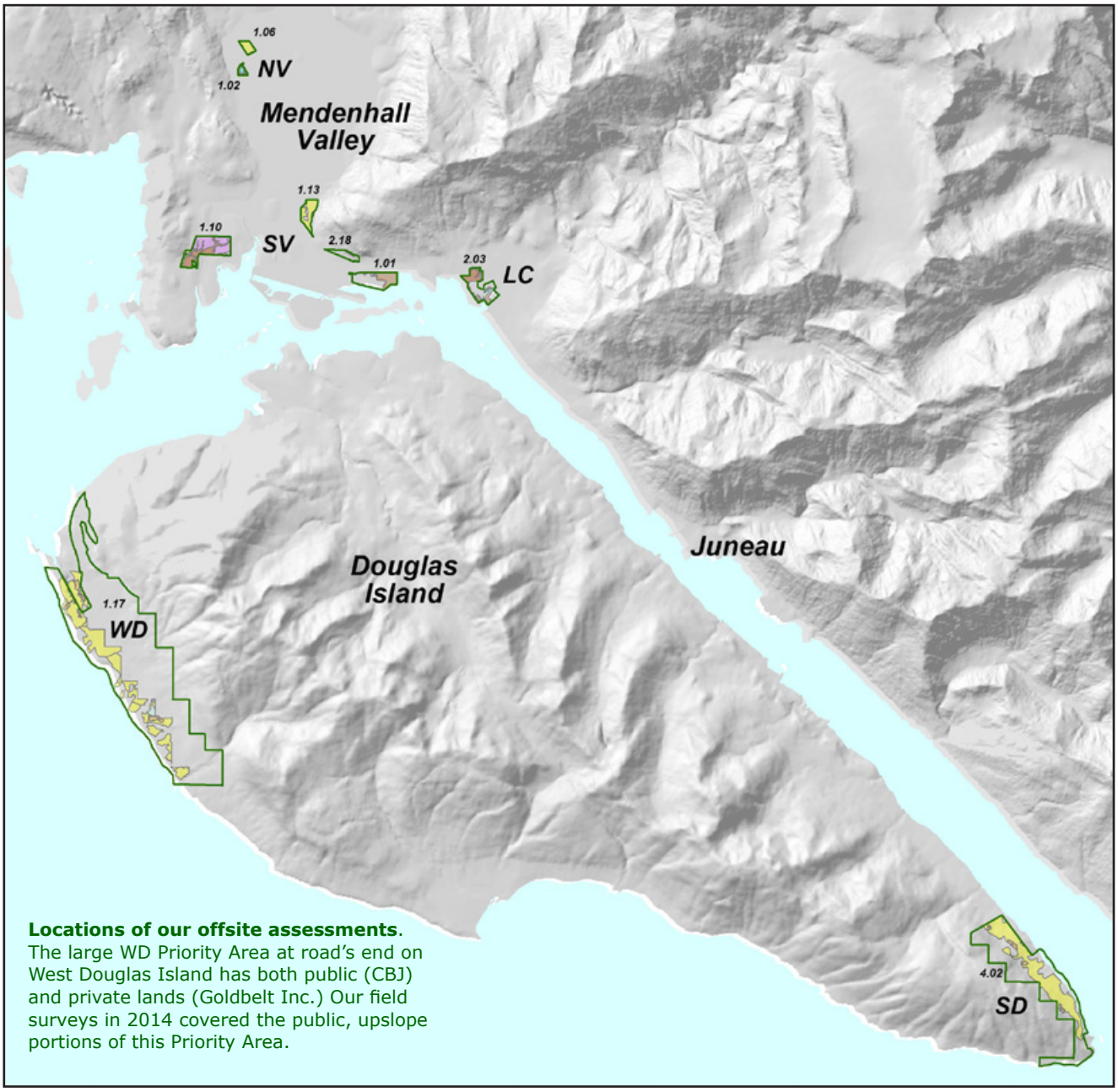
After scores were computed and normalized, a descriptor (Lower, Moderate, Higher) was placed next to each score. For a given function or value, natural breaks in the statistical distribution of scores among all wetlands were used to determine whether to characterize a score as Lower, Moderate, or Higher. Natural breaks were identified using a popular statistical procedure called Jenks Optimization. Using iterative calculations with gradual adjustments in group membership, the method minimizes variance within groups while maximinzing the variance between groups.

2.3.4 Off-site Assessments

A number of the parcels chosen by the CDD for potential mapping and assessment in this project. Several of these landowners chose to allow the CDD to survey on-site, others chose not to allow the study team on their property. The CDD asked the study team map and assess 12 of these private parcels "off-site." One other CBJ parcel on south Douglas Island (SD) that was difficult to access was also done off-site.

As with mapping of onsite AA's, the CBJ's 2013 high-resolution aerial imagery and LiDAR-derived digital elevation model and associated products were very useful in determining the wetland boundaries for the off-site areas, especially with open peatlands, fen/marshes, uplift meadows and tidal wetlands. Although mapping forested wetlands was more challenging, it was helpful to have just finished 6 months of on-the-ground surveying in very similar wetland areas. Further, many of the wetlands previously mapped on-site adjoined the off-site areas, and those wetlands came near or overlapped the parcel boundaries.

Wetlands were further divided, if necessary, into assessment areas (AA's) using the same two criteria as the on-site wetlands—wetland type and subshed. The office form component of the assessment was no different or difficult than for the on-site but there were aspects of the field form component that were more difficult off-site. However, by refering to the combination of



Locations of our offsite assessments. The large WD Priority Area at road's end on West Douglas Island has both public (CBJ) and private lands (Goldbelt Inc.) Our field surveys in 2014 covered the public, upslope portions of this Priority Area.

"normalized vegetation," high-resolution stream maps, hillshade, fine contours and color infrared orthophotography, most of the field form questions could be answered, albeit with less confidence then when we were able to visit the wetland.

The raw scores of wetlands assessed only from off site were normalized not by comparison with all assessed Juneau wetlands, but rather by comparison with just the other wetlands assessed off site.

Table 3. Off-site units and acreages by wetland type. We assessed 48 AAs totaling 887 acres. As with on-site surveys (Table 4, following), forested peatland comprised approximately 3/4 of wetlands by acreage.

type	AAs	%AAs	acres	%acres
forested peatland	23	48%	657	74%
open peatland	10	21%	28	3%
uplift meadow	5	10%	74	8%
fen/marsh	1	2%	5	1%
tidal	7	15%	112	13%
floodplain	0	0%	0	0%
beaver influenced	2	4%	11	1%
total	**48**		**887**	

Our numbering convention for off-site AAs uses the same map page abbreviation as on-site AA's but "*of*" is appended—eg. *SD01of*.

2.3.5 Quality Assurance

Several procedures were undertaken by Dr. Adamus and others to help ensure the quality of the collected WESPAK-SE data. During the first week of the field season he accompanied the entire team in visiting and assessing the first several AAs. In each case, after individual team members had filled out data forms on their own, he explained how he had answered each question. Where differences were apparent, he corrected team members. During the course of the field season he repeated that process during two subsequent visits to Juneau, but did the quality checks on a one-on-one basis with each team member. In addition, while absent from Juneau he responded by phone or email to occasional requests from team members for clarification of specific questions.

Repeatability of Results

The repeatability of WESPAK-SE scores among independent users visiting the same wetlands had been tested previously (in 2013) with generally good results (mean error of + or - 0.86 on a scale of 0 to 10). We conducted repeatability testing again at the start of this field season, after everyone had spent a few days assessing AAs together and discussing answers to the questions. The results demonstrated a higher overall level of consistency among members of our teams than was measured among 6 other trained users who were tested in 2013.

Two team members, Richard Carstensen and Koren Bosworth, completed all of the office-based portions of the wetland assessments. They used ESRI ArcMap desktop GIS software along with locally tailored and enhanced data layers prepared by Carstensen for the project area. To check the accuracy of the "office form" portion of the wetland assessment protocol, Dr. Adamus independently completed WESPAK-SE office assessments for 4 AAs using similar data layers via the University Alaska Southeast online WESPAK-SE wetlands portal and GoogleEarth. He found no instances of disagreement with the answers determined by Carstensen.

Data Entry

As WESPAK-SE field assessments were completed, two office staff at ELS double-entered the data into the standard spreadsheet. That is, they entered data from the same hard-copy field form independently. Data entry proved highly accurate so the double entry was discontinued mid-season. An Excel script written by Adamus automatically flagged entries that were discordant between the two data entry people. The hard-copy data form was then referred to in order to resolve the discord. To identify errors of omission, Adamus counted the responses to each WESPAK-SE, and if the number was less than 345, the person who did the assessment filled in the missing data by referring to field notes, orthophotos, and ground-level photos.

Data Consistency

Function	CI function 2014	CI function 2013	CI value 2014	CI value 2013
Amphibian Habitat (AM)	0.16	0.17	0.28	0.27
Carbon Sequestration (CS)	0.45	0.26		
Anadromous Fish Habitat (FA)	0.15	0.18	0.24	0.34
Resident & Other Fish Habitat (FR)	0.12	0.35	0.24	0.43
Aquatic Invertebrate Habitat (INV)	0.90	0.59	0.13	0.00
Nitrate Removal & Retention (NR)	1.00	1.02	0.80	0.44
Organic Nutrient Export (OE)	0.94	1.08		
Native Plant Habitat (PH)	0.41	0.21	0.14	0.54
Pollinator Habitat (POL)	0.81	0.53	0.00	0.54
Phosphorus Retention (PR)	0.94	1.07	1.16	0.59
Songbird, Raptor, & Mammal Habitat (SBM)	0.77	0.57	0.02	1.16
Stream Flow Support (SFS)	1.58	1.35	0.37	0.99
Sediment Retention (SR)	0.74	1.38	0.81	0.21
Waterbird Feeding Habitat (WBF)	0.59	0.75	0.88	0.74
Waterbird Nesting Habitat (WBN)	0.95	0.57	1.54	0.63
Streamwater Cooling (WC)	1.24	0.80	0.98	0.84
Surface Water Storage (WS)	1.49	1.56	0.08	0.00
Streamwater Warming (WW)	1.56	3.03	0.95	0.68
Wetland Ecological Condition			0.08	0.73
Public Use & Recognition (PU)			0.31	0.64
Wetland Sensitivity			0.63	0.36
Stress Potential			0.24	0.34
AVERAGE:	**0.82**	0.86	**0.49**	0.52

Repeatability of WESPAK-SE function and value scores among users in 2013 and 2014.

Lower CI (statistical confidence interval) numbers indicate greater consistency among the users. Results are based on assessments of 6 wetlands by 3-5 team members early in the 2014 field season, and assessments of 5 wetlands by 6 trained users in 2013. Comparisons are approximate because wetlands where testing was done were different in 2014 from those used in 2013.

Several questions include instructions to skip to a following series of questions. In some cases the intervening questions were answered when they were not needed. The additional data has no consequences in terms of resulting scores because the WESPAK-SE models (spreadsheet formulas) were written to overlook such question-specific superfluous data. Nonetheless, for the sake of consistency, these additional answers have been deleted from the final data set.

Another way of detecting possible misinterpretations or data entry errors is to identify and scrutinize "outliers". For example, if a particular question has 5 possible choices and the field teams selected the fifth choice in only 2 of 330 wetlands, it could mean that either an exceptional condition was truly present in those two wetlands, or that the question was misinterpreted. In that case, the person who completed the data form is asked to recall their visit to the wetland, possibly viewing photos taken during the visit, and consider whether the answer they marked was what they intended to mark.

A third way to detect possible misinterpretations or data entry errors is to identify sites where the combined responses to multiple questions do not make sense. There may be good reasons why they were answered in that manner, but at the very least these seeming incongruities need to be identified and reconsidered carefully. The person who completed the data form is asked to recall their visit to the wetland, possibly viewing photos taken during the visit, and consider whether the answer they marked was what they intended to mark. The following are *potential* incongruities in responses to WESPAK-SE questions:

- Percent of the AA that is Saturated-only (F2) plus Persistently (F3) plus Seasonal-only (F7), or some combination of 2 of these, exceeds 100%.
- Reported occurrence of Throughflow (F28) in a wetland that has no surface water Outlet (F29).
- Reported occurrence of Inflow (F25) but no flowing water in wetland (F24) and/or no Outflow (F29).
- Moss Extent (F43) is great but Soil Texture (F47) is not Organic.
- Woody Cover Extent (F32) is less than Tree Canopy Extent (F33).
- Deciduous Tree Cover (F34) is reported to exceed the Total Tree Cover (F33).
- Percent Woody Cover (F32) plus Percent Herbaceous Cover (F50), as seen from "bird's eye view", exceed 100%.
- In the Woody-Herbaceous Interspersion question (F40), the percent of either Woody or Herbaceous is reported to be 30-70% but the answers to F32 and F50 indicate Woody is greater than 75% or less than 25%, and Herbaceous is greater than 95% or less than 25%.

Clarifications and Interpretations Provided for WESPAK-SE: Field Questions

It became apparent during the first week of data collection, and to a lesser degree as the season progressed, that clarification was needed of the WESPAK-SE author's intent with regard to definitions or other aspects of a handful of the 126 questions in WESPAK-SE version 1.4. Definitions on the WESPAK-SE data forms were found to be unclear when our team encountered situations that had not been encountered or recognized during the author's field testing of WESPAK-SE in 2011-2013. When requested by the field teams, Paul Adamus provided these clarifications and interpretations and communicated them with all team members in order to help maintain consistency among the assessments. The field form interpretations and clarifications are noted here.

Non-tidal Wetlands

Definitions of wetland types that comprise the choices for the first question of the non-tidal field form (F1) were clarified and refined as follows:

- "Forested Peatland" was clarified to include *muck* (either mineral or organic muck) as well as peat soil.
- "Uplift Meadow" was refined as *"usually less than 30% tree canopy cover."*
- "Open Peatland" was clarified as having *less than 5% cover of trees* (in addition to already specifying less than 30% cover of woody plants over 3 feet tall).
- The definition of "Fen/marsh" was clarified similarly.
- "Fen/marsh" was described with additional examples of regionally common emergent plant species (*marsh marigold*) and settings (*often beaver-created, or adjoining larger water bodies*.)
- The Floodplain Wetland type was further defined hydrologically,

> *"At least once annually, surface water in a channel that flows through or adjoins the AA causes the width of surface water in the AA (perpendicular to the channel) to more than double. The increased width is due mainly to that channel inflow, not to hillslope seepage or runoff.*

and with an additional requirement to use field indicators for a final determination.

Several clarifications were also made to other WESPAK non-tidal field form questions to assure consistent and intended interpretation.

- For question F9, we included *loose muck* as part of the water depth. In question F12, the flat shoreline extent is expressed as *percent of shoreline length*.
- In question F21, the color of water is more specifically described as *tea-stained*.
- Inflow, in question F25, was clarified to mean surface water *that at least once annually, flows from a stream or ditch longer than 300 ft (before it reaches the AA) or in a pipe or hardened conduit, directly or as overbank floodwater.*
- The flow complexity choice in question F28 is to be selected for *most* of the flowing water or the choice producing the *greatest friction*, rather than the first applicable description.
- For question 31, we were to disregard part b, concerning flow into a soil pit.
- Question F43, Moss Extent, refers to the percent of the vegetated ground cover comprised of peat-forming moss (excluding moss on trees or rocks).
- Upland inclusions, F46, can be mounds of any type of upland soil. Invasive species (F54) can be woody or herbaceous.
- Shorebird feeding habitat, question F48, is further defined as non-acidic water shallower than 4 inches.
- In question F54, the slope from disturbed lands is to be considered uphill of the unit, or adjoining it if there are none.
- For F55 (Weed Source), the upland edge can be in any direction, not just uphill.
- For question 63, non-consumptive uses, "walking" refers to walking access *for an average person*. Interpretive centers, trails with signs or brochures, or regular guided tours apply only if *within .25 mile* of the AA and if they interpret the natural features of the AA or associated lands.
- *All hunting* is to be included (question F68) with *waterfowl hunting; known berry picking areas* are to be included with *harvesting of native plants*.

Tidal Wetlands

The definition of Tidal Wetland includes tidal freshwater as well as saline areas. "Dominated by emergent herbaceous or woody plants" was interpreted simply as "*dominated by vascular plant cover (excluding submerged aquatics)"* and the criterion "level of surface water fluctuates every ~6 hours" was interpreted to mean *only when surface water is present,* which may be as little as once annually.

"Driftwood" (Tidal Form question 12) refers to largely horizontal logs on the ground near the high water line. "*Large woody debris*" refers to wood such as root masses carried into the unit by currents or fallen from adjacent uplands.

Stressor Form

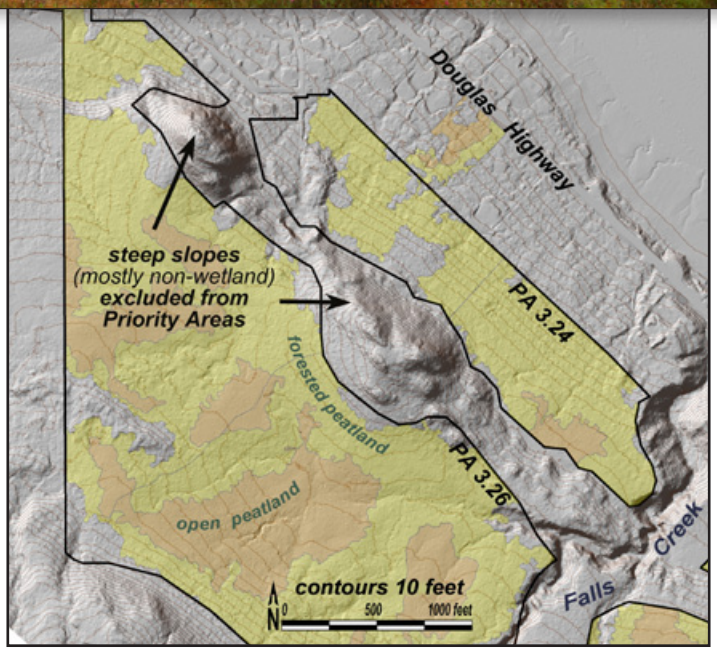
On question 2 of the wetland stressor form, we were to add *"or a partial blockage of flow out of the AA"* to row 6 and were to read question S3, Drier Water Regime—Internal Causes row 6 as "*placement of fill within the AA."* To answer S6 and S7 for tidal wetlands, we were to focus on *tributaries and uplands*, including *tidewater sources* only when there is strong evidence.

Office Questions

A separate document prepared by R. Carstensen describes the GIS procedures and associated interpretations used in answering the questions on the WESPAK-SE office data form.

Kax̱digoowu Héen, *clearing water as you move upstream* (Montana Creek). Floodplain wetlands with skunk cabbage under tall, 2-century-old spruce are common along the more active Juneau streams.

In some places, ORV trails extended far into the back country. These tracks circle a lily pond at 465 feet on the ridge dividing Montana from McGinnis Creek watersheds.



A typical pattern in landscape-position of Priority Areas. While steep slopes are avoided, these better-drained landforms actually support some of the only non-wetland habitats on otherwise low-gradient raised-marine surfaces.

3.0 INVENTORY OVERVIEW

3.1 Acreages, Wetland Distributions

During the 2014 and 2015 field seasons, our team mapped 94 distinct (contiguous) wetlands within 60 Priority Areas (PAs), dividing these into 345 units and covering 5204 acres. Within these, we assessed the functions of 13 tidal and 332 non-tidal wetland assessment areas. The Priority Areas we surveyed were ranked as follows: 13 of 21 Priority I; 23 of 27 Priority II, and 24 of 27 Priority III. Two AAs surveyed on request from private owners were located outside of any PA.

Priority areas *not* covered in the wetland surveys included 15 priority I, II, & III private parcels (8 priority I; 4 priority II; 3 priority III); the private-land portions of 3 priority I areas, including a large area on the west side of Douglas Island; and the 3 priority IV areas.

Wetlands mapped by our team totaled 5584 acres, or 44% of the 12,717 acres of Priority Areas that we surveyed. As shown in Table 4, they were not equitably distributed among Map Pages nor within Priority Areas. The most extensive wetlands occurred on level, poorly drained marine terraces, notably the raised benches of North Douglas (87%), West Juneau (67%) and West Douglas. To give a more realistic percentage for those ancient marine landforms on West Douglas, we added the estimated acres from our offsite assessments on private lands seaward of CBJ property. Because this side of the island was more wave exposed at time of deposition (~9000 to 12,000 yrs ago), sediments are coarser, and wetlands fewer, with much less open peatland.

Underlying these patterns in wetland distribution are the geographic constraints governing Priority Areas the City asked us to investigate. Steep slopes pose challenges

Table 4: Assessment Area units by map page: number of units and acreage. Highest percent wetland was within the North Douglas (ND) map page area. Lowest was at Lemon Creek (LC)

map page	#units	acres	PA acres	% of PAs
EC	48	1115	2902	38%
ER	61	485	1587	31%
LP	6	90	236	38%
AB	16	277	375	74%
NV	31	402	1206	33%
SV	43	409	1161	35%
LC	10	74	263	28%
ND	70	1111	1275	87%
WJ	15	184	276	67%
WD	45	1437*	3436	42%

* Total acres for the West Douglas (WD) units includes our estimate for Goldbelt Lands, assessed "off-site."

to construction, and are also avoided due to liabilities such as post-logging erosion and impacts to streams downslope. This drives Priority Area selection toward low-lying landforms whose drainage characteristics depend on sediment size, which in turn stems from glacio-marine history. Most of the flat but well-drained alluvial, deltaic or coarse-till surfaces in the CBJ were developed by the

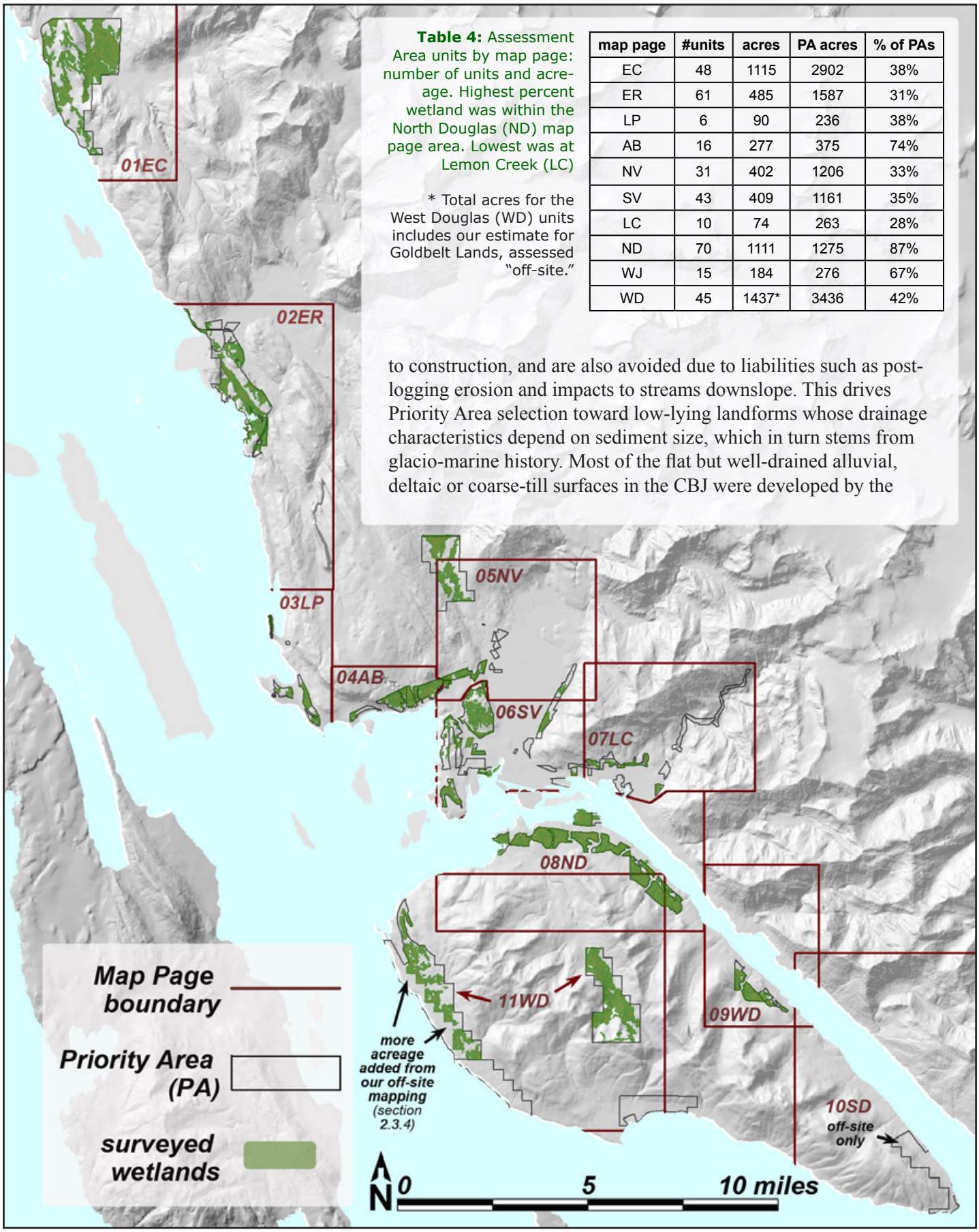


Table 5: Assessment Areas (AAs) by wetland type: # units & acreage. Forested peatland comprised more than 3/4 of our wetlands by area. **fw** = forested peatland. **op** = open peatland. **um** = uplift meadow. **fm** = fen/marsh. **td** = tidal wetland. **fl** = floodplain wetland. **bi** = beaver influenced.

type	#AAs	%total	acres	%acres
fw	160	46%	3961	76%
op	104	30%	773	15%
um	23	7%	182	3%
fm	24	7%	63	1%
td	13	4%	58	1%
fl	8	2%	48	1%
bi	13	4%	118	2%
	345		**5204**	

1970s. Remaining flat or gently rolling terrain is generally blanketed by marine fines, raised above sea level millennia ago. Builders locally refer to these sediments as "blue clay," and while they typically have more silt than clay-sized particles, they generally support open or forested wetlands.

Least wetland cover (28%) was found on Priority Areas within the Lemon Creek (LC) Map Page. Considerable portions of these units occupy fairly well-drained toeslope (colluvial) positions.

Table 5 shows acreages and percentages by wetland type. Forested peatlands (*fw*) comprise the large majority (76% by acreage) of wetlands within our Priority Areas. Many of the forested wetlands had small, well-dispersed hemlocks with large gaps between tree crowns, resulting in brushy understories over an herbaceous layer dominated by skunk cabbage. Wetlands with skunk cabbage were also present, however, in larger closed-canopy hemlock forest, often on moderate slopes, and in large-tree riparian spruce forest.

Second most common (15%) are open peatlands (*op*), typically with very deep, saturated sphagnum or sedge/sphagnum peat. These ranged from recently uplifted tidelands (*eg* Amalga) to ancient peatlands. They varied from nearly flat sphagnum-dominated bogs to sloping spike rush-dominated, pond-studded fens with orchids—often wildlife hotspots.

The remaining 5 wetland types are relatively rare, collectively constituting only 8% of our total by acreage, and 24% by number of mapped units. Such low percentages do not mean these wetland types are ecologically insignificant. Beaver wetlands (*bi*) support probably our richest fish and wildlife traffic. Uplift meadows (*um*) are Juneau's most globally unique habitats, on our most heavily developed landform. Tidal wetland (*td*) are uncommon in our

Unit ND25 in Neilson Creek subshed on Douglas Island, August 11, 2014. Deep-peat sphagnum bog (*op*) with abundant ponds and small, dispersed pines. A territorial greater yellowlegs circled defensively and called while we surveyed here.

Andrew Allison with yellow-cedars at 670 feet on the outer (western) slopes of Hill 970. These are the largest and probably oldest cedars so far discovered in the Juneau area.

surveys only because few of our assigned Priority Areas overlapped tidelands.

If the AA boundaries based upon differing wetland type or subshed (*ie* hydrologic divide) were dissolved, the total number of discrete wetlands assessed drops from 345 to 94.

The distribution of WESPAK-SE scores among all 332 non-tidal AAs is graphed in Section 4 by *function*. Those graphs are followed by similar ones showing the scores for wetland *values* and other attributes.

3.2 Study Highlights

The most scientifically significant finding was perhaps the sheer extent of forested wetlands. Previous inventories based on aerial photography mapped only a small portion of the cryptic and surprisingly extensive forested wetlands in our project area. Also of note were the presence of well-developed wetlands on steep slopes and at high elevation, and the abundance of wet and transitional shrublands in some areas.

Juneau's surveyed wetlands, unlike those of other parts of the United States, are dominated by native vegetation. Sloping sedge peatlands hosted a particularly variable and diverse flora, including orchids and crab-apples, and were typically threaded with stepped ponds and hosted a variety of migratory songbirds. Sign of bear, wolf—and in the Cowee watershed, moose—were found in these areas.. An impressive variety of edible berry plants were abundant and productive in many of the open sphagnum-sedge peatlands and adjacent shrublands.

Forested wetlands were dominated, as expected, by smaller western hemlock, but skunk-cabbage-laced wetlands were also found in large-tree riparian spruce, hillside spruce-hemlock, and post-disturbance red alder forest, and with a diversity of structural and shrub understory conditions. As expected, shorepine was abundant in lower elevation open or thinly forested peatlands, with mountain hemlock becoming more abundant at higher elevation. One cedar wetland—EC18—was found in the study area. The

Floral diversity in EC47: green-flowered and white bog orchids (*Platanthera saccata & dilatata*), fringed grass-of-parnassus (*Parnassia palustris*), self-heal (*Prunella vulgaris*), monkshood (*Aconitum delphinifolium*), and leather-leaved saxifrage (*Leptarrhena pyrolifolia*).

encompassing stand of Alaska yellow-cedar, rare in the Juneau area, was found in the 970 North subshed.

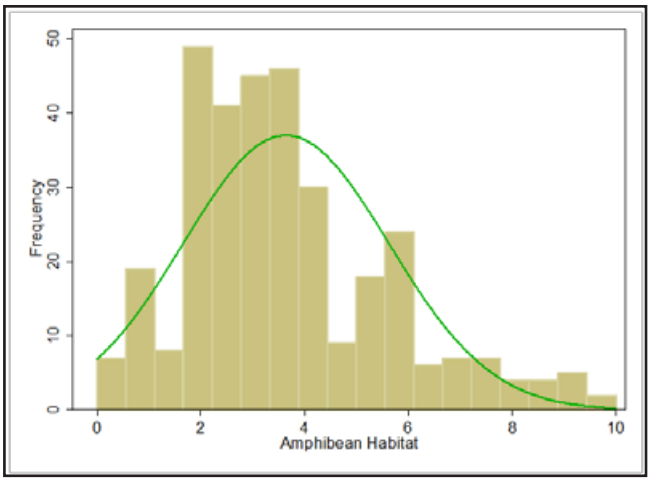
Most of the surveyed wetlands were free of invasive species, but non-native plants were present in and at the edges of some. European mountain ash, a bird-distributed invasive tree species, was found colonizing the edge of an open peatland on Douglas Island. Perennial sow-thistle, a troublesome invasive species that is a focus of control efforts in southeast Alaska, was found in the beach fringe near Hendrickson Creek. Reed canary grass was found in uplift meadows, marsh edges, and the edges of peatlands along roads perhaps most notably along Fish Creek Road. Creeping buttercup and comfrey were also found in wetland areas with a history of disturbance.

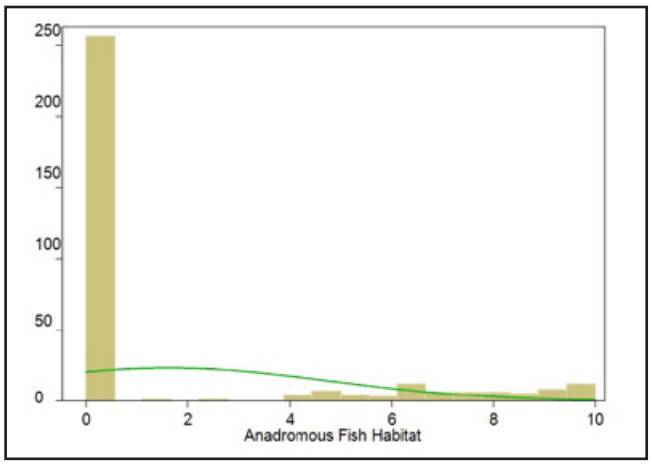
In brushy, forested or more remote wetlands, sign of human use was largely absent. The exception was marten sets attached to trees, which we found in impressively hard-to-reach scrub forests. In more open and easily traversed wetlands, human signs were generally apparent, if rarely prominent. Open peatlands near roads often had informal trails and flagged routes used by hunters, hikers and berry-pickers. Cut conifers were common along roads. Makeshift board-walks had been placed on wetland trails behind residential areas. Other sites had hydrologic research equipment or were accessed by trapper's ORV trails. Short stretches of many informal trails were deeply or broadly eroded, particularly near the edges of openings where peat is often saturated, but most foot trails had little apparent impact. In some places, off-road vehicles had left ruts of torn up or flooded peat.

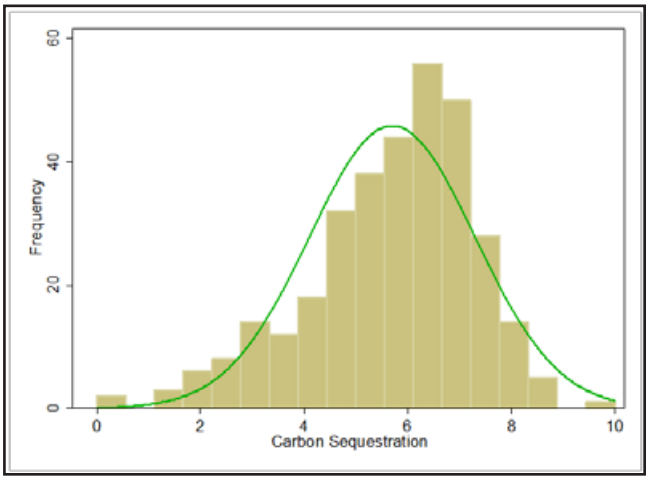
Wildlife sightings of note include an abundance of yearling western toads (with diminished populations region-wide) in the open peatlands of the Cowee watershed. Moose sign was common in the higher elevation Cowee peatlands. Although the extensive open peatlands of North Douglas Island were surveyed late in the breeding season for migratory birds, we observed a pair of the disturbance-sensitive wetland-nesting shorebird species Greater Yellowlegs, apparently still on territory in one of the larger and more remote units.

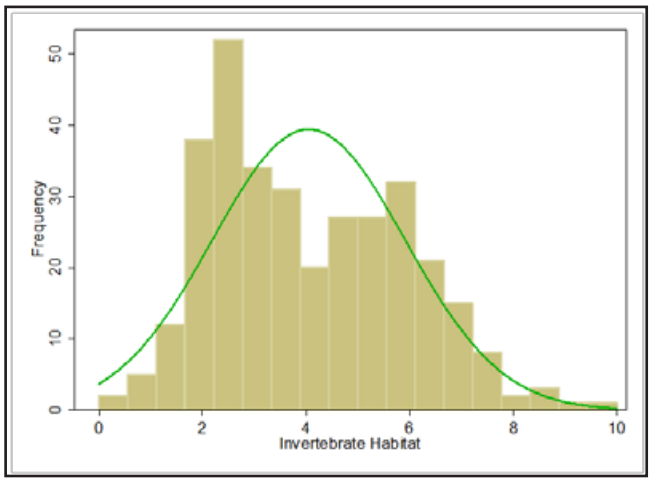
4.0 SCORES AND DISTRIBUTIONS

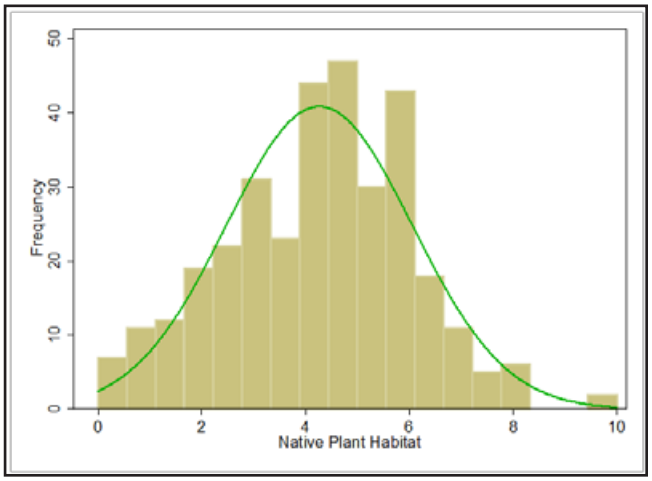
4.1 Score Distributions for FUNCTIONS for 330 Nontidal Wetlands

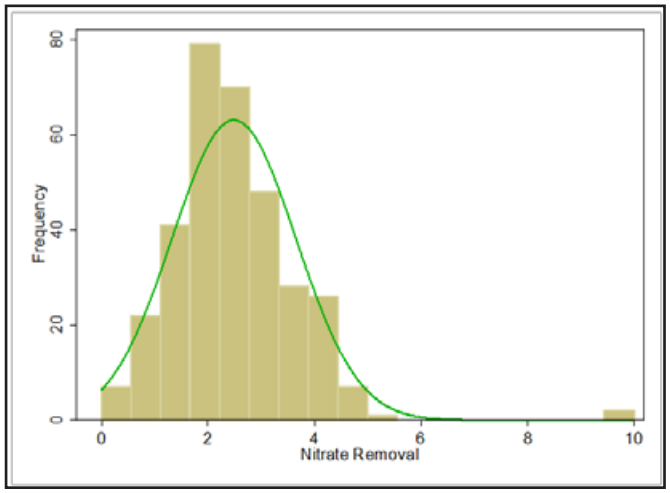


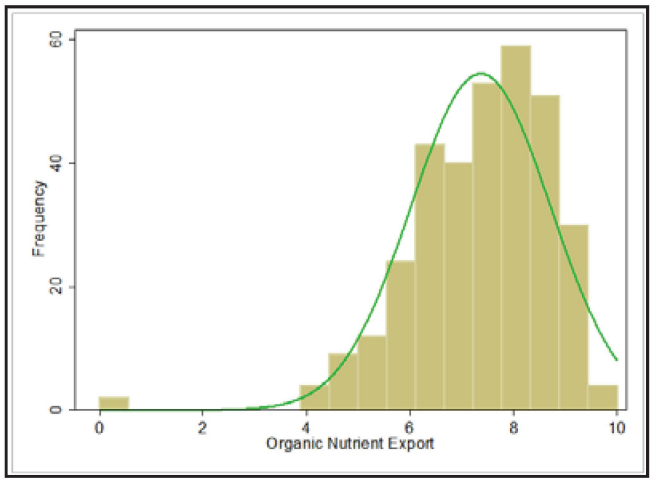








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8
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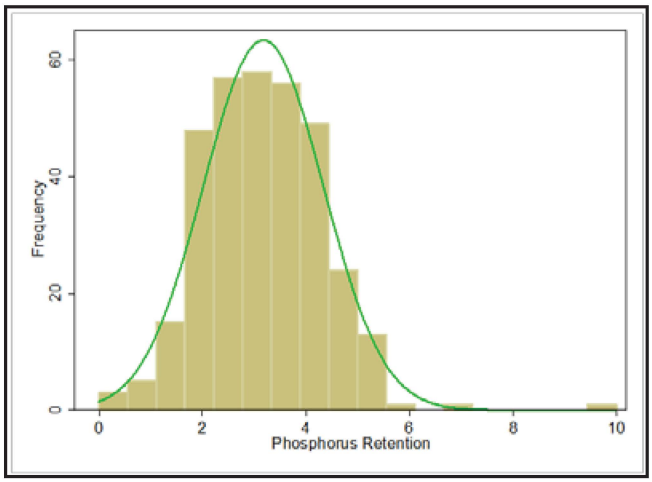
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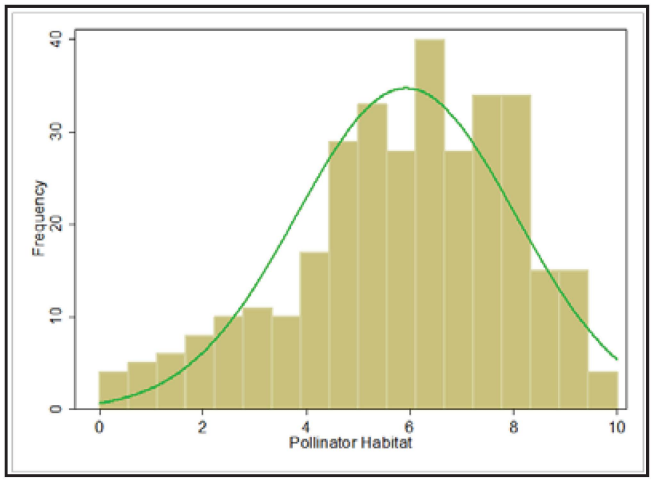
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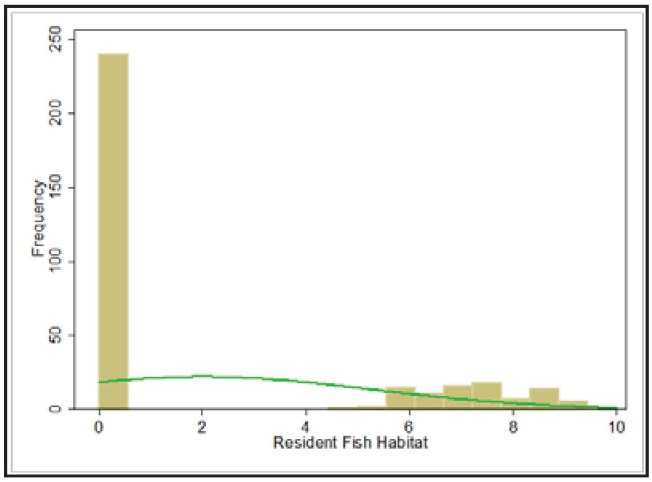
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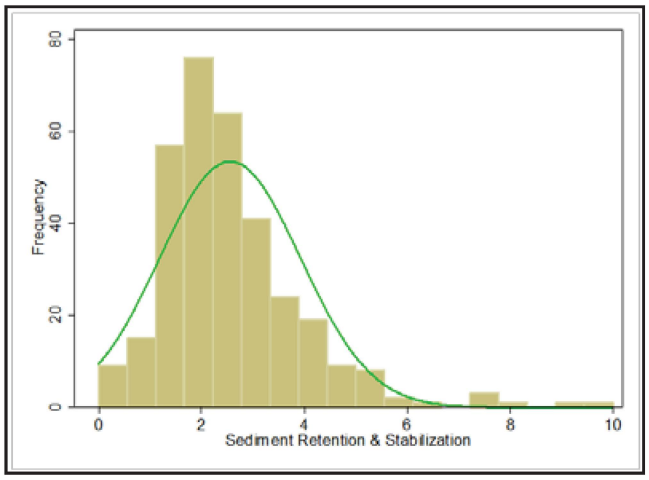
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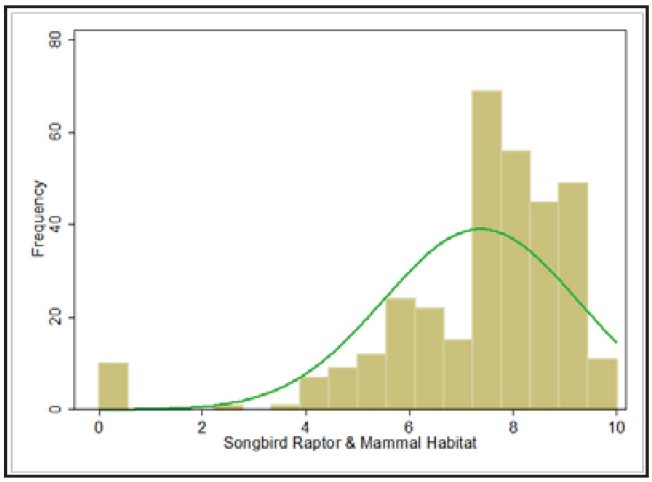
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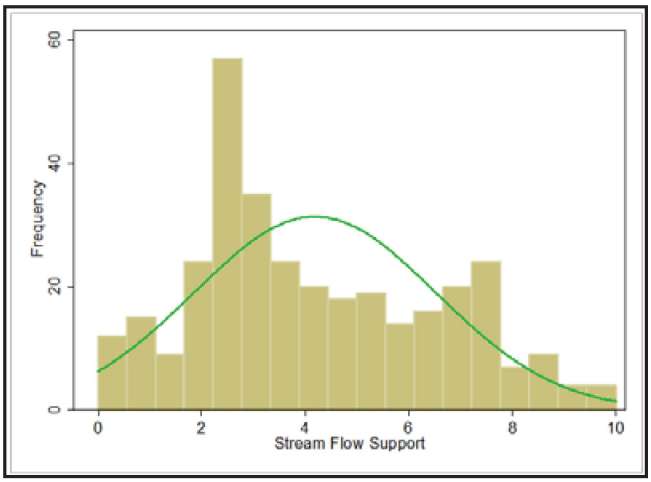
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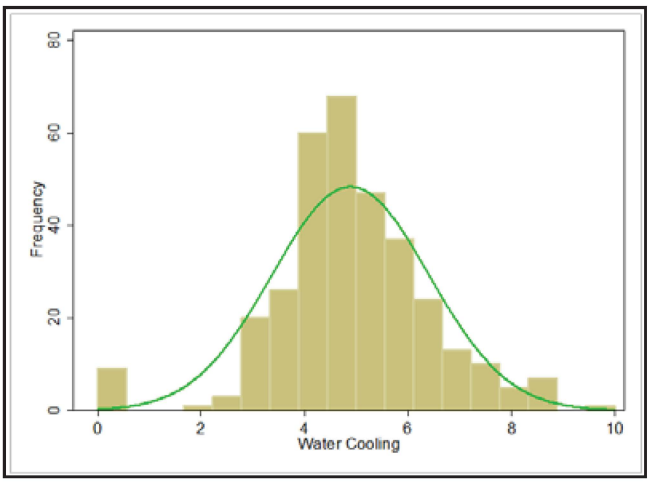
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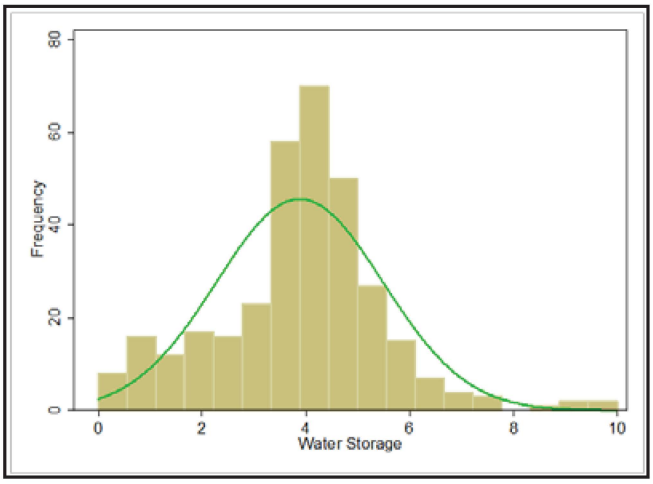
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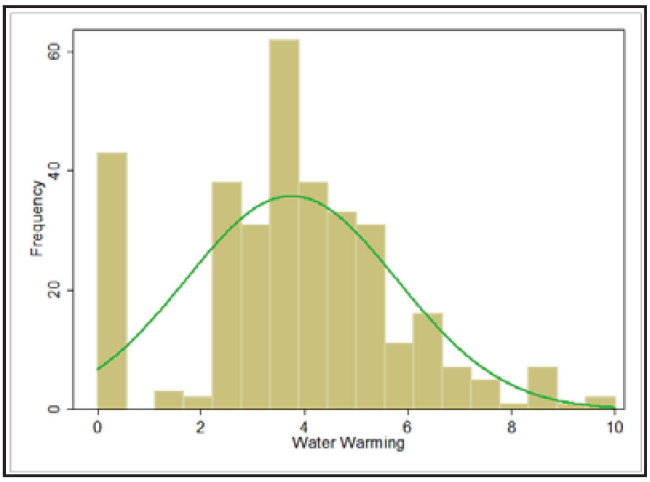
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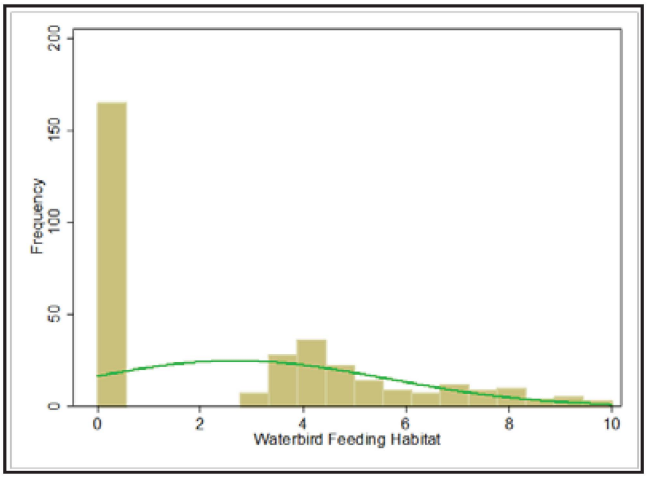
Frequency
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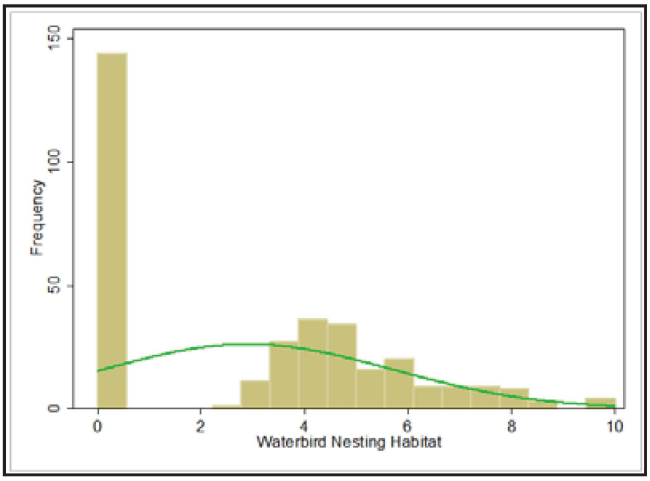
10
Waterbird Feeding Habitat


Frequency
0
50
100
150
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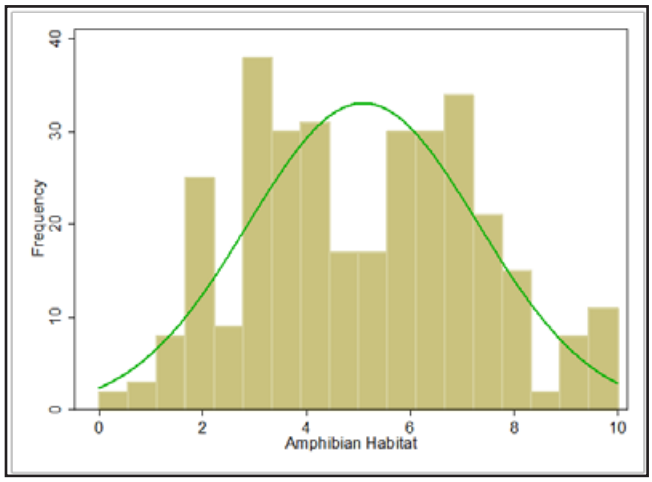
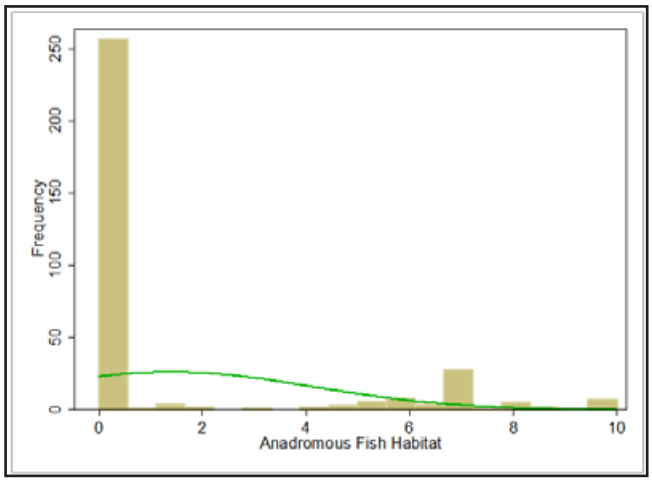
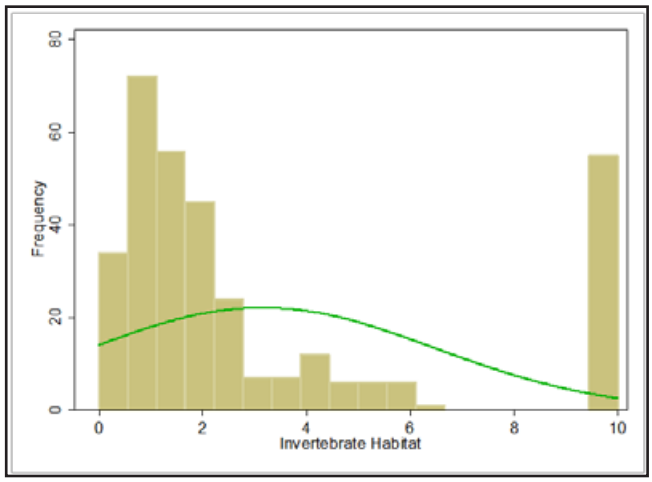
2
4
6
8
10
Waterbird Nesting Habitat

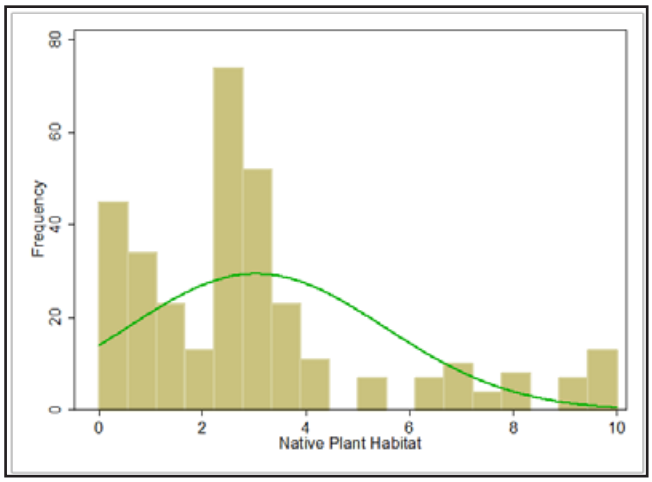
4.2 Score Distributions for VALUES[1] for 330 Nontidal Wetlands

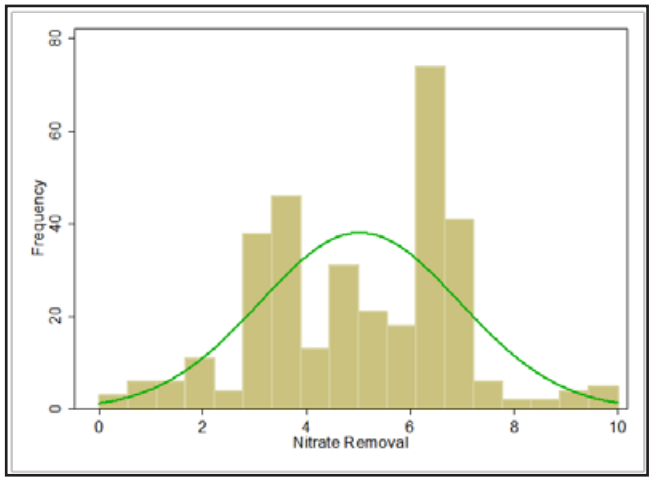
1 and other attributes

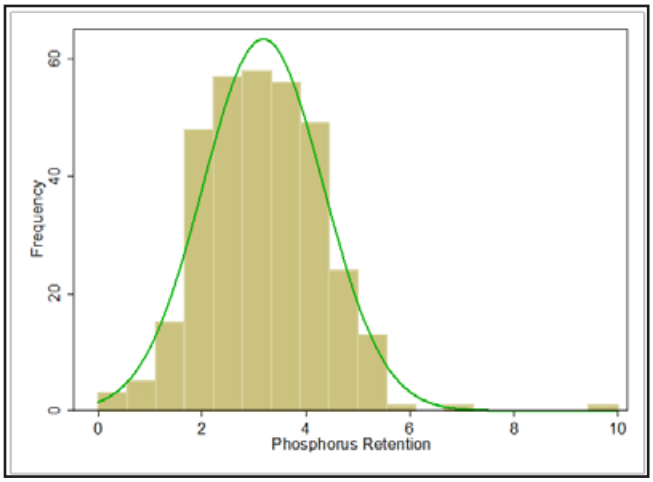


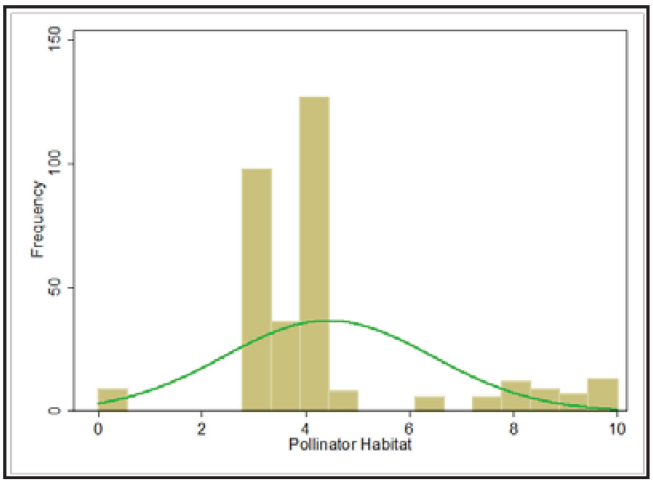











Frequency
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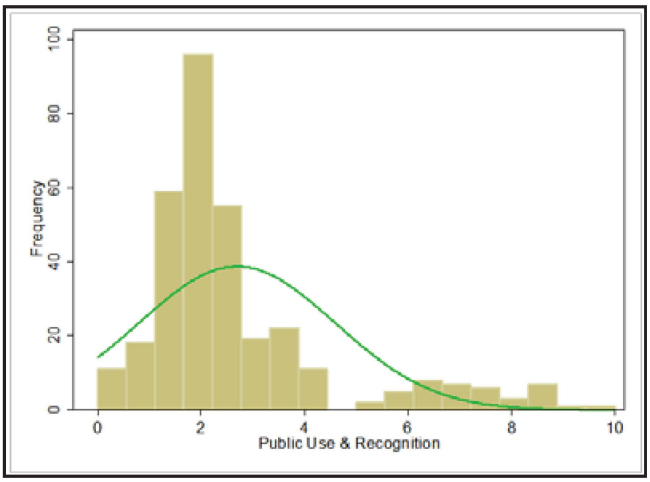
2
4
6
8
10
Pollinator Habitat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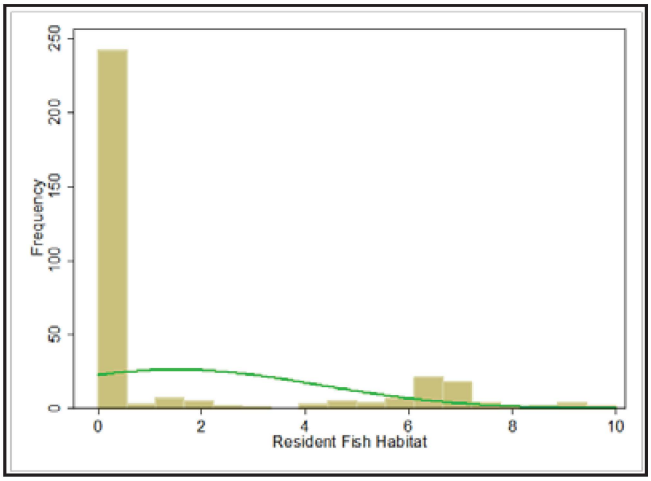
2
4
6
8
10
Public Use & Recognition


Frequency
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150
200
250
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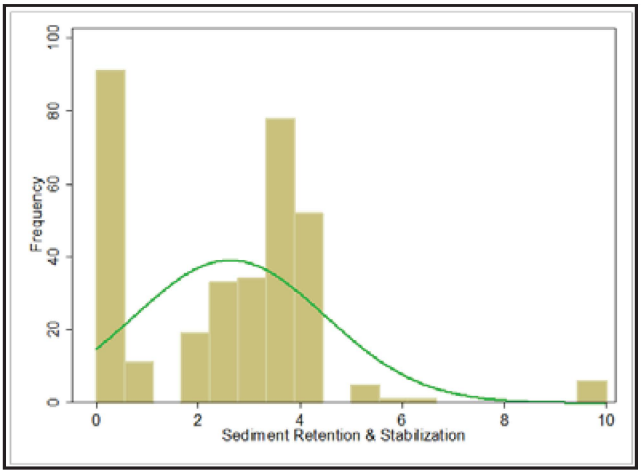
2
4
6
8
10
Resident Fish Habitat


Frequency
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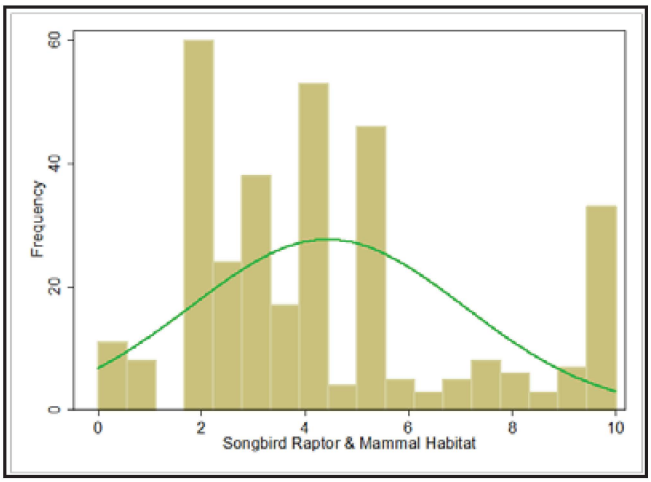
2
4
6
8
10
Sediment Retention & Stabilization


Frequency
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2
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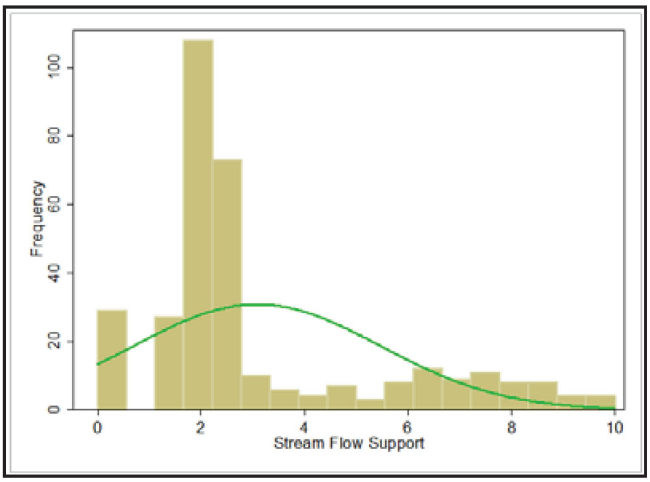
6
8
10
Songbird Raptor & Mammal Habitat


Frequency
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100
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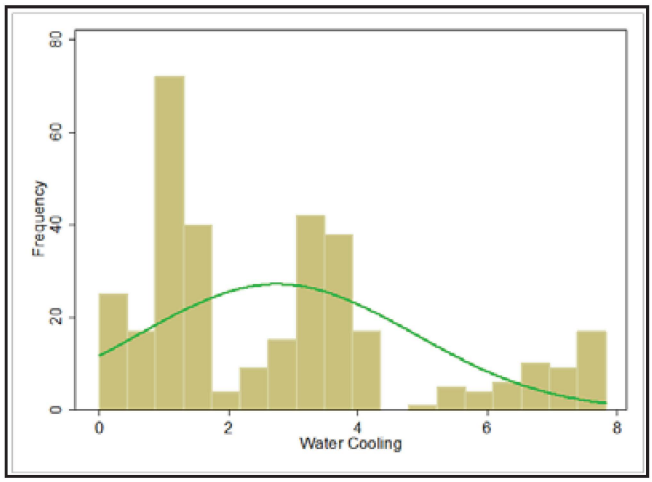
2
4
6
8
10
Stream Flow Support


Frequency
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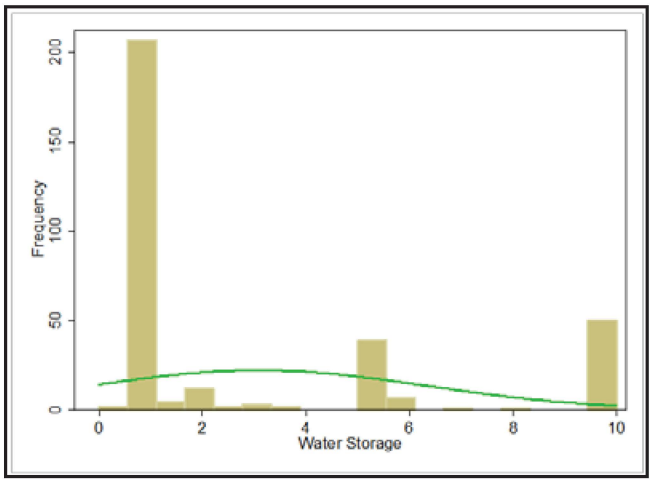
2
4
6
8
Water Cooling


Frequency
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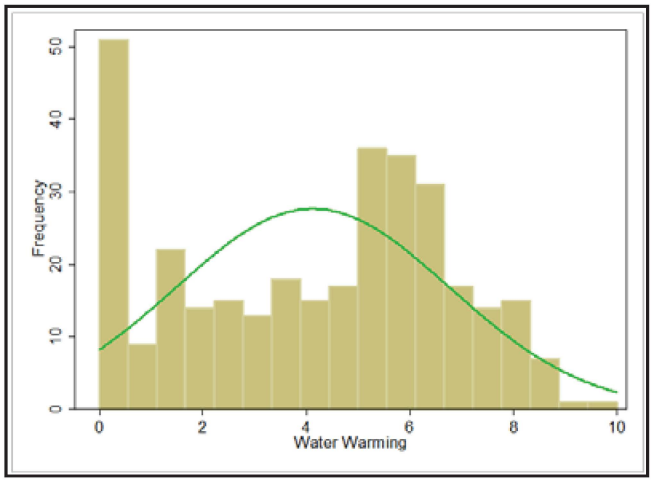
2
4
6
8
10
Water Storage


Frequency
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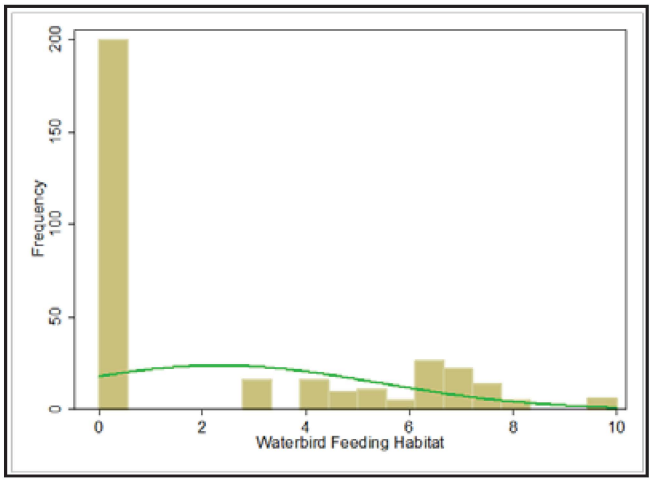
2
4
6
8
10
Water Warming


Frequency
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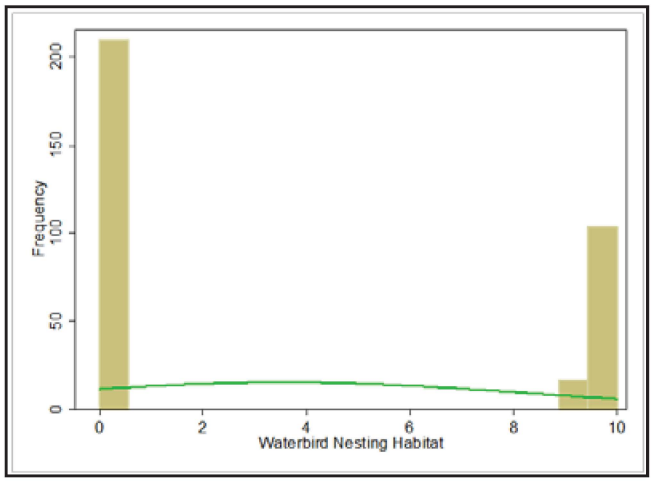
2
4
6
8
10
Waterbird Feeding Habitat


Frequency
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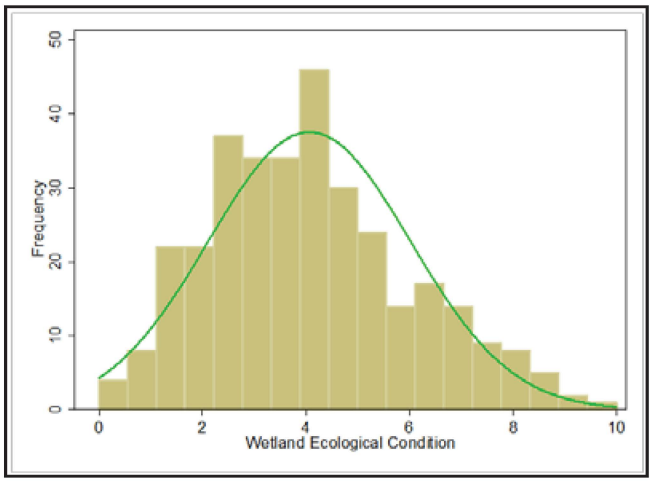
150
200
0
2
4
6
8
10
Waterbird Nesting Habitat


Frequency
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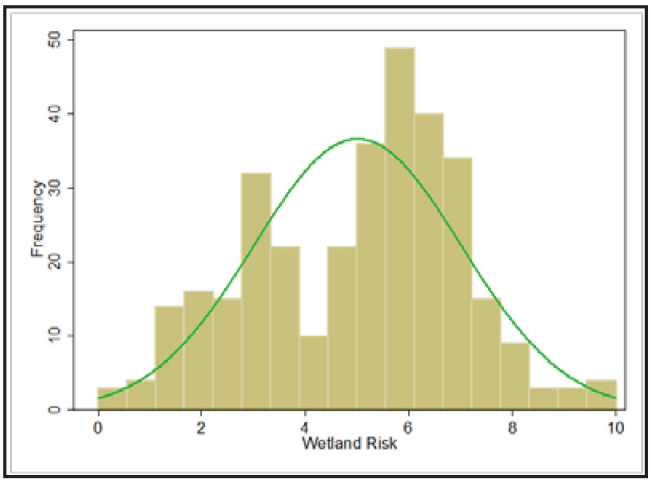
2
4
6
8
10
Wetland Ecological Condition


Frequency
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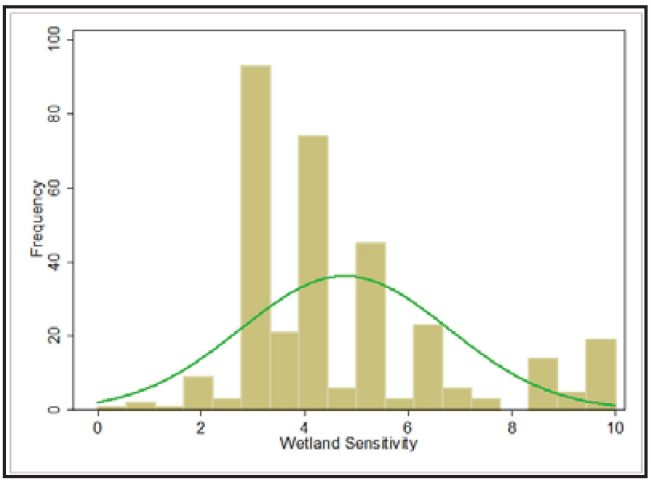
2
4
6
8
10
Wetland Risk


Frequency
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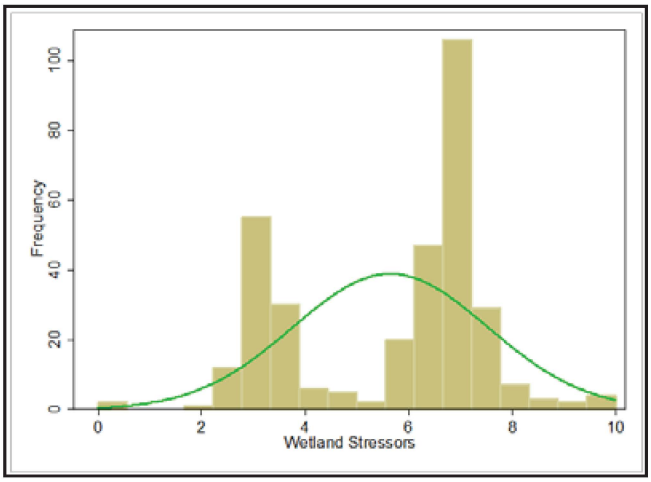
2
4
6
8
10
Wetland Sensitivity


Frequency
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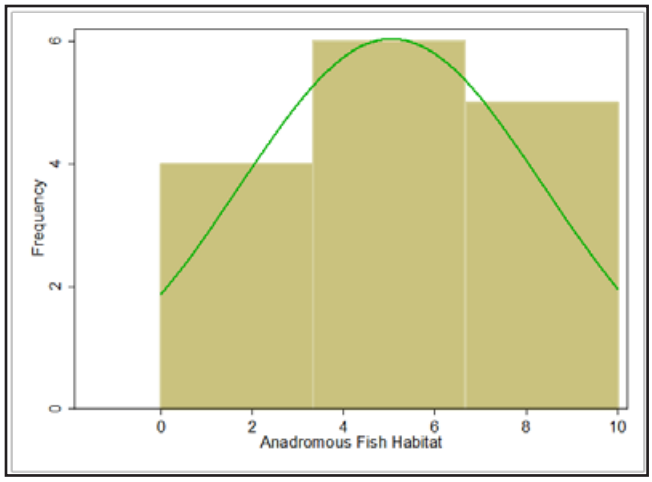
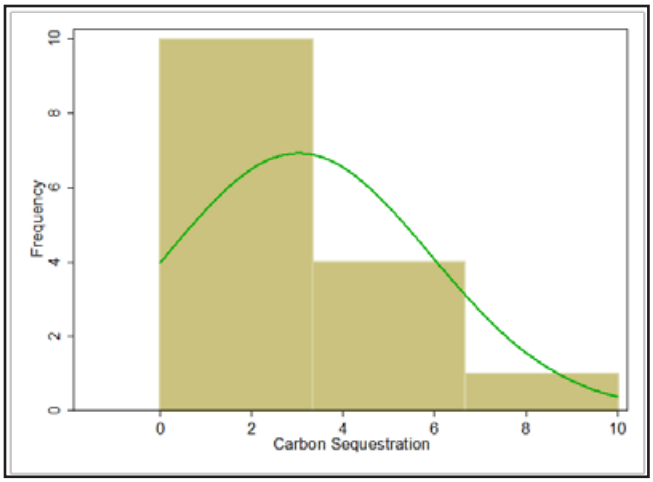
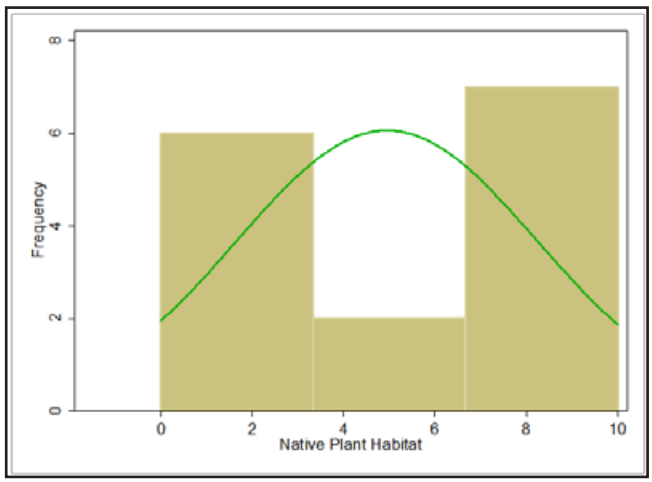
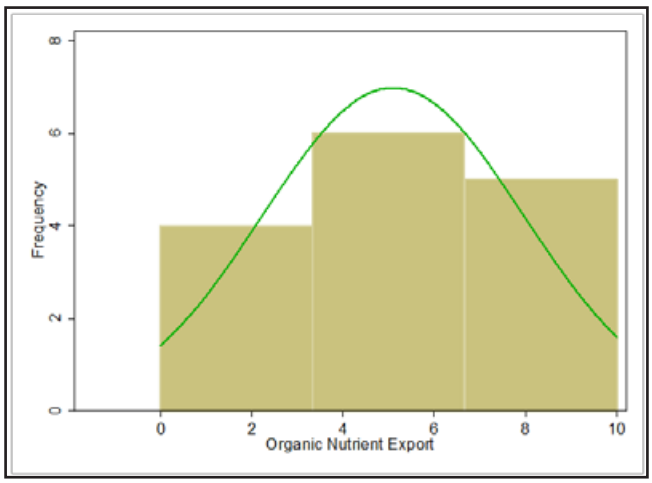
2
4
6
8
10
Wetland Stressors

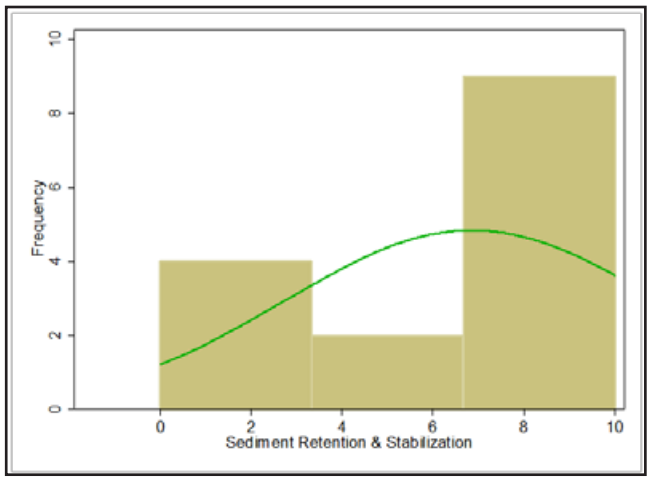
4.3 Tidal Sites Function Score Histograms

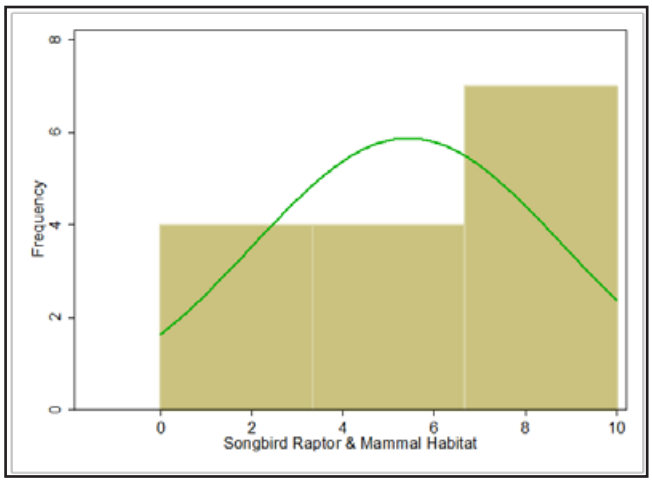


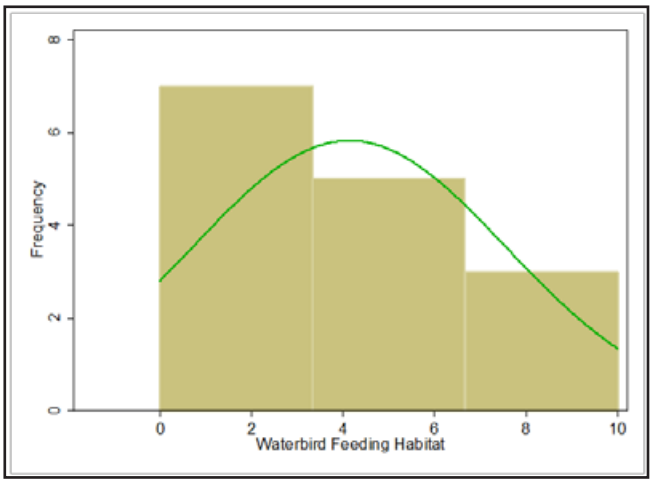




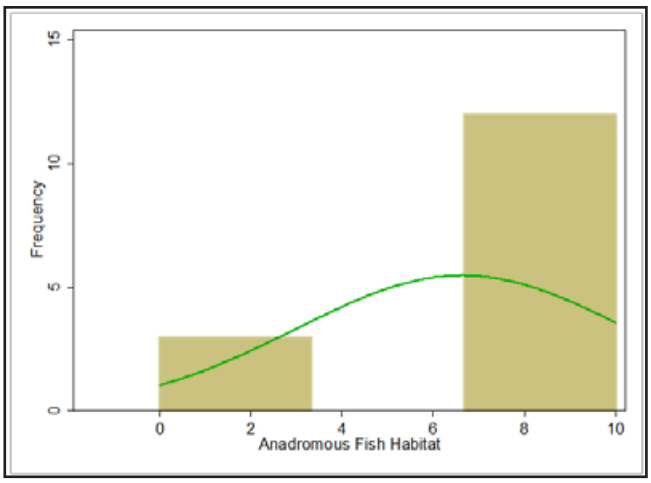


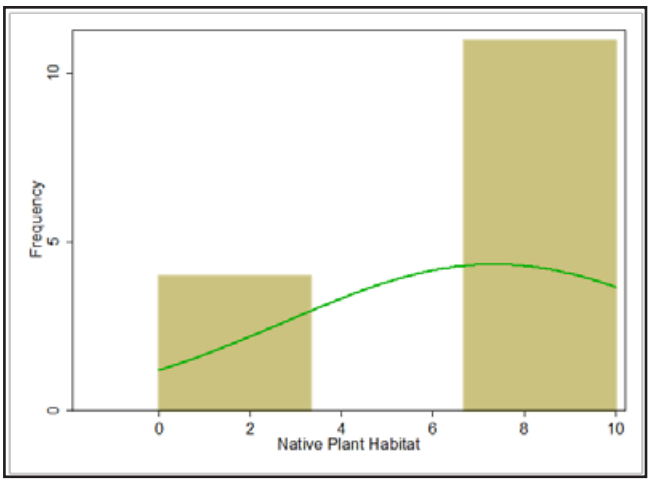


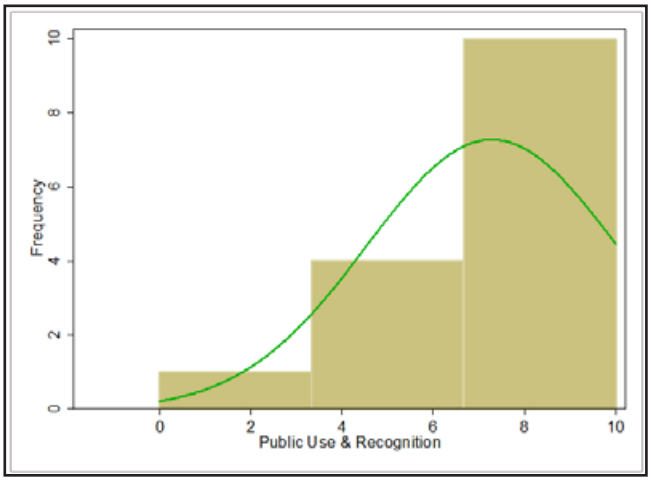


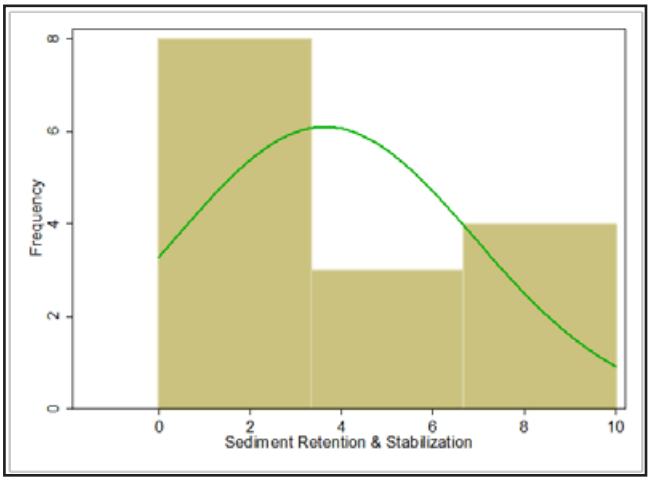


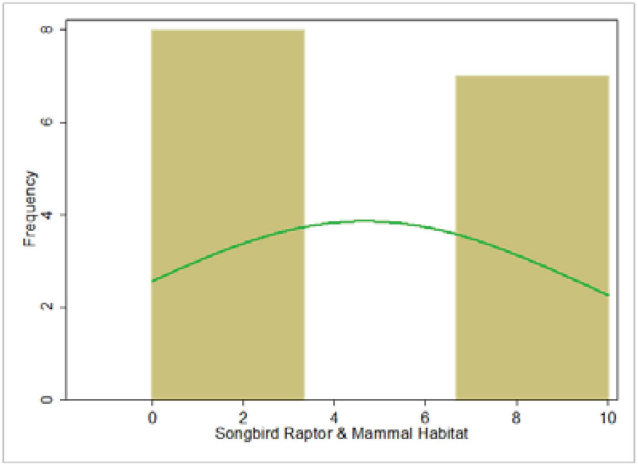
4.4 Tidal Sites Value Score Histograms

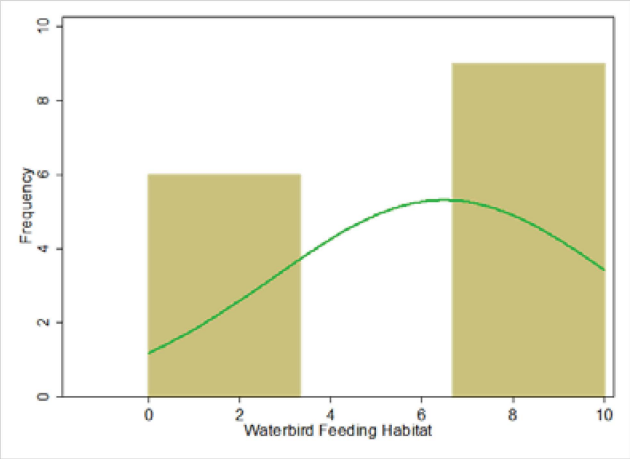









Frequency
0
2
4
6
8
0
2
4
6
8
10
Songbird Raptor & Mammal Habitat


Frequency
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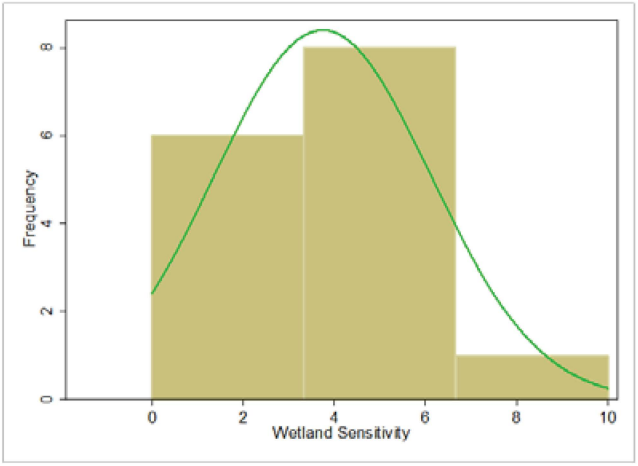
4
6
8
10
0
2
4
6
8
10
Waterbird Feeding Habitat


Frequency
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2
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6
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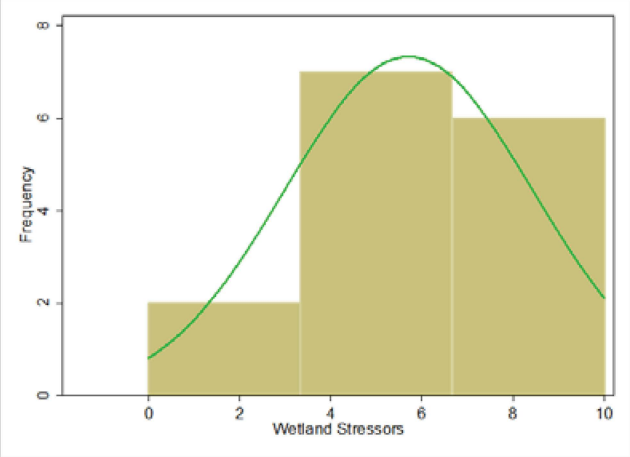
0
2
4
6
8
10
Wetland Sensitivity


Frequency
0
2
4
6
8
0
2
4
6
8
10
Wetland Stressors

4.5 Nontidal Sites Ranked by Function

Carried over from 2014 report:
These tables show the highest- and lowest-scoring AA for each function or other attribute. For this report, "highest scoring" meant the highest 5 scores (plus any ties) and "lowest scoring" meant the lowest 5 scores (plus any ties).

Scores are not reported for one WESPAK-SE item—Subsistence Value—because every wetland in the study area would have a score of 0 since by law the City-Borough of Juneau has been designated a "Non-subsistence Use" area.

haven't yet received tables for these
will add to next draft

4.6 Offsite NONTIDAL Sites Ranked by Function

These tables are just place-holders: will change when the WDs are added and all units re-normalized.

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	SV10of	5.11	Higher	4.53	Moderate
Amphibian Habitat	NV02of	4.80	Moderate	8.00	Higher
Amphibian Habitat	SV06of	4.46	Moderate	7.35	Higher
Amphibian Habitat	SD04of	4.43	Moderate	3.21	Lower
Amphibian Habitat	SV08of	3.74	Moderate	2.54	Lower
Amphibian Habitat	NV01of	3.48	Moderate	2.50	Lower
Amphibian Habitat	SV09of	3.34	Moderate	3.12	Lower
Amphibian Habitat	SV07of	3.07	Moderate	1.68	Lower
Amphibian Habitat	NV03of	2.47	Lower	3.33	Lower
Amphibian Habitat	SD01of	2.32	Lower	3.69	Lower
Amphibian Habitat	SD02of	2.31	Lower	6.20	Moderate
Amphibian Habitat	SD03of	2.17	Lower	6.20	Moderate

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	SV07of	8.23	Higher	5.33	Moderate
Anadromous Fish Habitat	SV09of	7.28	Moderate	4.83	Moderate
Anadromous Fish Habitat	NV02of	4.60	Moderate	7.00	Moderate
Anadromous Fish Habitat	NV03of	4.02	Moderate	6.67	Moderate
Anadromous Fish Habitat	SV06of	4.01	Moderate	5.17	Moderate
Anadromous Fish Habitat	NV01of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SD01of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SD02of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SD03of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SD04of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SV08of	0.00	Lower	0.00	Lower
Anadromous Fish Habitat	SV10of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Aquatic Invertebrate Habitat	NV02of	5.72	Higher	10.00	Higher
Aquatic Invertebrate Habitat	SV10of	5.38	Higher	1.11	Lower
Aquatic Invertebrate Habitat	SD02of	4.68	Moderate	1.13	Lower
Aquatic Invertebrate Habitat	NV03of	4.49	Moderate	10.00	Higher
Aquatic Invertebrate Habitat	SD03of	3.15	Lower	1.99	Lower
Aquatic Invertebrate Habitat	SV06of	2.86	Lower	3.93	Moderate
Aquatic Invertebrate Habitat	SD01of	2.78	Lower	0.64	Lower
Aquatic Invertebrate Habitat	SD04of	2.56	Lower	0.78	Lower
Aquatic Invertebrate Habitat	SV08of	1.74	Lower	0.58	Lower
Aquatic Invertebrate Habitat	SV07of	1.07	Lower	3.26	Moderate
Aquatic Invertebrate Habitat	SV09of	0.65	Lower	3.33	Moderate
Aquatic Invertebrate Habitat	NV01of	0.27	Lower	10.00	Higher

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	SD01of	7.38	Higher		
Carbon Sequestration	SD02of	6.87	Higher		
Carbon Sequestration	SD03of	6.87	Higher		
Carbon Sequestration	SD04of	5.74	Moderate		
Carbon Sequestration	NV01of	5.34	Moderate		
Carbon Sequestration	SV10of	4.82	Moderate		
Carbon Sequestration	SV09of	3.94	Moderate		
Carbon Sequestration	SV07of	3.49	Lower		
Carbon Sequestration	NV02of	3.09	Lower		
Carbon Sequestration	NV03of	2.73	Lower		
Carbon Sequestration	SV06of	2.64	Lower		
Carbon Sequestration	SV08of	0.77	Lower		

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Ecological Condition	NV03of			6.64	Higher
Ecological Condition	NV01of			5.52	Moderate
Ecological Condition	SV07of			4.79	Moderate
Ecological Condition	SD02of			4.50	Moderate
Ecological Condition	SD01of			4.47	Moderate
Ecological Condition	NV02of			4.17	Moderate
Ecological Condition	SV08of			3.65	Moderate
Ecological Condition	SD03of			3.63	Moderate
Ecological Condition	SV09of			3.53	Moderate
Ecological Condition	SV10of			2.56	Lower
Ecological Condition	SD04of			2.05	Lower
Ecological Condition	SV06of			-0.93	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	SV06of	8.62	Higher	0.43	Lower
Native Plant Habitat	SV10of	5.61	Higher	1.75	Lower
Native Plant Habitat	SD04of	5.58	Higher	2.88	Moderate
Native Plant Habitat	SV09of	5.00	Moderate	2.89	Moderate
Native Plant Habitat	SD02of	4.96	Moderate	0.43	Lower
Native Plant Habitat	SD03of	4.40	Moderate	0.43	Lower
Native Plant Habitat	SD01of	3.99	Moderate	0.43	Lower
Native Plant Habitat	SV07of	3.86	Moderate	0.48	Lower
Native Plant Habitat	SV08of	3.77	Moderate	0.43	Lower
Native Plant Habitat	NV01of	2.27	Lower	6.95	Higher
Native Plant Habitat	NV02of	1.34	Lower	8.10	Higher
Native Plant Habitat	NV03of	1.08	Lower	7.90	Higher

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	SV09of	4.44	Higher	6.46	Higher
Nitrate Removal	SV07of	2.93	Moderate	6.06	Higher
Nitrate Removal	NV03of	2.44	Moderate	6.77	Higher
Nitrate Removal	NV02of	2.40	Moderate	6.77	Higher
Nitrate Removal	NV01of	2.19	Moderate	6.97	Higher
Nitrate Removal	SD04of	2.11	Moderate	9.60	Higher
Nitrate Removal	SD03of	1.80	Lower	6.57	Higher
Nitrate Removal	SV10of	1.72	Lower	6.57	Higher
Nitrate Removal	SD01of	1.52	Lower	6.57	Higher
Nitrate Removal	SV06of	1.51	Lower	6.06	Higher
Nitrate Removal	SD02of	1.46	Lower	6.57	Higher
Nitrate Removal	SV08of	-0.94	Lower	2.78	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Organic Nutrient Export	SD04of	9.05	Higher		
Organic Nutrient Export	SV10of	8.93	Higher		
Organic Nutrient Export	SD02of	7.95	Higher		
Organic Nutrient Export	SV09of	7.78	Higher		
Organic Nutrient Export	SD03of	7.73	Higher		
Organic Nutrient Export	SD01of	7.18	Moderate		
Organic Nutrient Export	SV07of	6.82	Moderate		
Organic Nutrient Export	NV02of	6.30	Moderate		
Organic Nutrient Export	NV01of	6.13	Moderate		
Organic Nutrient Export	NV03of	5.93	Moderate		
Organic Nutrient Export	SV06of	5.00	Lower		
Organic Nutrient Export	SV08of	3.77	Lower		

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	SV09of	6.20	Higher	5.80	Higher
Phosphorus Retention	NV01of	4.06	Higher	3.81	Moderate
Phosphorus Retention	NV02of	3.98	Higher	8.54	Higher
Phosphorus Retention	SD04of	3.87	Higher	6.32	Higher
Phosphorus Retention	SD03of	3.73	Moderate	7.15	Higher
Phosphorus Retention	SV07of	3.69	Moderate	5.15	Higher
Phosphorus Retention	SD01of	3.47	Moderate	7.15	Higher
Phosphorus Retention	SV06of	3.38	Moderate	12.92	Higher
Phosphorus Retention	SD02of	2.74	Moderate	7.15	Higher
Phosphorus Retention	SV10of	2.06	Lower	7.15	Higher
Phosphorus Retention	NV03of	1.91	Lower	8.54	Higher
Phosphorus Retention	SV08of	0.30	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	SV10of	7.29	Higher	3.29	Moderate
Pollinator Habitat	SD04of	6.85	Higher	3.29	Moderate
Pollinator Habitat	NV01of	5.31	Moderate	7.85	Higher
Pollinator Habitat	SV09of	5.15	Moderate	3.29	Moderate
Pollinator Habitat	SD02of	4.98	Moderate	3.26	Moderate
Pollinator Habitat	NV03of	4.87	Moderate	8.52	Higher
Pollinator Habitat	SV08of	3.35	Lower	3.26	Moderate
Pollinator Habitat	NV02of	3.17	Lower	8.66	Higher
Pollinator Habitat	SV06of	2.79	Lower	3.26	Moderate
Pollinator Habitat	SV07of	2.77	Lower	3.29	Moderate
Pollinator Habitat	SD01of	2.21	Lower	3.26	Moderate
Pollinator Habitat	SD03of	2.10	Lower	3.26	Moderate

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Public Use & Recognition	SV06of			9.70	Higher
Public Use & Recognition	SV08of			9.34	Higher
Public Use & Recognition	NV02of			8.99	Higher
Public Use & Recognition	NV03of			8.97	Higher
Public Use & Recognition	SV07of			7.51	Higher
Public Use & Recognition	SD04of			2.55	Moderate
Public Use & Recognition	SV10of			2.29	Lower
Public Use & Recognition	SD01of			2.20	Lower
Public Use & Recognition	SD02of			2.20	Lower
Public Use & Recognition	SD03of			2.20	Lower
Public Use & Recognition	NV01of			1.78	Lower
Public Use & Recognition	SV09of			1.50	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	SV07of	7.67	Higher	6.15	Higher
Resident Fish Habitat	SV09of	6.80	Moderate	5.58	Moderate
Resident Fish Habitat	NV02of	6.14	Moderate	8.08	Higher
Resident Fish Habitat	SV06of	5.69	Moderate	5.96	Higher
Resident Fish Habitat	NV03of	4.97	Moderate	7.69	Higher
Resident Fish Habitat	NV01of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SD01of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SD02of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SD03of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SD04of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SV08of	0.00	Lower	0.00	Lower
Resident Fish Habitat	SV10of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Sediment Retention	SD01of	4.81	Higher	4.24	Moderate
Sediment Retention	SV09of	4.26	Higher	2.90	Moderate
Sediment Retention	NV02of	4.10	Higher	3.12	Moderate
Sediment Retention	SD04of	3.75	Moderate	3.86	Moderate
Sediment Retention	SD03of	3.74	Moderate	4.36	Moderate
Sediment Retention	SV07of	3.70	Moderate	2.94	Moderate
Sediment Retention	NV03of	3.66	Moderate	3.12	Moderate
Sediment Retention	NV01of	3.33	Moderate	2.74	Moderate
Sediment Retention	SD02of	3.23	Moderate	4.36	Moderate
Sediment Retention	SV06of	1.50	Lower	2.87	Moderate
Sediment Retention	SV10of	0.93	Lower	4.31	Moderate
Sediment Retention	SV08of	-0.99	Lower	0.17	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	SV10of	9.43	Higher	1.11	Lower
Songbird, Raptor, & Mammal Habitat	SD04of	7.85	Higher	3.33	Moderate
Songbird, Raptor, & Mammal Habitat	SV09of	7.74	Higher	1.11	Lower
Songbird, Raptor, & Mammal Habitat	SD02of	7.54	Higher	4.93	Moderate
Songbird, Raptor, & Mammal Habitat	NV03of	7.37	Higher	5.33	Moderate
Songbird, Raptor, & Mammal Habitat	NV02of	7.25	Higher	6.45	Moderate
Songbird, Raptor, & Mammal Habitat	SD03of	7.24	Higher	4.93	Moderate
Songbird, Raptor, & Mammal Habitat	NV01of	7.00	Higher	4.67	Moderate
Songbird, Raptor, & Mammal Habitat	SV06of	6.87	Moderate	10.00	Higher
Songbird, Raptor, & Mammal Habitat	SV07of	6.01	Moderate	10.00	Higher
Songbird, Raptor, & Mammal Habitat	SD01of	5.11	Moderate	4.93	Moderate
Songbird, Raptor, & Mammal Habitat	SV08of	4.21	Moderate	10.00	Higher

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	SD04of	7.23	Higher	1.74	Moderate
Stream Flow Support	NV02of	6.35	Higher	6.07	Higher
Stream Flow Support	SV09of	6.27	Higher	6.22	Higher
Stream Flow Support	SV10of	5.51	Moderate	2.30	Moderate
Stream Flow Support	SV07of	5.46	Moderate	6.93	Higher
Stream Flow Support	SD02of	4.54	Moderate	2.16	Moderate
Stream Flow Support	SD03of	4.54	Moderate	1.86	Moderate
Stream Flow Support	NV03of	3.88	Moderate	5.22	Higher
Stream Flow Support	NV01of	3.33	Moderate	1.28	Moderate
Stream Flow Support	SD01of	1.62	Lower	2.38	Moderate
Stream Flow Support	SV06of	0.00	Lower	0.00	Lower
Stream Flow Support	SV08of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Stress Potential	NV03of			12.92	Higher
Stress Potential	NV02of			12.72	Higher
Stress Potential	SV06of			10.03	Higher
Stress Potential	NV01of			9.60	Higher
Stress Potential	SV08of			9.56	Higher
Stress Potential	SV09of			6.55	Moderate
Stress Potential	SV07of			5.47	Moderate
Stress Potential	SV10of			3.79	Lower
Stress Potential	SD01of			3.16	Lower
Stress Potential	SD02of			3.16	Lower
Stress Potential	SD03of			3.16	Lower
Stress Potential	SD04of			3.16	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	SD01of	8.43	Higher	0.00	Lower
Water Cooling	SD04of	6.58	Higher	3.95	Higher
Water Cooling	SV10of	6.51	Higher	3.07	Moderate
Water Cooling	SV09of	6.35	Higher	6.22	Higher
Water Cooling	SV07of	5.40	Higher	7.07	Higher
Water Cooling	NV02of	5.04	Moderate	5.06	Higher
Water Cooling	SD02of	4.89	Moderate	1.58	Lower
Water Cooling	SD03of	4.89	Moderate	1.58	Lower
Water Cooling	SV08of	4.60	Moderate	0.00	Lower
Water Cooling	NV03of	4.34	Moderate	4.81	Higher
Water Cooling	SV06of	3.68	Moderate	0.96	Lower
Water Cooling	NV01of	3.58	Moderate	3.07	Moderate

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Water Storage	SV07of	5.68	Higher	1.11	Lower
Water Storage	SV09of	5.61	Higher	10.00	Higher
Water Storage	NV01of	5.46	Higher	10.00	Higher
Water Storage	NV02of	5.37	Higher	10.00	Higher
Water Storage	NV03of	5.23	Higher	10.00	Higher
Water Storage	SD03of	5.17	Higher	1.11	Lower
Water Storage	SD04of	4.63	Moderate	1.11	Lower
Water Storage	SD02of	4.59	Moderate	1.11	Lower
Water Storage	SD01of	2.77	Moderate	1.67	Lower
Water Storage	SV10of	2.53	Lower	1.11	Lower
Water Storage	SV06of	1.97	Lower	10.00	Higher
Water Storage	SV08of	-1.09	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Water Warming	SD01of	8.40	Higher	4.32	Moderate
Water Warming	SD02of	8.36	Higher	5.18	Moderate
Water Warming	SD03of	8.36	Higher	5.17	Moderate
Water Warming	SV10of	7.00	Higher	5.51	Moderate
Water Warming	SV06of	6.30	Higher	4.16	Moderate
Water Warming	NV03of	4.79	Higher	4.80	Moderate
Water Warming	SV07of	4.75	Higher	7.88	Higher
Water Warming	NV02of	3.78	Moderate	5.10	Moderate
Water Warming	SV09of	3.74	Moderate	5.28	Moderate
Water Warming	SD04of	3.61	Moderate	9.18	Higher
Water Warming	NV01of	3.19	Moderate	4.93	Moderate
Water Warming	SV08of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	NV02of	7.76	Higher	3.96	Moderate
Waterbird Feeding Habitat	SV06of	7.26	Higher	10.00	Higher
Waterbird Feeding Habitat	SD03of	5.13	Moderate	5.94	Higher
Waterbird Feeding Habitat	SD02of	4.76	Moderate	0.00	Lower
Waterbird Feeding Habitat	SD01of	4.04	Moderate	0.00	Lower
Waterbird Feeding Habitat	SV08of	3.47	Moderate	10.00	Higher
Waterbird Feeding Habitat	NV01of	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	NV03of	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	SD04of	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	SV07of	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	SV09of	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	SV10of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	NV02of	7.89	Higher	9.80	Higher
Waterbird Nesting Habitat	SD03of	6.36	Higher	9.70	Higher
Waterbird Nesting Habitat	SV06of	6.12	Higher	10.00	Higher
Waterbird Nesting Habitat	NV03of	5.17	Moderate	0.00	Lower
Waterbird Nesting Habitat	SV09of	3.57	Moderate	0.00	Lower
Waterbird Nesting Habitat	SV07of	3.28	Moderate	0.00	Lower
Waterbird Nesting Habitat	NV01of	2.80	Moderate	0.00	Lower
Waterbird Nesting Habitat	SD01of	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	SD02of	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	SD04of	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	SV08of	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	SV10of	0.00	Lower	0.00	Lower

Function or Other Attribute	Site	Function Score	Function Rating	Value Score	Value Rating
Wetland Sensitivity	SV10of			6.45	Moderate
Wetland Sensitivity	SV09of			5.38	Moderate
Wetland Sensitivity	NV03of			3.23	Lower
Wetland Sensitivity	SD01of			3.23	Lower
Wetland Sensitivity	SD02of			3.23	Lower
Wetland Sensitivity	SD03of			3.23	Lower
Wetland Sensitivity	SD04of			3.23	Lower
Wetland Sensitivity	NV02of			3.01	Lower
Wetland Sensitivity	SV08of			2.29	Lower
Wetland Sensitivity	NV01of			1.08	Lower
Wetland Sensitivity	SV07of			1.08	Lower
Wetland Sensitivity	SV06of			0.86	Lower

4.7 Offsite TIDAL Sites Ranked by Function

Anadromous Fish Habitat

Site	Function Score	Function Rating	Value Score	Value Rating
SV04of	7.33	Higher	10	Higher
SV05of	7.11	Higher	10	Higher
LC14of	5.18	Moderate	10	Higher
LC13of	4.85	Moderate	10	Higher
LC12of	3.57	Moderate	10	Higher
SV02of	0	Lower	0	Lower
SV03of	0	Lower	0	Lower

Carbon Sequestration

Site	Function Score	Function Rating	Value Score	Value Rating
LC14of	7.77	Higher	N.A.	N.A.
LC13of	7.75	Higher	N.A.	N.A.
SV02of	4.37	Moderate	N.A.	N.A.
SV04of	4.37	Moderate	N.A.	N.A.
SV05of	4.37	Moderate	N.A.	N.A.
LC12of	4.14	Moderate	N.A.	N.A.
SV03of	3.91	Moderate	N.A.	N.A.

Native Plant Habitat

Site	Function Score	Function Rating	Value Score	Value Rating
SV03of	9.93	Higher	4.12	Higher
SV02of	9.65	Higher	4.12	Higher
SV04of	9.09	Higher	10.00	Higher
SV05of	9.00	Higher	10.00	Higher
LC14of	8.67	Higher	10.00	Higher
LC12of	8.66	Higher	10.00	Higher
LC13of	7.03	Higher	10.00	Higher

Organic Nutrient Export

Site	Function Score	Function Rating	Value Score	Value Rating
LC13of	4.46	Moderate	N.A.	N.A.
LC14of	3.75	Lower	N.A.	N.A.
SV02of	2.40	Lower	N.A.	N.A.
SV04of	1.96	Lower	N.A.	N.A.
LC12of	1.23	Lower	N.A.	N.A.
SV05of	1.18	Lower	N.A.	N.A.
SV03of	0.13	Lower	N.A.	N.A.

Public Use & Recognition

Site	Function Score	Function Rating	Value Score	Value Rating
LC12of	N.A.	N.A.	10.00	Higher
SV02of	N.A.	N.A.	10.00	Higher
SV04of	N.A.	N.A.	10.00	Higher
SV05of	N.A.	N.A.	10.00	Higher
SV03of	N.A.	N.A.	9.40	Higher
LC13of	N.A.	N.A.	6.27	Higher
LC14of	N.A.	N.A.	0.90	Lower

Sediment Retention & Stabilization

Site	Function Score	Function Rating	Value Score	Value Rating
SV04of	7.33	Higher	10	Higher
SV05of	7.11	Higher	10	Higher
LC14of	5.18	Moderate	10	Higher
LC13of	4.85	Moderate	10	Higher
LC12of	3.57	Moderate	10	Higher
SV02of	0	Lower	0	Lower
SV03of	0	Lower	0	Lower

Songbird, Raptor, & Mammal Habitat

Site	Function Score	Function Rating	Value Score	Value Rating
SV02of	10.00	Higher	10.00	Higher
SV03of	10.00	Higher	10.00	Higher
SV04of	10.00	Higher	10.00	Higher
LC14of	9.79	Higher	10.00	Higher
LC12of	9.28	Higher	10.00	Higher
SV05of	9.14	Higher	10.00	Higher
LC13of	7.01	Higher	10.00	Higher

Waterbird Feeding Habitat

Site	Function Score	Function Rating	Value Score	Value Rating
SV02of	10.00	Higher	10.00	Higher
SV04of	10.00	Higher	10.00	Higher
SV05of	8.63	Higher	10.00	Higher
SV03of	7.67	Higher	10.00	Higher
LC13of	5.03	Moderate	10.00	Higher
LC12of	4.07	Moderate	10.00	Higher
LC14of	1.87	Lower	10.00	Higher

Wetland Sensitivity

Site	Function Score	Function Rating	Value Score	Value Rating
LC14of	N.A.	N.A.	9.39	Higher
LC12of	N.A.	N.A.	6.06	Higher
LC13of	N.A.	N.A.	5.75	Higher
SV04of	N.A.	N.A.	4.81	Higher
SV03of	N.A.	N.A.	4.48	Higher
SV05of	N.A.	N.A.	4.26	Moderate
SV02of	N.A.	N.A.	3.93	Moderate

Wetland Stressors

Site	Function Score	Function Rating	Value Score	Value Rating
LC13of	N.A.	N.A.	8.53	Higher
LC14of	N.A.	N.A.	8.22	Higher
SV02of	N.A.	N.A.	7.56	Higher
SV03of	N.A.	N.A.	6.79	Higher
LC12of	N.A.	N.A.	6.27	Higher
SV04of	N.A.	N.A.	5.35	Moderate
SV05of	N.A.	N.A.	5.03	Moderate

5.0 IMPLEMENTATION

5.1 Background

Prior to 1993, wetland management in Juneau was primarily under Corps jurisdiction. In 1992, in order to establish a stronger local role in wetland management, CBJ government adopted the Juneau Wetlands Management Plan (JWMP). Regulatory provisions of JWMP, and maps of wetlands covered under the plan, were adopted into the CBJ Land Use Code and given oversight by the newly formed CBJ Wetlands Review Board. Part of the board's oversight included adoption of a general wetlands mitigation strategy. This strategy pursues 1) wetlands protection, 2) public education, and 3) wetlands restoration and creation as the primary mitigating actions for wetland impacts. Following adoption of the JWMP into Land Use Code, regulatory provisions of the JWMP have had the full effect of federal law administered at the local level. The JWMP was recognized by the U.S. Army Corps of Engineers (Corps) and used at the federal level for decisions regarding local wetland fill permits and other management strategies for public wetland resources.

Under the JWMP, Juneau's wetlands were divided into four main categories: A, B, C, and D. Category A and B were considered higher quality wetlands; C and D were considered lower quality wetlands. A fifth category, EP ("Enhancement Potential"), is designated to wetlands with particular potential for wetlands enhancement projects. In 1994 the Corps signed a cooperative agreement with CBJ government allowing the Wetlands Review Board to assume all responsibility for C, D, and EP wetlands, providing the review board with local oversight and authority to grant a General Permit for wetland fill. The Corps retained permitting authority for the higher quality A and B wetlands, as well as any wetlands not otherwise classified under the wetland management plan or identified on existing wetland mapping. Any impacts proposed for A or B wetlands required an individual or nationwide permit to be issued by the Corps, granted within the standard federal regulatory procedure.

The Corps of Engineers continued to reissue local authority for General Permits in C, D, and EP wetlands from 1993 until 2011. In 2011, the Corps did not renew General Permits because the vast majority of C and D wetlands (as identified on existing JWMP wetland maps) had been filled. Following a grant award, CBJ scheduled updates to the JWMP for 2013; field mapping was concluded in 2014 and a new draft of the JWMP was begun in 2015. This draft addresses new strategies for local wetland regulation as well as exploring new opportunities for meeting requirements of the Federal Compensatory Mitigation Rule for development impacts in Juneau's wetland areas. This JWMP Update is the third stage of a larger 3.5 year project entitled, "The City and Borough of Juneau Habitat Mapping and Analysis Project."

5.1.1 Wetland Management in CBJ

Wetland management in Juneau (since the expiration of General Permits in 2011) continues under direction and oversight from the Wetland Review Board. The Board is composed of seven members, appointed by the Assembly who chooses representatives from the public at large, and two representatives of the CBJ Planning Commission. When making appointments, the Assembly is required to consider the "broadest possible representation from those technical fields with knowledge of the values, functions and uses of wetlands, such as fish or wildlife biology, geology, hydrology, land use planning, and engineering" (CBJ 49.70.1010). Appointments are three-year terms. The presence of five members constitutes a quorum and any action of the Board requires five or more affirmative votes to be approved.

At present, the Board has no authority to issue wetland permits, and does not have a defined framework for interpreting or applying broadly applicable mitigation actions (the Juneau Wetlands Mitigation Bank was initiated in 2008 and abandoned in 2009). Instead, the Board functions as an advisory body to the Planning Commission and the Director of the Community Development Department regarding general wetlands issues. Board responsibilities include (but are not limited to) providing comments on wetland permit applications under Corps review, reviewing protection standards for streams and riparian areas, and the overall conduct of local, state and federal projects that affect wetlands and streams.

Following (and preceding) an attempt to establish the Juneau Wetlands Mitigation Bank, the primary method for providing mitigating actions in CBJ is through the Fee-in-Lieu program sponsored by the Southeast Alaska Land Trust (SEAL Trust), which is required to meet the new regulations named in the 2008 U.S. Army Corps of Engineer Compensatory Mitigation Rule (see section 4.1.2). SEAL Trust's Fee-in-Lieu program functions similarly to a preservation bank: the funds they receive for wetland mitigation fund permanent conservation of wetland areas across Southeast Alaska. The fee-in-lieu program is a form of

wetland mitigation but meets the second (not the first) preferred option as defined by the Corps.

5.1.2 Federal Rule

The Federal regulation of 2008, known commonly as the "Federal Rule" or "Federal Rule on Compensatory Mitigation," is officially coded and titled "33CFR Part 332, Compensatory Mitigation for Losses of Aquatic Resources." The purpose of it is to establish standards and criteria for the use of all types of compensatory mitigation, including on-site and off-site permittee-responsible mitigation, mitigation banks, and in-lieu fee mitigation to offset unavoidable impacts to waters of the U.S. authorized through Department of the Army permits ("Corps permits") under Section 404 of the Clean Water Act and Sections 9 or 10 of the Rivers and Harbors Act. The Federal Rule directs that the standards and criteria shall:

- *to the extent practicable, maximize available credits and opportunities for mitigation*
- *provide for regional variations in wetland conditions, functions, and values, and*
- *apply equivalent standards and criteria to each type of compensatory mitigation.*

Nothing in the Federal Rule changes the requirement that for all Corps permits the permit applicant take all appropriate and practicable steps to avoid and minimize adverse impacts to waters/wetlands of the U.S. prior to proposing and implementing mitigation. This is typically called "sequencing" where the permit process requires in sequence: 1) avoidance, 2) minimization, and 3) mitigation. A common misconception held by inexperienced permit applicants is that permits can be obtained by first and directly proposing mitigation for their proposed impacts and the "quantity and type" of mitigation will "sweeten" the prospect of obtaining a permit. In actuality, the Corps requires the applicant demonstrate that avoidance and minimization measures have been fully considered and documented before moving to the mitigation phase of the permit process. Obviously, commensurate mitigation to the impacts is required for most permits and the quality/quantity of that is weighed in the permitting process, but not until avoidance and minimization measures are taken.

The Federal Rule outlines a general preference for the methods of mitigation as 1) restoration, 2) establishment or enhancement, and in certain circumstances 3) preservation. Preservation, which does not create, restore, rehabilitate, enhance, or otherwise "lift" wetland function, can only be utilized when all the following criteria are met:

- *the resources to be preserved provide important physical, chemical, or biological functions for the watershed*
- *the resources to be preserved contribute significantly to the ecological sustainability of the watershed- -preservation is determined to be appropriate and practicable -the resources are under threat of destruction or adverse modification, and -the preserved site will be permanently protected through a legal instrument.*

Where preservation is used, the Federal Rule states that "to the extent appropriate and practicable the preservation shall be done in conjunction with aquatic resource restoration, establishment, and/or enhancement activities. When this requirement is waived by the Corps District Engineer, and is therefore "preservation-only", compensation ratios shall be higher.

Another requirement of the Federal Rule is that a watershed approach must be used to establish compensatory mitigation requirements in Corps permits. In general mitigation should be located in the same watershed as the impact site and where it is most likely to successfully replace lost functions and services taking into account such watershed scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources, trends in land use, ecological benefits, and compatibility with adjacent land uses. Where watershed boundaries do not exist, such as marine areas, an appropriate spatial scale should be used rather than watershed boundaries.

A major requirement of the Federal Rule is the stated preference for the type and location of compensatory mitigation, listed as follows along with a brief characterization of each type:

1) mitigation bank credits: a site or suite of sites where resources are restored, established, enhanced, and/or preserved. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor.

2) in-lieu fee program, means a program involving the restoration, establishment, enhancement and/or preservation of resources through funds paid to a governmental or non-profit natural resource management entity. Similar to a mitigation bank, credits are sold to permittees whose obligation to provide mitigation is then

transferred to the in-lieu fee sponsor.

3) permittee-responsible mitigation under a watershed approach: resource restoration, establishment, enhancement and/or preservation undertaken by the permittee

4) permittee-responsible mitigation through on-site and in-kind mitigation

5) permittee-responsible mitigation through off-site and/or out-of-kind mitigation

The Federal Rule then outlines the information required for submittal of proposals for mitigation banks, in-lieu fee programs, and permittee-responsible mitigation.

5.1.3 Mitigation in Southeast Alaska

Following the mitigation sequencing explained above, mitigation demonstrating restoration and enhancement is preferred over preservation mitigation. The availability of wetland restoration and enhancement opportunities on private land in Southeast Alaska is limited, and furthermore, such opportunities on public land are often encumbered with legal or administrative prohibitions or policies discouraging private investment. As such, preservation mitigation as been the primary source of mitigation found in Southeast Alaska to date.

The resources necessary to restore or enhance wetlands in Southeast Alaska, due to such factors as limited or remote access, mobilization logistics, weather constraints, and terrain, magnify the significance, and therefore the value, of those restoration and enhancement opportunities that do exist. Due to the extensive cover of wetlands in Alaska, the ability to preserve wetlands has offered a less restricting source of mitigation, however, using arguably insufficient mitigation ratios to achieve no net loss of wetlands.

A bank offering some restoration or enhancement opportunities, even if proportionally less than that provided by preservation, and considering the overall constraints to mitigation banking specific to Southeast Alaska, is given preference in the determination of credit generation ratios when a lift in functions can be achieved.

There are proposed private mitigation banks in Southeast Alaska that could provide restoration and enhancement opportunities. When avoidance and minimization have been addressed and wetland impacts remain in a proposed project, the primary mitigation option for wetlands within the CBJ remains Fee-in-Lieu until a wetland mitigation bank with a service area reaching Juneau is approved.

5.2 Best Available Science

The objective of the JWMP Update is to develop a long-range planning document that will assist public land managers and interested private landholders with practical management of their properties. The project meets this goal by providing wetland maps and wetland scores so land managers have comparative, site-specific, and function-specific information on high functioning wetlands and low functioning wetlands, indicating permitting needs for proposed wetland impacts. The WESPAK-SE assessments and mapping are also in compliance with the Federal Rule as it takes into account regional differences in wetland resources and functions and uses a watershed approach to wetland management.

The JWMP Update provides a consistent and standard scientifically informed wetland evaluation throughout the CBJ. The JWMP Update evaluates Wetland Assessment Areas in accordance with the WESPAK-SE protocol. This approach provides information to public and private developers to help guide project planning decisions and to gauge needs for more detailed wetland mapping and analysis when a specific project is proposed. The wetland inventory accomplished through this JWMP update does not provide legal wetland delineation lines, but more of a guidance tool to locate wetlands and understand their functions.

The JWMP established wetland scores in accordance with the WESPAK-SE protocol described in Chapter 2 and scores found in Volume __. As described in Chapter 2, WESPAK-SE produces 22 functions and 18 values for each wetland (or assessment area). These functions and values are important for both public and private land-use groups for planning development within CBJ. This tool allows landowners the advanced knowledge for development planning including costs for environmental review associated with sensitive or higher functioning wetlands. For example, if a private landowner were to propose a development within the CBJ, they would have access to the wetland inventory providing information about location and function and value scores of wetlands in their project area. Communication between the developer and CBJ planning department can develop around the 2016 inventory wetland information to make project decisions early on in the process. If the project is proposed in an area with high functioning wetlands, the landowner may be encouraged to find alternative building sites. Or,

if the project area would impact lower-functioning wetlands, the landowner would be encouraged to pursue development in that area and provided with mitigation regulations applicable to any wetlands that may be impacted. The protection of high-valued wetlands is a priority named in the Juneau 2013 Comprehensive plan in Policy 7.5.

CBJ strives to protect high-valued wetlands and allow impacts, with avoidance and mitigation, to lower-valued wetlands. The value of wetlands is decided through a categorization public process that can use the WESPAK-SE scores provided in this update by assigning them into buckets or ranges. In regards to development, WESPAK-SE assessments inform what functions a wetland provides. If a proposed development were to impact a wetland assessed in this JWMP update, CBJ will have an indication of what functions need to be replaced in mitigation to achieve the Corps rule of "no net loss". Private developers also will be able to use the mapping and WESPAK-SE assessments for initial project feasibility, saving on project costs.

5.3 Wetland Categories for Plan Implementation

Establishing wetland categories could be useful in implementing the JWMP. However, the goal of this update is to provide wetland maps and wetland scores using the WESPAK-SE assessment method. At this time, CBJ will not establish specific wetland categories that indicate high value (for example, A and B) or low value (C and D). This option may be considered at a later time before or after the JWMP is finalized. The reason CBJ has chosen not to establish categories at this stage is because categorization requires a public discussion of the relative value of different wetland functions (for example, whether or not salmon habitat or flood control/water storage has more value to society). The wetland mapping and WESPAK-SE assessments presented in the previous chapters provide the scientific knowledge of the functions wetlands provide in the CBJ; a key tool necessary for the categorization process to be successful. The process of reaching wetland categories is a collaborative process with CBJ staff, policy makers, and stakeholders to agree upon a prioritization of wetland functional values.

The CBJ is taking many factors into consideration in their decision-making process for future development that may impact wetlands, including wetland functions and the value of those functions. Functions are what some wetlands do naturally, such as store and purify water, or provide unique habitat. Values represent the "So what?" question, and help regulators decide whether or not reducing or removing wetland functions for development will have a negative effect on people and/or ecosystems. To help in this task, CBJ has chosen to use WESPAK-SE to assess functions and values of wetlands including some of Juneau's potential growth areas. WESPAK-SE is intended to rate functions and values of individual wetlands; for CBJ, scores generated from the functions and values assessment can be used for development-related impact analysis and mitigation planning. A variety of methods can be used to interpret WESPAK-SE scores use them to achieve "no net loss" of wetland functions and values in Juneau. Presented below are categorization methodology options to reach wetland categories using WESPAK-SE assessment function and value scores. The below section outlines options for developing a systematic approach unique to Juneau's wetlands, and the mathematical rational for each method.

5.3.1 Options for Summarizing a Wetland's Relative Importance

In the context of the CBJ's Wetlands Management Plan, development decisions can be more consistent when criteria are quantified by assigned a single score or rating derived from the forty functions and values assessed by WESPAK-SE. The challenge is how to best combine wetland scores into a single score or rating. WESPAK-SE provides science and statistics for wetland analysis; these must be informed by policies or preferences of agencies and elected officials to provide the appropriate combination for meaningful rules. To date, CBJ has not adopted a detailed procedure for summarizing a wetland's relative importance.

The process involved in taking the 22 functions and 18 values that WESPAK-SE produces for each wetland and narrowing down those numbers into an overall wetland score that can be then categorized into groups is an extensive procedure that involves public involvement. In the paragraphs below, options for summarizing a wetland's relative importance are described. They are not exhaustive; other options may exist that are not described.

Three questions must be addressed to combine the scores into one wetland score:

1) For converting scores to ratings, should a score be

Table 4.1 WESPAK-SE assigns 22 functions and 18 values to each wetland. Below there are 4 functions and 4 values shown as an example.

Function or Attribute	Definition	Values
Water Storage & Delay	The effectiveness for storing runoff or delaying the downslope movement of surface water for long or short periods.	Flood control, maintain ecological systems
Stream Flow Support	The effectiveness for contributing water to streams during the driest part of a growing season.	Support fish and other aquatic life
Water Cooling	The effectiveness for maintaining or reducing temperature of downslope waters.	Support coldwater fish and other aquatic life
Water Warming	The effectiveness for increasing the temperature of downslope waters.	Maintain late-season ice-free conditions

Table 4.1 Question #2

Function and Value Combined Score
Water Storage & Delay
Stream Flow Support
Water Cooling
Water Warming

Table 4.2 Question #3

Wetland Score
1-10

placed in one of 3 groups (e.g., Lower, Moderate, Higher) or 4 (e.g., A, B, C, D) or some other number?

With regard to #1, an in-lieu fee program administered by Southeast Alaska Land Trust (SEAL Trust) is already proposed to federal regulatory agencies and is currently being reviewed by an Interagency Review Team (IRT) that includes a CBJ representative. SEAL Trust has proposed that WESPAK-SE scores be converted to just 3 groups, whereas the CBJ's 1996 Wetlands Management Plan assigned wetlands to four groups. Four or more groups would provide more flexibility in wetland planning decisions and complies with past practices in Juneau. Three groups may be more statistically defensible (i.e., broader confidence intervals), given the potential for some human error in applying WESPAK-SE, and has been used elsewhere in Alaska by the Alaska Conservation Trust.

To provide a visual example of the detailed options below, a portion of Table 1 in Chapter 2 has been used to demonstrate the steps required to reach an overall wetland score.

First, for each individual wetland (or assessment area) the function and value scores need to be combined. Possibly producing 22 "combined scores" for each wetland. Then, the 22 "combined scores" for each wetland function and value will need to be rolled up again to give a single wetland score.

2) For each of the wetland's functions, how can function and value scores (or ratings) be combined into one number (or rating)?

3) How can the score resulting from #2 be combined with those of other functions in order to yield an overall score (or rating) for the wetland?

With an overall wetland score, the wetland can then be placed into the previously decided categories for appropriate management.

Question #2

Option 2a: SEAL Trust has proposed that, for a given function, if the function score is higher than the value score, then only the function score can be used in subsequent calculations, whereas if (for a given function) the value score is equal or higher than the function score, then the average of the two be used in the calculations that will follow. We shall call this option 2a.

Option 2b is the same but the ratings associated with a function or value -- rather than the scores themselves -- are used to judge when to use the function score or an average of function and value scores.

Option 2c would simply average the function and value score, regardless of which was higher. The resultant score would be called the FVaverage score.

Option 2d would use the greater of the function score and value score. The resultant score would be called the FVmax score.

Under all options, the function and value scores would be normalized before being evaluated or combined.

Options 2a and 2b give more recognition to the possibility that some wetlands which currently score high for function but low for value might become more valuable in the future even though being less valuable now. For example, a wetland that is high-functioning now for Anadromous Fish Habitat may have a low Value score (according to WESPAK-SE) because it is not in one of Southeast Alaska's priority watersheds for salmon (as indicated by the TNC-Audubon 2007 Conservation Assessment). Simply averaging Function and Value (2c) might give it a Moderate score, which may be acceptable if the policy is to highlight only a wetland's current importance.

Question #3

Option 3a: SEAL Trust is proposing to first combine the scores resulting from Option 2a into six thematic groups, then combine the scores of those groups into an overall score. At both levels of combining, SEAL Trust adds the average of the scores with the maximum of the scores and divides by 2. Under the SEAL Trust proposal, membership of the thematic groups would be as follows:

Water Quality*: Sediment Retention, Phosphorus Retention, Nitrate Removal, Carbon Sequestration*

Hydrologic*: Water Storage*

Aquatic Support*: Organic Nutrient Export, Stream Flow Support, Water Cooling, Water Warming, Aquatic Invertebrate Habitat*

Fish Habitat*: Anadromous Fish Habitat, Resident Fish Habitat*

Other Aquatic Habitat*: Amphibian Habitat, Waterbird Feeding Habitat, Waterbird Nesting Habitat*

Terrestrial Habitat*: Native Plant Habitat, Pollinator Habitat; Songbird, Raptor, & Mammal Habitat*

Social*: Subsistence, Public Use & Recognition*

Furthermore, under the SEAL Trust proposal, the score for Social would be used in calculations only if it does not lower a wetland's overall score. The CBJ could suspend that rule, use a smaller or larger number of groups, and/or constitute the groups differently. The SEAL Trust groupings would only be applied to non-tidal wetlands; WESPAK-SE assesses fewer functions for tidal wetlands and therefore SEAL Trust determined that grouping those function scores prior to roll-up was unnecessary.

Option 3b would, for the combining process, simply take the average rather than the average + maximum divided by 2.

Option 3c would instead use only a wetland's highest score to represent that wetland; its other scores would be ignored.

Option 3d would be similar, but not just any highest score would be used to represent the wetland: only if Anadromous Fish Habitat was the highest would that trump all other functions.

Option 3e would require someone assigning a weight to each of the 18 functions based on policy considerations and-or public input, and then using a weighted average to represent the wetland.

Under all options, the combined scores would be normalized before being evaluated or combined further.

5.4 Plan Implementation Options

If categories are needed for the implementation of JWMP, once they are agreed upon and established, the Juneau Wetland Management Plan can be implemented through different options presented in this chapter. Since the first plan, written in 1993, CBJ's management strategy has involved the use of a General Permit from the Corps of Engineers. This implementation chapter examines the successes and issues with wetland management in the past and proposes three options for future wetland management implementation in Juneau. Regional examples of wetland management are cited and compared for reference. The three options are 1) use the wetlands management plan as a planning and educational tool, 2) update enforceable policies and CBJ Land Use Code to reflect 1997 management strategy and apply for a General Permit from the Corps of Engineers, 3) update the enforceable policies and CBJ Land Use Code to still involve CBJ through local wetland policies.

Option 1: Planning and Education Tool Only

This option reflects the current status of wetland permitting in CBJ. Since the expiration of CBJ's General Permit in 2011, wetland permitting has been managed by the Corps for all categories of wetlands. The Wetland Review Board is currently fulfilling an advisory role; in this capacity it could continue to function as an advisory body to the Planning Commission and to the Director of the Community

Development on wetlands issues. Advisory functions would also include comments on wetland permit applications administered by the Corps, protection for stream side riparian areas, and any effects that CBJ, state, or federal projects may have on wetlands and streams. This option could involve the continued advisory role of the Board. CBJ could still comment on wetland fill permit applications through the Corps public process, but would not be involved in administering any wetland fill permits.

The detailed and extensive wetland mapping and WESPAK-SE assessments offer a science-based product that provides the JWMP an educational tool and guiding principles for wetland management. This tool is compliant with the Federal Rule as it takes into account regional differences in wetland resources and functions and, as much as possible, uses a watershed approach to wetland management. An example of this type of implementation can be found in the Matanuska-Susitna Borough Wetlands Management Plan (HDR, 2012). The purpose of the Matanuska-Susitna (Mat-Su) document is stated as:

> *This plan serves primarily as an educational tool and promotes coordination among all entities involved in wetland management. This plan does not propose or include any new regulations or permitting requirements. It encourages voluntary practices to conserve and protect wetland resources within the Mat-Su.*

In addition to wetland and watershed mapping, the Matanuska-Susitna Borough (MSB) Assembly passed several ordinances related to wetlands conservation and protection. Topics of these ordinances include flood control, shoreline setbacks, BMPs for development, mitigation banking, and watershed classifications.

The overarching goals of wetlands planning in the MSB Wetlands Management Plan involves taking a long-term management approach using three main goals; identify, assess, and protect. The Mat-Su Borough encompasses a much larger area than the CBJ. The goal is to identify wetlands at a planning scale of information and involves determining size, boundary and type of wetlands. Assessing wetlands for MSB involves developing their own functional assessment methodology. Lastly, implementing conservation and protection efforts includes the input of an advisory committee for avoiding, minimizing or compensating impacts onsite, participating in an in-lieu fee program, and creating wetland banks.

These goals of MSB's wetland management provide a regional example to CBJ of how the JWMP can be used as a planning and educational tool. CBJ has many advantages due to the size of the borough and their accessibility and agreement to use a Southeast Alaskan wetland assessment tool, WESPAK-SE. The recent mapping produced in this update should not limit CBJ's ability to acquire updated wetland and habitat mapping in the future. The current mapping and assessments provide a snapshot of the landscape and, with a dynamically changing environment, should continue to be updated in future efforts. The mapping and WESPAK-SE assessments allows for informed decision-making for wetland conservation and protection, and regulation. The Corps of Engineers has expressed its support of the WESPAK-SE tool and CBJ has seen potential for its use in growth management planning.

There are many incentives for using the JWMP update as an education and planning tool only. One is that the plan is a useful tool to all stakeholders as a source for best available science. As a best available science document, the JWMP plays a valuable role in planning for future development by all entities involved in wetland management. The JWMP therefore is least influenced by political pressures, yet serves as a tool for future planning regarding community and borough priorities and values. In this option, wetland categories (such as A, B, C, D or High, Moderate, Low) are not necessary to complete the JWMP update. If so desired, the public process of creating categories from WESPAK-SE can be done as a next step to wetland management and land planning in Juneau.

There are some limitations to this option for JWMP update. Since the past JWMP has included enforceable policies and, until 2011, the administration of wetland fill permits for lower quality wetlands, using the JWMP only as best available science and not assigning any regulatory authority to its contents may be interpreted as a step backward in wetland management by some stakeholders. This option would maintain CBJ as a stakeholder and commenter on proposed wetland fill permits issued by the Corps and would not reinstate any authority over wetland permits. The only remaining authority with CBJ would be in the scenario of CBJ as an applicant or landowner for a proposed project. CBJ would then be able to act as more than a commenter of the project application and would be involved in other local codes that apply to

the proposed project. Applicants may have found clarity and consistency from the CBJ's past involvement in wetland permitting. This may be lost in relinquishing authority to the Corps for all types of wetland fill. However, with the previous update of the JWMP seven years ago, and the expiration of the general permits almost five years ago, the current situation has likely become familiar as the status quo.

Option 2: General Permit

This option would maintain, or reauthorize, the wetland management process described in the 2008 JWMP. In the 2008 JWMP a Plan Implementation section summarizes the approach the plan takes and is provided below. The language would match much of what is named below and in the existing JWMP or would be amended through the current update.

"On June 30, 1995, the Corps of Engineers issued General Permit 92-1 for wetlands that are classified as Category C, D, and EP in the Revised Juneau Wetlands Management Plan. On July 24, 2000, the Corps of Engineers issues four General Permits (2000-01, -02, -03 and -04) that replaced 92-1. On May 24, 2006, three of the General Permits (GP) were renewed: GP 2000-01, -02, -03. GP 2000-04 was not renewed due to lack of use. The General Permits authorize the discharge of fill material into wetlands, for the purpose of creating foundation pads for structures, utilities, associated roads, driveways, parking areas, and other domestic, governmental, and commercial development, as well as enhancement of certain environmental situations. These GPs authorize mechanized land clearing and other activities that could result in a re-deposition of fill material. Copies of both original and the new General Permits are included in Appendix II-F.

The Corps of Engineers has authorized the CBJ Wetlands Review Board to administer the General Permit through the permitting process outlined in this plan. The Board has the authority to issue wetland permits locally for the discharge of dredged or fill material in these lower value and enhancement wetlands (Category C, D and EP) for the purposes listed in the General Permit. The Board will issue permits in compliance with the enforceable policies of this plan and the specific and general conditions included in the General Permit.

For the Category C, D and EP wetlands, the CBJ has become a 'one-stop' wetlands permitting agency, greatly reducing permit processing time. No individual permit from the Corps of Engineers, consistency determination from the Alaska Department of Natural Resources, Office of Project Management and Permitting, nor individual water quality certification ("401 certification") from the Alaska Department of Environmental Conservation, is required for development in these wetlands. However, other local, State and federal permits may be needed for the project and it is the responsibility of the applicant to obtain all required permits.

For development proposals in Category A and B wetlands, and for any wetlands that are not within the Juneau Wetlands Management Plan study area or are not classified under the plan, a permit must still be obtained from the Corps of Engineers. The enforceable policies of the wetlands plan will be applied when those permit applications are reviewed by the Corps of Engineers."

The wetland categories mentioned in an earlier section of this chapter would need to be updated with the chosen categorization method. This option will require agreement between Corps and CBJ on what constitutes "lower" and "higher" functioning wetlands through the established categorization system.

A regional example of this method is the Anchorage Wetland Management Plan (AWMP, 2014). Anchorage currently has General Permits issued to the municipality for lower valued wetlands, just as Juneau used to have. Using General Permits in wetland regulation requires agreed upon wetland categories for the Corp and CBJ to then name which agency will be in charge of issuing wetland permits for each category of wetland. Since WESPAK-SE is a wetland assessment tool designed for the Southeast Alaska region, Anchorage has created it's own wetland assessment methodology, Anchorage Wetlands Assessment Methodology (AWAM) as well as a credit-debit method for mitigation, Anchorage Debit-Credit Method (ACDM). Anchorage wetland assessment methodology came up with three categories of wetland, A, B, and C. The Corp issued General Permits for Anchorage to administer wetland fill permits for category C wetlands.

The Federal Rule (33 CFR Part 332) on Compensatory Mitigation for Losses of Aquatic Resources issued April 10, 2008, establishes an order of preference for mitigation options, as follows: 1) mitigation banks, 2)in-lieu fee programs, 3)permittee-responsible mitigation, and furthermore establishes an order of preference to mitigation approaches: 1)restoration, 2) enhancement, 3)preservation (in certain circumstances). All mitigation types and approaches are specified to use a watershed approach and it recognizes and encourages accounting of "regional characteristics of aquatic resource types, functions and services." (332.1.e) The AWMP uses a watershed approach and accounts for regional characteristics in compliance

with the Federal Rule. It also established procedures to determine debits and credits for impacts/mitigation regardless of whether it's a mitigation bank, in-lieu fee program or permittee-responsible mitigation. The AWMP fits with a General Permit because it also identifies the higher functioning and lower functioning wetlands, allowing impacts to lower quality wetlands and offering more protection for the higher quality wetlands. While it discusses the Federal Rule, the AWMP does not emphasize the specifics of it, especially the order of preference of banks first, in-lieu fee programs second, and permittee-responsible approaches third.

It is important to note that the AWMP only acknowledges mitigation banking and in-lieu fee programs as tools for wetland preservation, when in fact the Federal Rule, as noted above, prioritizes mitigation banks and lists preservation as a last priority for mitigation type. The one bank the AWMP plan mentions is the Mat-Su bank which is primarily a preservation-only bank. For parts of Alaska, wetland restoration and enhancement opportunities have been difficult to find and successfully implement. Preservation has instead been the focus. The preservation-only approach, arguably does not meet the no-net-loss standard of the Clean Water Act (the foundation of the Federal Rule) because preservation does not restore or enhance wetland functions. Thus, when wetland impacts occur, no corresponding increase in function is provided to off-set the impact, only preservation of land already un-developed. While the AWMP generally is consistent with the Federal Rule approach, the lack of restoration and enhancement opportunities has made the mitigation approach focus mostly on preservation-only, which in the Federal Rule is the last approach in the order of preference.

Renewing and continuing to manage CBJ wetlands with general permits provides some incentives to consider. This method inherently directs future wetland impacts toward lower functioning wetlands as it keeps wetland permitting at the local level for lower category wetlands. For applicants applying to impact lower category wetlands, this process should provide some certainty in acquiring a wetland permit and expedite their permitting process at the local level. Using the general permit options for wetlands management could transfer wetland delineation and determination authority to CBJ in some cases and will be beneficial to CBJ's own development planning services.

Some drawbacks of this management option center around the need to renew the general permit every five years. The initial acquisition of the general permits and the renewal process requires Corps approval which may come with uncertainty and additional expenses. Once the general permits are approved, CBJ will need to have an established administrative and technical review for wetland impact assessment and mitigation. Additional updating of the CBJ code would also be necessary, which adds time and expenses to the process. CBJ would be required to write a new set of regulation or revise existing codes for the applicable wetlands, most likely incorporating a local political process, again adding time and cost.

Option 3: Local Code

This option involves the CBJ expanding current code for all wetlands of all categories within the borough and requires project applicants to adhere to CBJ code provisions (such as avoidance criteria and mitigation) while maintaining the Corps' administration of wetland fill permits. This example can be found in Washington and Oregon where local governments can adopt ordinances related to land use and critical area impacts. In Washington State, cities and counties are given this authority through the Growth Management Act (Chapter 36.70A RCW). Juneau is given this authority through the Alaska Coastal Management Program (ACMP) 11 AAC 110, 112, and 114. Critical areas regulated under local code can include geologically hazardous areas, frequently flooded areas, critical aquifer recharge areas, wetlands, and fish and wildlife habitat conservation areas.

Without a General Permit from the Corps, CBJ would not have primary control over issuing wetland permits and a Corps permit would still be required in all cases. However, similar to some of the code in place now, applicants would be required to submit an application to the CBJ that included approval of, or proof they are seeking, a wetland fill permit from the Corps. The application would also include reports along with their site plan such as, but not limited to, a habitat assessment, wetlands delineation report, wetland mitigation plan, and stormwater plan. There are many examples of this code language and application in Washington State and Oregon cities and counties.

In an attempt to find code from a similar landscape area of a municipality encompassing similar landscape characteristics and population size as Juneau, code was reviewed from City of Bellingham, Port Angeles, and City of Longview in Washington State. If this

option is chosen in the final draft of the JWMP, CBJ would analyze more code examples and templates for CBJs code update in accordance with the ACMP. There are restrictions in the ACMP in regard to local jurisdiction of wetlands that will need to be considered when developing local code for critical areas and their mitigation without a general permit from the Corps.

CBJ jurisdiction would not be limited to the wetlands mapped in the inventory completed between 2014-2015; instead, it would apply to all lands within CBJ, both public and private. Wetland mapping completed for the JWMP update would serve as a reference tool for general wetland locations, types, and extents within the CBJ. Site analysis for wetlands would still be required prior to site development; wetlands located by this analysis would require formal delineation, categorization, and subsequent local and federal regulation. In short, all wetlands in CBJ are designated in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0), U.S. Army Corps of Engineers, 2007. Further steps would be to adopt wetland management policies and codes for the category of wetlands, mitigation standards, etc.

Local jurisdictions often adopt the Corps mitigation sequencing within their state, county, or municipal mitigation codes. Requiring wetland buffers of varying widths according to wetland category and proposed land-use intensity is another method that can be employed to further refine mitigation sequencing. Some jurisdictions define specific buffer mitigation ratios; others state allowed uses within wetland buffer areas or address variables such as buffer width averaging and reduction. Each local jurisdiction has the authority to develop and regulate buffers, or omit them. Similarly, CBJ has the opportunity in the JWMP update to refine wetland protection standards and subsequent mitigation requirements in ways that promote development in Juneau's unique environment without compromising the federal standard of no net loss of wetland area.

Incentives provided to CBJ by this option include: 1) CBJ retains an active role in local wetland management and mitigation requirements, 2) creates a favorable setting for private mitigation providers, 3) addresses public concerns regarding environmental conditions of the borough, and 4) has the potential to streamline wetland impacts permitting and subsequent compensatory mitigation through a local (rather than regional) lead agency review process.

Drawbacks of this approach include the possibility of initial inefficiencies regarding code adoption. As mentioned above, resources and examples from other jurisdictions in other states may prove to be useful as templates or general guidelines, but these examples notwithstanding, any new codification process would most likely be time consuming. Ultimately, adopting local code creates a more refined regulatory process. This could be interpreted as an incentive for protecting public environmental interests, as well as a drawback for developers (local and non-local) for whom additional regulatory processes would result in longer time commitments for project approval and potential duplication of efforts when requesting permits from both CBJ and the Corps.

5.5 Summary

The implementation strategy for the JWMP 2016 update is an important decision that will shape future wetland management in Juneau. Three options have been proposed in this chapter for the consideration of CBJ staff, Planning Commission, Wetland Review Board, and Assembly Members. These three options do not represent the only options available to CBJ, and they do not have to act as stand-alone scenarios. Portions of one option can be incorporated with others where necessary. In summary, the three options are:

1) Planning and Educational Tool Only
2) General Permit
3) Local Code

Local and regional examples of each type of management have been provided as guidance for decisions that shape the JWMP update and its contents. This background information and scenario presentation has been provided in the draft JWMP report to further inform decisions for the final JWMP and future wetland management in CBJ.

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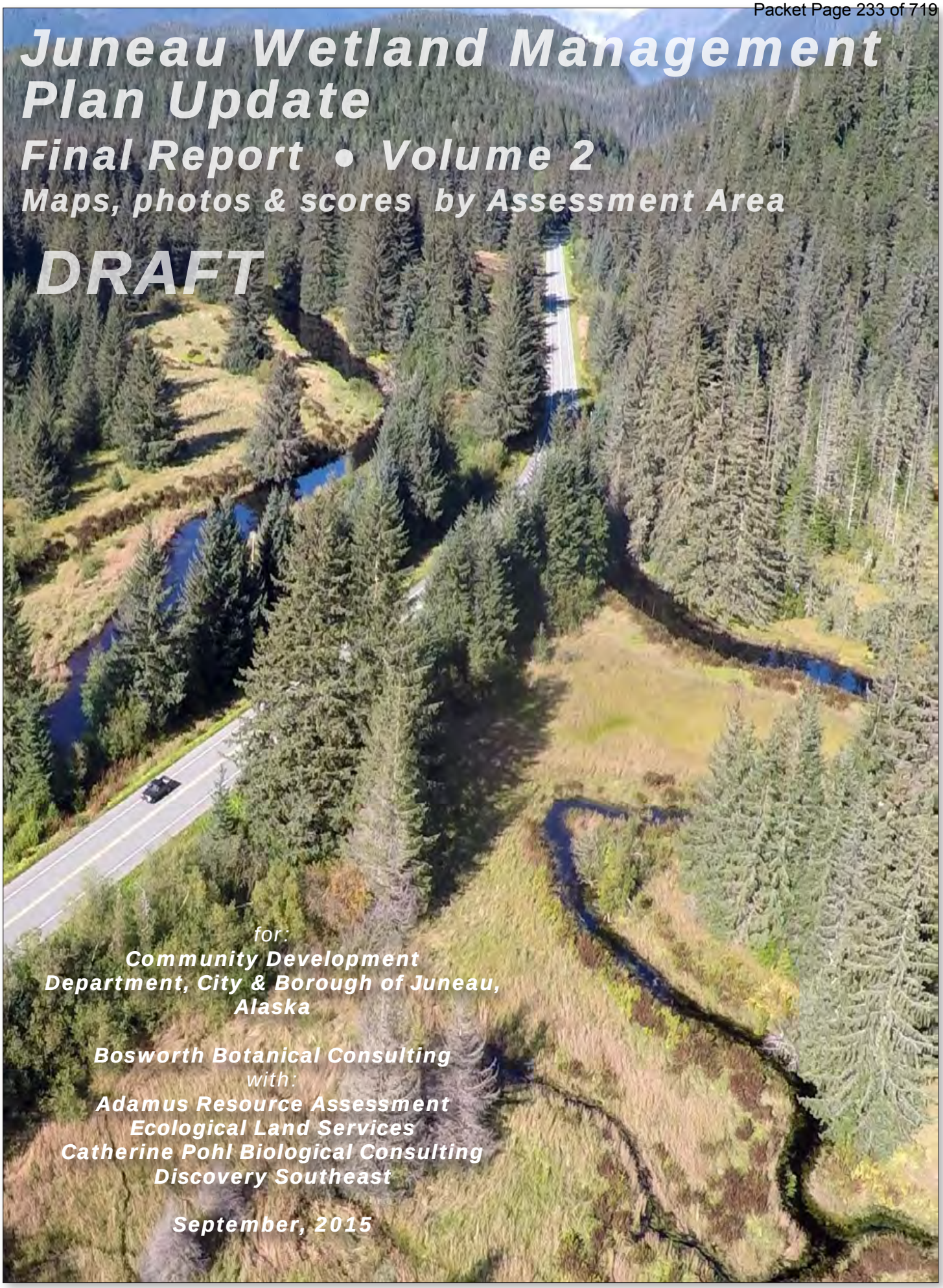
Juneau Wetland Management Plan Update

Final Report • Volume 2

Maps, photos & scores by Assessment Area

DRAFT



for:
Community Development Department, City & Borough of Juneau, Alaska

Bosworth Botanical Consulting
with:
Adamus Resource Assessment
Ecological Land Services
Catherine Pohl Biological Consulting
Discovery Southeast

September, 2015

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Cover: View northwest over Peterson Creek parkland to Amalga Harbor, September, 2015. Eagle River delta in left distance. We assessed forested and floodplain wetlands, fen/marsh, and uplifted wetlands in this area.

This contract was funded by the Coastal Impact Assistance Program through the Alaska Dept of Commerce, Community and Economic Development as part of Grant #10-CIAP- 0009, "Habitat Mapping and Analysis Project."

1.0 INTRODUCTION TO VOLUME 2

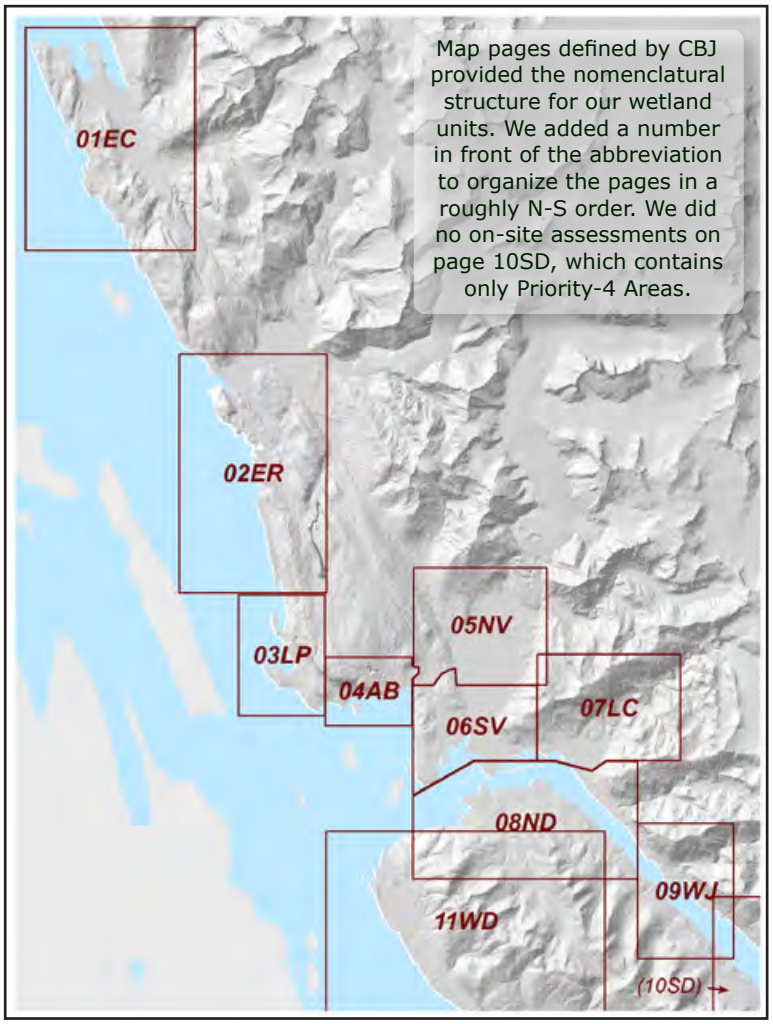
Volume 1 of the Juneau Wetlands Management Plan Update provides an overview of the project, including methods, summary tables, study highlights, and implementation plan. In Volume 2, we give detailed scores, maps and on-site photos for each Assessment Area (AA) unit.

Non-tidal AAs—the large majority of wetlands surveyed—are arranged in Section 2.0 by Map Page. These are subdivisions of the road-accessible CBJ. From north to south:

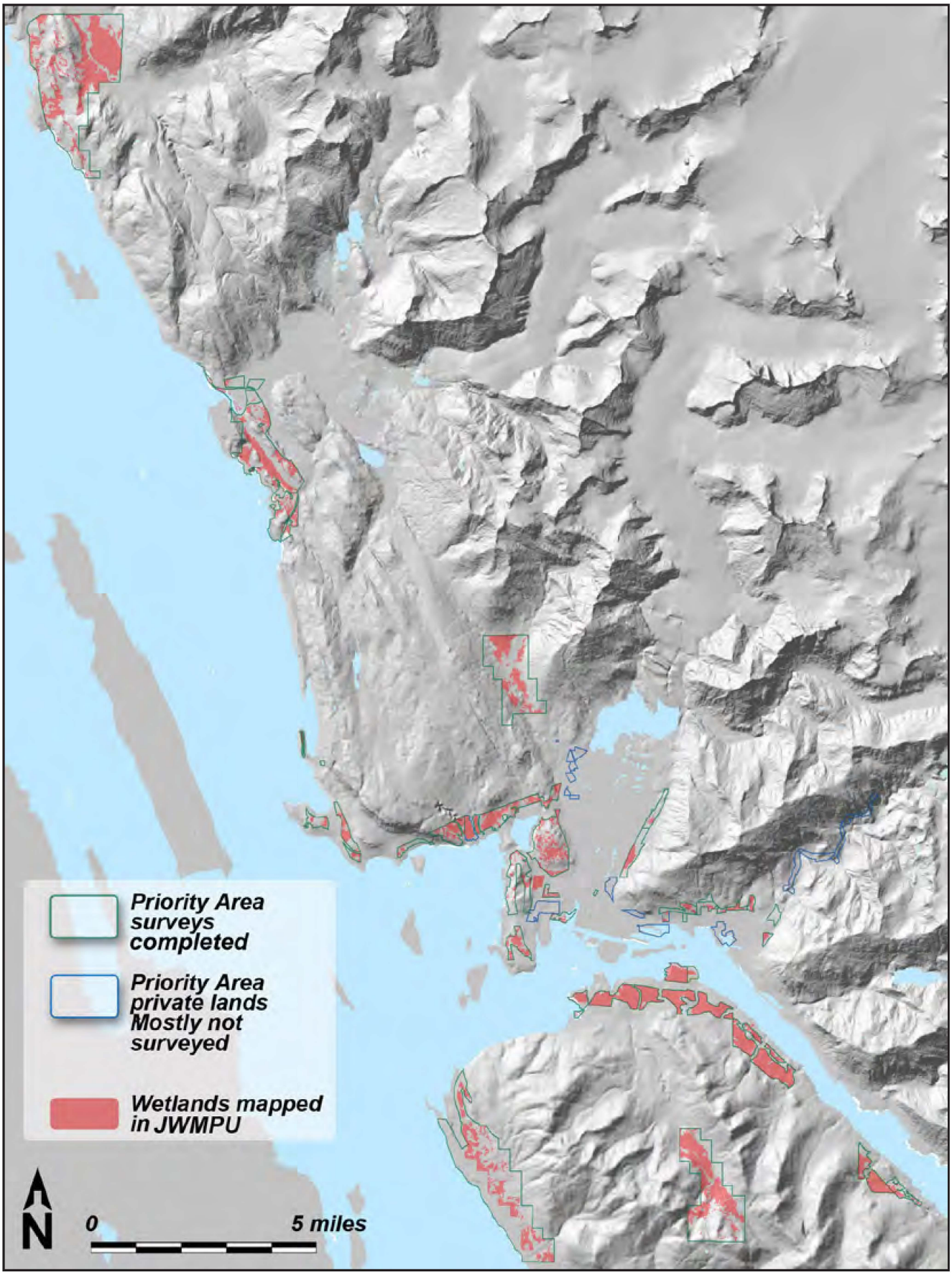
- Echo Cove (01EC)
- Eagle River (02ER)
- Lena Point (03LP)
- Auke Bay (04AB)
- North Valley (05NV)
- South Valley (06SV)
- Lemon Creek (07LC)
- North Douglas (08ND)
- West Juneau (09WJ)
- West Douglas (11WD)

Areas within CBJ's map page 10, South Douglas Island (10SD), were assigned lower priority for field efforts so were not included in the surveys. Off-site evaluations were conducted here, as described in Section 4.0

Only a few tidal AAs were surveyed. These are described in Section 3.0



Notice to reviewers of the draft: In formating this version of the report some errors were noted in fish scores. These are highlighted in red font, below, and will be corrected in future drafts. At this late stage in draft submission, tables cannot be recalculated.


Priority Area surveys completed
Priority Area private lands Mostly not surveyed
Wetlands mapped in JWMPU
N
0
5 miles

2.0 SCORES BY AA: NON-TIDAL WETLANDS

The 332 non-tidal wetland AAs characterized in this section are presented roughly from north to south according to Map Page. The basis for separating the AA from other AAs is denoted by its wetland type, or WESPAK-SE classification, defined in the table on right).

Normalized scores for functions and values of the AA are shown in tables. A score of 10 indicates the AA is believed to have greater capacity to perform the function than the other 331 non-tidal AAs. A score of 0 indicates it's believed to have less capacity for performing the function than any of the other 331 non-tidal AAs (but tied scores are allowed).

For two functions—Anadromous Fish Habitat and Resident Fish Habitat—a score of 0 means the wetland does not provide that function, due to lack of fish access and known presence. However, for other functions, a score of 0 does not mean the function is literally absent from the AA —only that the AA scored lower than any other AA we surveyed. Scores have not been calibrated to actual measurements of functions because cost and time requirements of doing so are prohibitive.

For any function or value, if one score changes it can shift all the normalized scores of the others, as explained in Volume 1, Section 2.3.3.

In each AA's score table, the functions or other attributes are listed from highest-to-lowest function score. That way, readers can see for which functions each AA is likely to be most effective. A high number in the Value Score column indicates that, because of reasons such as where the AA is located, the function is likely to be valued more highly, currently or in the future.

Consistent with WESPAK-SE, no value scores are assigned to Carbon Sequestration or Organic Nutrient Export. Although those functions are important, their benefits are expressed globally or at a broad scale. It's difficult to assign value based on local factors.

Wetland Type	Definition
Forested Peatland fw	Nearly all the AA is moss-covered and/or with peat or muck soils to a depth of at least 4 inches, sometimes greater if not rocky. More tall (>3 ft) woody cover than herbaceous. Trees often hemlock or cedar. Often with skunk cabbage (at least in seasonal channels), blueberries. Little or no open water. Includes shrub fringes of open peatlands and fens. Not in active floodplain.
Open Peatland op	Nearly all the AA is moss-covered. Peat depth usually >16 inches except where bedrock near surface. Tree cover is <5% and cover of tall (>3 ft) shrubs is <30%. Shore pine, Labrador tea, crowberry often occur. Often with small (<25 sq ft) scattered stair-step pools with acidic, stained water. Some examples are flat bogs, floating bogs, and sloping muskeg.
Fen/ Marsh fm	Often with extensive surface water, at least seasonally. Usually with more emergent than tall (>3 ft) woody plant cover. Often sedges, deer cabbage, marsh marigold, horsetail, burreed, pond lily. If ground is moss-covered, the moss often is mostly obscured by sedges or other herbaceous plants. Soils often muck or peat, seldom coarse unless created by excavation. Often beaver-created, or at base of steep slopes, or in depressions or adjoining larger water bodies.
Floodplain Wetland fl	At least once annually, surface water in a channel that flows through or adjoins the AA causes the width of surface water in the AA (perpendicular to the channel) to more than double. The increased width is due mainly to that channel inflow, not to hillslope seepage or runoff. Soils are silt or coarser (little or no organic soil or peat). Vegetation can be woody or herbaceous: often alder, willow, devil's club.
Uplift Meadow um	Within a few miles of tidewater or a glacier, but nontidal, and mostly within 100 miles of Glacier Bay National Park. Little or no persistent surface water except in channels, which may be strongly downcut. Mostly sweetgale and/or herbaceous vegetation, e.g., silverweed, iris, Lyngbye's sedge. Tree cover usually <30%. Peat depth usually <16 inches. Resulted from uplift following isostatic rebound as a glacier receded within recent centuries.
Beaver Influenced bi	Active or recent beaver activity has altered the water regime and vegetation. These wetlands are typically episodic, with periods of flood-induced tree mortality alternating with periods of de-watering and vegetation recovery.
Tidal Wetland td	Inundated by tide at least once annually and dominated by emergent herbaceous or woody plants. The level of surface water fluctuates every ~6 hours on a daily basis in response to tides. Does not include areas of beachgrass (*Leymus* or *Elymus mollis*, also called ryegrass) unless they are inundated at that frequency. Does not include areas that are entirely eelgrass or seaweeds.

Definitions of wetland types used in this survey.

In the following AA bullet lists, for **boundary criteria**, rationales for separating the AA unit are given. Here they're listed in order from most to least frequently applied:

• **wetland-upland boundary (w-u)** The AA borders non-wetland habitat. These borders were all mapped in the field with GPS units capable of sub-meter resolution.

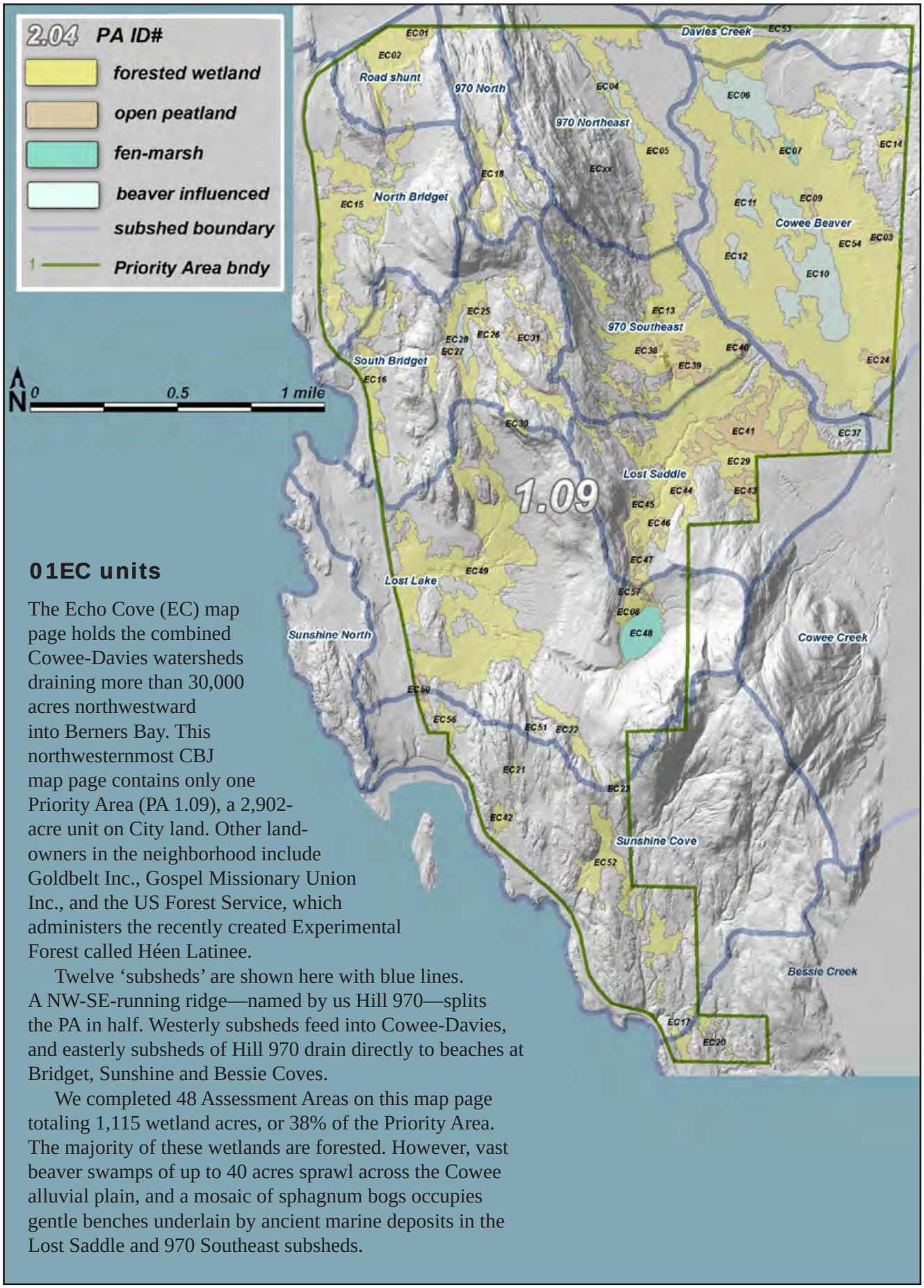
• **wetland type (type)** The AA borders another of a different wetland type. These borders were mapped from imagery, on computers using Geographic Information System software (ESRI ArcMap) with aerial photography and LiDAR-based vegetation height and terrain elevation data layers.

• **priority area (pa)** The AA continues to the edge of a Priority Area boundary (often beyond), which defines the aa boundary.

• **subshed (subsh)** The AA splits from another of like wetland type along a "subshed" boundary, as defined in Volume 1, Section 2.2.[1]

If AAs are more than 200 feet fromothers of like type, they're assigned different unit numbers.

1 Other unit-separation criteria were considered in the first phases of the project, but ultimately rejected: • **channel** The AA is separated from another of like type by a substantial (generally entrenched) stream or river. • **road** The AA is separated from another of like type by a road that alters surface water amount, frequency, or seasonal timing, or which due to lack of culverts, has the capacity to do so.



01EC units

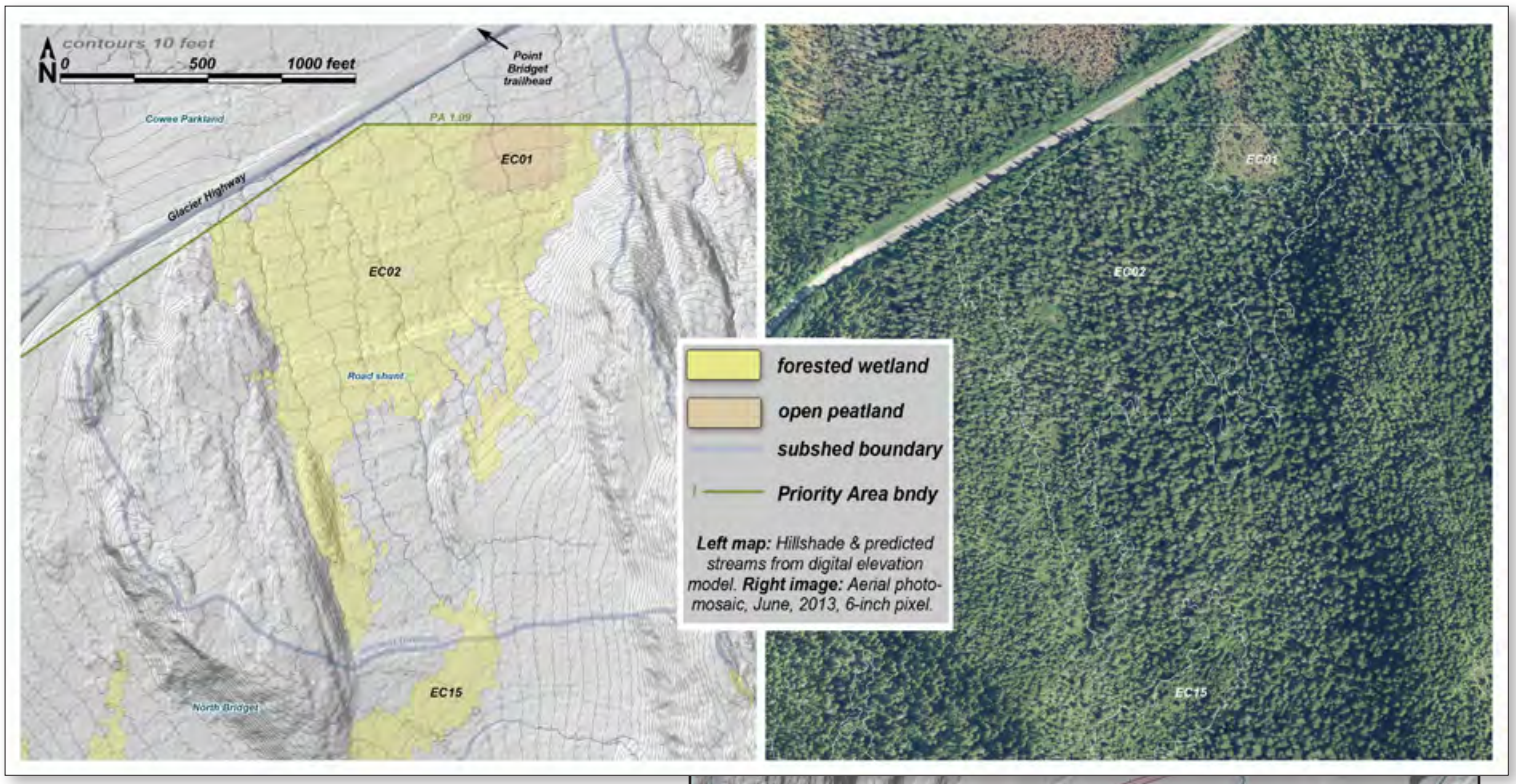
The Echo Cove (EC) map page holds the combined Cowee-Davies watersheds draining more than 30,000 acres northwestward into Berners Bay. This northwesternmost CBJ map page contains only one Priority Area (PA 1.09), a 2,902-acre unit on City land. Other land-owners in the neighborhood include Goldbelt Inc., Gospel Missionary Union Inc., and the US Forest Service, which administers the recently created Experimental Forest called Héen Latinee.

Twelve 'subsheds' are shown here with blue lines. A NW-SE-running ridge—named by us Hill 970—splits the PA in half. Westerly subsheds feed into Cowee-Davies, and easterly subsheds of Hill 970 drain directly to beaches at Bridget, Sunshine and Bessie Coves.

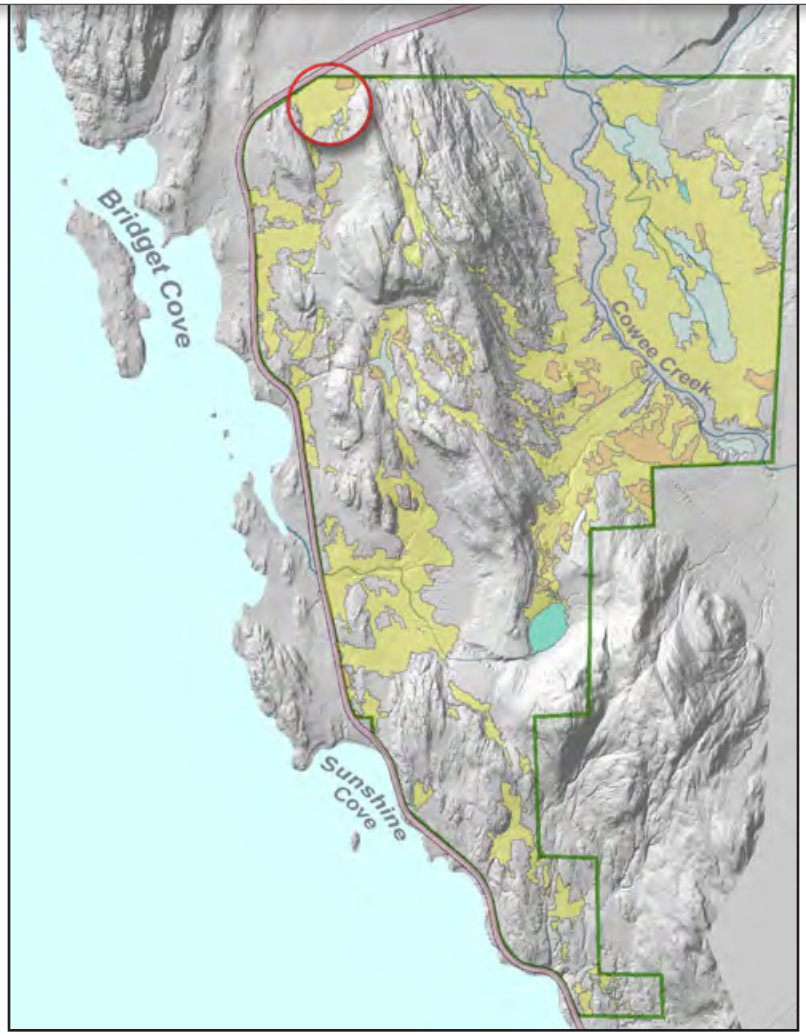
We completed 48 Assessment Areas on this map page totaling 1,115 wetland acres, or 38% of the Priority Area. The majority of these wetlands are forested. However, vast beaver swamps of up to 40 acres sprawl across the Cowee alluvial plain, and a mosaic of sphagnum bogs occupies gentle benches underlain by ancient marine deposits in the Lost Saddle and 970 Southeast subsheds.

EC01 • **type:** open peatland • **acres:** 1.9 • **boundary criteria**: type, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.75	Higher	5.36	Moderate
Stream Flow Support	6.55	Higher	1.78	Moderate
Amphibian Habitat	5.34	Higher	5.90	Moderate
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Water Warming	3.82	Moderate	7.80	Higher
Pollinator Habitat	6.01	Moderate	4.21	Moderate
Waterbird Nesting Habitat	4.08	Moderate	9.40	Moderate
Waterbird Feeding Habitat	4.07	Moderate	3.21	Moderate
Water Cooling	3.86	Moderate	3.68	Moderate
Native Plant Habitat	3.50	Moderate	2.52	Moderate
Water Storage	4.56	Moderate	1.11	Lower
Organic Nutrient Export	7.35	Moderate	N.A.	N.A.
Invertebrate Habitat	2.77	Lower	1.97	Lower
Phosphorus Retention	2.52	Lower	2.52	Lower
Sediment Retention & Stabilization	2.19	Lower	0.52	Lower
Nitrate Removal	0.73	Lower	1.52	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.15	Higher
Wetland Risk	N.A.	N.A.	7.05	Higher
Wetland Stressors	N.A.	N.A.	5.86	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.53	Lower

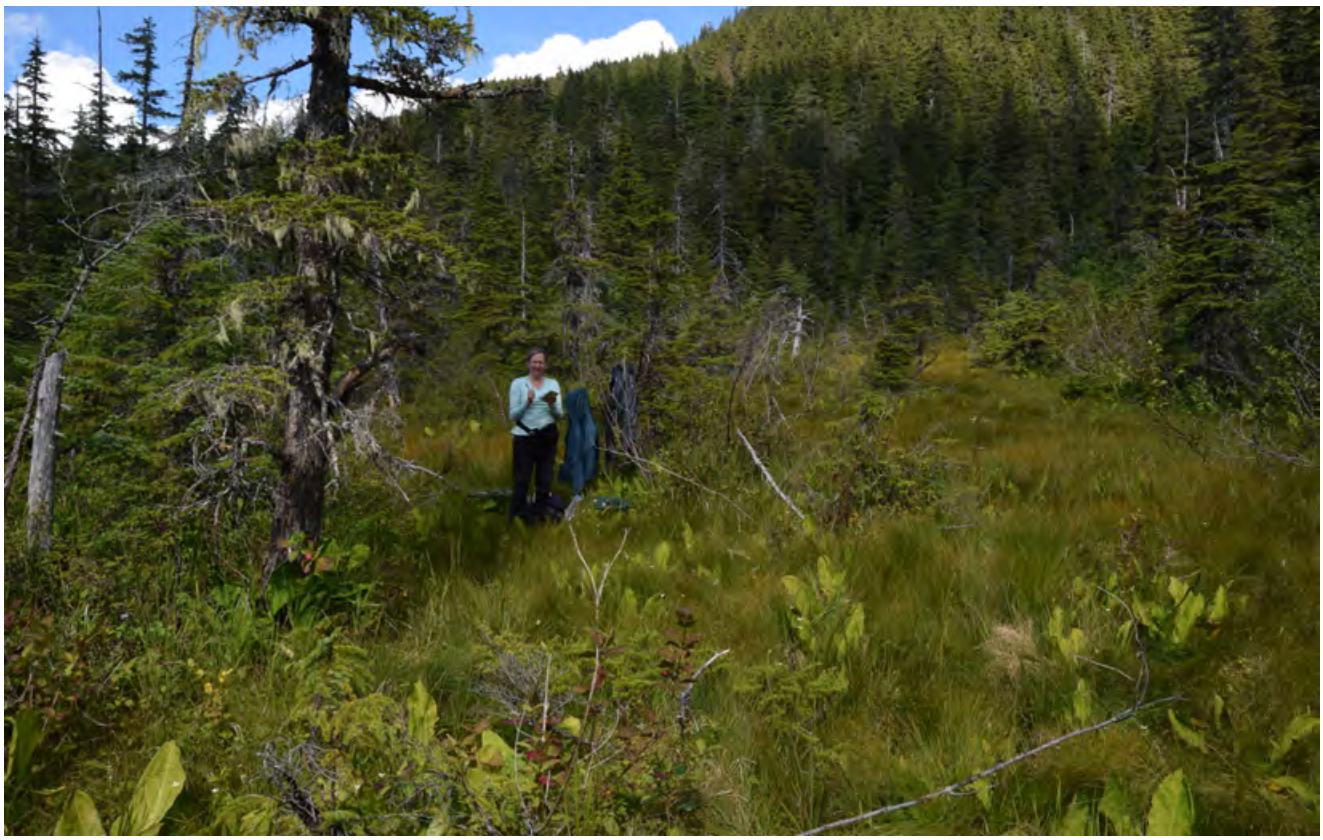


Unit maps for EC01 & 02



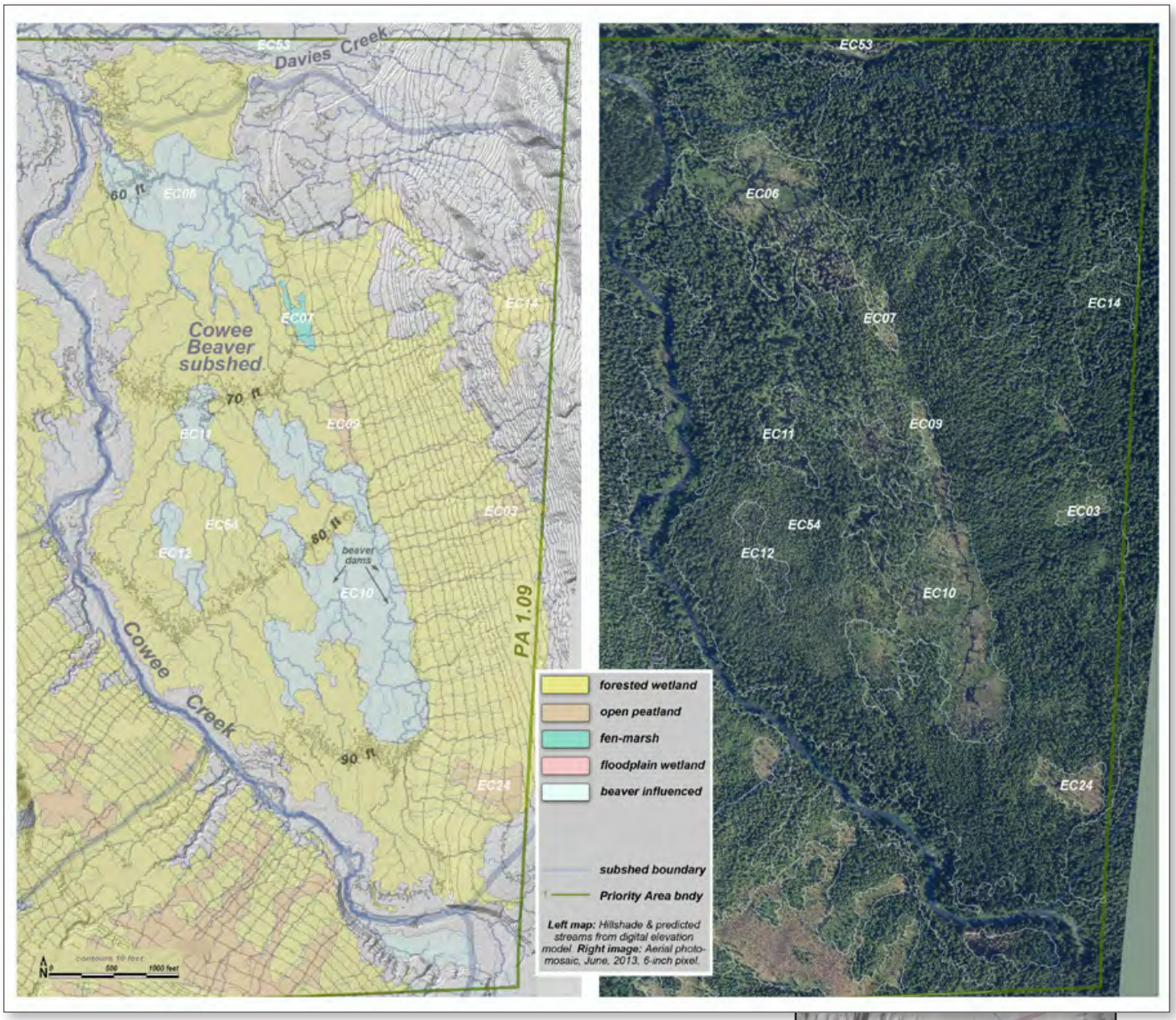
EC02 • **type:** forested peatland • **acres:** 27.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.41	Higher	4.43	Moderate
Songbird, Raptor, & Mammal Habitat	7.76	Higher	5.52	Moderate
Amphibian Habitat	5.29	Higher	5.40	Moderate
Organic Nutrient Export	8.04	Higher	N.A.	N.A.
Carbon Sequestration	6.65	Higher	N.A.	N.A.
Native Plant Habitat	4.40	Moderate	2.88	Moderate
Water Warming	4.33	Moderate	3.12	Moderate
Water Storage	4.25	Moderate	1.11	Lower
Water Cooling	3.54	Moderate	1.47	Lower
Waterbird Feeding Habitat	3.32	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.41	Moderate	0.43	Lower
Stream Flow Support	3.15	Lower	1.78	Moderate
Invertebrate Habitat	2.78	Lower	1.30	Lower
Phosphorus Retention	1.96	Lower	1.96	Lower
Nitrate Removal	1.78	Lower	1.26	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.33	Higher
Wetland Risk	N.A.	N.A.	7.99	Higher
Wetland Stressors	N.A.	N.A.	6.66	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Public Use & Recognition	N.A.	N.A.	1.31	Lower

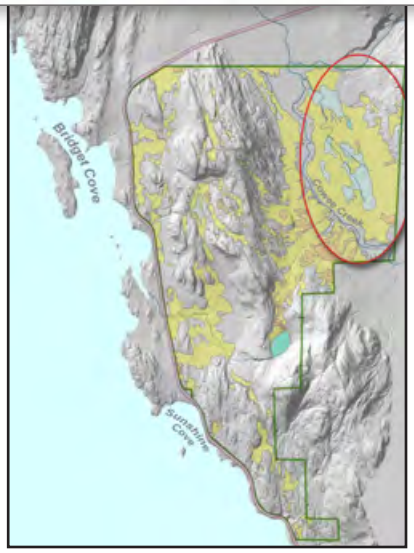


EC03 • **type:** open peatland • **acres:** 1.1 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.09	Higher	5.36	Moderate
Pollinator Habitat	7.84	Higher	4.21	Moderate
Native Plant Habitat	6.24	Higher	2.52	Moderate
Amphibian Habitat	5.44	Higher	6.29	Moderate
Water Warming	5.38	Higher	2.52	Lower
Organic Nutrient Export	7.74	Higher	N.A.	N.A.
Stream Flow Support	4.24	Moderate	1.83	Moderate
Water Cooling	5.30	Moderate	1.26	Lower
Waterbird Feeding Habitat	4.22	Moderate	0.00	Lower
Water Storage	2.98	Moderate	1.11	Lower
Carbon Sequestration	5.61	Moderate	N.A.	N.A.
Invertebrate Habitat	3.00	Lower	1.49	Lower
Phosphorus Retention	1.70	Lower	1.70	Lower
Nitrate Removal	1.48	Lower	2.27	Lower
Sediment Retention & Stabilization	1.48	Lower	0.45	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.83	Higher
Wetland Risk	N.A.	N.A.	4.18	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower
Public Use & Recognition	N.A.	N.A.	1.39	Lower

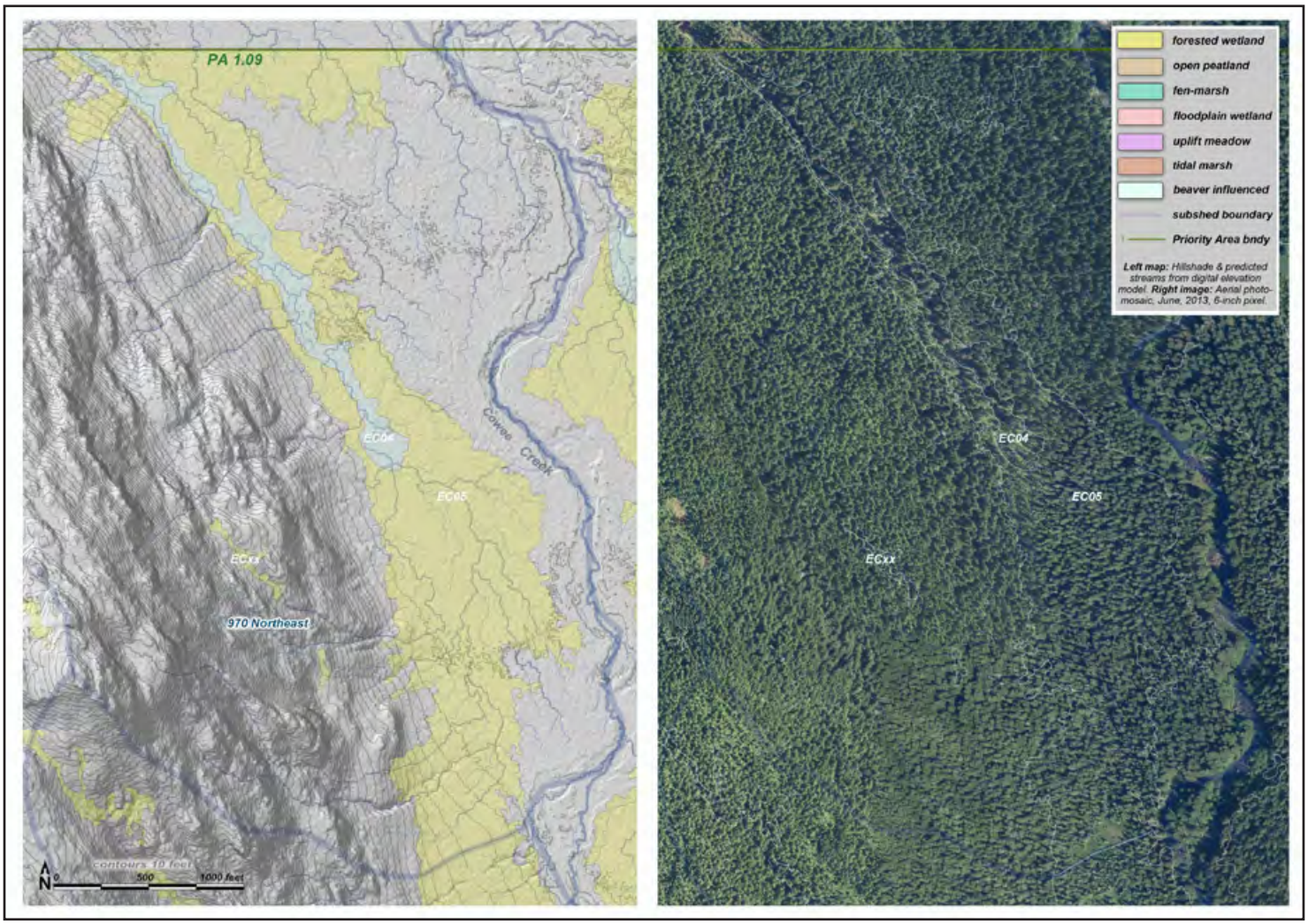


Unit maps for EC03 06 07 09 10 11 12 14 24 53 54

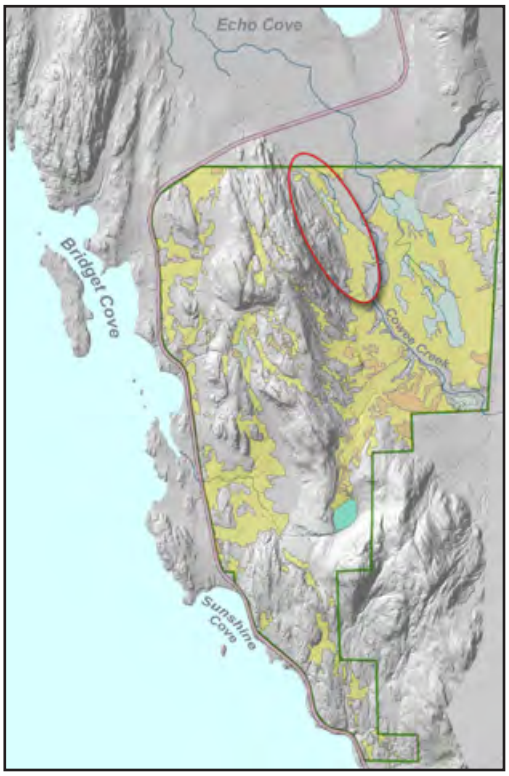


EC04 • **type:** beaver influenced • **acres:** 7.1 • **boundary criteria**: type, pa • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	9.41	Higher	7.14	Higher
Resident Fish Habitat	8.59	Higher	6.46	Higher
Waterbird Nesting Habitat	8.28	Higher	10.00	Higher
Stream Flow Support	7.31	Higher	7.83	Higher
Water Warming	6.01	Higher	8.70	Higher
Phosphorus Retention	5.17	Higher	5.17	Higher
Waterbird Feeding Habitat	8.21	Higher	3.00	Moderate
Invertebrate Habitat	6.17	Higher	5.57	Moderate
Nitrate Removal	4.81	Higher	4.80	Moderate
Sediment Retention & Stabilization	4.65	Higher	3.81	Moderate
Water Storage	6.32	Higher	1.04	Lower
Native Plant Habitat	5.64	Higher	0.57	Lower
Anadromous Fish Habitat	6.47	Moderate	10.00	Higher
Water Cooling	3.61	Moderate	5.60	Higher
Pollinator Habitat	6.53	Moderate	3.36	Moderate
Songbird, Raptor, & Mammal Habitat	5.85	Moderate	3.75	Moderate
Organic Nutrient Export	7.12	Moderate	N.A.	N.A.
Carbon Sequestration	3.86	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	5.95	Higher
Public Use & Recognition	N.A.	N.A.	5.77	Higher
Wetland Risk	N.A.	N.A.	2.96	Lower
Wetland Stressors	N.A.	N.A.	2.91	Lower
Wetland Sensitivity	N.A.	N.A.	2.20	Lower



Unit maps for EC04 & 05



EC05 • **type:** forested peatland • **acres:** 59.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	8.03	Higher	6.78	Higher
Water Cooling	5.81	Higher	6.87	Higher
Phosphorus Retention	4.73	Higher	4.73	Higher
Nitrate Removal	3.36	Higher	5.68	Higher
Songbird, Raptor, & Mammal Habitat	8.25	Higher	3.33	Moderate
Pollinator Habitat	6.91	Higher	4.43	Moderate
Resident Fish Habitat	7.90	Higher	0.58	Lower
Amphibian Habitat	6.59	Higher	3.54	Lower
Organic Nutrient Export	7.78	Higher	N.A.	N.A.
Water Warming	3.61	Moderate	7.58	Higher
Anadromous Fish Habitat	6.75	Moderate	6.67	Moderate
Sediment Retention & Stabilization	3.19	Moderate	3.86	Moderate
Water Storage	4.74	Moderate	1.11	Lower
Waterbird Nesting Habitat	4.66	Moderate	0.00	Lower
Carbon Sequestration	5.98	Moderate	N.A.	N.A.
Native Plant Habitat	3.05	Lower	2.88	Moderate
Invertebrate Habitat	2.55	Lower	4.00	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.32	Higher
Wetland Risk	N.A.	N.A.	3.64	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower
Public Use & Recognition	N.A.	N.A.	1.48	Lower

EC06 • **type:** beaver influenced • **acres:** 23.4 • **boundary criteria**: w-u, type • **pin**: 3B4501000010 • known or probable anadromous fish

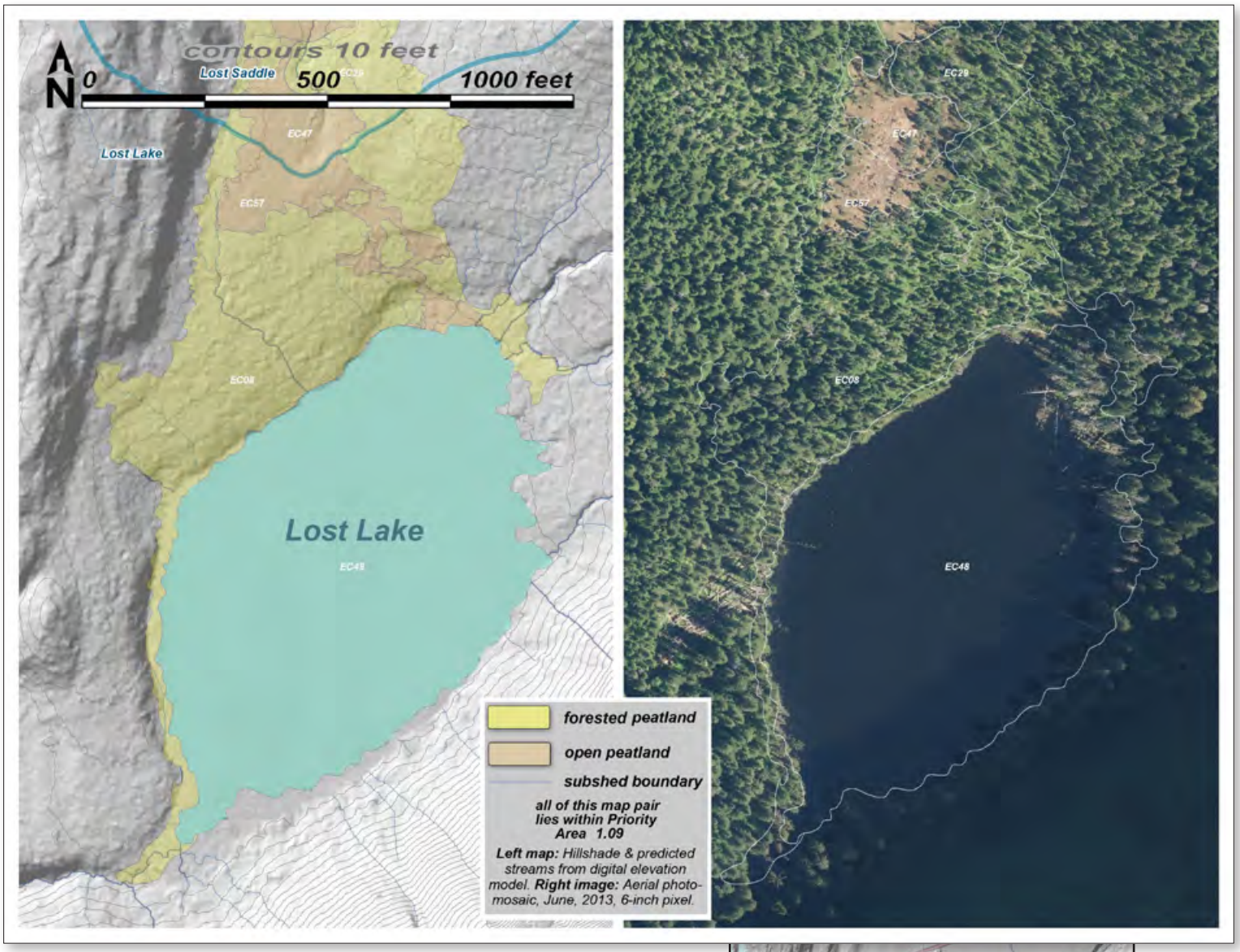
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	9.93	Higher	10.00	Higher
Resident Fish Habitat	9.38	Higher	7.53	Higher
Invertebrate Habitat	9.33	Higher	10.00	Higher
Pollinator Habitat	8.96	Higher	8.52	Higher
Native Plant Habitat	8.20	Higher	7.90	Higher
Stream Flow Support	6.40	Higher	9.76	Higher
Amphibian Habitat	6.04	Higher	8.42	Higher
Nitrate Removal	4.37	Higher	8.84	Higher
Waterbird Nesting Habitat	10.00	Higher	9.40	Moderate
Waterbird Feeding Habitat	9.56	Higher	5.21	Moderate
Sediment Retention & Stabilization	4.85	Higher	2.35	Moderate
Water Storage	5.32	Higher	1.11	Lower
Water Warming	4.83	Higher	2.63	Lower
Organic Nutrient Export	7.94	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.27	Moderate	8.02	Higher
Water Cooling	4.50	Moderate	7.36	Higher
Carbon Sequestration	4.68	Moderate	N.A.	N.A.
Phosphorus Retention	2.04	Lower	2.04	Lower
Wetland Sensitivity	N.A.	N.A.	8.48	Higher
Wetland Ecological Condition	N.A.	N.A.	6.79	Higher
Public Use & Recognition	N.A.	N.A.	6.61	Higher
Wetland Risk	N.A.	N.A.	3.16	Lower
Wetland Stressors	N.A.	N.A.	2.75	Lower

EC07 • **type:** fen/marsh • **acres:** 1.5 • **boundary criteria**: type • **pin**: 3B4501000010 • known or probable anadromous fish

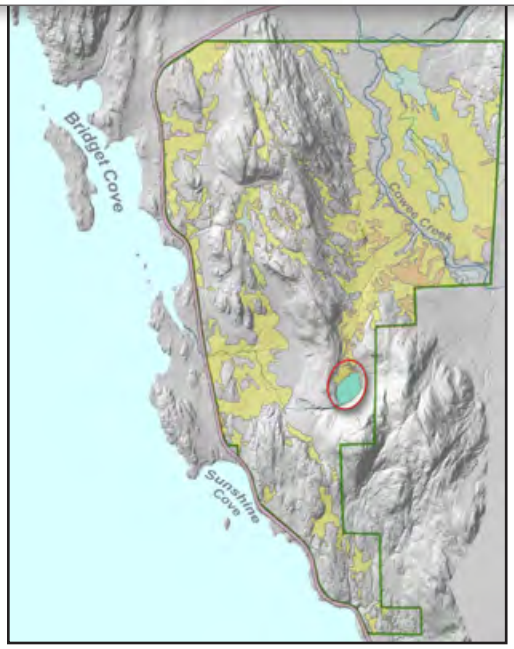
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.37	Higher	7.85	Higher
Stream Flow Support	8.99	Higher	7.34	Higher
Songbird, Raptor, & Mammal Habitat	8.73	Higher	7.52	Higher
Native Plant Habitat	8.24	Higher	6.95	Higher
Amphibian Habitat	5.54	Higher	7.93	Higher
Resident Fish Habitat	8.05	Higher	4.61	Moderate
Water Warming	5.38	Higher	5.19	Moderate
Anadromous Fish Habitat	6.76	Moderate	10.00	Higher
Water Cooling	5.30	Moderate	5.99	Higher
Invertebrate Habitat	5.04	Moderate	10.00	Higher
Nitrate Removal	2.09	Moderate	6.82	Higher
Waterbird Feeding Habitat	5.85	Moderate	3.21	Moderate
Waterbird Nesting Habitat	5.66	Moderate	9.40	Moderate
Phosphorus Retention	3.02	Moderate	3.02	Moderate
Water Storage	3.67	Moderate	1.11	Lower
Organic Nutrient Export	7.55	Moderate	N.A.	N.A.
Carbon Sequestration	5.21	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.68	Lower	3.81	Moderate
Wetland Ecological Condition	N.A.	N.A.	6.45	Higher
Public Use & Recognition	N.A.	N.A.	6.26	Higher
Wetland Sensitivity	N.A.	N.A.	5.97	Moderate
Wetland Risk	N.A.	N.A.	3.32	Lower
Wetland Stressors	N.A.	N.A.	3.05	Lower

EC08 • **type:** forested peatland • **acres:** 7.4 • **boundary criteria**: w-u, type, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	6.56	Higher
Songbird, Raptor, & Mammal Habitat	9.92	Higher	3.33	Moderate
Pollinator Habitat	8.11	Higher	4.43	Moderate
Amphibian Habitat	7.39	Higher	4.93	Moderate
Stream Flow Support	7.28	Higher	2.60	Moderate
Water Cooling	5.84	Higher	3.51	Moderate
Native Plant Habitat	5.82	Higher	2.88	Moderate
Invertebrate Habitat	6.83	Higher	1.44	Lower
Organic Nutrient Export	9.59	Higher	N.A.	N.A.
Nitrate Removal	2.15	Moderate	5.05	Moderate
Water Storage	3.49	Moderate	1.11	Lower
Carbon Sequestration	5.51	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.35	Lower	3.86	Moderate
Phosphorus Retention	1.92	Lower	1.92	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.43	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.25	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower
Public Use & Recognition	N.A.	N.A.	1.48	Lower



Unit maps for EC08 48 57



EC09 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.98	Higher	6.35	Higher
Songbird, Raptor, & Mammal Habitat	8.42	Higher	4.02	Moderate
Pollinator Habitat	7.82	Higher	3.15	Moderate
Waterbird Feeding Habitat	6.30	Higher	3.21	Moderate
Water Warming	5.38	Higher	4.73	Moderate
Native Plant Habitat	6.75	Higher	1.49	Lower
Carbon Sequestration	6.94	Higher	N.A.	N.A.
Anadromous Fish Habitat	6.39	Moderate	10.00	Higher
Water Cooling	5.30	Moderate	5.83	Higher
Nitrate Removal	2.61	Moderate	6.82	Higher
Resident Fish Habitat	6.93	Moderate	4.96	Moderate
Waterbird Nesting Habitat	4.78	Moderate	9.40	Moderate
Phosphorus Retention	3.66	Moderate	3.66	Moderate
Sediment Retention & Stabilization	2.47	Moderate	3.81	Moderate
Water Storage	3.98	Moderate	1.11	Lower
Organic Nutrient Export	6.74	Moderate	N.A.	N.A.
Amphibian Habitat	1.98	Lower	7.98	Higher
Invertebrate Habitat	2.64	Lower	4.16	Moderate
Public Use & Recognition	N.A.	N.A.	6.61	Higher
Wetland Ecological Condition	N.A.	N.A.	6.19	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	2.89	Lower
Wetland Stressors	N.A.	N.A.	2.75	Lower

EC10 • **type:** beaver influenced • **acres:** 40.0 • **boundary criteria**: type • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	10.00	Higher	7.37	Higher
Resident Fish Habitat	8.74	Higher	6.34	Higher
Amphibian Habitat	5.47	Higher	9.07	Higher
Water Warming	5.00	Higher	6.31	Higher
Phosphorus Retention	3.97	Higher	3.97	Higher
Songbird, Raptor, & Mammal Habitat	8.29	Higher	5.36	Moderate
Waterbird Feeding Habitat	8.06	Higher	3.21	Moderate
Pollinator Habitat	7.45	Higher	4.21	Moderate
Waterbird Nesting Habitat	7.30	Higher	9.40	Moderate
Native Plant Habitat	5.32	Higher	2.52	Moderate
Water Cooling	5.01	Moderate	6.44	Higher
Anadromous Fish Habitat	6.77	Moderate	6.67	Moderate
Invertebrate Habitat	4.02	Moderate	5.44	Moderate
Sediment Retention & Stabilization	3.22	Moderate	3.86	Moderate
Nitrate Removal	2.89	Moderate	5.30	Moderate
Water Storage	4.87	Moderate	1.11	Lower
Organic Nutrient Export	7.30	Moderate	N.A.	N.A.
Carbon Sequestration	4.48	Moderate	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	4.56	Moderate
Wetland Stressors	N.A.	N.A.	2.86	Lower
Wetland Sensitivity	N.A.	N.A.	2.83	Lower
Wetland Risk	N.A.	N.A.	2.28	Lower
Public Use & Recognition	N.A.	N.A.	1.39	Lower

EC11 • **type:** beaver influenced • **acres:** 4.6 • **boundary criteria**: type • **pin**: 3B4501000010 • known or probable anadromous fish

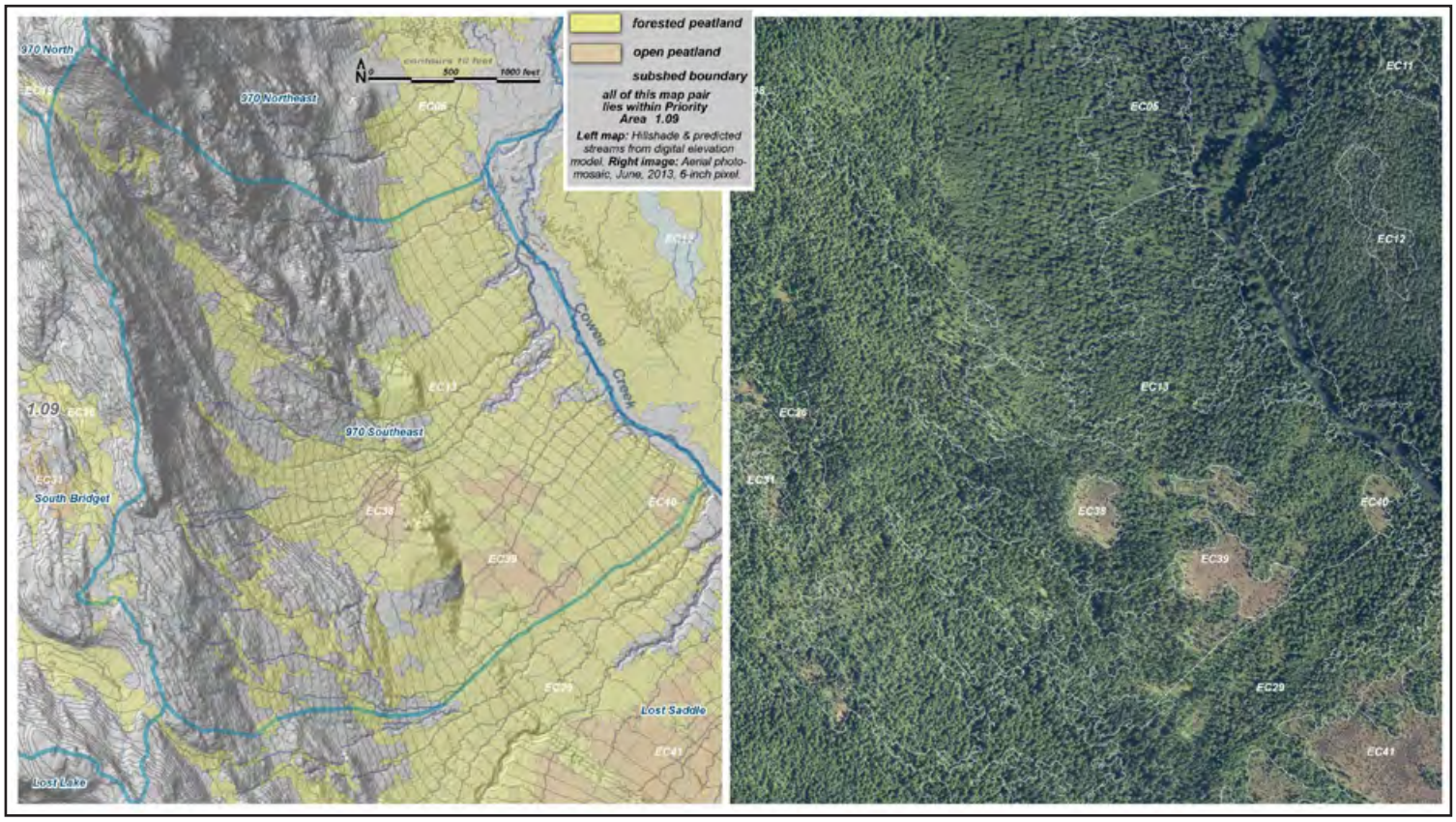
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	9.01	Higher	6.14	Higher
Stream Flow Support	7.31	Higher	8.43	Higher
Amphibian Habitat	6.04	Higher	7.98	Higher
Water Warming	5.46	Higher	6.38	Higher
Phosphorus Retention	3.99	Higher	3.99	Higher
Invertebrate Habitat	8.69	Higher	5.46	Moderate
Waterbird Nesting Habitat	8.09	Higher	9.40	Moderate
Waterbird Feeding Habitat	7.79	Higher	3.21	Moderate
Songbird, Raptor, & Mammal Habitat	7.19	Higher	5.36	Moderate
Native Plant Habitat	7.15	Higher	2.52	Moderate
Sediment Retention & Stabilization	4.51	Higher	2.21	Moderate
Water Storage	5.32	Higher	1.11	Lower
Water Cooling	4.02	Moderate	6.47	Higher
Anadromous Fish Habitat	6.85	Moderate	6.67	Moderate
Pollinator Habitat	5.98	Moderate	4.21	Moderate
Nitrate Removal	2.66	Moderate	4.80	Moderate
Organic Nutrient Export	7.05	Moderate	N.A.	N.A.
Carbon Sequestration	2.89	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	4.55	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.79	Lower
Wetland Risk	N.A.	N.A.	2.20	Lower
Public Use & Recognition	N.A.	N.A.	0.00	Lower

EC12 • **type:** beaver influenced • **acres:** 3.7 • **boundary criteria**: type • **pin**: 3B4501000010 • known or probable anadromous fish

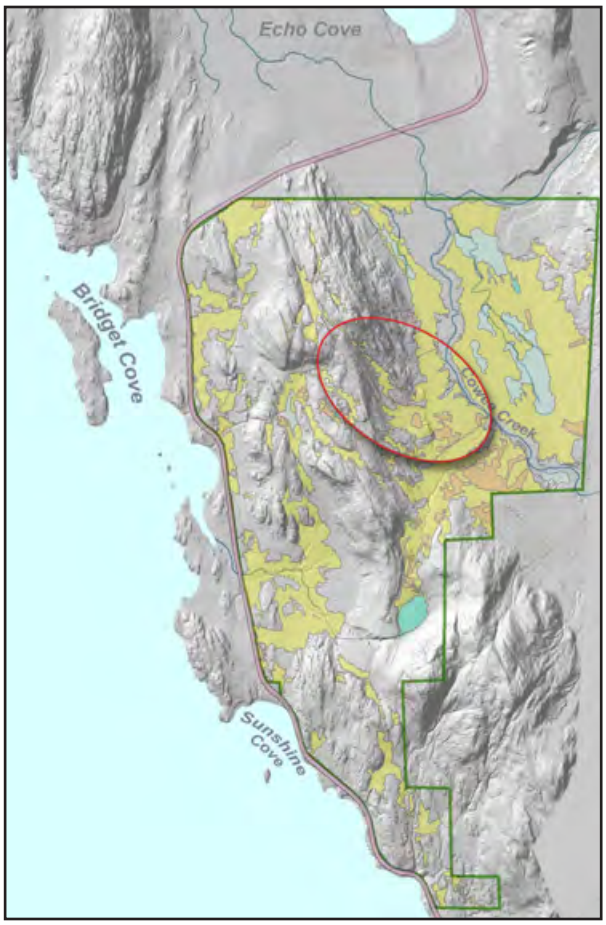
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.35	Higher	5.35	Higher
Water Warming	5.04	Higher	6.10	Higher
Songbird, Raptor, & Mammal Habitat	7.46	Higher	3.33	Moderate
Native Plant Habitat	5.93	Higher	2.52	Moderate
Invertebrate Habitat	5.82	Higher	4.04	Moderate
Nitrate Removal	4.74	Higher	4.80	Moderate
Sediment Retention & Stabilization	4.52	Higher	2.21	Moderate
Resident Fish Habitat	8.75	Higher	0.00	Lower
Waterbird Nesting Habitat	6.69	Higher	0.00	Lower
Water Storage	5.55	Higher	1.11	Lower
Organic Nutrient Export	8.10	Higher	N.A.	N.A.
Stream Flow Support	4.64	Moderate	7.84	Higher
Water Cooling	4.09	Moderate	6.57	Higher
Anadromous Fish Habitat	7.09	Moderate	6.67	Moderate
Pollinator Habitat	6.41	Moderate	4.21	Moderate
Amphibian Habitat	3.86	Moderate	2.88	Lower
Carbon Sequestration	5.76	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	7.53	Higher
Wetland Ecological Condition	N.A.	N.A.	4.99	Moderate
Wetland Stressors	N.A.	N.A.	2.86	Lower
Wetland Risk	N.A.	N.A.	2.47	Lower
Public Use & Recognition	N.A.	N.A.	1.39	Lower

EC13 • **type:** forested peatland • **acres:** 90.2 • **boundary criteria**: w-u, type, subshed • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	5.40	Higher	6.78	Higher
Native Plant Habitat	7.16	Higher	2.88	Moderate
Resident Fish Habitat	7.54	Higher	0.00	Lower
Amphibian Habitat	7.09	Higher	1.11	Lower
Organic Nutrient Export	9.43	Higher	N.A.	N.A.
Stream Flow Support	4.54	Moderate	6.85	Higher
Water Warming	4.33	Moderate	7.65	Higher
Anadromous Fish Habitat	6.56	Moderate	6.67	Moderate
Pollinator Habitat	5.77	Moderate	4.43	Moderate
Phosphorus Retention	3.28	Moderate	3.28	Moderate
Sediment Retention & Stabilization	2.82	Moderate	2.16	Moderate
Invertebrate Habitat	3.82	Moderate	2.00	Lower
Water Storage	3.49	Moderate	1.11	Lower
Nitrate Removal	1.80	Lower	5.18	Moderate
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.78	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	6.03	Higher
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Risk	N.A.	N.A.	2.85	Lower
Wetland Stressors	N.A.	N.A.	2.79	Lower
Public Use & Recognition	N.A.	N.A.	0.00	Lower



Unit maps for EC13, 38, 39, 40

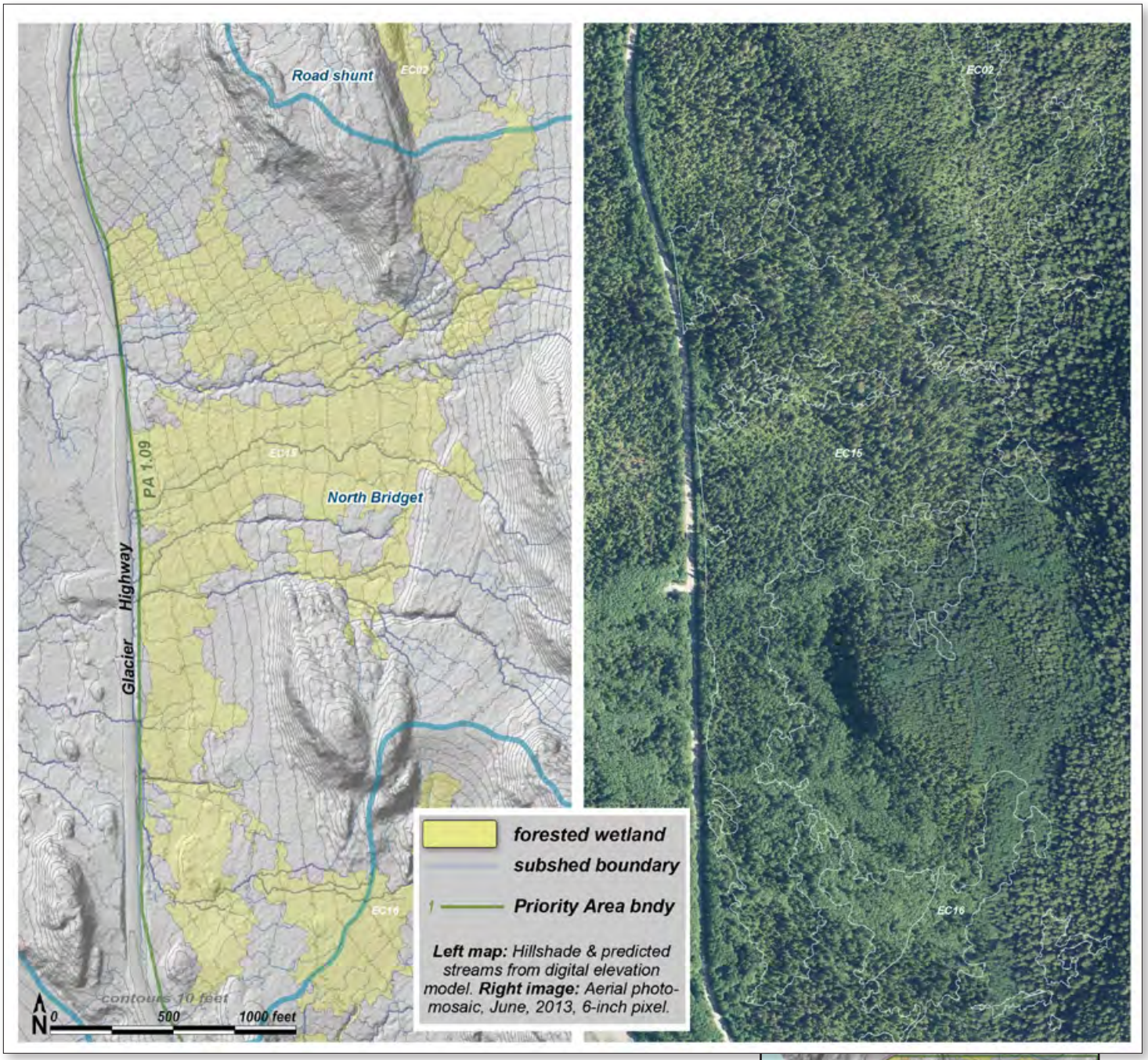


EC14 • **type:** for. peatl. • **acres:** 8.4 • **boundary criteria**: w-u, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

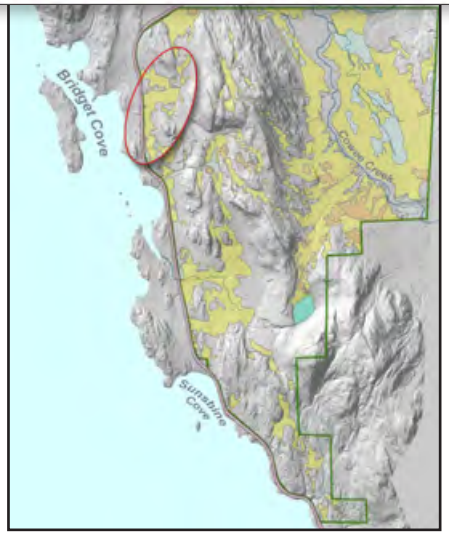
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.28	Higher	2.40	Moderate
Water Cooling	5.59	Higher	3.29	Moderate
Invertebrate Habitat	5.86	Higher	0.00	Lower
Native Plant Habitat	5.48	Higher	0.00	Lower
Organic Nutrient Export	9.28	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	6.62	Higher
Pollinator Habitat	5.25	Moderate	2.95	Moderate
Songbird, Raptor, & Mammal Habitat	3.63	Moderate	2.22	Lower
Amphibian Habitat	3.50	Moderate	0.00	Lower
Water Storage	3.35	Moderate	1.11	Lower
Carbon Sequestration	4.68	Moderate	N.A.	N.A.
Nitrate Removal	1.84	Lower	3.79	Moderate
Sediment Retention & Stabilization	1.38	Lower	4.43	Moderate
Phosphorus Retention	1.17	Lower	1.17	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.03	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	2.79	Lower
Wetland Risk	N.A.	N.A.	1.97	Lower
Public Use & Recognition	N.A.	N.A.	0.00	Lower

EC15 • **type:** forested peatland • **acres:** 55.0• **boundary criteria**: w-u, pa, subsh • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.99	Higher	7.28	Higher
Native Plant Habitat	6.93	Higher	6.14	Higher
Phosphorus Retention	4.61	Higher	4.61	Higher
Songbird, Raptor, & Mammal Habitat	8.34	Higher	6.22	Moderate
Organic Nutrient Export	8.85	Higher	N.A.	N.A.
Carbon Sequestration	7.06	Higher	N.A.	N.A.
Water Cooling	4.66	Moderate	5.23	Higher
Stream Flow Support	3.83	Moderate	5.35	Higher
Water Warming	2.94	Moderate	6.03	Higher
Amphibian Habitat	3.32	Moderate	5.00	Moderate
Nitrate Removal	2.08	Moderate	4.95	Moderate
Resident Fish Habitat	5.87	Moderate	1.73	Lower
Anadromous Fish Habitat	4.99	Moderate	1.50	Lower
Invertebrate Habitat	1.92	Lower	10.00	Higher
Sediment Retention & Stabilization	1.19	Lower	3.76	Moderate
Water Storage	2.28	Lower	1.11	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.62	Moderate
Wetland Risk	N.A.	N.A.	6.14	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.28	Moderate
Public Use & Recognition	N.A.	N.A.	1.89	Lower

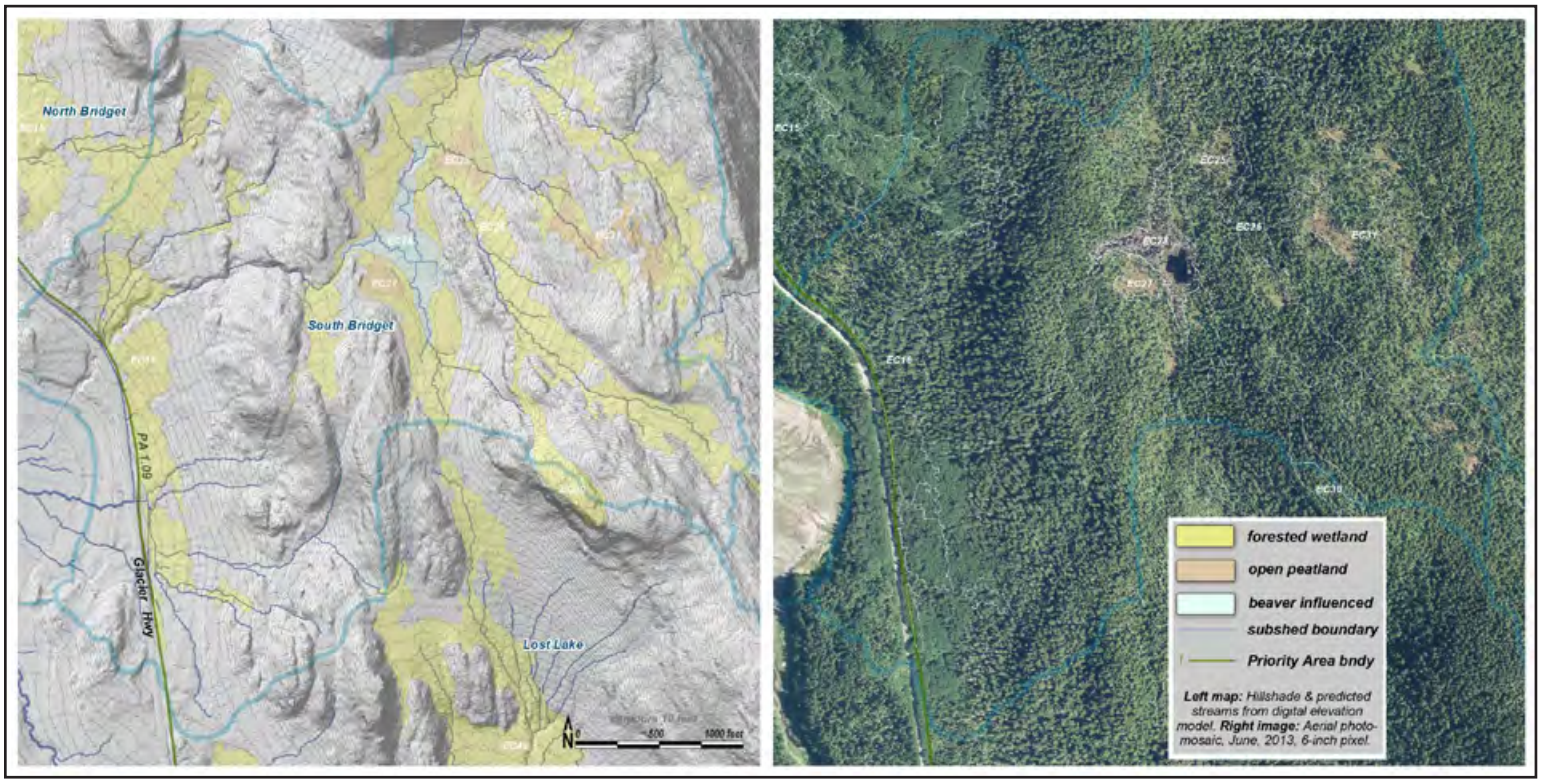


Unit map for EC15

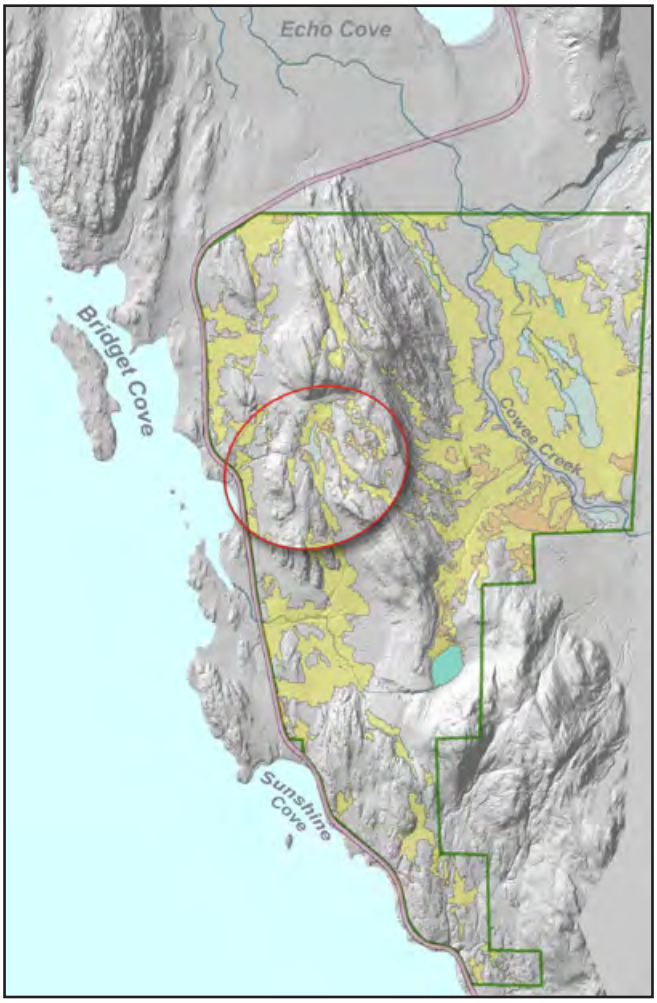


EC16 • **type:** forested peatland • **acres:** 20.3 • **boundary criteria**: w-u, pa, subsh • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.33	Higher	7.28	Higher
Native Plant Habitat	5.84	Higher	6.14	Higher
Nitrate Removal	3.28	Higher	5.81	Higher
Songbird, Raptor, & Mammal Habitat	8.20	Higher	6.22	Moderate
Water Cooling	5.44	Higher	2.04	Lower
Organic Nutrient Export	8.73	Higher	N.A.	N.A.
Invertebrate Habitat	3.72	Moderate	10.00	Higher
Amphibian Habitat	3.74	Moderate	5.00	Moderate
Phosphorus Retention	2.80	Moderate	2.80	Moderate
Water Warming	2.52	Moderate	4.26	Moderate
Resident Fish Habitat	7.10	Moderate	2.31	Lower
Anadromous Fish Habitat	4.70	Moderate	2.00	Lower
Water Storage	3.86	Moderate	1.11	Lower
Carbon Sequestration	5.19	Moderate	N.A.	N.A.
Stream Flow Support	2.04	Lower	6.03	Higher
Sediment Retention & Stabilization	1.72	Lower	3.86	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.06	Higher
Wetland Ecological Condition	N.A.	N.A.	5.87	Higher
Wetland Stressors	N.A.	N.A.	6.82	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.97	Lower

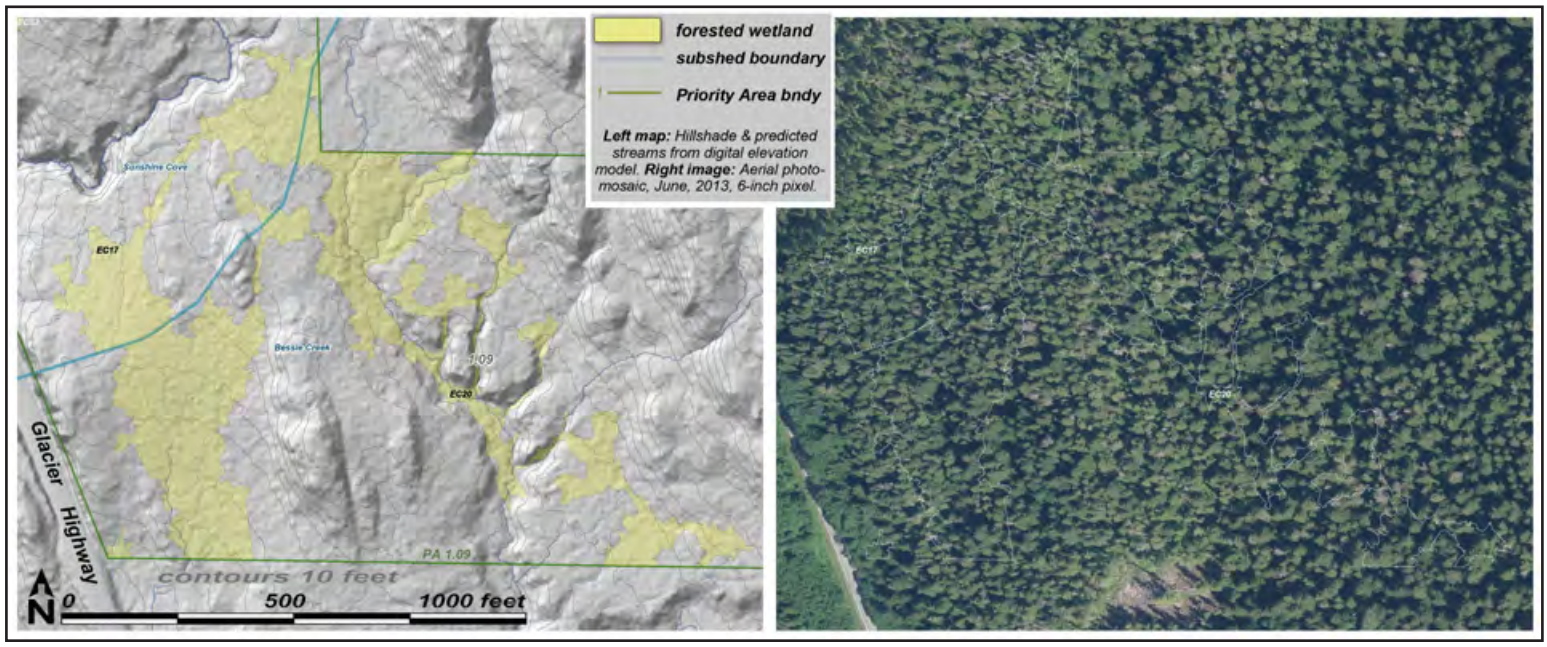


Unit maps for EC 16 25 26 27 28 31

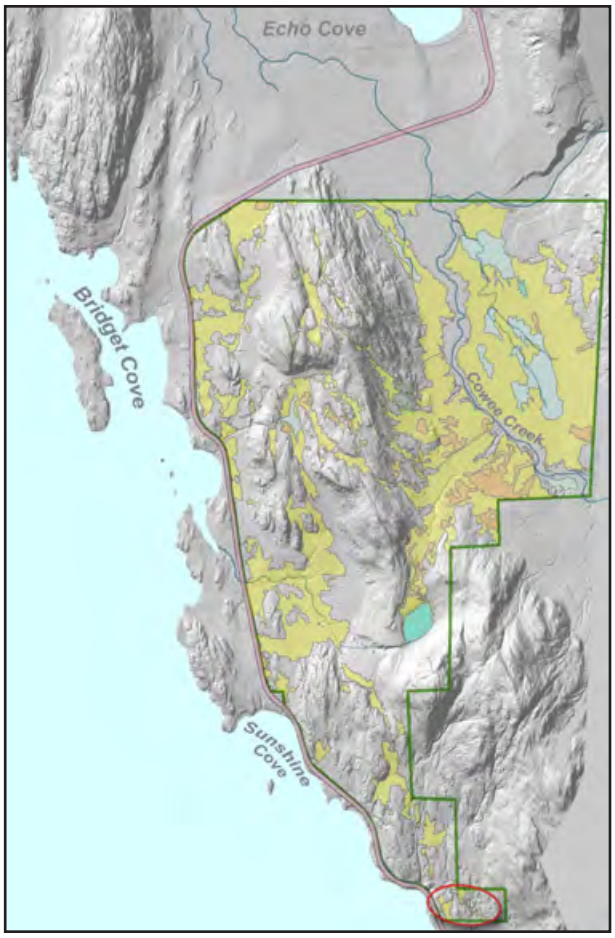


EC17 • **type:** for. peatland • **acres:** 1.8 • **boundary criteria**: w-u,subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Invertebrate Habitat	5.99	Higher	1.41	Lower
Carbon Sequestration	6.42	Higher	N.A.	N.A.
Pollinator Habitat	6.63	Moderate	3.26	Moderate
Amphibian Habitat	3.43	Moderate	4.18	Moderate
Water Warming	3.36	Moderate	4.76	Moderate
Nitrate Removal	3.06	Moderate	4.29	Moderate
Phosphorus Retention	2.92	Moderate	2.92	Moderate
Native Plant Habitat	4.43	Moderate	1.40	Lower
Waterbird Nesting Habitat	3.99	Moderate	0.00	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Water Storage	2.97	Moderate	1.11	Lower
Organic Nutrient Export	6.93	Moderate	N.A.	N.A.
Stream Flow Support	2.04	Lower	2.43	Moderate
Sediment Retention & Stabilization	0.93	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.37	Lower
Public Use & Recognition	N.A.	N.A.	2.20	Lower
Wetland Ecological Condition	N.A.	N.A.	1.85	Lower
Wetland Risk	N.A.	N.A.	1.62	Lower

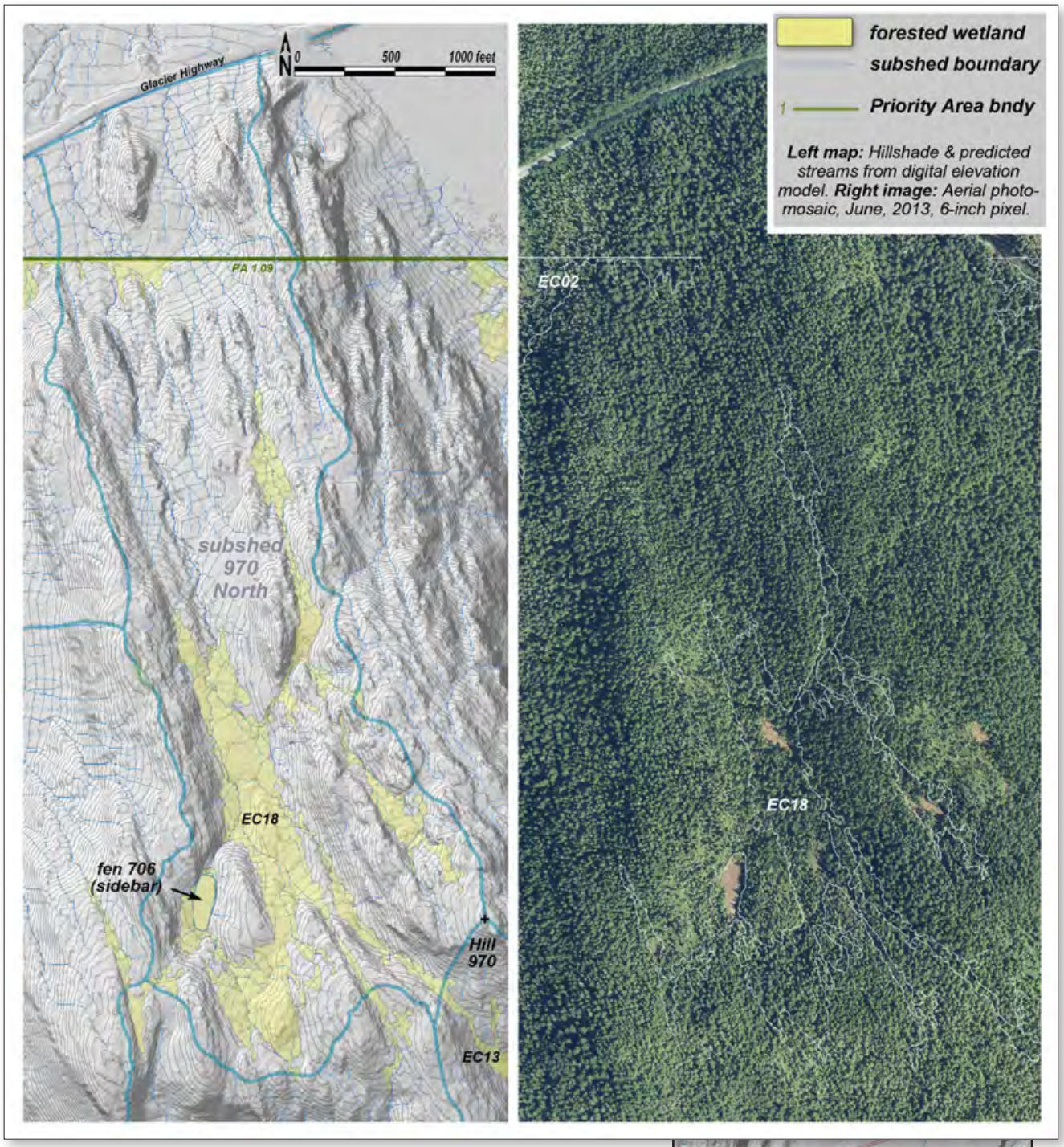


Unit maps for EC17 & 20

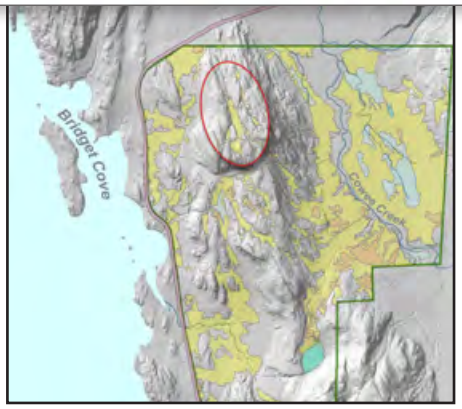


EC18 • **type:** forested peatland • **acres:** 22.8 • **boundary criteria**: w-u, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.31	Higher	3.33	Moderate
Pollinator Habitat	7.75	Higher	4.43	Moderate
Amphibian Habitat	6.99	Higher	4.43	Moderate
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Carbon Sequestration	6.82	Higher	N.A.	N.A.
Water Storage	3.51	Moderate	5.00	Moderate
Phosphorus Retention	2.72	Moderate	2.72	Moderate
Invertebrate Habitat	4.30	Moderate	1.30	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Water Warming	3.36	Moderate	0.70	Lower
Nitrate Removal	2.42	Moderate	3.03	Lower
Native Plant Habitat	2.52	Lower	5.29	Moderate
Stream Flow Support	2.14	Lower	2.09	Moderate
Sediment Retention & Stabilization	1.59	Lower	2.63	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.29	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.19	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower
Public Use & Recognition	N.A.	N.A.	1.60	Lower



Unit map for EC18

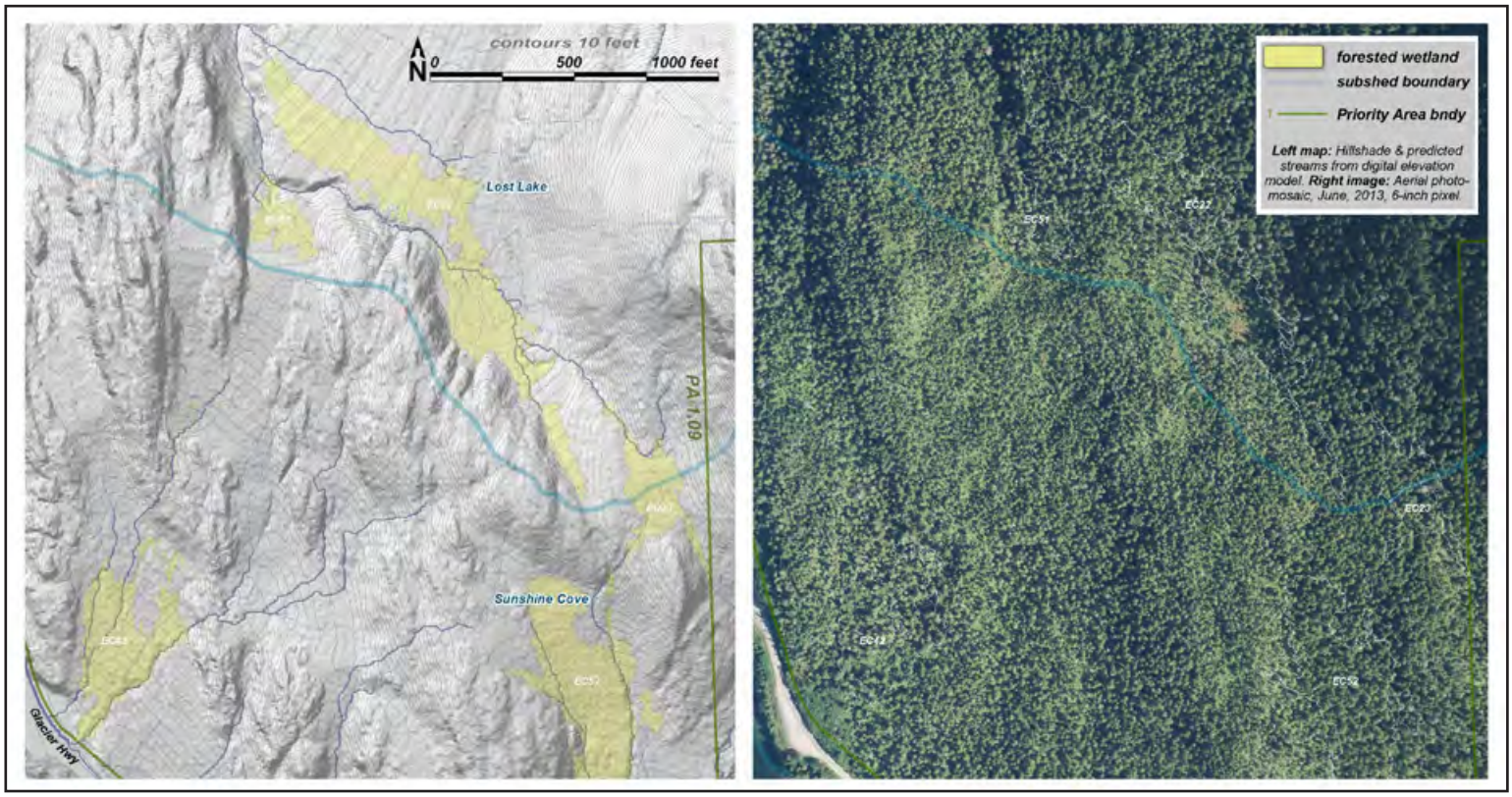


EC20 • **type:** for. peatland • **acres:** 6.2 • **boundary criteria**: w-u, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

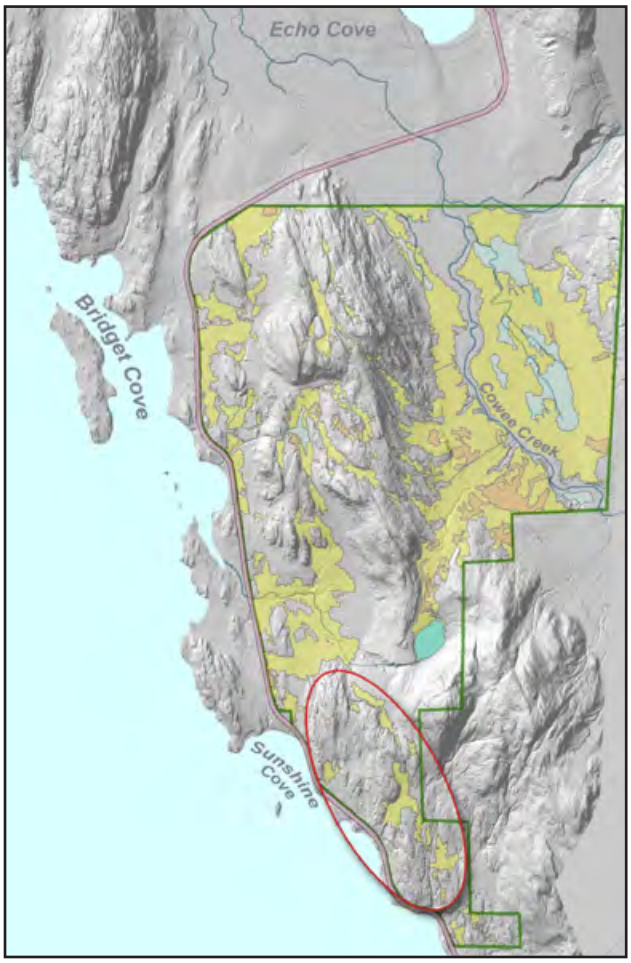
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.31	Higher	3.33	Moderate
Pollinator Habitat	7.75	Higher	4.43	Moderate
Amphibian Habitat	6.99	Higher	4.43	Moderate
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Carbon Sequestration	6.82	Higher	N.A.	N.A.
Water Storage	3.51	Moderate	5.00	Moderate
Phosphorus Retention	2.72	Moderate	2.72	Moderate
Invertebrate Habitat	4.30	Moderate	1.30	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Water Warming	3.36	Moderate	0.70	Lower
Nitrate Removal	2.42	Moderate	3.03	Lower
Native Plant Habitat	2.52	Lower	5.29	Moderate
Stream Flow Support	2.14	Lower	2.09	Moderate
Sediment Retention & Stabilization	1.59	Lower	2.63	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.29	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.19	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower
Public Use & Recognition	N.A.	N.A.	1.60	Lower

EC22 • **type:** forested peatland • **acres:** 8.8 • **boundary criteria**: w-u, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.57	Higher	6.89	Higher
Stream Flow Support	6.77	Higher	1.79	Moderate
Water Cooling	5.49	Higher	3.07	Moderate
Pollinator Habitat	5.41	Moderate	7.95	Higher
Water Warming	4.12	Moderate	5.26	Moderate
Amphibian Habitat	3.19	Moderate	5.83	Moderate
Waterbird Nesting Habitat	3.32	Moderate	0.00	Lower
Organic Nutrient Export	6.13	Moderate	N.A.	N.A.
Carbon Sequestration	5.44	Moderate	N.A.	N.A.
Invertebrate Habitat	2.81	Lower	10.00	Higher
Native Plant Habitat	1.28	Lower	7.10	Higher
Nitrate Removal	1.26	Lower	3.79	Moderate
Sediment Retention & Stabilization	0.09	Lower	3.78	Moderate
Phosphorus Retention	1.76	Lower	1.76	Lower
Water Storage	1.74	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.65	Moderate
Wetland Stressors	N.A.	N.A.	2.99	Lower
Wetland Risk	N.A.	N.A.	2.45	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower



Unit maps for EC22 23 42 51 52



EC23 • **type:** forested peatland • **acres:** 1.1 • **boundary criteria**: w-u, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.52	Higher	1.75	Moderate
Amphibian Habitat	6.61	Higher	1.96	Lower
Water Warming	4.62	Moderate	5.71	Higher
Water Cooling	5.17	Moderate	3.07	Moderate
Pollinator Habitat	4.41	Moderate	3.26	Moderate
Nitrate Removal	2.76	Moderate	3.79	Moderate
Songbird, Raptor, & Mammal Habitat	6.35	Moderate	2.22	Lower
Waterbird Nesting Habitat	3.37	Moderate	0.00	Lower
Organic Nutrient Export	6.44	Moderate	N.A.	N.A.
Carbon Sequestration	4.17	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	0.42	Lower	3.88	Moderate
Invertebrate Habitat	2.63	Lower	1.25	Lower
Water Storage	2.55	Lower	1.11	Lower
Native Plant Habitat	1.92	Lower	0.43	Lower
Phosphorus Retention	1.16	Lower	1.16	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.24	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Risk	N.A.	N.A.	3.16	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC24 • **type:** open peatland • **acres:** 3.8 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.96	Higher	8.72	Higher
Songbird, Raptor, & Mammal Habitat	7.91	Higher	8.17	Higher
Native Plant Habitat	5.99	Higher	8.19	Higher
Amphibian Habitat	5.56	Higher	6.67	Higher
Water Storage	5.53	Higher	1.11	Lower
Carbon Sequestration	6.39	Higher	N.A.	N.A.
Waterbird Nesting Habitat	5.25	Moderate	10.00	Higher
Waterbird Feeding Habitat	4.53	Moderate	3.33	Moderate
Water Warming	4.33	Moderate	2.75	Moderate
Water Cooling	3.54	Moderate	1.16	Lower
Sediment Retention & Stabilization	2.75	Moderate	0.24	Lower
Nitrate Removal	2.07	Moderate	1.77	Lower
Organic Nutrient Export	7.27	Moderate	N.A.	N.A.
Invertebrate Habitat	2.53	Lower	10.00	Higher
Stream Flow Support	2.90	Lower	1.73	Moderate
Phosphorus Retention	2.28	Lower	2.28	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	10.00	Higher
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Risk	N.A.	N.A.	4.70	Moderate
Wetland Stressors	N.A.	N.A.	2.86	Lower
Public Use & Recognition	N.A.	N.A.	1.39	Lower

EC25 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	6.02	Higher	6.51	Higher
Songbird, Raptor, & Mammal Habitat	8.03	Higher	4.17	Moderate
Water Warming	4.88	Higher	3.94	Moderate
Waterbird Nesting Habitat	5.01	Moderate	10.00	Higher
Pollinator Habitat	5.08	Moderate	3.36	Moderate
Waterbird Feeding Habitat	4.62	Moderate	3.33	Moderate
Nitrate Removal	2.70	Moderate	3.54	Moderate
Invertebrate Habitat	4.98	Moderate	2.29	Lower
Water Storage	4.62	Moderate	1.11	Lower
Native Plant Habitat	4.04	Moderate	0.58	Lower
Water Cooling	3.72	Moderate	1.23	Lower
Organic Nutrient Export	7.29	Moderate	N.A.	N.A.
Carbon Sequestration	5.80	Moderate	N.A.	N.A.
Stream Flow Support	2.65	Lower	2.22	Moderate
Sediment Retention & Stabilization	1.86	Lower	3.86	Moderate
Phosphorus Retention	2.29	Lower	2.29	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	6.44	Moderate
Wetland Risk	N.A.	N.A.	5.96	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.31	Moderate
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC26 • **type:** forested peatland • **acres:** 46.5 • **boundary criteria**: w-u, type, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.91	Higher	3.26	Moderate
Amphibian Habitat	7.66	Higher	3.97	Moderate
Songbird, Raptor, & Mammal Habitat	8.77	Higher	2.22	Lower
Invertebrate Habitat	7.26	Higher	1.29	Lower
Organic Nutrient Export	8.92	Higher	N.A.	N.A.
Carbon Sequestration	6.82	Higher	N.A.	N.A.
Water Warming	2.68	Moderate	5.84	Higher
Water Cooling	5.25	Moderate	3.07	Moderate
Stream Flow Support	4.54	Moderate	2.68	Moderate
Nitrate Removal	3.14	Moderate	3.54	Moderate
Phosphorus Retention	2.95	Moderate	2.95	Moderate
Sediment Retention & Stabilization	2.40	Moderate	3.86	Moderate
Native Plant Habitat	5.17	Moderate	1.65	Lower
Water Storage	4.25	Moderate	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.85	Higher
Wetland Ecological Condition	N.A.	N.A.	6.32	Higher
Wetland Stressors	N.A.	N.A.	6.44	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC27 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

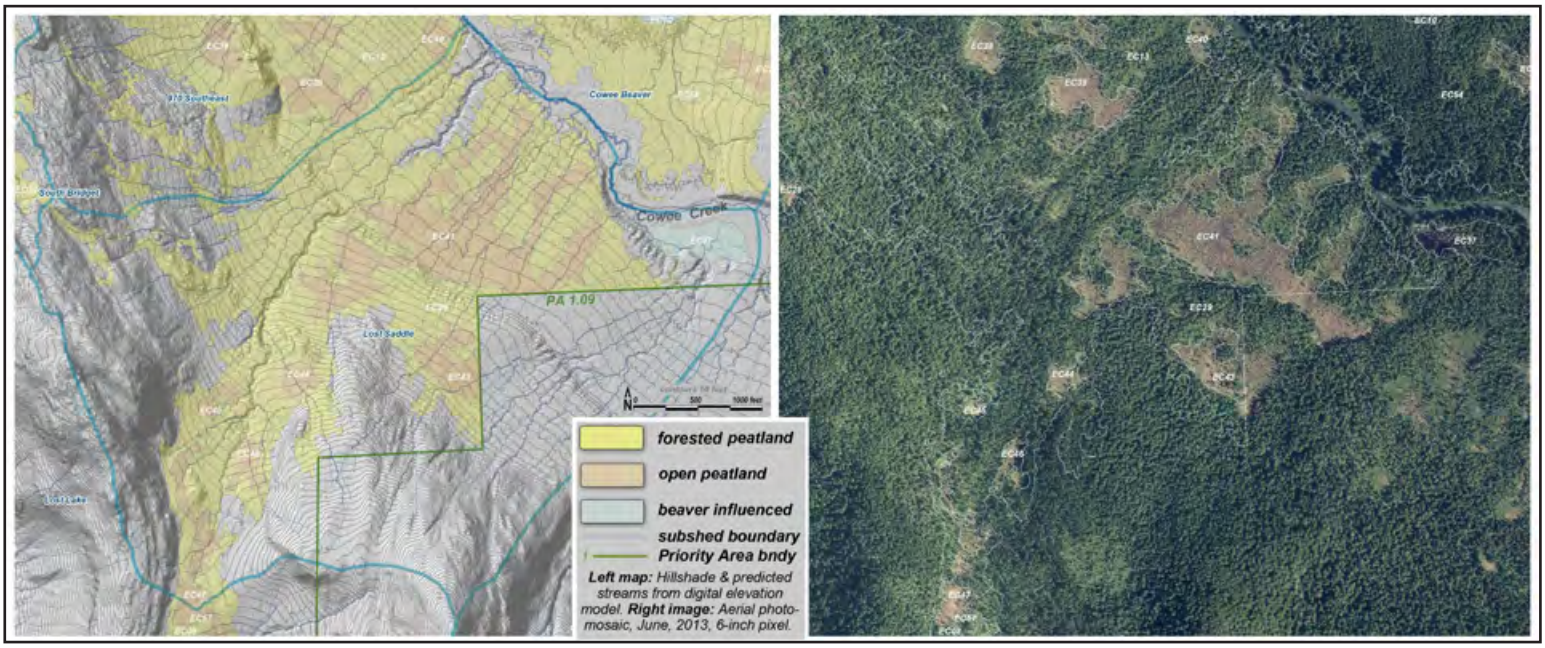
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.81	Higher	7.10	Higher
Songbird, Raptor, & Mammal Habitat	7.83	Higher	4.17	Moderate
Water Storage	5.16	Higher	5.00	Moderate
Water Warming	4.88	Higher	2.34	Lower
Waterbird Nesting Habitat	5.32	Moderate	10.00	Higher
Waterbird Feeding Habitat	5.72	Moderate	3.33	Moderate
Phosphorus Retention	3.14	Moderate	3.14	Moderate
Sediment Retention & Stabilization	2.65	Moderate	2.68	Moderate
Water Cooling	3.72	Moderate	1.23	Lower
Nitrate Removal	2.81	Moderate	3.03	Lower
Organic Nutrient Export	6.19	Moderate	N.A.	N.A.
Carbon Sequestration	5.80	Moderate	N.A.	N.A.
Stream Flow Support	2.65	Lower	1.75	Moderate
Pollinator Habitat	1.56	Lower	3.36	Moderate
Invertebrate Habitat	2.61	Lower	2.42	Lower
Native Plant Habitat	2.01	Lower	0.57	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.44	Moderate
Wetland Risk	N.A.	N.A.	5.88	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.15	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC28 • **type:** beaver influenced • **acres:** 4.9 • **boundary criteria**: w-u, type • **pin**: 3B4501000010 • no known or probable anadromous fish

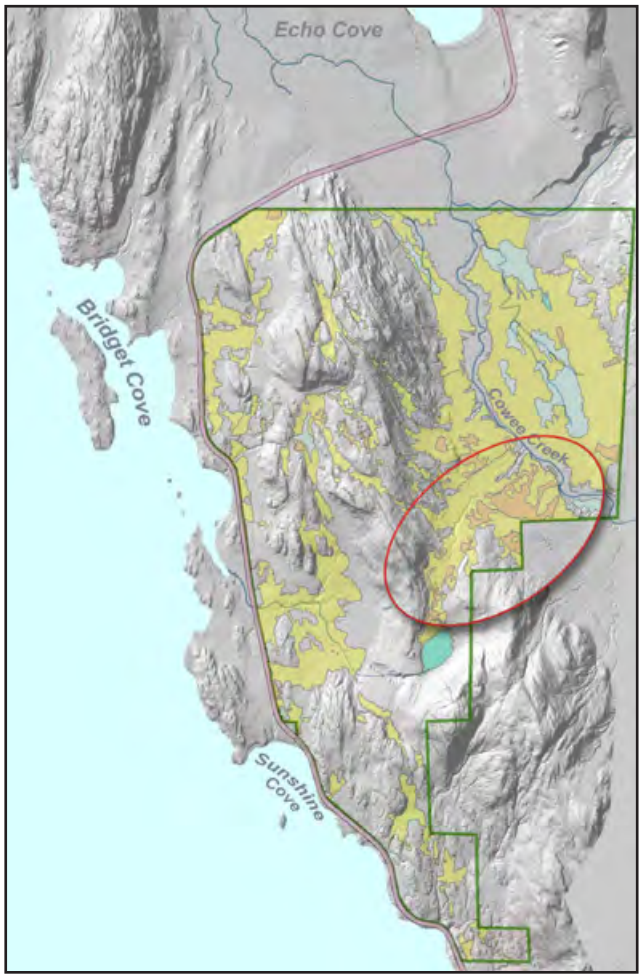
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	10.00	Higher	7.99	Higher
Water Warming	5.08	Higher	6.14	Higher
Waterbird Nesting Habitat	9.63	Higher	9.70	Moderate
Waterbird Feeding Habitat	9.10	Higher	3.27	Moderate
Invertebrate Habitat	8.58	Higher	3.65	Moderate
Stream Flow Support	7.06	Higher	2.95	Moderate
Nitrate Removal	3.42	Higher	3.54	Moderate
Water Storage	5.46	Higher	1.11	Lower
Pollinator Habitat	6.51	Moderate	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	6.13	Moderate	4.09	Moderate
Water Cooling	4.18	Moderate	3.07	Moderate
Sediment Retention & Stabilization	4.08	Moderate	2.85	Moderate
Phosphorus Retention	3.62	Moderate	3.62	Moderate
Native Plant Habitat	4.82	Moderate	0.43	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.41	Lower	N.A.	N.A.
Carbon Sequestration	3.88	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.86	Higher
Wetland Ecological Condition	N.A.	N.A.	6.35	Higher
Wetland Stressors	N.A.	N.A.	6.44	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC29 • **type:** for. peatland • **acres:** 116.0 • **boundary criteria**: w-u, type, subsh, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	7.47	Higher	3.51	Moderate
Stream Flow Support	7.03	Higher	1.97	Moderate
Nitrate Removal	3.37	Higher	4.17	Moderate
Organic Nutrient Export	9.19	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	6.52	Higher
Pollinator Habitat	6.39	Moderate	3.15	Moderate
Sediment Retention & Stabilization	2.73	Moderate	3.78	Moderate
Songbird, Raptor, & Mammal Habitat	6.88	Moderate	2.22	Lower
Native Plant Habitat	4.64	Moderate	0.48	Lower
Amphibian Habitat	4.15	Moderate	2.40	Lower
Invertebrate Habitat	3.73	Moderate	0.59	Lower
Water Storage	3.49	Moderate	1.11	Lower
Carbon Sequestration	5.47	Moderate	N.A.	N.A.
Phosphorus Retention	2.55	Lower	2.55	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	2.91	Lower
Wetland Ecological Condition	N.A.	N.A.	1.74	Lower
Wetland Risk	N.A.	N.A.	1.08	Lower
Public Use & Recognition	N.A.	N.A.	0.20	Lower



Unit maps for EC29 37 41 43 44 45 46



EC31 • **type:** open peatland • **acres:** 2.7 • **boundary criteria**: w-u, type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.54	Higher	4.17	Moderate
Pollinator Habitat	7.60	Higher	3.36	Moderate
Native Plant Habitat	6.08	Higher	1.48	Lower
Carbon Sequestration	7.36	Higher	N.A.	N.A.
Waterbird Nesting Habitat	5.14	Moderate	10.00	Higher
Waterbird Feeding Habitat	5.02	Moderate	3.33	Moderate
Phosphorus Retention	3.23	Moderate	3.23	Moderate
Water Storage	5.00	Moderate	1.11	Lower
Water Cooling	4.34	Moderate	1.05	Lower
Invertebrate Habitat	3.22	Moderate	2.44	Lower
Water Warming	3.19	Moderate	2.25	Lower
Sediment Retention & Stabilization	3.03	Moderate	0.43	Lower
Nitrate Removal	2.60	Moderate	1.26	Lower
Organic Nutrient Export	6.63	Moderate	N.A.	N.A.
Stream Flow Support	2.77	Lower	1.87	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.88	Higher
Wetland Risk	N.A.	N.A.	7.56	Higher
Wetland Stressors	N.A.	N.A.	6.45	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.60	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC37 • **type:** beaver influenced • **acres:** 4.0 • **boundary criteria**: w-u • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	10.00	Higher	7.10	Higher
Water Warming	9.12	Higher	8.24	Higher
Amphibian Habitat	8.81	Higher	7.50	Higher
Waterbird Nesting Habitat	8.25	Higher	10.00	Higher
Resident Fish Habitat	7.84	Higher	7.40	Higher
Waterbird Feeding Habitat	9.40	Higher	3.00	Moderate
Anadromous Fish Habitat	6.19	Moderate	10.00	Higher
Water Cooling	3.80	Moderate	5.48	Higher
Invertebrate Habitat	3.36	Moderate	10.00	Higher
Nitrate Removal	2.28	Moderate	5.05	Moderate
Pollinator Habitat	3.36	Lower	9.40	Higher
Native Plant Habitat	1.93	Lower	9.14	Higher
Sediment Retention & Stabilization	0.55	Lower	5.41	Moderate
Phosphorus Retention	2.26	Lower	2.26	Lower
Water Storage	1.67	Lower	0.63	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.62	Lower	N.A.	N.A.
Carbon Sequestration	0.00	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	8.88	Higher
Public Use & Recognition	N.A.	N.A.	5.57	Higher
Wetland Risk	N.A.	N.A.	4.12	Moderate
Wetland Stressors	N.A.	N.A.	2.79	Lower
Wetland Sensitivity	N.A.	N.A.	N.A.	N.A.

EC38 • **type:** open peatland • **acres:** 2.0 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.94	Higher	8.25	Higher
Stream Flow Support	6.30	Higher	3.04	Moderate
Organic Nutrient Export	7.96	Higher	N.A.	N.A.
Pollinator Habitat	5.50	Moderate	9.40	Higher
Amphibian Habitat	5.03	Moderate	7.50	Higher
Water Warming	3.05	Moderate	8.88	Higher
Water Cooling	2.76	Moderate	3.25	Moderate
Water Storage	4.92	Moderate	1.04	Lower
Waterbird Feeding Habitat	4.07	Moderate	0.00	Lower
Carbon Sequestration	5.86	Moderate	N.A.	N.A.
Invertebrate Habitat	2.15	Lower	10.00	Higher
Native Plant Habitat	1.76	Lower	9.14	Higher
Sediment Retention & Stabilization	2.11	Lower	5.27	Moderate
Nitrate Removal	1.41	Lower	3.79	Moderate
Phosphorus Retention	2.02	Lower	2.02	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	6.96	Higher
Wetland Ecological Condition	N.A.	N.A.	6.76	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Risk	N.A.	N.A.	3.26	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower

EC39 • **type:** open peatland • **acres:** 6.0 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.34	Higher	8.25	Higher
Carbon Sequestration	6.97	Higher	N.A.	N.A.
Amphibian Habitat	5.12	Moderate	7.50	Higher
Waterbird Nesting Habitat	4.49	Moderate	10.00	Higher
Native Plant Habitat	3.86	Moderate	9.14	Higher
Water Warming	3.19	Moderate	6.23	Higher
Waterbird Feeding Habitat	4.58	Moderate	3.00	Moderate
Phosphorus Retention	3.33	Moderate	3.33	Moderate
Stream Flow Support	3.28	Moderate	2.94	Moderate
Water Cooling	4.34	Moderate	1.30	Lower
Water Storage	3.95	Moderate	1.04	Lower
Organic Nutrient Export	6.93	Moderate	N.A.	N.A.
Pollinator Habitat	3.94	Lower	9.40	Higher
Invertebrate Habitat	1.55	Lower	10.00	Higher
Sediment Retention & Stabilization	1.73	Lower	4.11	Moderate
Nitrate Removal	0.63	Lower	3.54	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.42	Higher
Public Use & Recognition	N.A.	N.A.	6.96	Higher
Wetland Risk	N.A.	N.A.	3.55	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower

EC40 • **type:** open peatland • **acres:** 1.2 • **boundary criteria**: type, subsh • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.67	Higher	6.34	Higher
Resident Fish Habitat	7.56	Higher	4.81	Moderate
Amphibian Habitat	5.72	Higher	5.95	Moderate
Waterbird Feeding Habitat	6.11	Higher	0.00	Lower
Organic Nutrient Export	9.57	Higher	N.A.	N.A.
Carbon Sequestration	6.13	Higher	N.A.	N.A.
Stream Flow Support	5.60	Moderate	7.05	Higher
Water Cooling	4.05	Moderate	6.25	Higher
Nitrate Removal	2.64	Moderate	5.68	Higher
Anadromous Fish Habitat	6.34	Moderate	6.67	Moderate
Songbird, Raptor, & Mammal Habitat	6.14	Moderate	5.36	Moderate
Invertebrate Habitat	5.19	Moderate	3.61	Moderate
Native Plant Habitat	4.90	Moderate	2.52	Moderate
Sediment Retention & Stabilization	3.20	Moderate	3.81	Moderate
Water Storage	4.38	Moderate	1.11	Lower
Pollinator Habitat	2.30	Lower	4.21	Moderate
Phosphorus Retention	2.11	Lower	2.11	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower
Public Use & Recognition	N.A.	N.A.	1.39	Lower
Wetland Ecological Condition	N.A.	N.A.	0.56	Lower
Wetland Risk	N.A.	N.A.	0.50	Lower

EC41 • **type:** open peatland • **acres:** 28.0 • **boundary criteria**: type, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.63	Higher	7.75	Higher
Waterbird Nesting Habitat	6.07	Higher	10.00	Higher
Water Warming	5.55	Higher	6.26	Higher
Amphibian Habitat	5.55	Higher	6.28	Moderate
Carbon Sequestration	7.12	Higher	N.A.	N.A.
Pollinator Habitat	4.39	Moderate	8.72	Higher
Native Plant Habitat	4.22	Moderate	8.19	Higher
Waterbird Feeding Habitat	4.77	Moderate	3.00	Moderate
Phosphorus Retention	3.44	Moderate	3.44	Moderate
Stream Flow Support	3.40	Moderate	3.15	Moderate
Sediment Retention & Stabilization	3.12	Moderate	5.21	Moderate
Water Storage	4.85	Moderate	1.46	Lower
Water Cooling	4.73	Moderate	1.30	Lower
Organic Nutrient Export	7.30	Moderate	N.A.	N.A.
Invertebrate Habitat	2.83	Lower	10.00	Higher
Nitrate Removal	1.24	Lower	3.54	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.70	Higher
Public Use & Recognition	N.A.	N.A.	6.96	Higher
Wetland Risk	N.A.	N.A.	4.12	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower

EC42 • **type:** forested peatland • **acres:** 3.8 • **boundary criteria**: w-u, pa • **pin**: 3B4501000010 • no known or probable

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	7.09	Higher	2.37	Moderate
Stream Flow Support	6.72	Higher	3.32	Moderate
Nitrate Removal	3.33	Higher	4.29	Moderate
Native Plant Habitat	6.35	Higher	0.43	Lower
Organic Nutrient Export	8.86	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	8.42	Higher
Pollinator Habitat	5.59	Moderate	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	6.67	Moderate	1.67	Lower
Amphibian Habitat	4.39	Moderate	2.22	Lower
Invertebrate Habitat	3.87	Moderate	0.59	Lower
Water Storage	2.87	Moderate	1.46	Lower
Carbon Sequestration	5.51	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.76	Lower	5.56	Moderate
Phosphorus Retention	1.97	Lower	1.97	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.82	Moderate
Wetland Risk	N.A.	N.A.	5.56	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.52	Lower
Public Use & Recognition	N.A.	N.A.	2.20	Lower

EC43 • **type:** open peatland • **acres:** 3.9 • **boundary criteria**: type, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.85	Higher	3.75	Moderate
Stream Flow Support	6.55	Higher	3.09	Moderate
Carbon Sequestration	6.27	Higher	N.A.	N.A.
Water Warming	3.82	Moderate	8.88	Higher
Amphibian Habitat	5.05	Moderate	5.75	Moderate
Pollinator Habitat	5.02	Moderate	3.36	Moderate
Water Cooling	3.10	Moderate	3.25	Moderate
Waterbird Feeding Habitat	3.73	Moderate	0.00	Lower
Water Storage	3.31	Moderate	1.46	Lower
Organic Nutrient Export	7.59	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.35	Lower	5.16	Moderate
Nitrate Removal	1.28	Lower	3.54	Moderate
Invertebrate Habitat	2.48	Lower	1.34	Lower
Phosphorus Retention	2.40	Lower	2.40	Lower
Native Plant Habitat	1.01	Lower	0.57	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	6.17	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.40	Moderate
Wetland Stressors	N.A.	N.A.	2.92	Lower
Wetland Risk	N.A.	N.A.	2.27	Lower

EC44 • **type:** open peatland • **acres:** 2.3 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.59	Higher	7.21	Higher
Songbird, Raptor, & Mammal Habitat	9.33	Higher	4.14	Moderate
Invertebrate Habitat	5.47	Higher	1.68	Lower
Organic Nutrient Export	7.78	Higher	N.A.	N.A.
Carbon Sequestration	6.24	Higher	N.A.	N.A.
Pollinator Habitat	5.91	Moderate	3.32	Moderate
Water Warming	3.36	Moderate	2.98	Moderate
Water Cooling	5.08	Moderate	1.47	Lower
Native Plant Habitat	4.16	Moderate	1.33	Lower
Water Storage	4.07	Moderate	1.11	Lower
Waterbird Feeding Habitat	4.05	Moderate	0.00	Lower
Stream Flow Support	3.15	Lower	2.32	Moderate
Phosphorus Retention	2.13	Lower	2.13	Lower
Sediment Retention & Stabilization	1.48	Lower	0.43	Lower
Nitrate Removal	0.87	Lower	0.88	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.16	Higher
Public Use & Recognition	N.A.	N.A.	6.96	Higher
Wetland Risk	N.A.	N.A.	3.44	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.86	Lower

EC45 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.01	Higher	4.14	Moderate
Water Warming	5.15	Higher	5.44	Moderate
Amphibian Habitat	5.15	Moderate	7.06	Higher
Pollinator Habitat	4.92	Moderate	3.32	Moderate
Stream Flow Support	4.50	Moderate	1.37	Moderate
Water Cooling	4.29	Moderate	1.23	Lower
Waterbird Feeding Habitat	4.23	Moderate	0.00	Lower
Water Storage	3.82	Moderate	0.83	Lower
Organic Nutrient Export	7.43	Moderate	N.A.	N.A.
Carbon Sequestration	4.93	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.86	Lower	3.86	Moderate
Nitrate Removal	1.84	Lower	3.91	Moderate
Invertebrate Habitat	2.43	Lower	1.60	Lower
Phosphorus Retention	2.19	Lower	2.19	Lower
Native Plant Habitat	1.60	Lower	0.92	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	7.16	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.33	Moderate
Wetland Stressors	N.A.	N.A.	2.99	Lower
Wetland Risk	N.A.	N.A.	2.31	Lower

EC46 • **type:** open peatland • **acres:** 1.4 • **boundary criteria**: type • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.73	Higher	7.32	Higher
Songbird, Raptor, & Mammal Habitat	9.40	Higher	4.14	Moderate
Stream Flow Support	6.30	Higher	2.53	Moderate
Invertebrate Habitat	6.49	Higher	1.72	Lower
Organic Nutrient Export	8.17	Higher	N.A.	N.A.
Carbon Sequestration	6.24	Higher	N.A.	N.A.
Water Warming	3.36	Moderate	7.85	Higher
Pollinator Habitat	6.63	Moderate	3.32	Moderate
Water Cooling	5.08	Moderate	3.68	Moderate
Native Plant Habitat	4.57	Moderate	1.55	Lower
Waterbird Feeding Habitat	4.13	Moderate	0.00	Lower
Water Storage	3.97	Moderate	1.11	Lower
Phosphorus Retention	2.38	Lower	2.38	Lower
Sediment Retention & Stabilization	1.67	Lower	0.43	Lower
Nitrate Removal	1.31	Lower	0.88	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	7.16	Higher
Wetland Ecological Condition	N.A.	N.A.	6.39	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.25	Lower
Wetland Stressors	N.A.	N.A.	3.00	Lower

EC47 • **type:** open peatland • **acres:** 3.3 • **boundary criteria**: type, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	4.88	Higher	3.19	Moderate
Songbird, Raptor, & Mammal Habitat	7.68	Higher	2.22	Lower
Amphibian Habitat	6.69	Higher	3.06	Lower
Organic Nutrient Export	7.85	Higher	N.A.	N.A.
Water Storage	4.07	Moderate	1.11	Lower
Water Cooling	3.72	Moderate	1.47	Lower
Carbon Sequestration	5.30	Moderate	N.A.	N.A.
Stream Flow Support	2.65	Lower	1.84	Moderate
Pollinator Habitat	1.56	Lower	3.32	Moderate
Invertebrate Habitat	3.08	Lower	1.00	Lower
Nitrate Removal	1.71	Lower	0.63	Lower
Phosphorus Retention	1.63	Lower	1.63	Lower
Sediment Retention & Stabilization	1.62	Lower	0.31	Lower
Native Plant Habitat	0.70	Lower	0.52	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	6.37	Higher
Wetland Ecological Condition	N.A.	N.A.	3.40	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	3.06	Lower
Wetland Risk	N.A.	N.A.	1.98	Lower

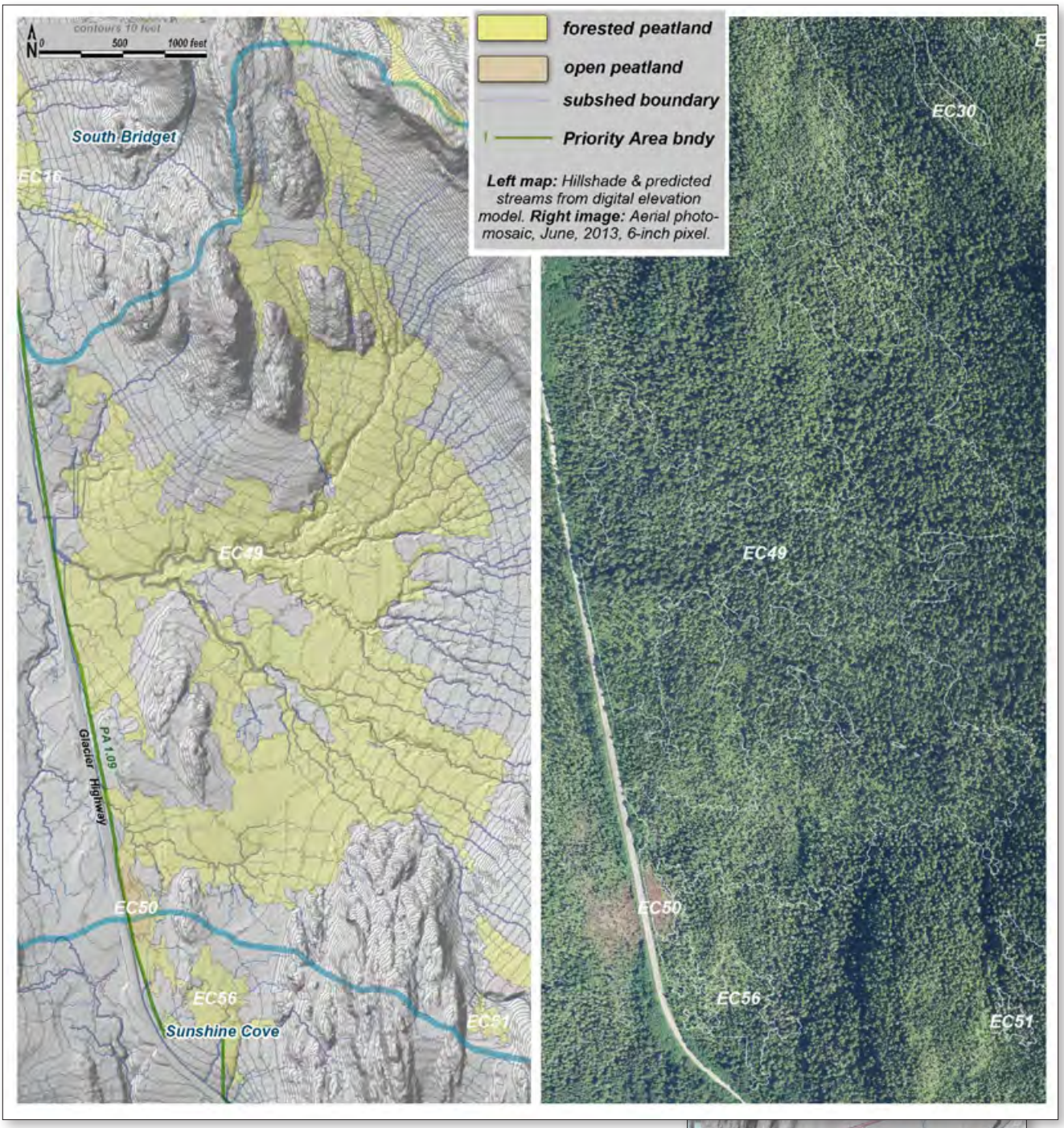
EC48 • **type:** fen/marsh • **acres:** 13.0 • **boundary criteria**: w-u, type • **pin**: 3B4501000010 • ~~known or probable anadromous fish~~

(There's a history of stocking here, but anadromous fish can't ascend the final gorge. Scores will be recalculated.)

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	10.00	Higher	7.88	Higher
Waterbird Nesting Habitat	9.84	Higher	10.00	Higher
Stream Flow Support	9.04	Higher	8.61	Higher
Water Warming	7.35	Higher	6.06	Higher
Native Plant Habitat	7.16	Higher	6.29	Higher
Invertebrate Habitat	6.87	Higher	10.00	Higher
Waterbird Feeding Habitat	10.00	Higher	3.33	Moderate
Amphibian Habitat	9.36	Higher	5.00	Moderate
Anadromous Fish Habitat	7.46	Higher	6.83	Moderate
Nitrate Removal	3.65	Higher	4.55	Moderate
Pollinator Habitat	4.97	Moderate	7.38	Higher
Water Cooling	4.50	Moderate	6.29	Higher
Sediment Retention & Stabilization	3.28	Moderate	4.06	Moderate
Phosphorus Retention	3.06	Moderate	3.06	Moderate
Water Storage	4.61	Moderate	1.11	Lower
Organic Nutrient Export	6.47	Moderate	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.17	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	3.39	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Stressors	N.A.	N.A.	2.91	Lower
Wetland Risk	N.A.	N.A.	1.82	Lower
Public Use & Recognition	N.A.	N.A.	0.20	Lower

EC49 • **type:** forested peatland • **acres:** 130.0 • **boundary criteria**: w-u, pa, subsh • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.77	Higher	6.26	Higher
Water Cooling	6.26	Higher	5.74	Higher
Phosphorus Retention	3.98	Higher	3.98	Higher
Pollinator Habitat	8.49	Higher	3.26	Moderate
Amphibian Habitat	6.94	Higher	3.97	Moderate
Songbird, Raptor, & Mammal Habitat	8.77	Higher	2.22	Lower
Native Plant Habitat	6.93	Higher	1.81	Lower
Organic Nutrient Export	9.17	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	6.50	Higher
Nitrate Removal	2.91	Moderate	4.55	Moderate
Sediment Retention & Stabilization	2.64	Moderate	3.86	Moderate
Resident Fish Habitat	6.94	Moderate	0.58	Lower
Anadromous Fish Habitat	6.19	Moderate	0.50	Lower
Water Storage	3.67	Moderate	1.11	Lower
Carbon Sequestration	5.89	Moderate	N.A.	N.A.
Invertebrate Habitat	2.58	Lower	3.24	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	8.67	Higher
Wetland Stressors	N.A.	N.A.	5.36	Moderate
Wetland Risk	N.A.	N.A.	4.93	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.57	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower



Unit maps for EC49 50 56

EC50 • **type:** open peatland • **acres:** 1.2 • **boundary criteria**: type, pa, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.84	Higher	6.63	Higher
Songbird, Raptor, & Mammal Habitat	7.72	Higher	3.75	Moderate
Water Cooling	5.59	Higher	0.72	Lower
Carbon Sequestration	7.61	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.54	Moderate	10.00	Higher
Pollinator Habitat	5.43	Moderate	3.36	Moderate
Waterbird Feeding Habitat	5.18	Moderate	5.00	Moderate
Water Storage	4.28	Moderate	5.00	Moderate
Invertebrate Habitat	4.76	Moderate	2.23	Lower
Water Warming	3.47	Moderate	1.94	Lower
Sediment Retention & Stabilization	2.37	Moderate	1.84	Lower
Nitrate Removal	2.17	Moderate	0.00	Lower
Native Plant Habitat	3.00	Lower	2.94	Moderate
Stream Flow Support	2.77	Lower	3.46	Moderate
Phosphorus Retention	2.50	Lower	2.50	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.12	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.94	Higher
Wetland Ecological Condition	N.A.	N.A.	6.50	Higher
Wetland Stressors	N.A.	N.A.	6.44	Moderate
Public Use & Recognition	N.A.	N.A.	2.95	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower

EC51 • **type:** forested peatland • **acres:** 1.0 • **boundary criteria**: w-u • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.35	Higher	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	9.72	Higher	1.67	Lower
Organic Nutrient Export	8.41	Higher	N.A.	N.A.
Water Warming	3.68	Moderate	9.05	Higher
Stream Flow Support	4.84	Moderate	3.12	Moderate
Amphibian Habitat	3.38	Moderate	4.77	Moderate
Water Cooling	3.30	Moderate	2.84	Moderate
Native Plant Habitat	4.65	Moderate	1.88	Lower
Carbon Sequestration	5.98	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.38	Lower	2.14	Moderate
Water Storage	2.74	Lower	1.46	Lower
Invertebrate Habitat	2.64	Lower	0.97	Lower
Nitrate Removal	1.06	Lower	0.76	Lower
Phosphorus Retention	0.43	Lower	0.43	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.45	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Risk	N.A.	N.A.	4.93	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.98	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

EC52 • **type:** forested peatland • **acres:** 30.3 • **boundary criteria**: w-u, pa • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Organic Nutrient Export	7.85	Higher	N.A.	N.A.
Carbon Sequestration	7.57	Higher	N.A.	N.A.
Water Cooling	4.60	Moderate	2.63	Moderate
Stream Flow Support	3.63	Moderate	1.89	Moderate
Phosphorus Retention	2.72	Moderate	2.72	Moderate
Songbird, Raptor, & Mammal Habitat	5.97	Moderate	2.22	Lower
Native Plant Habitat	4.25	Moderate	0.43	Lower
Amphibian Habitat	3.38	Moderate	1.64	Lower
Invertebrate Habitat	3.31	Moderate	0.36	Lower
Sediment Retention & Stabilization	2.70	Moderate	0.28	Lower
Nitrate Removal	2.14	Moderate	0.51	Lower
Pollinator Habitat	3.95	Lower	3.26	Moderate
Water Storage	0.81	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	2.93	Lower
Wetland Ecological Condition	N.A.	N.A.	1.14	Lower
Wetland Risk	N.A.	N.A.	0.83	Lower
Public Use & Recognition	N.A.	N.A.	0.41	Lower

EC53 • **type:** beaver influenced • **acres:** 1.0 • **boundary criteria**: w-u, pa • **pin**: 3B4501000010 • known or probable anadromous fish

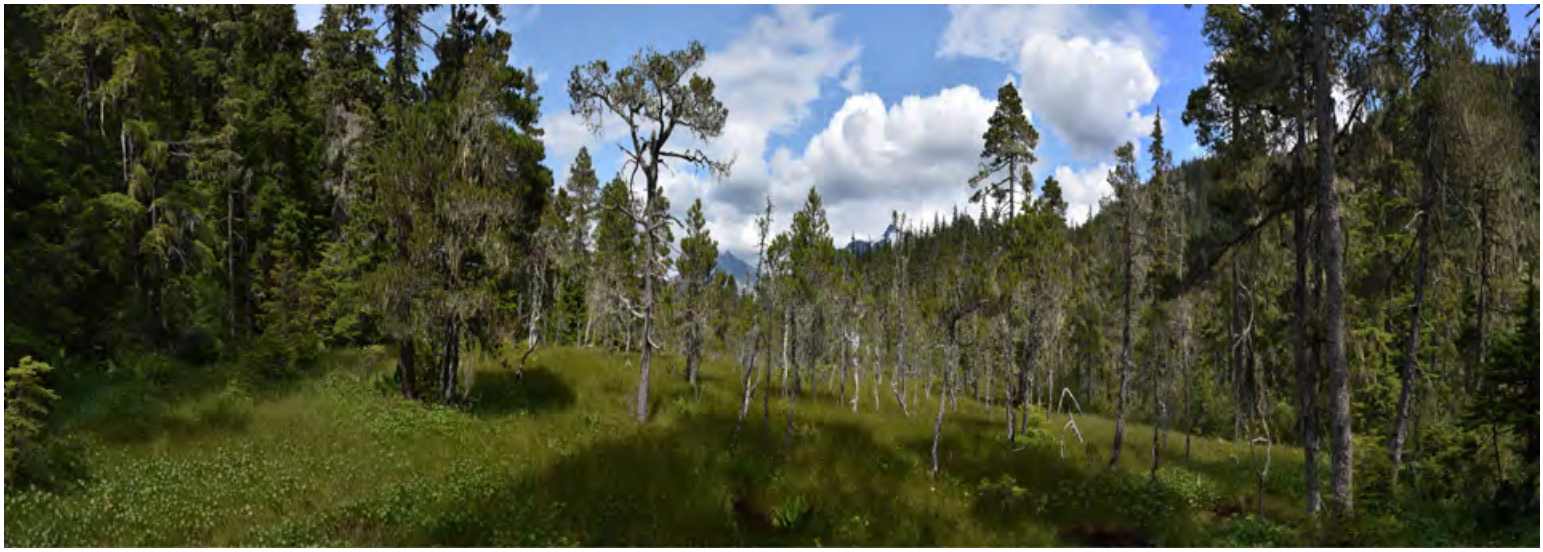
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.03	Higher	7.05	Higher
Amphibian Habitat	6.35	Higher	9.75	Higher
Water Cooling	5.56	Higher	5.14	Higher
Waterbird Feeding Habitat	8.95	Higher	3.21	Moderate
Songbird, Raptor, & Mammal Habitat	8.38	Higher	4.02	Moderate
Pollinator Habitat	7.03	Higher	3.15	Moderate
Waterbird Nesting Habitat	6.75	Higher	9.40	Moderate
Invertebrate Habitat	6.09	Higher	5.43	Moderate
Sediment Retention & Stabilization	4.28	Higher	4.21	Moderate
Native Plant Habitat	7.08	Higher	1.25	Lower
Anadromous Fish Habitat	6.42	Moderate	10.00	Higher
Stream Flow Support	4.03	Moderate	7.65	Higher
Water Warming	3.78	Moderate	6.80	Higher
Nitrate Removal	2.79	Moderate	6.57	Higher
Phosphorus Retention	3.66	Moderate	3.66	Moderate
Water Storage	4.61	Moderate	1.46	Lower
Organic Nutrient Export	7.09	Moderate	N.A.	N.A.
Carbon Sequestration	4.93	Moderate	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	6.29	Higher
Public Use & Recognition	N.A.	N.A.	6.00	Higher
Wetland Risk	N.A.	N.A.	2.79	Lower
Wetland Stressors	N.A.	N.A.	2.62	Lower
Wetland Sensitivity	N.A.	N.A.	2.15	Lower

EC54 • **type:** forested peatland • **acres:** 306.7 • **boundary criteria**: w-u, type • **pin**: 3B4501000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.61	Higher	8.52	Higher
Songbird, Raptor, & Mammal Habitat	8.77	Higher	7.56	Higher
Native Plant Habitat	6.91	Higher	7.90	Higher
Water Cooling	5.94	Higher	5.31	Higher
Phosphorus Retention	4.29	Higher	4.29	Higher
Sediment Retention & Stabilization	4.41	Higher	4.21	Moderate
Waterbird Nesting Habitat	6.00	Higher	0.00	Lower
Anadromous Fish Habitat	5.79	Moderate	10.00	Higher
Stream Flow Support	4.29	Moderate	6.32	Higher
Amphibian Habitat	3.10	Moderate	6.67	Higher
Nitrate Removal	2.29	Moderate	6.82	Higher
Resident Fish Habitat	6.58	Moderate	4.42	Moderate
Water Storage	4.61	Moderate	1.04	Lower
Organic Nutrient Export	6.73	Moderate	N.A.	N.A.
Carbon Sequestration	4.86	Moderate	N.A.	N.A.
Invertebrate Habitat	1.35	Lower	10.00	Higher
Water Warming	1.43	Lower	3.75	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.38	Higher
Public Use & Recognition	N.A.	N.A.	6.26	Higher
Wetland Sensitivity	N.A.	N.A.	3.64	Lower
Wetland Risk	N.A.	N.A.	3.29	Lower
Wetland Stressors	N.A.	N.A.	3.05	Lower

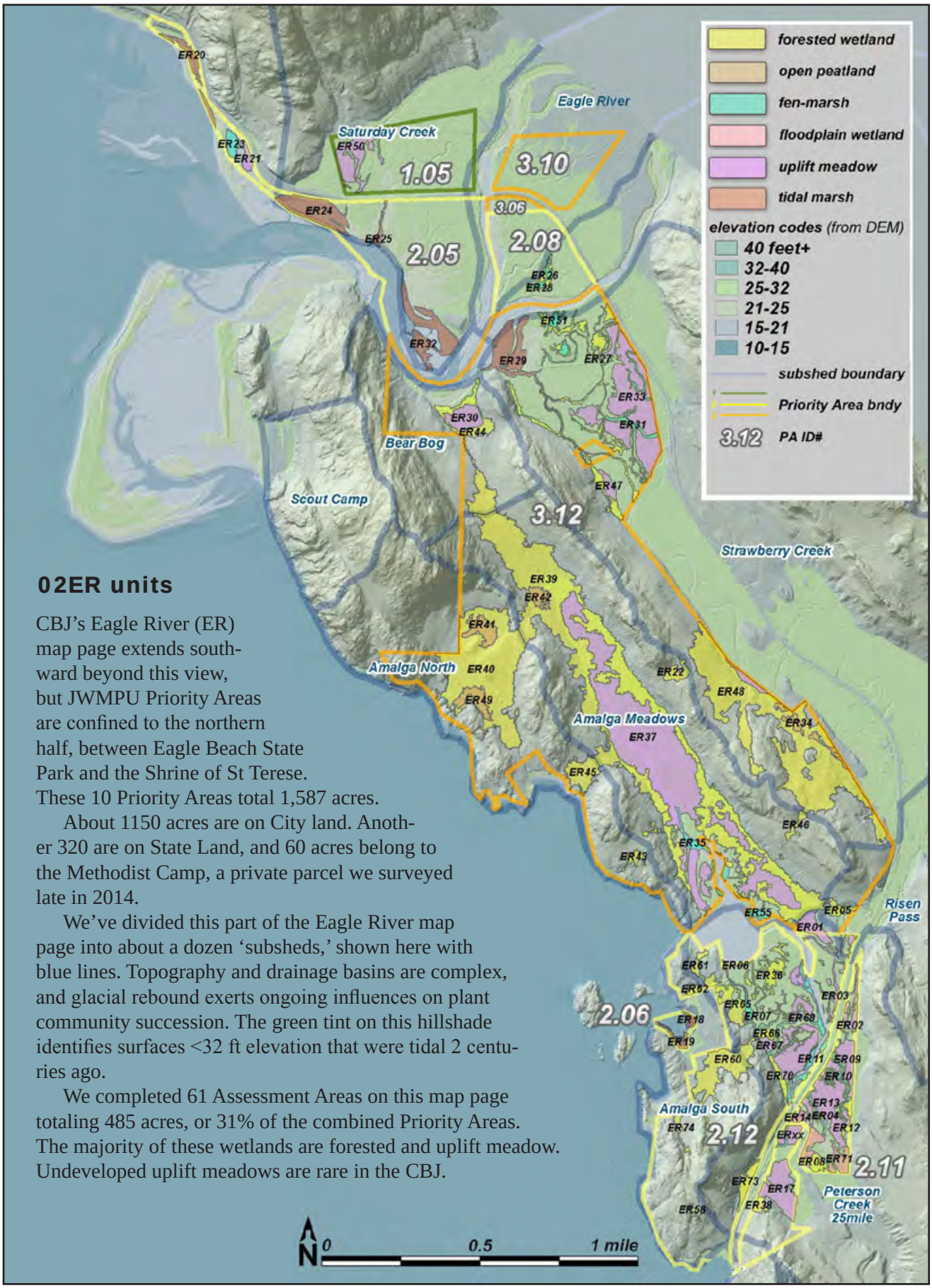
EC56 • **type:** forested peatland • **acres:** 6.1 • **boundary criteria**: w-u, type, pa subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.46	Higher	5.84	Higher
Phosphorus Retention	4.11	Higher	4.11	Higher
Water Cooling	7.22	Higher	2.37	Moderate
Nitrate Removal	4.13	Higher	4.29	Moderate
Amphibian Habitat	7.63	Higher	2.91	Lower
Songbird, Raptor, & Mammal Habitat	7.49	Higher	1.67	Lower
Stream Flow Support	5.51	Moderate	2.96	Moderate
Water Storage	4.48	Moderate	5.00	Moderate
Pollinator Habitat	4.35	Moderate	3.26	Moderate
Sediment Retention & Stabilization	3.68	Moderate	3.93	Moderate
Native Plant Habitat	4.49	Moderate	0.43	Lower
Waterbird Nesting Habitat	2.99	Moderate	0.00	Lower
Organic Nutrient Export	7.30	Moderate	N.A.	N.A.
Carbon Sequestration	5.82	Moderate	N.A.	N.A.
Invertebrate Habitat	1.68	Lower	1.49	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	8.15	Higher
Wetland Risk	N.A.	N.A.	7.21	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.04	Lower
Public Use & Recognition	N.A.	N.A.	2.23	Lower



EC57 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type, subsh • **pin**: 3B4501000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.18	Higher	4.17	Moderate
Amphibian Habitat	6.14	Higher	6.05	Moderate
Invertebrate Habitat	6.04	Higher	1.52	Lower
Water Warming	4.88	Higher	2.26	Lower
Organic Nutrient Export	7.87	Higher	N.A.	N.A.
Carbon Sequestration	6.96	Higher	N.A.	N.A.
Pollinator Habitat	6.34	Moderate	3.36	Moderate
Water Storage	4.07	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.76	Moderate	0.00	Lower
Water Cooling	3.72	Moderate	1.05	Lower
Native Plant Habitat	3.55	Moderate	0.99	Lower
Nitrate Removal	2.55	Moderate	0.25	Lower
Stream Flow Support	2.65	Lower	2.44	Moderate
Sediment Retention & Stabilization	1.81	Lower	0.31	Lower
Phosphorus Retention	1.75	Lower	1.75	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Ecological Condition	N.A.	N.A.	5.84	Higher
Wetland Risk	N.A.	N.A.	3.22	Lower
Wetland Stressors	N.A.	N.A.	3.21	Lower
Public Use & Recognition	N.A.	N.A.	1.15	Lower



02ER units

CBJ's Eagle River (ER) map page extends southward beyond this view, but JWMPU Priority Areas are confined to the northern half, between Eagle Beach State Park and the Shrine of St Terese. These 10 Priority Areas total 1,587 acres.

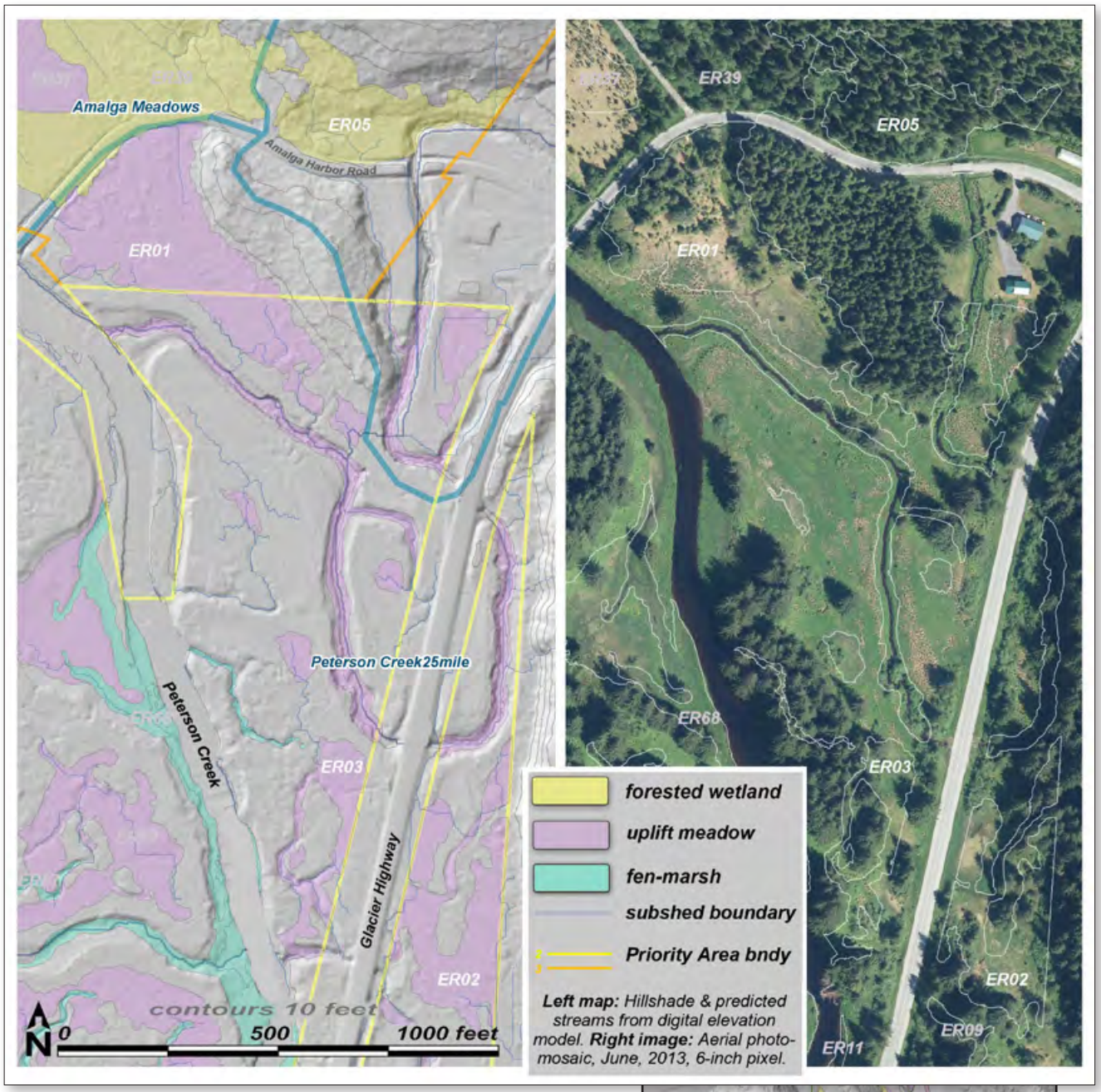
About 1150 acres are on City land. Another 320 are on State Land, and 60 acres belong to the Methodist Camp, a private parcel we surveyed late in 2014.

We've divided this part of the Eagle River map page into about a dozen 'subsheds,' shown here with blue lines. Topography and drainage basins are complex, and glacial rebound exerts ongoing influences on plant community succession. The green tint on this hillshade identifies surfaces <32 ft elevation that were tidal 2 centuries ago.

We completed 61 Assessment Areas on this map page totaling 485 acres, or 31% of the combined Priority Areas. The majority of these wetlands are forested and uplift meadow. Undeveloped uplift meadows are rare in the CBJ.

ER01 • **type:** uplift meadow • **acres:** 3.37 • **boundary criteria**: w-u, type • **pin**: 3B4001000050, 60 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	6.22	Higher	10.00	Higher
Waterbird Feeding Habitat	6.01	Higher	6.67	Higher
Songbird, Raptor, & Mammal Habitat	7.86	Higher	5.00	Moderate
Water Cooling	6.42	Higher	1.05	Lower
Native Plant Habitat	5.98	Higher	0.68	Lower
Amphibian Habitat	5.10	Moderate	7.32	Higher
Pollinator Habitat	5.69	Moderate	3.36	Moderate
Water Storage	4.28	Moderate	5.00	Moderate
Phosphorus Retention	3.70	Moderate	3.70	Moderate
Nitrate Removal	2.30	Moderate	3.28	Moderate
Water Warming	3.07	Moderate	1.90	Lower
Sediment Retention & Stabilization	2.83	Moderate	0.16	Lower
Organic Nutrient Export	7.07	Moderate	N.A.	N.A.
Carbon Sequestration	4.56	Moderate	N.A.	N.A.
Invertebrate Habitat	2.91	Lower	2.51	Lower
Stream Flow Support	1.13	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.03	Moderate
Wetland Risk	N.A.	N.A.	5.13	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.41	Moderate
Public Use & Recognition	N.A.	N.A.	2.92	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower



Unit maps for ER01 02 03 05

ER02 • **type:** uplift meadow • **acres:** 1.8 • **boundary criteria**: w-u, pa • **pin**: 3B4001000040 • known or probable anadromous fish

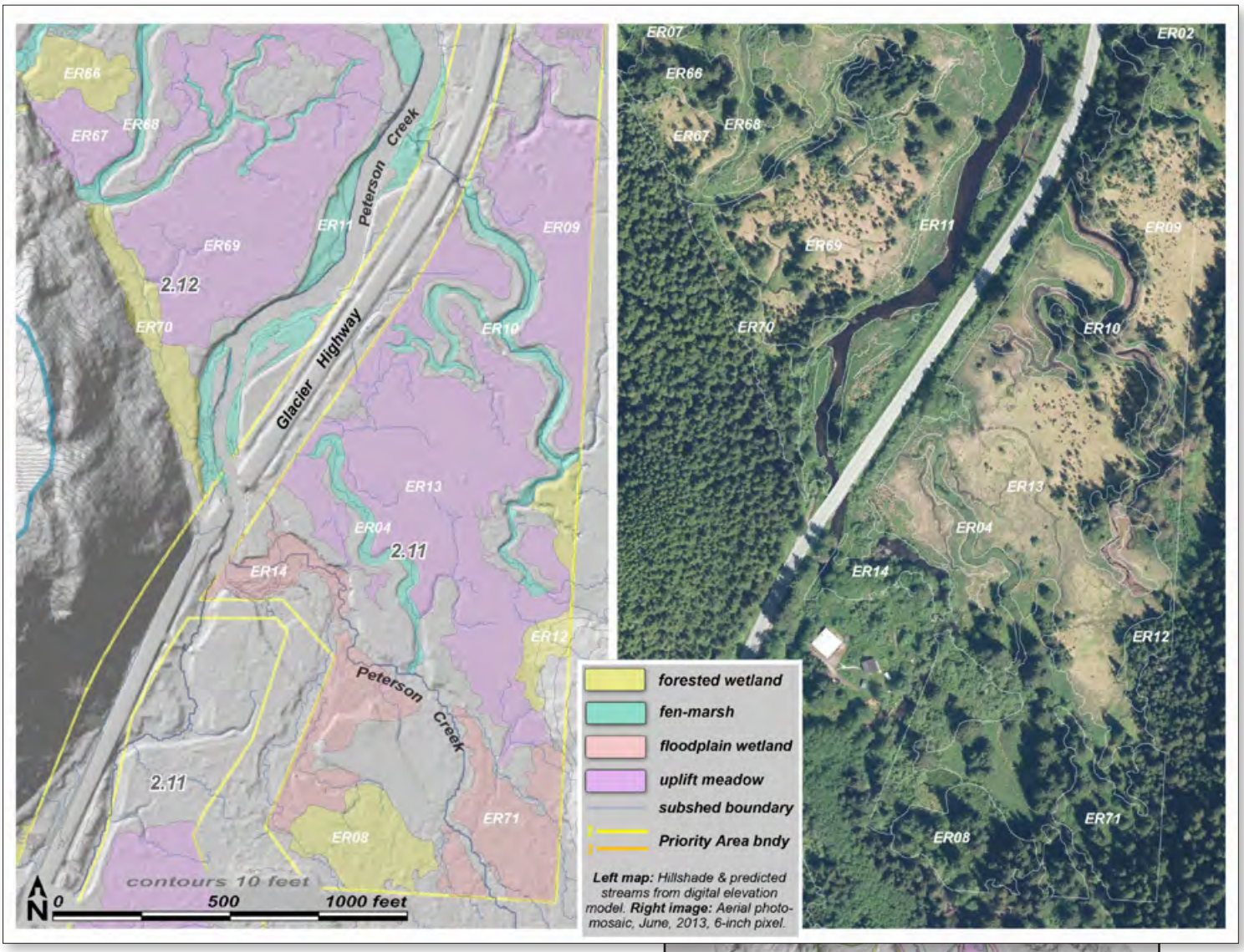
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	6.33	Higher	7.00	Higher
Songbird, Raptor, & Mammal Habitat	7.30	Higher	5.00	Moderate
Water Storage	5.96	Higher	1.67	Lower
Carbon Sequestration	6.87	Higher	N.A.	N.A.
Resident Fish Habitat	7.09	Moderate	7.12	Higher
Amphibian Habitat	4.04	Moderate	7.07	Higher
Waterbird Nesting Habitat	3.86	Moderate	10.00	Higher
Pollinator Habitat	4.97	Moderate	3.36	Moderate
Native Plant Habitat	4.55	Moderate	2.72	Moderate
Anadromous Fish Habitat	4.28	Moderate	6.67	Moderate
Phosphorus Retention	3.83	Moderate	3.83	Moderate
Nitrate Removal	2.12	Moderate	3.54	Moderate
Water Cooling	4.28	Moderate	0.00	Lower
Water Warming	2.94	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.59	Moderate	0.39	Lower
Invertebrate Habitat	2.75	Lower	3.77	Moderate
Stream Flow Support	0.42	Lower	0.00	Lower
Organic Nutrient Export	5.35	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	8.54	Higher
Wetland Ecological Condition	N.A.	N.A.	7.88	Higher
Wetland Stressors	N.A.	N.A.	7.37	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Public Use & Recognition	N.A.	N.A.	3.64	Moderate

ER03 • **type:** uplift meadow • **acres:** 3.6 • **boundary criteria**: w-u, pa • **pin**: 3B4001040050 • known or probable anadromous fish

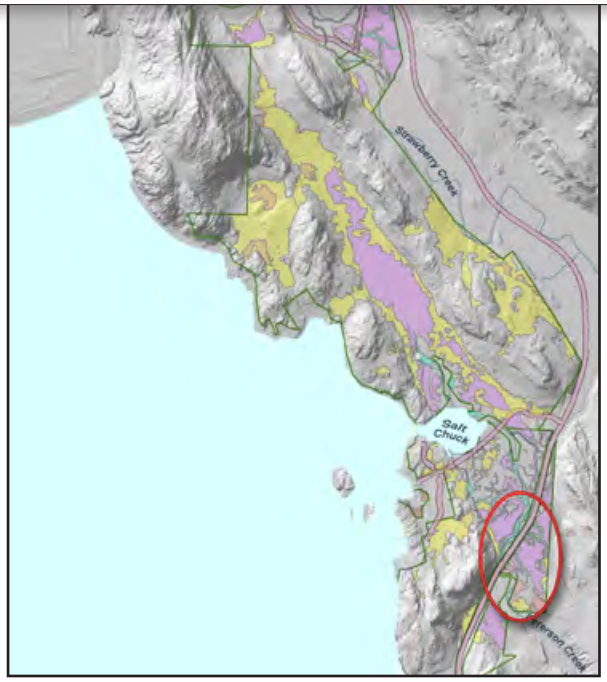
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.95	Higher	6.15	Higher
Waterbird Feeding Habitat	7.63	Higher	6.67	Higher
Waterbird Nesting Habitat	6.24	Higher	10.00	Higher
Water Warming	5.13	Higher	8.02	Higher
Phosphorus Retention	3.99	Higher	3.99	Higher
Anadromous Fish Habitat	9.00	Higher	6.67	Moderate
Water Cooling	4.28	Moderate	7.40	Higher
Stream Flow Support	3.28	Moderate	7.81	Higher
Nitrate Removal	2.11	Moderate	6.31	Higher
Invertebrate Habitat	3.60	Moderate	4.00	Moderate
Amphibian Habitat	4.17	Moderate	1.88	Lower
Organic Nutrient Export	6.63	Moderate	N.A.	N.A.
Pollinator Habitat	1.70	Lower	3.36	Moderate
Sediment Retention & Stabilization	1.59	Lower	2.62	Moderate
Native Plant Habitat	3.00	Lower	0.57	Lower
Water Storage	2.26	Lower	1.11	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.92	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	5.73	Moderate
Wetland Risk	N.A.	N.A.	4.28	Moderate
Public Use & Recognition	N.A.	N.A.	2.46	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.23	Lower
Wetland Sensitivity	N.A.	N.A.	1.08	Lower

ER04 • **type:** fen/marsh • **acres:** 0.7 • **boundary criteria**: w-u, type • **pin**: 3B4001000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.70	Higher	8.00	Higher
Resident Fish Habitat	7.53	Higher	6.07	Higher
Water Cooling	6.51	Higher	6.26	Higher
Waterbird Nesting Habitat	5.78	Higher	10.00	Higher
Phosphorus Retention	5.33	Higher	5.33	Higher
Songbird, Raptor, & Mammal Habitat	7.17	Higher	5.00	Moderate
Amphibian Habitat	4.80	Moderate	7.90	Higher
Nitrate Removal	1.95	Moderate	6.31	Higher
Anadromous Fish Habitat	6.36	Moderate	6.67	Moderate
Invertebrate Habitat	4.82	Moderate	4.68	Moderate
Native Plant Habitat	4.48	Moderate	1.98	Moderate
Sediment Retention & Stabilization	3.73	Moderate	2.21	Moderate
Water Warming	3.19	Moderate	4.05	Moderate
Water Storage	3.71	Moderate	1.11	Lower
Organic Nutrient Export	6.66	Moderate	N.A.	N.A.
Carbon Sequestration	5.55	Moderate	N.A.	N.A.
Stream Flow Support	2.27	Lower	6.98	Higher
Pollinator Habitat	1.56	Lower	3.36	Moderate
Public Use & Recognition	N.A.	N.A.	6.73	Higher
Wetland Stressors	N.A.	N.A.	7.26	Moderate
Wetland Risk	N.A.	N.A.	4.91	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	0.00	Lower

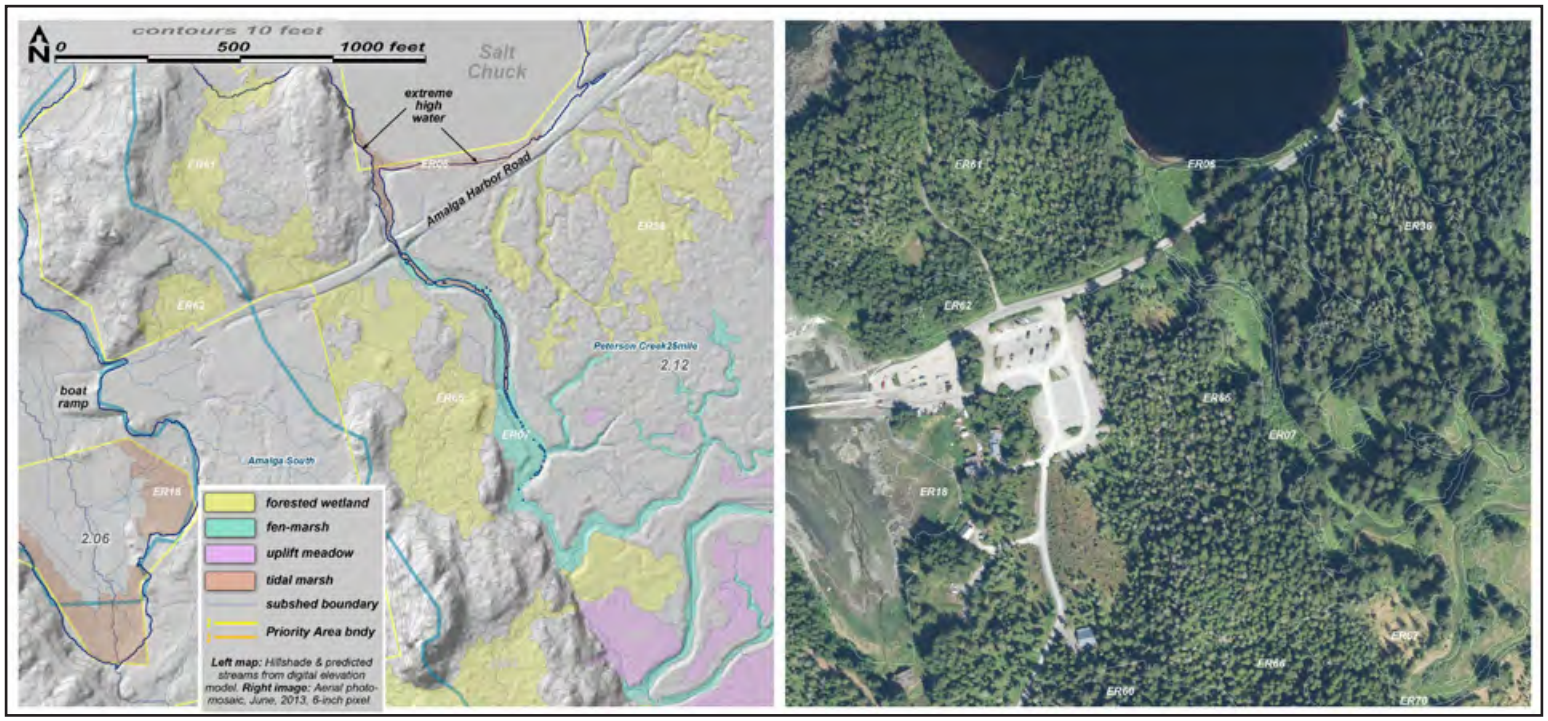


Unit maps for ER04 18 09 10 11 12 13 14 66 67 68 89 70 71

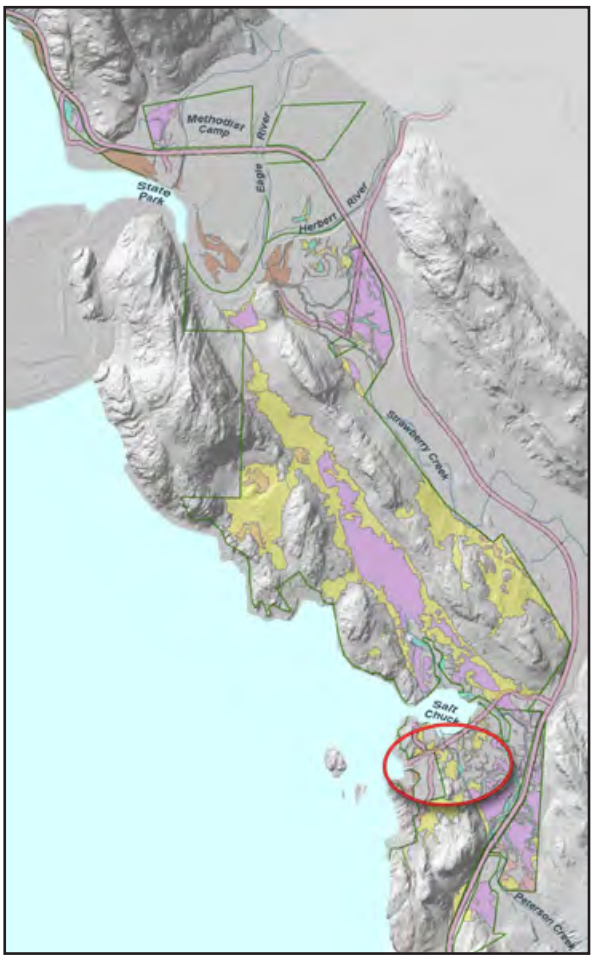


ER05 • **type:** forested peatland • **acres:** 1.8 • **boundary criteria**: w-u, subsh, pa • **pin**: 3B4201000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	10.00	Higher	6.60	Higher
Stream Flow Support	9.16	Higher	7.71	Higher
Resident Fish Habitat	7.92	Higher	6.54	Higher
Water Warming	6.25	Higher	5.77	Higher
Phosphorus Retention	4.89	Higher	4.89	Higher
Nitrate Removal	3.73	Higher	10.00	Higher
Anadromous Fish Habitat	8.17	Higher	6.67	Moderate
Pollinator Habitat	7.33	Higher	4.34	Moderate
Songbird, Raptor, & Mammal Habitat	7.83	Higher	2.50	Lower
Amphibian Habitat	7.13	Higher	3.19	Lower
Organic Nutrient Export	7.96	Higher	N.A.	N.A.
Native Plant Habitat	4.85	Moderate	2.74	Moderate
Invertebrate Habitat	4.63	Moderate	4.04	Moderate
Sediment Retention & Stabilization	3.08	Moderate	3.02	Moderate
Water Storage	4.76	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.30	Moderate	0.00	Lower
Carbon Sequestration	3.95	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.65	Higher
Wetland Risk	N.A.	N.A.	5.99	Moderate
Public Use & Recognition	N.A.	N.A.	3.09	Moderate
Wetland Stressors	N.A.	N.A.	4.65	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower



Unit maps for ER06 07 18 36 61 62 65



ER07 • **type:** fen/marsh • **acres:** 2.2 • **boundary criteria**: w-u, type • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.63	Higher	10.00	Higher
Waterbird Feeding Habitat	7.09	Higher	8.00	Higher
Waterbird Nesting Habitat	6.54	Higher	10.00	Higher
Amphibian Habitat	5.63	Higher	7.65	Higher
Phosphorus Retention	4.34	Higher	4.34	Higher
Nitrate Removal	4.01	Higher	6.31	Higher
Native Plant Habitat	9.48	Higher	2.78	Moderate
Songbird, Raptor, & Mammal Habitat	7.38	Higher	5.00	Moderate
Invertebrate Habitat	6.53	Higher	4.99	Moderate
Water Cooling	6.03	Higher	2.66	Moderate
Organic Nutrient Export	8.58	Higher	N.A.	N.A.
Anadromous Fish Habitat	7.26	Moderate	8.67	Higher
Pollinator Habitat	5.15	Moderate	3.36	Moderate
Sediment Retention & Stabilization	3.91	Moderate	2.85	Moderate
Water Storage	4.58	Moderate	1.11	Lower
Water Warming	3.57	Moderate	1.64	Lower
Carbon Sequestration	4.12	Moderate	N.A.	N.A.
Stream Flow Support	3.20	Lower	7.67	Higher
Wetland Stressors	N.A.	N.A.	8.08	Higher
Wetland Risk	N.A.	N.A.	6.73	Higher
Wetland Sensitivity	N.A.	N.A.	5.97	Moderate
Public Use & Recognition	N.A.	N.A.	2.48	Moderate

ER08 • **type:** forested peatland • **acres:** 1.8 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	8.44	Higher	8.17	Higher
Songbird, Raptor, & Mammal Habitat	7.53	Higher	7.33	Higher
Water Cooling	7.51	Higher	7.16	Higher
Resident Fish Habitat	7.48	Higher	9.42	Higher
Native Plant Habitat	5.86	Higher	6.14	Higher
Sediment Retention & Stabilization	4.88	Higher	2.99	Moderate
Water Storage	5.90	Higher	0.56	Lower
Stream Flow Support	4.29	Moderate	7.17	Higher
Nitrate Removal	3.11	Moderate	6.57	Higher
Amphibian Habitat	2.90	Moderate	6.67	Higher
Phosphorus Retention	3.55	Moderate	3.55	Moderate
Waterbird Nesting Habitat	3.98	Moderate	0.00	Lower
Organic Nutrient Export	6.57	Moderate	N.A.	N.A.
Pollinator Habitat	3.09	Lower	7.28	Higher
Invertebrate Habitat	2.23	Lower	10.00	Higher
Water Warming	1.26	Lower	7.11	Higher
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.83	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.22	Higher
Wetland Stressors	N.A.	N.A.	7.05	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.68	Moderate
Public Use & Recognition	N.A.	N.A.	2.53	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower

ER09 • **type:** uplift meadow • **acres:** 3.7 • **boundary criteria**: w-u, pa • **pin**: 3B4001000020, 30 • no known or probable anadromous fish

probable error- recalculate?

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	6.71	Higher	6.67	Higher
Phosphorus Retention	4.20	Higher	4.20	Higher
Sediment Retention & Stabilization	6.22	Higher	0.26	Lower
Carbon Sequestration	7.09	Higher	N.A.	N.A.
Resident Fish Habitat	6.61	Moderate	7.12	Higher
Songbird, Raptor, & Mammal Habitat	5.19	Moderate	5.00	Moderate
Amphibian Habitat	4.36	Moderate	5.57	Moderate
Water Cooling	4.60	Moderate	0.00	Lower
Native Plant Habitat	3.23	Moderate	1.43	Lower
Pollinator Habitat	1.77	Lower	3.36	Moderate
Water Storage	2.56	Lower	1.67	Lower
Invertebrate Habitat	1.88	Lower	2.23	Lower
Nitrate Removal	1.84	Lower	3.03	Lower
Stream Flow Support	0.50	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.51	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.61	Higher
Wetland Stressors	N.A.	N.A.	7.13	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.14	Moderate
Public Use & Recognition	N.A.	N.A.	3.06	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower

ER10 • **type:** fen/marsh • **acres:** 1.54 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010, 20, 30 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	9.37	Higher	6.67	Higher
Water Warming	8.07	Higher	8.04	Higher
Resident Fish Habitat	7.62	Higher	7.38	Higher
Waterbird Nesting Habitat	7.09	Higher	10.00	Higher
Phosphorus Retention	4.99	Higher	4.99	Higher
Nitrate Removal	4.25	Higher	6.06	Higher
Anadromous Fish Habitat	8.76	Higher	6.67	Moderate
Invertebrate Habitat	3.80	Moderate	4.27	Moderate
Sediment Retention & Stabilization	3.40	Moderate	2.79	Moderate
Water Storage	4.74	Moderate	1.11	Lower
Amphibian Habitat	4.30	Moderate	3.07	Lower
Organic Nutrient Export	6.31	Moderate	N.A.	N.A.
Stream Flow Support	2.27	Lower	7.65	Higher
Water Cooling	2.04	Lower	7.29	Higher
Native Plant Habitat	2.09	Lower	0.57	Lower
Pollinator Habitat	0.00	Lower	0.00	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.40	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.82	Moderate
Wetland Risk	N.A.	N.A.	4.89	Moderate
Public Use & Recognition	N.A.	N.A.	3.25	Moderate
Wetland Sensitivity	N.A.	N.A.	1.40	Lower
Wetland Ecological Condition	N.A.	N.A.	1.01	Lower

ER11 • **type:** fen/marsh • **acres:** 2.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	9.44	Higher	7.83	Higher
Waterbird Feeding Habitat	8.55	Higher	8.00	Higher
Resident Fish Habitat	8.47	Higher	9.04	Higher
Stream Flow Support	6.91	Higher	8.21	Higher
Amphibian Habitat	5.28	Higher	8.93	Higher
Nitrate Removal	4.30	Higher	6.57	Higher
Songbird, Raptor, & Mammal Habitat	7.71	Higher	5.00	Moderate
Sediment Retention & Stabilization	4.24	Higher	2.94	Moderate
Water Storage	6.00	Higher	0.56	Lower
Waterbird Nesting Habitat	5.60	Moderate	10.00	Higher
Water Cooling	4.69	Moderate	7.59	Higher
Water Warming	2.06	Moderate	8.16	Higher
Pollinator Habitat	5.88	Moderate	3.36	Moderate
Invertebrate Habitat	4.00	Moderate	5.54	Moderate
Phosphorus Retention	3.83	Moderate	3.83	Moderate
Native Plant Habitat	4.56	Moderate	0.67	Lower
Organic Nutrient Export	6.46	Moderate	N.A.	N.A.
Carbon Sequestration	4.42	Moderate	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	6.20	Moderate
Wetland Risk	N.A.	N.A.	4.99	Moderate
Public Use & Recognition	N.A.	N.A.	3.85	Moderate

ER12 • **type:** forested peatland • **acres:** 1.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.19	Higher	6.67	Higher
Nitrate Removal	3.80	Higher	6.82	Higher
Resident Fish Habitat	8.05	Higher	5.66	Moderate
Sediment Retention & Stabilization	5.15	Higher	3.04	Moderate
Water Storage	6.95	Higher	1.11	Lower
Waterbird Nesting Habitat	4.88	Moderate	10.00	Higher
Anadromous Fish Habitat	4.94	Moderate	6.67	Moderate
Water Cooling	4.85	Moderate	2.26	Moderate
Water Warming	4.12	Moderate	4.96	Moderate
Invertebrate Habitat	3.67	Moderate	2.96	Moderate
Phosphorus Retention	2.87	Moderate	2.87	Moderate
Native Plant Habitat	3.99	Moderate	0.57	Lower
Organic Nutrient Export	6.98	Moderate	N.A.	N.A.
Carbon Sequestration	4.72	Moderate	N.A.	N.A.
Stream Flow Support	2.39	Lower	6.42	Higher
Amphibian Habitat	2.72	Lower	1.67	Lower
Pollinator Habitat	0.12	Lower	0.00	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.91	Higher
Wetland Ecological Condition	N.A.	N.A.	6.32	Higher
Wetland Stressors	N.A.	N.A.	6.49	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.54	Lower

ER13 • **type:** uplift meadow • **acres:** 10.5 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010, 20, 30 • known or probable anadromous fish

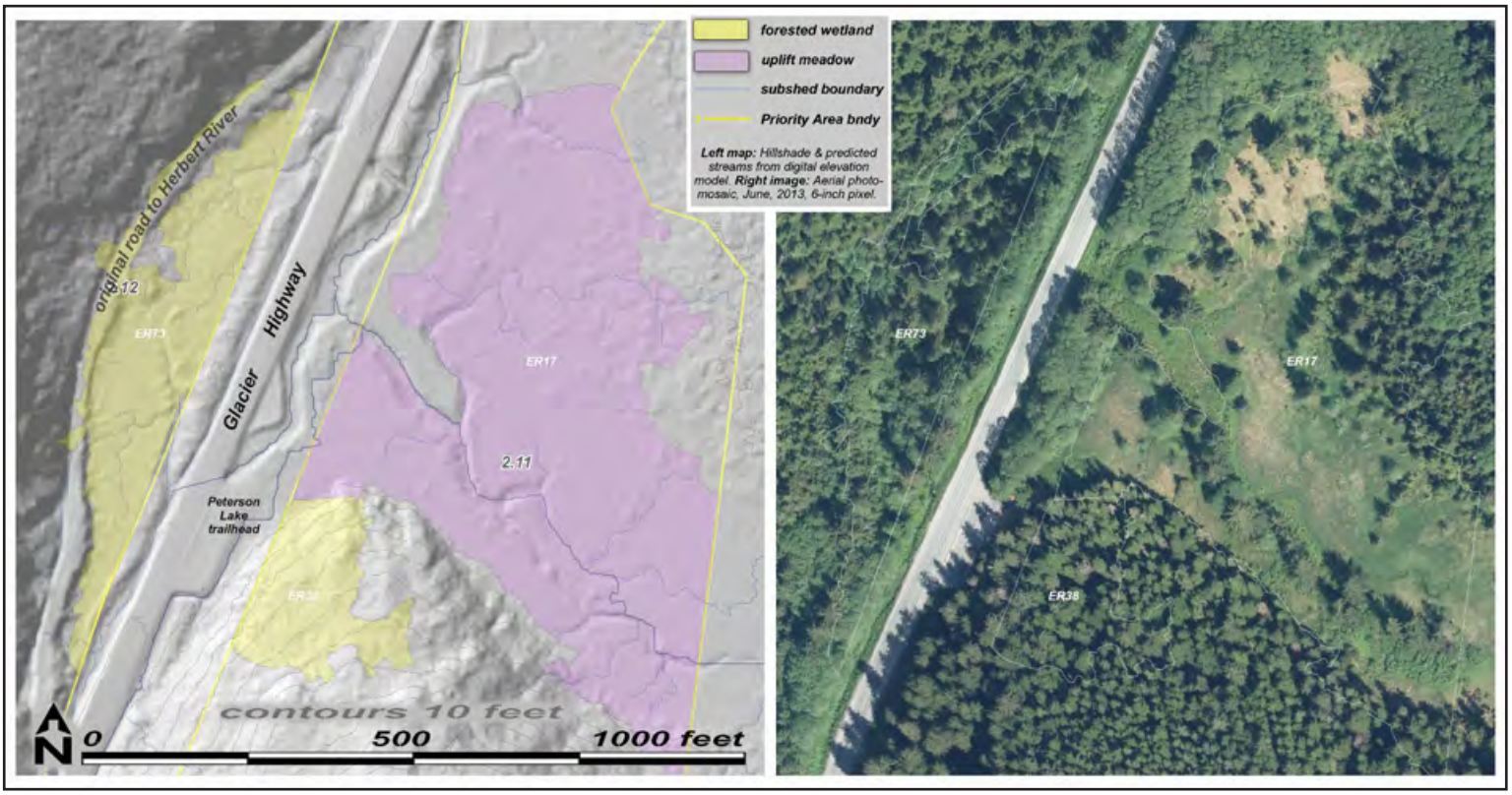
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	7.92	Higher	6.77	Higher
Waterbird Feeding Habitat	6.24	Higher	8.00	Higher
Nitrate Removal	3.96	Higher	6.57	Higher
Phosphorus Retention	3.96	Higher	3.96	Higher
Native Plant Habitat	7.11	Higher	2.47	Moderate
Songbird, Raptor, & Mammal Habitat	7.02	Higher	5.00	Moderate
Water Warming	5.97	Higher	5.10	Moderate
Water Storage	6.25	Higher	1.11	Lower
Resident Fish Habitat	6.79	Moderate	7.12	Higher
Waterbird Nesting Habitat	5.47	Moderate	10.00	Higher
Pollinator Habitat	4.15	Moderate	3.36	Moderate
Sediment Retention & Stabilization	3.98	Moderate	2.84	Moderate
Water Cooling	4.28	Moderate	0.94	Lower
Organic Nutrient Export	6.16	Moderate	N.A.	N.A.
Carbon Sequestration	5.22	Moderate	N.A.	N.A.
Invertebrate Habitat	3.05	Lower	4.08	Moderate
Anadromous Fish Habitat	2.76	Lower	6.67	Moderate
Stream Flow Support	0.84	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	9.01	Higher
Wetland Stressors	N.A.	N.A.	8.61	Higher
Wetland Ecological Condition	N.A.	N.A.	5.99	Higher
Public Use & Recognition	N.A.	N.A.	4.13	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower

ER14 • **type:** floodplain wetland • **acres:** 1.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010 • known or probable anadromous fish

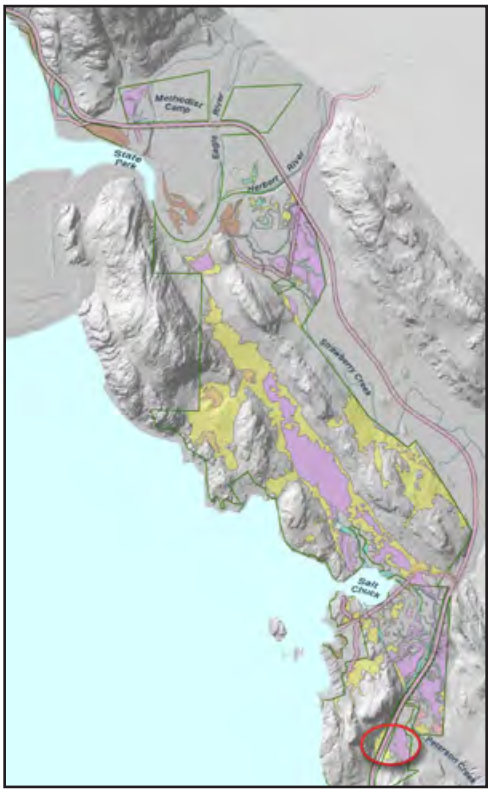
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	8.69	Higher	8.67	Higher
Resident Fish Habitat	7.58	Higher	10.00	Higher
Waterbird Feeding Habitat	6.97	Higher	8.00	Higher
Nitrate Removal	3.48	Higher	6.82	Higher
Songbird, Raptor, & Mammal Habitat	7.48	Higher	5.00	Moderate
Sediment Retention & Stabilization	4.32	Higher	3.04	Moderate
Native Plant Habitat	5.97	Higher	0.57	Lower
Water Storage	5.59	Higher	0.56	Lower
Water Cooling	4.98	Moderate	7.26	Higher
Waterbird Nesting Habitat	4.94	Moderate	10.00	Higher
Stream Flow Support	4.08	Moderate	7.62	Higher
Water Warming	2.69	Moderate	7.54	Higher
Invertebrate Habitat	3.84	Moderate	4.41	Moderate
Phosphorus Retention	2.98	Moderate	2.98	Moderate
Organic Nutrient Export	6.35	Moderate	N.A.	N.A.
Carbon Sequestration	4.18	Moderate	N.A.	N.A.
Amphibian Habitat	0.41	Lower	7.65	Higher
Pollinator Habitat	4.01	Lower	3.36	Moderate
Wetland Stressors	N.A.	N.A.	6.43	Moderate
Wetland Risk	N.A.	N.A.	4.71	Moderate
Public Use & Recognition	N.A.	N.A.	4.13	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	1.53	Lower

ER17 • **type:** uplift meadow • **acres:** 7.7 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000080 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.15	Higher	6.67	Higher
Phosphorus Retention	4.15	Higher	4.15	Higher
Nitrate Removal	3.58	Higher	6.77	Higher
Songbird, Raptor, & Mammal Habitat	7.20	Higher	5.00	Moderate
Water Storage	5.25	Higher	1.11	Lower
Resident Fish Habitat	6.62	Moderate	7.12	Higher
Waterbird Nesting Habitat	5.40	Moderate	10.00	Higher
Amphibian Habitat	4.20	Moderate	7.55	Higher
Anadromous Fish Habitat	6.32	Moderate	6.67	Moderate
Native Plant Habitat	5.10	Moderate	2.63	Moderate
Water Cooling	5.06	Moderate	2.50	Moderate
Pollinator Habitat	4.69	Moderate	3.36	Moderate
Water Warming	3.15	Moderate	5.09	Moderate
Sediment Retention & Stabilization	2.76	Moderate	2.37	Moderate
Organic Nutrient Export	6.48	Moderate	N.A.	N.A.
Carbon Sequestration	4.72	Moderate	N.A.	N.A.
Stream Flow Support	1.26	Lower	5.91	Higher
Invertebrate Habitat	1.12	Lower	4.35	Moderate
Wetland Risk	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	10.00	Higher
Wetland Ecological Condition	N.A.	N.A.	4.91	Moderate
Public Use & Recognition	N.A.	N.A.	2.83	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower

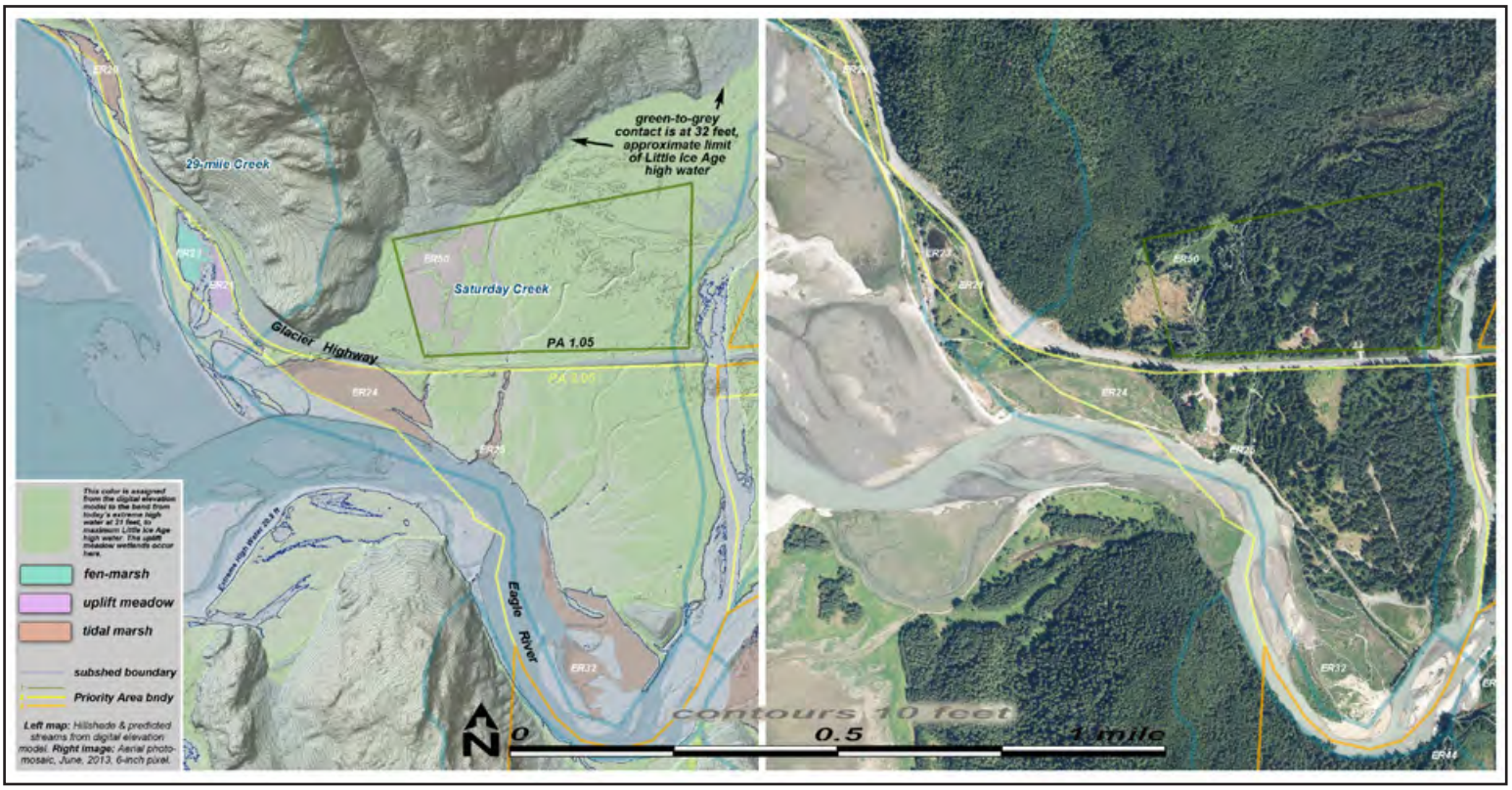


Unit maps for ER17 38 73

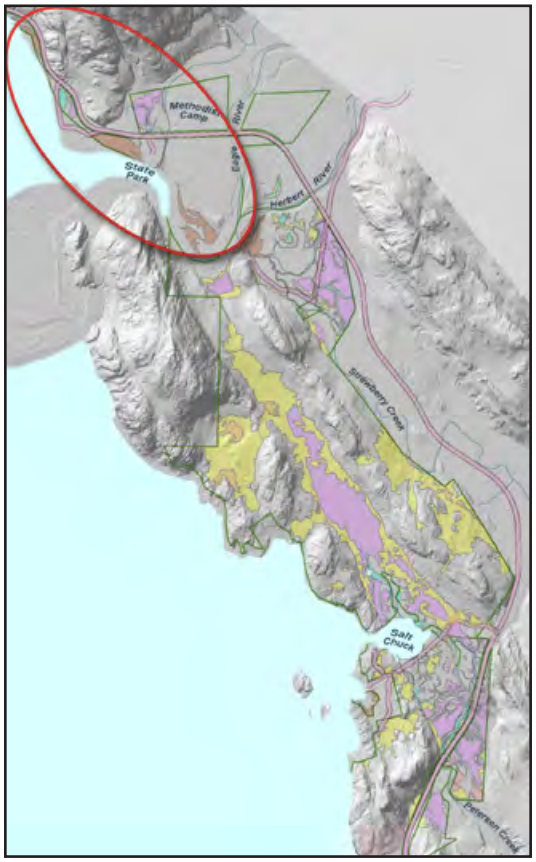


ER21 • **type:** uplift meadow • **acres:** 1.2 • **boundary criteria**: w-u, pa • **pin**: 3B4404000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	6.69	Higher	10.00	Higher
Nitrate Removal	3.78	Higher	5.96	Higher
Songbird, Raptor, & Mammal Habitat	8.56	Higher	4.17	Moderate
Pollinator Habitat	7.90	Higher	3.36	Moderate
Native Plant Habitat	6.23	Higher	3.70	Moderate
Waterbird Feeding Habitat	5.94	Moderate	6.67	Higher
Water Storage	5.03	Moderate	7.78	Higher
Amphibian Habitat	3.12	Moderate	7.86	Higher
Sediment Retention & Stabilization	3.57	Moderate	6.27	Moderate
Water Warming	3.36	Moderate	4.82	Moderate
Phosphorus Retention	2.64	Moderate	2.64	Moderate
Invertebrate Habitat	4.04	Moderate	2.46	Lower
Water Cooling	3.93	Moderate	0.00	Lower
Stream Flow Support	0.21	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.54	Lower	N.A.	N.A.
Carbon Sequestration	3.87	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.67	Higher
Wetland Stressors	N.A.	N.A.	7.26	Moderate
Wetland Sensitivity	N.A.	N.A.	4.80	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.96	Moderate
Public Use & Recognition	N.A.	N.A.	3.55	Moderate

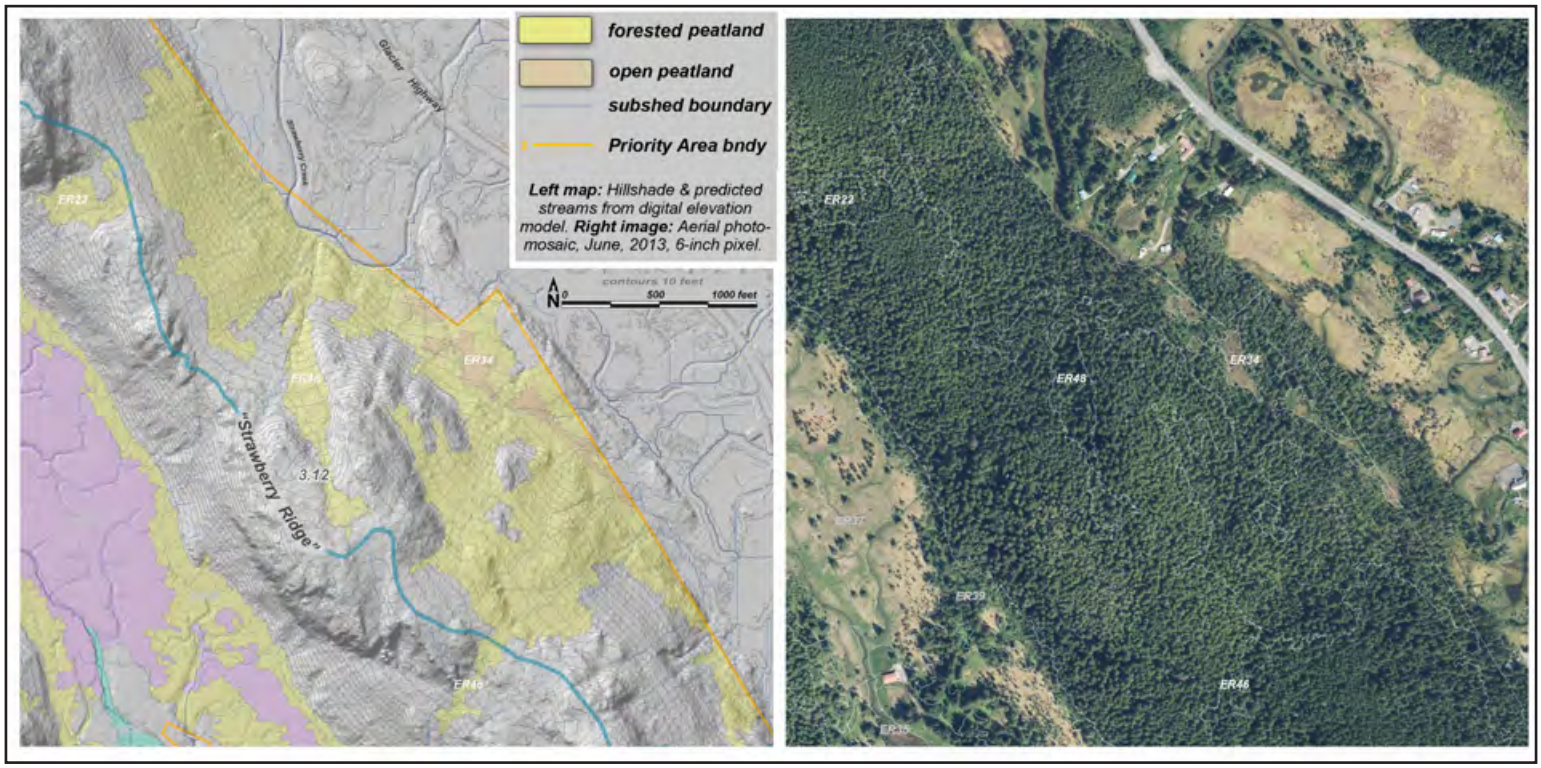


Unit maps for ER 21 23 24 25 32 50

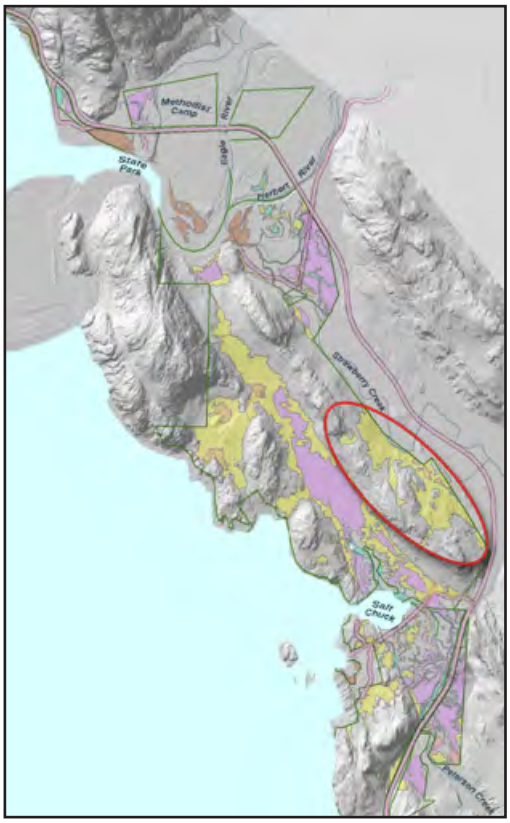


ER22 • **type:** for. peatland • **acres:** 1.2 • **boundary criteria**: w-u, subsh • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.88	Higher	3.36	Moderate
Native Plant Habitat	5.61	Higher	2.13	Moderate
Songbird, Raptor, & Mammal Habitat	10.00	Higher	1.67	Lower
Invertebrate Habitat	7.72	Higher	1.69	Lower
Water Warming	7.00	Higher	2.61	Lower
Water Cooling	6.51	Higher	1.26	Lower
Organic Nutrient Export	7.80	Higher	N.A.	N.A.
Amphibian Habitat	4.15	Moderate	5.00	Moderate
Stream Flow Support	3.61	Moderate	2.78	Moderate
Phosphorus Retention	3.57	Moderate	3.57	Moderate
Waterbird Nesting Habitat	4.31	Moderate	0.00	Lower
Water Storage	3.40	Moderate	1.11	Lower
Nitrate Removal	2.66	Moderate	2.32	Lower
Carbon Sequestration	4.80	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.43	Lower	0.52	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.62	Higher
Wetland Stressors	N.A.	N.A.	7.28	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.78	Moderate
Public Use & Recognition	N.A.	N.A.	2.10	Lower



Unit maps for ER22 35 46 48

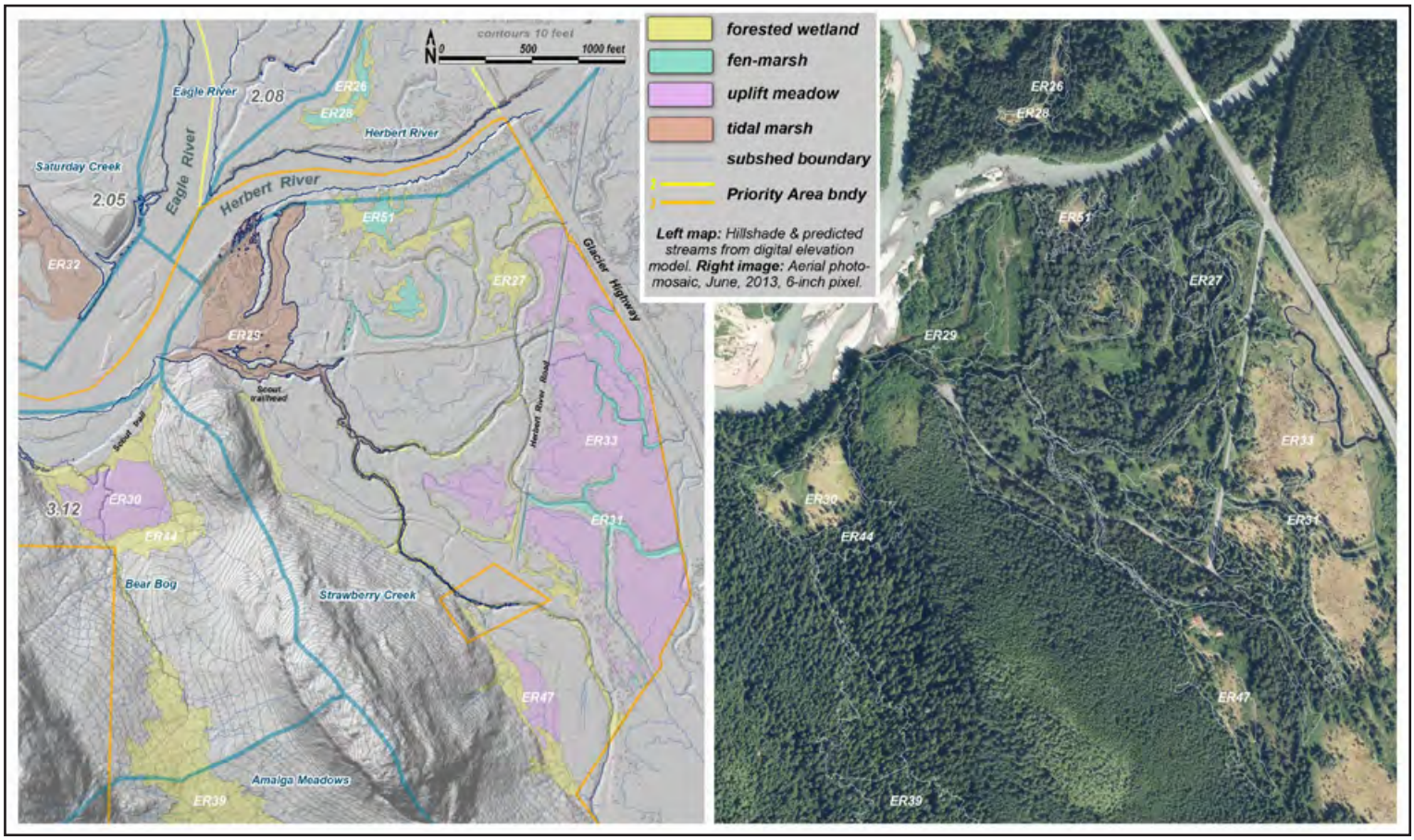


ER23 • **type:** fen/marsh • **acres:** 1.2 • **boundary criteria**: w-u • **pin**: 3B4404000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.05	Higher	6.67	Higher
Waterbird Nesting Habitat	6.79	Higher	10.00	Higher
Nitrate Removal	4.42	Higher	5.76	Higher
Sediment Retention & Stabilization	5.51	Higher	5.33	Moderate
Amphibian Habitat	5.47	Higher	5.19	Moderate
Native Plant Habitat	6.10	Higher	0.57	Lower
Water Storage	4.73	Moderate	7.08	Moderate
Songbird, Raptor, & Mammal Habitat	4.45	Moderate	4.17	Moderate
Water Warming	4.03	Moderate	5.14	Moderate
Water Cooling	5.24	Moderate	0.44	Lower
Invertebrate Habitat	3.79	Moderate	2.22	Lower
Pollinator Habitat	2.19	Lower	3.36	Moderate
Stream Flow Support	1.51	Lower	1.59	Moderate
Phosphorus Retention	1.75	Lower	1.75	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.43	Lower	N.A.	N.A.
Carbon Sequestration	2.57	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.72	Higher
Wetland Stressors	N.A.	N.A.	7.26	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.07	Moderate
Public Use & Recognition	N.A.	N.A.	3.55	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower

ER26 • **type:** forested peatland • **acres:** 1.2 • **boundary criteria**: w-u, type • **pin**: 3B4404000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.99	Higher	3.99	Higher
Songbird, Raptor, & Mammal Habitat	7.87	Higher	2.22	Lower
Pollinator Habitat	5.34	Moderate	3.29	Moderate
Water Storage	4.09	Moderate	5.00	Moderate
Nitrate Removal	3.11	Moderate	3.99	Moderate
Water Cooling	4.21	Moderate	1.23	Lower
Waterbird Nesting Habitat	3.70	Moderate	0.00	Lower
Water Warming	2.44	Moderate	2.01	Lower
Organic Nutrient Export	6.72	Moderate	N.A.	N.A.
Carbon Sequestration	5.88	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.14	Lower	2.09	Moderate
Stream Flow Support	2.04	Lower	1.59	Moderate
Native Plant Habitat	2.65	Lower	0.59	Lower
Amphibian Habitat	2.14	Lower	3.22	Lower
Invertebrate Habitat	1.84	Lower	1.04	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.68	Moderate
Wetland Risk	N.A.	N.A.	5.06	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.05	Lower
Wetland Ecological Condition	N.A.	N.A.	1.70	Lower



Unit maps for ER26 27 28 29 30 31 32 33 44 47

ER27 • **type:** forested peatland • **acres:** 14.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.73	Higher	7.80	Higher
Water Warming	7.02	Higher	8.37	Higher
Water Cooling	5.52	Higher	7.43	Higher
Phosphorus Retention	4.68	Higher	4.68	Higher
Nitrate Removal	3.29	Higher	6.31	Higher
Anadromous Fish Habitat	9.08	Higher	6.67	Moderate
Resident Fish Habitat	7.69	Higher	4.42	Moderate
Amphibian Habitat	6.92	Higher	2.09	Lower
Water Storage	5.74	Higher	0.56	Lower
Waterbird Nesting Habitat	5.71	Higher	0.00	Lower
Sediment Retention & Stabilization	4.00	Moderate	2.40	Moderate
Invertebrate Habitat	3.88	Moderate	4.24	Moderate
Songbird, Raptor, & Mammal Habitat	6.51	Moderate	1.67	Lower
Native Plant Habitat	5.00	Moderate	0.57	Lower
Organic Nutrient Export	6.45	Moderate	N.A.	N.A.
Carbon Sequestration	4.35	Moderate	N.A.	N.A.
Pollinator Habitat	3.98	Lower	3.36	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	7.49	Higher
Wetland Risk	N.A.	N.A.	7.42	Higher
Wetland Ecological Condition	N.A.	N.A.	6.02	Higher
Wetland Stressors	N.A.	N.A.	7.10	Moderate
Wetland Sensitivity	N.A.	N.A.	2.47	Lower

ER28 • **type:** fen/marsh • **acres:** 1.0 • **boundary criteria**: type • **pin**: 3B4404000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.80	Higher	7.67	Higher
Waterbird Nesting Habitat	8.00	Higher	10.00	Higher
Phosphorus Retention	4.11	Higher	4.11	Higher
Waterbird Feeding Habitat	7.40	Higher	4.33	Moderate
Water Warming	5.15	Higher	1.31	Lower
Nitrate Removal	3.39	Higher	0.96	Lower
Amphibian Habitat	5.16	Moderate	9.05	Higher
Invertebrate Habitat	4.03	Moderate	10.00	Higher
Native Plant Habitat	3.76	Moderate	7.24	Higher
Water Storage	4.64	Moderate	5.00	Moderate
Sediment Retention & Stabilization	4.08	Moderate	0.12	Lower
Water Cooling	3.52	Moderate	1.05	Lower
Organic Nutrient Export	6.92	Moderate	N.A.	N.A.
Carbon Sequestration	4.56	Moderate	N.A.	N.A.
Pollinator Habitat	3.82	Lower	8.05	Higher
Stream Flow Support	2.65	Lower	2.03	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.71	Moderate
Wetland Risk	N.A.	N.A.	5.49	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Ecological Condition	N.A.	N.A.	2.60	Lower
Public Use & Recognition	N.A.	N.A.	2.05	Lower

ER30 • **type:** uplift meadow • **acres:** 4.4 • **boundary criteria**: type • **pin**: 3B4301000030 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	8.52	Higher	7.06	Higher
Waterbird Nesting Habitat	7.19	Higher	9.90	Higher
Phosphorus Retention	4.77	Higher	4.77	Higher
Songbird, Raptor, & Mammal Habitat	7.64	Higher	3.73	Moderate
Water Warming	7.56	Higher	4.45	Moderate
Native Plant Habitat	5.99	Higher	2.75	Moderate
Water Cooling	5.49	Higher	3.07	Moderate
Invertebrate Habitat	5.34	Higher	2.97	Moderate
Waterbird Feeding Habitat	5.90	Moderate	5.98	Higher
Water Storage	4.92	Moderate	10.00	Higher
Stream Flow Support	5.21	Moderate	2.30	Moderate
Pollinator Habitat	4.65	Moderate	3.32	Moderate
Sediment Retention & Stabilization	4.10	Moderate	3.91	Moderate
Nitrate Removal	2.64	Moderate	4.49	Moderate
Organic Nutrient Export	6.35	Moderate	N.A.	N.A.
Carbon Sequestration	4.02	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.40	Higher
Wetland Stressors	N.A.	N.A.	7.33	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.43	Moderate
Public Use & Recognition	N.A.	N.A.	2.91	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower

ER31 • **type:** fen/marsh • **acres:** 2.7 • **boundary criteria**: w-u, type, pa • **pin**: 3B4301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	9.16	Higher	6.61	Higher
Resident Fish Habitat	9.15	Higher	6.89	Higher
Waterbird Nesting Habitat	8.16	Higher	10.00	Higher
Stream Flow Support	7.11	Higher	8.94	Higher
Phosphorus Retention	4.09	Higher	4.09	Higher
Nitrate Removal	3.28	Higher	6.82	Higher
Anadromous Fish Habitat	9.53	Higher	6.67	Moderate
Waterbird Feeding Habitat	8.74	Higher	4.00	Moderate
Invertebrate Habitat	6.34	Higher	5.99	Moderate
Water Warming	4.75	Moderate	7.91	Higher
Water Cooling	4.57	Moderate	7.63	Higher
Songbird, Raptor, & Mammal Habitat	4.77	Moderate	3.75	Moderate
Sediment Retention & Stabilization	3.87	Moderate	2.53	Moderate
Water Storage	4.83	Moderate	0.56	Lower
Native Plant Habitat	4.63	Moderate	0.57	Lower
Organic Nutrient Export	6.07	Moderate	N.A.	N.A.
Pollinator Habitat	2.14	Lower	3.36	Moderate
Carbon Sequestration	1.85	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.69	Higher
Wetland Stressors	N.A.	N.A.	7.12	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.33	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate
Wetland Sensitivity	N.A.	N.A.	2.11	Lower

ER33 • **type:** uplift meadow • **acres:** 27.9 • **boundary criteria**: w-u, type, pa • **pin**: 3B4301000010 • known or probable anadromous fish

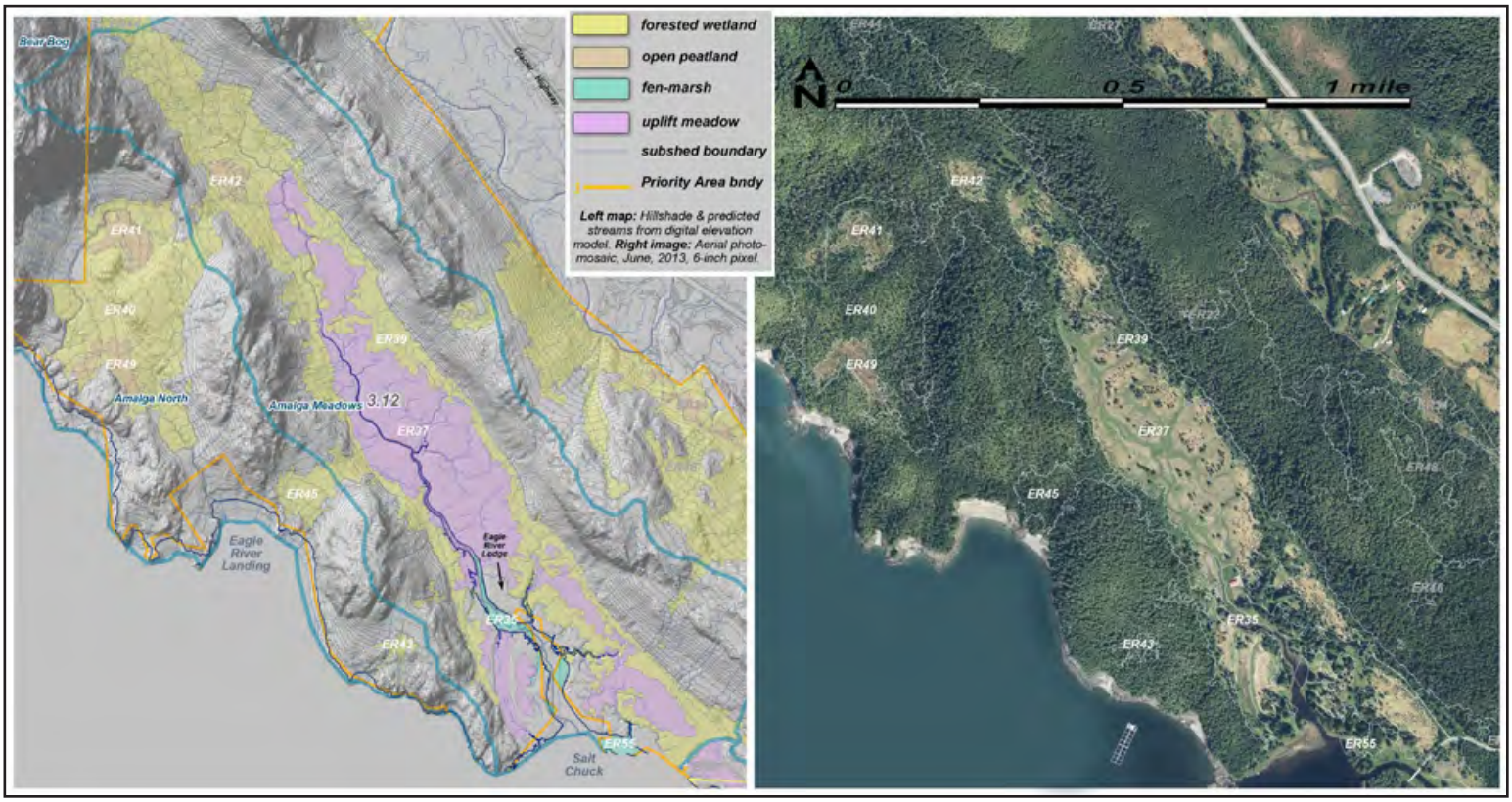
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	6.60	Higher	5.98	Higher
Native Plant Habitat	5.72	Higher	6.24	Higher
Phosphorus Retention	4.90	Higher	4.90	Higher
Nitrate Removal	3.35	Higher	6.77	Higher
Songbird, Raptor, & Mammal Habitat	7.60	Higher	6.73	Moderate
Water Storage	5.64	Higher	1.11	Lower
Pollinator Habitat	6.23	Moderate	7.35	Higher
Stream Flow Support	5.60	Moderate	5.95	Higher
Amphibian Habitat	4.93	Moderate	7.51	Higher
Waterbird Nesting Habitat	4.49	Moderate	9.90	Higher
Water Warming	4.33	Moderate	8.12	Higher
Water Cooling	3.54	Moderate	6.66	Higher
Anadromous Fish Habitat	7.30	Moderate	6.67	Moderate
Resident Fish Habitat	6.11	Moderate	5.20	Moderate
Sediment Retention & Stabilization	3.92	Moderate	2.47	Moderate
Organic Nutrient Export	6.35	Moderate	N.A.	N.A.
Carbon Sequestration	4.68	Moderate	N.A.	N.A.
Invertebrate Habitat	0.47	Lower	10.00	Higher
Public Use & Recognition	N.A.	N.A.	8.85	Higher
Wetland Risk	N.A.	N.A.	8.03	Higher
Wetland Ecological Condition	N.A.	N.A.	6.85	Higher
Wetland Stressors	N.A.	N.A.	7.32	Moderate
Wetland Sensitivity	N.A.	N.A.	3.76	Lower

ER34 • **type:** open peatland • **acres:** 2.6 • **boundary criteria**: type, pa • **pin**: 3B4101000010 • no known or probable anadromous fish

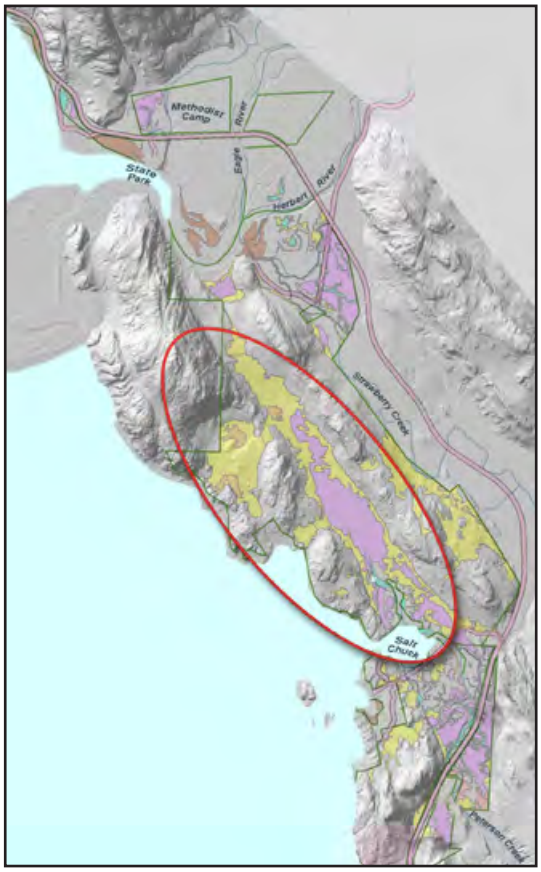
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.94	Higher	3.31	Moderate
Water Warming	6.16	Higher	5.20	Moderate
Water Cooling	5.84	Higher	1.58	Lower
Invertebrate Habitat	5.52	Higher	1.88	Lower
Carbon Sequestration	6.22	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.57	Moderate	9.90	Higher
Pollinator Habitat	6.49	Moderate	3.32	Moderate
Stream Flow Support	4.50	Moderate	2.33	Moderate
Waterbird Feeding Habitat	3.75	Moderate	4.15	Moderate
Phosphorus Retention	2.74	Moderate	2.74	Moderate
Water Storage	3.42	Moderate	1.11	Lower
Organic Nutrient Export	7.53	Moderate	N.A.	N.A.
Amphibian Habitat	2.54	Lower	6.68	Higher
Native Plant Habitat	2.64	Lower	3.52	Moderate
Nitrate Removal	1.76	Lower	5.35	Moderate
Sediment Retention & Stabilization	1.11	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.87	Higher
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.22	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

ER35 • **type:** fen/marsh • **acres:** 2.5 • **boundary criteria**: w-u, type, pa • **pin**: 3B4101000013 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.59	Higher	6.54	Higher
Waterbird Feeding Habitat	8.22	Higher	6.98	Higher
Waterbird Nesting Habitat	7.92	Higher	9.90	Higher
Stream Flow Support	6.30	Higher	8.58	Higher
Nitrate Removal	4.37	Higher	9.85	Higher
Phosphorus Retention	3.96	Higher	3.96	Higher
Amphibian Habitat	9.43	Higher	6.08	Moderate
Anadromous Fish Habitat	9.40	Higher	6.67	Moderate
Invertebrate Habitat	5.68	Higher	5.78	Moderate
Sediment Retention & Stabilization	4.45	Higher	2.53	Moderate
Water Storage	5.32	Higher	0.56	Lower
Water Cooling	5.27	Moderate	7.57	Higher
Water Warming	3.82	Moderate	7.20	Higher
Songbird, Raptor, & Mammal Habitat	4.57	Moderate	3.73	Moderate
Native Plant Habitat	3.54	Moderate	0.52	Lower
Organic Nutrient Export	6.60	Moderate	N.A.	N.A.
Pollinator Habitat	2.83	Lower	3.32	Moderate
Carbon Sequestration	3.00	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.99	Moderate
Wetland Risk	N.A.	N.A.	6.40	Moderate
Public Use & Recognition	N.A.	N.A.	4.27	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.99	Moderate
Wetland Sensitivity	N.A.	N.A.	1.04	Lower



Unit maps for ER35 37 39 40 41 42 43 45 49 55



ER36 • **type:** forested peatland • **acres:** 4.3 • **boundary criteria**: w-u, pa • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.50	Higher	6.15	Higher
Native Plant Habitat	5.29	Higher	6.14	Higher
Nitrate Removal	4.73	Higher	6.06	Higher
Phosphorus Retention	4.71	Higher	4.71	Higher
Sediment Retention & Stabilization	4.16	Higher	2.79	Moderate
Water Storage	6.32	Higher	1.11	Lower
Songbird, Raptor, & Mammal Habitat	4.39	Moderate	7.33	Higher
Amphibian Habitat	3.45	Moderate	6.67	Higher
Water Cooling	4.85	Moderate	2.23	Moderate
Anadromous Fish Habitat	4.75	Moderate	6.67	Moderate
Water Warming	4.71	Moderate	5.55	Moderate
Waterbird Nesting Habitat	4.35	Moderate	0.00	Lower
Organic Nutrient Export	6.23	Moderate	N.A.	N.A.
Carbon Sequestration	4.56	Moderate	N.A.	N.A.
Invertebrate Habitat	2.00	Lower	10.00	Higher
Stream Flow Support	1.76	Lower	5.83	Higher
Pollinator Habitat	0.38	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.23	Higher
Wetland Stressors	N.A.	N.A.	7.20	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.35	Moderate
Public Use & Recognition	N.A.	N.A.	4.08	Moderate
Wetland Sensitivity	N.A.	N.A.	0.00	Lower

ER37 • **type:** uplift meadow • **acres:** 73.5 • **boundary criteria**: w-u, type • **pin**: 3B4201000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	8.15	Higher	9.58	Higher
Waterbird Nesting Habitat	7.73	Higher	9.90	Higher
Waterbird Feeding Habitat	7.60	Higher	6.98	Higher
Phosphorus Retention	6.09	Higher	6.09	Higher
Nitrate Removal	3.63	Higher	6.31	Higher
Pollinator Habitat	10.00	Higher	3.32	Moderate
Songbird, Raptor, & Mammal Habitat	9.27	Higher	3.73	Moderate
Anadromous Fish Habitat	8.67	Higher	6.67	Moderate
Native Plant Habitat	6.06	Higher	4.34	Moderate
Invertebrate Habitat	5.52	Higher	5.95	Moderate
Sediment Retention & Stabilization	4.21	Higher	2.87	Moderate
Water Storage	5.28	Higher	1.11	Lower
Resident Fish Habitat	7.12	Moderate	5.99	Higher
Water Cooling	4.41	Moderate	7.26	Higher
Water Warming	2.52	Moderate	7.78	Higher
Organic Nutrient Export	6.99	Moderate	N.A.	N.A.
Stream Flow Support	3.03	Lower	7.79	Higher
Carbon Sequestration	3.13	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	5.50	Moderate
Wetland Risk	N.A.	N.A.	5.30	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.06	Moderate
Public Use & Recognition	N.A.	N.A.	3.24	Moderate
Wetland Sensitivity	N.A.	N.A.	3.82	Lower

ER38 • **type:** for. peatland • **acres:** 1.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000080 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.60	Higher	3.33	Moderate
Water Cooling	6.58	Higher	0.63	Lower
Organic Nutrient Export	8.00	Higher	N.A.	N.A.
Pollinator Habitat	5.74	Moderate	3.26	Moderate
Native Plant Habitat	4.23	Moderate	0.59	Lower
Amphibian Habitat	3.89	Moderate	3.00	Lower
Invertebrate Habitat	3.70	Moderate	0.68	Lower
Water Warming	2.94	Moderate	1.30	Lower
Carbon Sequestration	6.01	Moderate	N.A.	N.A.
Stream Flow Support	1.45	Lower	1.97	Moderate
Water Storage	2.15	Lower	1.11	Lower
Phosphorus Retention	1.96	Lower	1.96	Lower
Nitrate Removal	1.70	Lower	3.03	Lower
Sediment Retention & Stabilization	0.98	Lower	0.07	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.04	Higher
Wetland Stressors	N.A.	N.A.	7.59	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Public Use & Recognition	N.A.	N.A.	4.11	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.00	Moderate

ER39 • **type:** forested peatland • **acres:** 92.1 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 3B4201000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.43	Higher	5.43	Higher
Nitrate Removal	3.27	Higher	6.57	Higher
Pollinator Habitat	9.26	Higher	3.36	Moderate
Amphibian Habitat	7.37	Higher	4.59	Moderate
Songbird, Raptor, & Mammal Habitat	9.51	Higher	1.67	Lower
Invertebrate Habitat	5.87	Higher	2.14	Lower
Organic Nutrient Export	8.78	Higher	N.A.	N.A.
Carbon Sequestration	6.55	Higher	N.A.	N.A.
Water Warming	2.52	Moderate	8.06	Higher
Stream Flow Support	5.34	Moderate	2.40	Moderate
Native Plant Habitat	4.53	Moderate	4.26	Moderate
Water Cooling	4.41	Moderate	3.95	Moderate
Sediment Retention & Stabilization	3.28	Moderate	3.86	Moderate
Waterbird Nesting Habitat	5.55	Moderate	0.00	Lower
Water Storage	4.61	Moderate	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.02	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.42	Lower
Wetland Risk	N.A.	N.A.	2.64	Lower
Public Use & Recognition	N.A.	N.A.	2.38	Lower

ER40 • **type:** forested peatland • **acres:** 40.0 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.33	Higher	3.36	Moderate
Amphibian Habitat	7.47	Higher	4.41	Moderate
Songbird, Raptor, & Mammal Habitat	9.30	Higher	1.67	Lower
Invertebrate Habitat	7.34	Higher	2.08	Lower
Organic Nutrient Export	9.23	Higher	N.A.	N.A.
Carbon Sequestration	6.13	Higher	N.A.	N.A.
Water Warming	3.36	Moderate	8.45	Higher
Native Plant Habitat	4.67	Moderate	1.98	Moderate
Stream Flow Support	4.59	Moderate	2.70	Moderate
Water Cooling	3.93	Moderate	3.51	Moderate
Phosphorus Retention	3.69	Moderate	3.69	Moderate
Nitrate Removal	3.05	Moderate	5.35	Moderate
Sediment Retention & Stabilization	2.32	Moderate	3.86	Moderate
Waterbird Nesting Habitat	5.28	Moderate	0.00	Lower
Water Storage	4.20	Moderate	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.20	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.17	Lower
Wetland Risk	N.A.	N.A.	2.44	Lower
Public Use & Recognition	N.A.	N.A.	2.36	Lower

ER41 • **type:** open peatland • **acres:** 3.6 • **boundary criteria**: type • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	7.63	Higher	9.90	Higher
Songbird, Raptor, & Mammal Habitat	9.18	Higher	3.73	Moderate
Pollinator Habitat	7.07	Higher	3.32	Moderate
Invertebrate Habitat	5.90	Higher	2.57	Lower
Carbon Sequestration	6.89	Higher	N.A.	N.A.
Waterbird Feeding Habitat	5.59	Moderate	4.48	Moderate
Phosphorus Retention	3.54	Moderate	3.54	Moderate
Water Warming	3.36	Moderate	5.20	Moderate
Nitrate Removal	2.02	Moderate	5.35	Moderate
Water Storage	4.94	Moderate	1.11	Lower
Water Cooling	3.93	Moderate	1.58	Lower
Organic Nutrient Export	7.27	Moderate	N.A.	N.A.
Amphibian Habitat	2.47	Lower	8.13	Higher
Stream Flow Support	3.15	Lower	2.41	Moderate
Sediment Retention & Stabilization	2.18	Lower	3.86	Moderate
Native Plant Habitat	2.95	Lower	1.58	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.08	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	3.17	Lower
Wetland Risk	N.A.	N.A.	2.83	Lower
Public Use & Recognition	N.A.	N.A.	2.01	Lower

ER42 • **type:** open peatland • **acres:** 1.8 • **boundary criteria**: type • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.87	Higher	6.71	Higher
Songbird, Raptor, & Mammal Habitat	8.90	Higher	3.73	Moderate
Invertebrate Habitat	5.30	Higher	2.26	Lower
Carbon Sequestration	6.96	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.65	Moderate	9.90	Higher
Waterbird Feeding Habitat	3.84	Moderate	6.48	Higher
Pollinator Habitat	6.62	Moderate	3.32	Moderate
Water Warming	3.36	Moderate	4.72	Moderate
Phosphorus Retention	3.17	Moderate	3.17	Moderate
Water Cooling	3.93	Moderate	1.40	Lower
Water Storage	3.86	Moderate	1.11	Lower
Organic Nutrient Export	7.51	Moderate	N.A.	N.A.
Stream Flow Support	2.90	Lower	2.29	Moderate
Native Plant Habitat	2.82	Lower	3.53	Moderate
Nitrate Removal	1.65	Lower	5.10	Moderate
Sediment Retention & Stabilization	1.34	Lower	2.70	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.35	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.54	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.36	Lower

ER43 • **type:** forested peatland • **acres:** 1.2 • **boundary criteria**: w-u • **pin**: 3B4101000013 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.06	Higher	3.32	Moderate
Water Warming	5.25	Higher	2.76	Moderate
Songbird, Raptor, & Mammal Habitat	8.06	Higher	1.67	Lower
Water Cooling	7.51	Higher	1.05	Lower
Native Plant Habitat	5.98	Higher	1.41	Lower
Invertebrate Habitat	5.89	Higher	0.78	Lower
Organic Nutrient Export	8.42	Higher	N.A.	N.A.
Carbon Sequestration	6.17	Higher	N.A.	N.A.
Stream Flow Support	3.26	Moderate	2.41	Moderate
Phosphorus Retention	2.65	Moderate	2.65	Moderate
Nitrate Removal	2.35	Moderate	3.54	Moderate
Amphibian Habitat	4.13	Moderate	3.38	Lower
Water Storage	1.79	Lower	1.11	Lower
Sediment Retention & Stabilization	0.72	Lower	0.24	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Public Use & Recognition	N.A.	N.A.	4.12	Moderate
Wetland Stressors	N.A.	N.A.	3.81	Lower
Wetland Risk	N.A.	N.A.	2.05	Lower
Wetland Ecological Condition	N.A.	N.A.	1.80	Lower

ER44 • **type:** forested peatland • **acres:** 9.9 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.73	Higher	1.55	Moderate
Pollinator Habitat	7.31	Higher	3.36	Moderate
Water Cooling	6.10	Higher	3.51	Moderate
Songbird, Raptor, & Mammal Habitat	7.85	Higher	1.67	Lower
Amphibian Habitat	6.52	Higher	3.21	Lower
Native Plant Habitat	5.84	Higher	1.12	Lower
Organic Nutrient Export	8.34	Higher	N.A.	N.A.
Water Warming	4.24	Moderate	8.32	Higher
Water Storage	3.89	Moderate	10.00	Higher
Phosphorus Retention	3.60	Moderate	3.60	Moderate
Sediment Retention & Stabilization	2.57	Moderate	3.93	Moderate
Nitrate Removal	2.17	Moderate	5.00	Moderate
Carbon Sequestration	5.82	Moderate	N.A.	N.A.
Invertebrate Habitat	1.65	Lower	1.01	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.74	Moderate
Wetland Stressors	N.A.	N.A.	3.11	Lower
Public Use & Recognition	N.A.	N.A.	2.31	Lower
Wetland Risk	N.A.	N.A.	2.18	Lower

ER45 • **type:** for. peatland • **acres:** 5.0 • **boundary criteria**: w-u, pa, subsh • **pin**: 3B4101000013 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.33	Higher	3.36	Moderate
Songbird, Raptor, & Mammal Habitat	7.96	Higher	1.67	Lower
Water Cooling	6.26	Higher	1.05	Lower
Carbon Sequestration	6.09	Higher	N.A.	N.A.
Stream Flow Support	3.39	Moderate	1.52	Moderate
Phosphorus Retention	3.19	Moderate	3.19	Moderate
Native Plant Habitat	5.06	Moderate	1.17	Lower
Water Warming	4.12	Moderate	2.13	Lower
Amphibian Habitat	3.65	Moderate	3.30	Lower
Waterbird Nesting Habitat	3.27	Moderate	0.00	Lower
Water Storage	3.25	Moderate	1.11	Lower
Nitrate Removal	2.06	Moderate	2.07	Lower
Organic Nutrient Export	7.44	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.62	Lower	0.12	Lower
Invertebrate Habitat	1.50	Lower	1.16	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	6.18	Higher
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	4.37	Lower
Wetland Risk	N.A.	N.A.	2.94	Lower
Wetland Ecological Condition	N.A.	N.A.	2.44	Lower

ER46 • **type:** forested peatland • **acres:** 1.1 • **boundary criteria**: w-u, subsh • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.40	Higher	1.67	Lower
Invertebrate Habitat	5.53	Higher	0.64	Lower
Carbon Sequestration	6.55	Higher	N.A.	N.A.
Pollinator Habitat	6.37	Moderate	3.36	Moderate
Nitrate Removal	2.26	Moderate	3.79	Moderate
Water Cooling	4.60	Moderate	1.05	Lower
Amphibian Habitat	3.78	Moderate	2.84	Lower
Native Plant Habitat	3.63	Moderate	0.69	Lower
Organic Nutrient Export	6.96	Moderate	N.A.	N.A.
Stream Flow Support	1.82	Lower	2.33	Moderate
Sediment Retention & Stabilization	1.89	Lower	0.37	Lower
Phosphorus Retention	1.30	Lower	1.30	Lower
Water Storage	0.32	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.45	Higher
Wetland Stressors	N.A.	N.A.	7.50	Moderate
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.90	Lower
Public Use & Recognition	N.A.	N.A.	2.37	Lower

ER47 • **type:** uplift meadow • **acres:** 1.6 • **boundary criteria**: w-u, type • **pin**: 3B4301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	7.99	Higher	6.08	Moderate
Songbird, Raptor, & Mammal Habitat	7.49	Higher	3.73	Moderate
Water Storage	5.42	Higher	1.67	Lower
Carbon Sequestration	6.09	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.41	Moderate	9.90	Higher
Waterbird Feeding Habitat	4.64	Moderate	3.98	Moderate
Native Plant Habitat	3.78	Moderate	2.40	Moderate
Water Cooling	4.02	Moderate	0.00	Lower
Water Warming	3.70	Moderate	0.00	Lower
Sediment Retention & Stabilization	3.64	Moderate	0.35	Lower
Nitrate Removal	1.98	Moderate	1.21	Lower
Pollinator Habitat	3.13	Lower	3.32	Moderate
Invertebrate Habitat	2.44	Lower	2.34	Lower
Phosphorus Retention	2.10	Lower	2.10	Lower
Stream Flow Support	0.43	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.40	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.45	Higher
Wetland Ecological Condition	N.A.	N.A.	6.50	Higher
Wetland Stressors	N.A.	N.A.	6.93	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.77	Lower

ER48 • **type:** forested peatland • **acres:** 54.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 3B4101000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.90	Higher	3.36	Moderate
Songbird, Raptor, & Mammal Habitat	9.76	Higher	1.67	Lower
Organic Nutrient Export	8.17	Higher	N.A.	N.A.
Amphibian Habitat	3.51	Moderate	4.80	Moderate
Water Warming	3.05	Moderate	5.29	Moderate
Phosphorus Retention	2.89	Moderate	2.89	Moderate
Nitrate Removal	2.20	Moderate	5.35	Moderate
Invertebrate Habitat	3.51	Moderate	0.99	Lower
Water Storage	3.01	Moderate	1.11	Lower
Water Cooling	2.76	Moderate	1.58	Lower
Carbon Sequestration	5.73	Moderate	N.A.	N.A.
Stream Flow Support	2.55	Lower	1.93	Moderate
Native Plant Habitat	2.53	Lower	2.32	Moderate
Sediment Retention & Stabilization	1.43	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.61	Moderate
Wetland Risk	N.A.	N.A.	5.65	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	3.20	Lower
Public Use & Recognition	N.A.	N.A.	2.10	Lower

ER49 • **type:** open peatland • **acres:** 3.2 • **boundary criteria**: type • **pin**: 3B4101000013 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.94	Higher	3.75	Moderate
Invertebrate Habitat	6.22	Higher	1.26	Lower
Organic Nutrient Export	7.98	Higher	N.A.	N.A.
Carbon Sequestration	7.18	Higher	N.A.	N.A.
Pollinator Habitat	6.04	Moderate	3.36	Moderate
Native Plant Habitat	3.60	Moderate	3.43	Moderate
Phosphorus Retention	2.71	Moderate	2.71	Moderate
Water Warming	2.52	Moderate	5.45	Moderate
Water Cooling	4.41	Moderate	1.40	Lower
Waterbird Feeding Habitat	4.01	Moderate	0.00	Lower
Water Storage	3.33	Moderate	1.11	Lower
Amphibian Habitat	2.37	Lower	6.85	Higher
Stream Flow Support	3.03	Lower	2.47	Moderate
Sediment Retention & Stabilization	1.48	Lower	3.81	Moderate
Nitrate Removal	1.40	Lower	5.35	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	2.50	Moderate
Wetland Stressors	N.A.	N.A.	3.87	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.44	Lower
Wetland Risk	N.A.	N.A.	2.40	Lower

ER50 • **type:** uplift meadow • **acres:** 7.9 • **boundary criteria**: w-u, pa • **pin**: 3B4401000020 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.50	Higher	6.04	Higher
Waterbird Nesting Habitat	8.11	Higher	10.00	Higher
Amphibian Habitat	7.97	Higher	9.74	Higher
Phosphorus Retention	6.99	Higher	6.99	Higher
Water Cooling	5.56	Higher	7.63	Higher
Nitrate Removal	3.63	Higher	8.46	Higher
Pollinator Habitat	9.87	Higher	3.36	Moderate
Anadromous Fish Habitat	9.54	Higher	6.67	Moderate
Songbird, Raptor, & Mammal Habitat	9.40	Higher	4.17	Moderate
Invertebrate Habitat	8.07	Higher	6.36	Moderate
Waterbird Feeding Habitat	7.67	Higher	4.33	Moderate
Native Plant Habitat	6.71	Higher	4.36	Moderate
Water Storage	5.28	Higher	1.11	Lower
Water Warming	2.52	Moderate	7.76	Higher
Sediment Retention & Stabilization	3.45	Moderate	3.98	Moderate
Organic Nutrient Export	6.45	Moderate	N.A.	N.A.
Carbon Sequestration	4.00	Moderate	N.A.	N.A.
Stream Flow Support	3.03	Lower	9.08	Higher
Wetland Ecological Condition	N.A.	N.A.	7.34	Higher
Wetland Risk	N.A.	N.A.	6.98	Higher
Wetland Stressors	N.A.	N.A.	6.13	Moderate
Wetland Sensitivity	N.A.	N.A.	5.43	Moderate
Public Use & Recognition	N.A.	N.A.	2.06	Lower

ER51 • **type:** fen/marsh • **acres:** 1.8 • **boundary criteria**: w-u, type, subsh • **pin**: 3B4301000010 • no known or probable anadromous fish

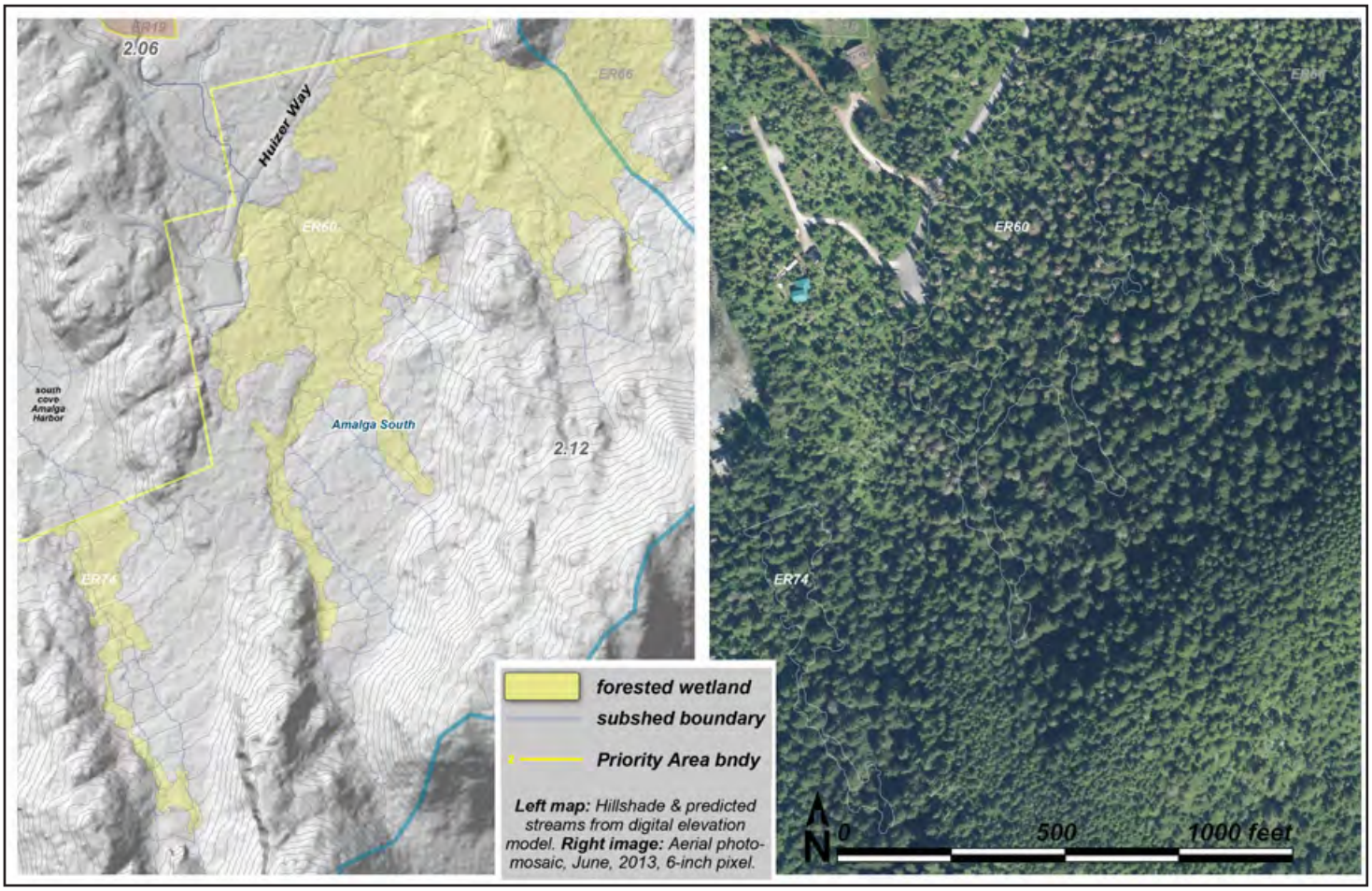
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	7.22	Higher	10.00	Higher
Water Storage	5.42	Higher	10.00	Higher
Phosphorus Retention	4.03	Higher	4.03	Higher
Amphibian Habitat	8.96	Higher	5.76	Moderate
Waterbird Feeding Habitat	7.06	Higher	4.00	Moderate
Sediment Retention & Stabilization	5.22	Higher	0.33	Lower
Nitrate Removal	4.36	Higher	0.96	Lower
Pollinator Habitat	5.41	Moderate	3.36	Moderate
Songbird, Raptor, & Mammal Habitat	5.13	Moderate	3.75	Moderate
Water Warming	4.62	Moderate	0.00	Lower
Water Cooling	4.47	Moderate	0.00	Lower
Invertebrate Habitat	4.41	Moderate	2.78	Lower
Native Plant Habitat	3.29	Moderate	0.57	Lower
Carbon Sequestration	4.53	Moderate	N.A.	N.A.
Stream Flow Support	0.14	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.21	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	8.43	Higher
Public Use & Recognition	N.A.	N.A.	7.91	Higher
Wetland Risk	N.A.	N.A.	7.62	Higher
Wetland Stressors	N.A.	N.A.	6.27	Moderate
Wetland Sensitivity	N.A.	N.A.	3.76	Lower

ER55 • **type:** fen/marsh • **acres:** 1.0 • **boundary criteria**: w-u, type, pa • **pin**: 3B4101000012 • known or probable anadromous fish

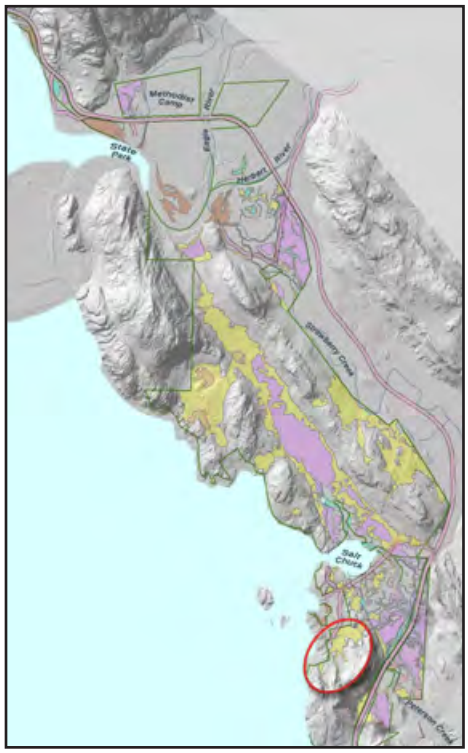
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	9.67	Higher	6.98	Higher
Amphibian Habitat	9.48	Higher	8.67	Higher
Resident Fish Habitat	8.69	Higher	8.46	Higher
Waterbird Nesting Habitat	7.81	Higher	9.90	Higher
Invertebrate Habitat	5.98	Higher	10.00	Higher
Native Plant Habitat	5.76	Higher	9.10	Higher
Water Cooling	5.49	Higher	7.82	Higher
Nitrate Removal	3.61	Higher	6.82	Higher
Anadromous Fish Habitat	9.97	Higher	7.33	Moderate
Water Storage	5.19	Higher	0.00	Lower
Organic Nutrient Export	7.75	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.48	Moderate	8.23	Higher
Stream Flow Support	5.80	Moderate	8.87	Higher
Water Warming	3.28	Moderate	7.95	Higher
Sediment Retention & Stabilization	4.01	Moderate	2.38	Moderate
Phosphorus Retention	3.45	Moderate	3.45	Moderate
Pollinator Habitat	2.81	Lower	9.36	Higher
Carbon Sequestration	2.86	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.11	Higher
Wetland Stressors	N.A.	N.A.	7.13	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.26	Moderate
Public Use & Recognition	N.A.	N.A.	3.88	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower

ER60 • **type:** forested peatland • **acres:** 9.6 • **boundary criteria**: w-u, pa, subsh • **pin**: 3B4001000070 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.66	Higher	4.66	Higher
Nitrate Removal	3.23	Higher	6.57	Higher
Songbird, Raptor, & Mammal Habitat	9.03	Higher	3.33	Moderate
Pollinator Habitat	7.35	Higher	3.26	Moderate
Water Warming	7.00	Higher	5.57	Moderate
Native Plant Habitat	5.60	Higher	3.73	Moderate
Water Cooling	6.51	Higher	1.40	Lower
Invertebrate Habitat	5.89	Higher	1.38	Lower
Organic Nutrient Export	8.21	Higher	N.A.	N.A.
Amphibian Habitat	3.67	Moderate	4.19	Moderate
Stream Flow Support	3.51	Moderate	2.41	Moderate
Water Storage	3.64	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.57	Moderate	0.00	Lower
Carbon Sequestration	5.24	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.08	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.95	Moderate
Wetland Risk	N.A.	N.A.	4.96	Moderate
Public Use & Recognition	N.A.	N.A.	2.92	Moderate
Wetland Ecological Condition	N.A.	N.A.	0.83	Lower



Unit maps for ER60 74



ER61 • **type:** for. peatland • **acres:** 2.0 • **boundary criteria**: w-u, pa • **pin**: 3B4001010010, 20, 30, 40 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.38	Higher	4.38	Higher
Nitrate Removal	4.21	Higher	3.54	Moderate
Sediment Retention & Stabilization	9.25	Higher	0.40	Lower
Water Storage	9.22	Higher	1.11	Lower
Carbon Sequestration	8.76	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.84	Moderate	3.33	Moderate
Amphibian Habitat	3.11	Moderate	1.67	Lower
Pollinator Habitat	4.10	Lower	3.26	Moderate
Native Plant Habitat	2.69	Lower	2.11	Moderate
Stream Flow Support	1.68	Lower	1.84	Moderate
Invertebrate Habitat	3.06	Lower	0.31	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.56	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.09	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Risk	N.A.	N.A.	4.92	Moderate
Public Use & Recognition	N.A.	N.A.	3.90	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.81	Lower

ER62 • **type:** for. peatland • **acres:** 0.7 • **boundary criteria**: w-u, pa • **pin**: 3B4001010040 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	3.95	Higher	3.64	Moderate
Water Storage	9.22	Higher	1.67	Lower
Sediment Retention & Stabilization	8.12	Higher	0.50	Lower
Carbon Sequestration	8.60	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.28	Moderate	3.33	Moderate
Phosphorus Retention	3.44	Moderate	3.44	Moderate
Amphibian Habitat	3.32	Moderate	1.67	Lower
Pollinator Habitat	3.29	Lower	3.26	Moderate
Native Plant Habitat	2.20	Lower	0.43	Lower
Invertebrate Habitat	2.06	Lower	0.08	Lower
Stream Flow Support	0.67	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.08	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	5.99	Moderate
Wetland Risk	N.A.	N.A.	4.24	Moderate
Public Use & Recognition	N.A.	N.A.	4.08	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.51	Lower

ER65 • **type:** forested peatland • **acres:** 3.8 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000060 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	6.77	Higher	1.67	Lower
Water Storage	6.40	Higher	1.67	Lower
Carbon Sequestration	7.52	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.41	Moderate	3.33	Moderate
Phosphorus Retention	3.27	Moderate	3.27	Moderate
Nitrate Removal	2.84	Moderate	3.23	Moderate
Sediment Retention & Stabilization	3.03	Moderate	0.25	Lower
Organic Nutrient Export	6.08	Moderate	N.A.	N.A.
Pollinator Habitat	3.29	Lower	3.26	Moderate
Native Plant Habitat	2.32	Lower	1.81	Lower
Invertebrate Habitat	2.06	Lower	0.65	Lower
Stream Flow Support	0.84	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	7.42	Higher
Wetland Risk	N.A.	N.A.	6.48	Higher
Wetland Stressors	N.A.	N.A.	6.98	Moderate
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.19	Moderate

ER66 • **type:** forested peatland • **acres:** 2.5 • **boundary criteria**: w-u, subsh • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	5.87	Higher	10.00	Higher
Phosphorus Retention	4.33	Higher	4.33	Higher
Songbird, Raptor, & Mammal Habitat	7.63	Higher	3.33	Moderate
Nitrate Removal	3.35	Higher	3.28	Moderate
Water Cooling	6.83	Higher	0.00	Lower
Sediment Retention & Stabilization	4.20	Higher	0.35	Lower
Carbon Sequestration	6.50	Higher	N.A.	N.A.
Resident Fish Habitat	6.65	Moderate	6.54	Higher
Pollinator Habitat	5.55	Moderate	3.26	Moderate
Waterbird Nesting Habitat	5.01	Moderate	0.00	Lower
Native Plant Habitat	4.83	Moderate	0.55	Lower
Amphibian Habitat	3.19	Moderate	3.03	Lower
Water Warming	2.44	Moderate	0.00	Lower
Anadromous Fish Habitat	1.55	Lower	6.67	Moderate
Invertebrate Habitat	1.63	Lower	2.56	Lower
Stream Flow Support	0.76	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.56	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.87	Moderate
Wetland Risk	N.A.	N.A.	6.00	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.39	Moderate
Public Use & Recognition	N.A.	N.A.	2.74	Moderate

ER67 • **type:** uplift meadow • **acres:** 1.0 • **boundary criteria**: w-u, type • **pin**: 3B4001000060 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	6.36	Higher	6.67	Higher
Pollinator Habitat	7.17	Higher	3.36	Moderate
Resident Fish Habitat	6.82	Moderate	6.54	Higher
Songbird, Raptor, & Mammal Habitat	5.76	Moderate	5.00	Moderate
Water Cooling	4.60	Moderate	2.63	Moderate
Amphibian Habitat	4.22	Moderate	5.81	Moderate
Native Plant Habitat	3.46	Moderate	2.71	Moderate
Phosphorus Retention	2.88	Moderate	2.88	Moderate
Nitrate Removal	1.91	Moderate	3.28	Moderate
Carbon Sequestration	5.49	Moderate	N.A.	N.A.
Stream Flow Support	2.02	Lower	4.08	Moderate
Water Storage	1.76	Lower	5.00	Moderate
Invertebrate Habitat	2.77	Lower	2.30	Lower
Sediment Retention & Stabilization	1.68	Lower	0.36	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.74	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.99	Higher
Wetland Stressors	N.A.	N.A.	7.01	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.26	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Public Use & Recognition	N.A.	N.A.	3.67	Moderate

ER68 • **type:** fen/marsh • **acres:** 3.3 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.39	Higher	7.12	Higher
Waterbird Feeding Habitat	7.34	Higher	6.67	Higher
Waterbird Nesting Habitat	6.35	Higher	10.00	Higher
Amphibian Habitat	5.57	Higher	7.86	Higher
Phosphorus Retention	5.00	Higher	5.00	Higher
Songbird, Raptor, & Mammal Habitat	7.42	Higher	5.00	Moderate
Invertebrate Habitat	5.36	Higher	4.55	Moderate
Nitrate Removal	4.56	Higher	3.54	Moderate
Water Cooling	6.83	Higher	0.00	Lower
Native Plant Habitat	6.21	Higher	0.57	Lower
Water Storage	6.05	Higher	1.67	Lower
Sediment Retention & Stabilization	4.53	Higher	0.43	Lower
Carbon Sequestration	6.29	Higher	N.A.	N.A.
Pollinator Habitat	5.55	Moderate	3.36	Moderate
Anadromous Fish Habitat	4.69	Moderate	6.67	Moderate
Water Warming	2.44	Moderate	0.00	Lower
Organic Nutrient Export	6.30	Moderate	N.A.	N.A.
Stream Flow Support	1.18	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.35	Moderate
Wetland Risk	N.A.	N.A.	6.37	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.08	Lower
Public Use & Recognition	N.A.	N.A.	2.25	Lower

ER69 • **type:** uplift meadow • **acres:** 11.4 • **boundary criteria**: w-u, type • **pin**: 3B4001000060 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	8.51	Higher	10.00	Higher
Phosphorus Retention	4.01	Higher	4.01	Higher
Nitrate Removal	4.24	Higher	3.54	Moderate
Sediment Retention & Stabilization	7.74	Higher	0.40	Lower
Songbird, Raptor, & Mammal Habitat	4.29	Moderate	5.00	Moderate
Amphibian Habitat	3.84	Moderate	1.67	Lower
Carbon Sequestration	5.45	Moderate	N.A.	N.A.
Invertebrate Habitat	1.69	Lower	0.14	Lower
Pollinator Habitat	1.04	Lower	0.00	Lower
Native Plant Habitat	0.98	Lower	1.01	Lower
Stream Flow Support	0.34	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.86	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.51	Higher
Wetland Stressors	N.A.	N.A.	7.63	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.95	Moderate
Public Use & Recognition	N.A.	N.A.	2.83	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower

ER70 • **type:** forested peatland • **acres:** 1.5 • **boundary criteria**: w-u, type • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	4.16	Higher	6.82	Higher
Phosphorus Retention	4.10	Higher	4.10	Higher
Songbird, Raptor, & Mammal Habitat	7.84	Higher	3.33	Moderate
Pollinator Habitat	7.36	Higher	3.26	Moderate
Water Cooling	5.94	Higher	2.68	Moderate
Sediment Retention & Stabilization	4.23	Higher	4.43	Moderate
Native Plant Habitat	7.44	Higher	1.13	Lower
Water Storage	6.37	Higher	1.11	Lower
Resident Fish Habitat	7.18	Moderate	7.12	Higher
Stream Flow Support	3.51	Moderate	6.43	Higher
Anadromous Fish Habitat	7.37	Moderate	6.67	Moderate
Water Warming	4.62	Moderate	5.51	Moderate
Waterbird Nesting Habitat	3.38	Moderate	0.00	Lower
Amphibian Habitat	2.98	Moderate	3.20	Lower
Organic Nutrient Export	7.31	Moderate	N.A.	N.A.
Carbon Sequestration	5.15	Moderate	N.A.	N.A.
Invertebrate Habitat	0.95	Lower	3.35	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.84	Higher
Wetland Stressors	N.A.	N.A.	7.29	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.25	Moderate
Wetland Sensitivity	N.A.	N.A.	4.44	Lower
Public Use & Recognition	N.A.	N.A.	2.25	Lower

ER71 • **type:** floodplain wetland • **acres:** 4.4 • **boundary criteria**: w-u, type, pa • **pin**: 3B4001000010 • known or probable anadromous fish

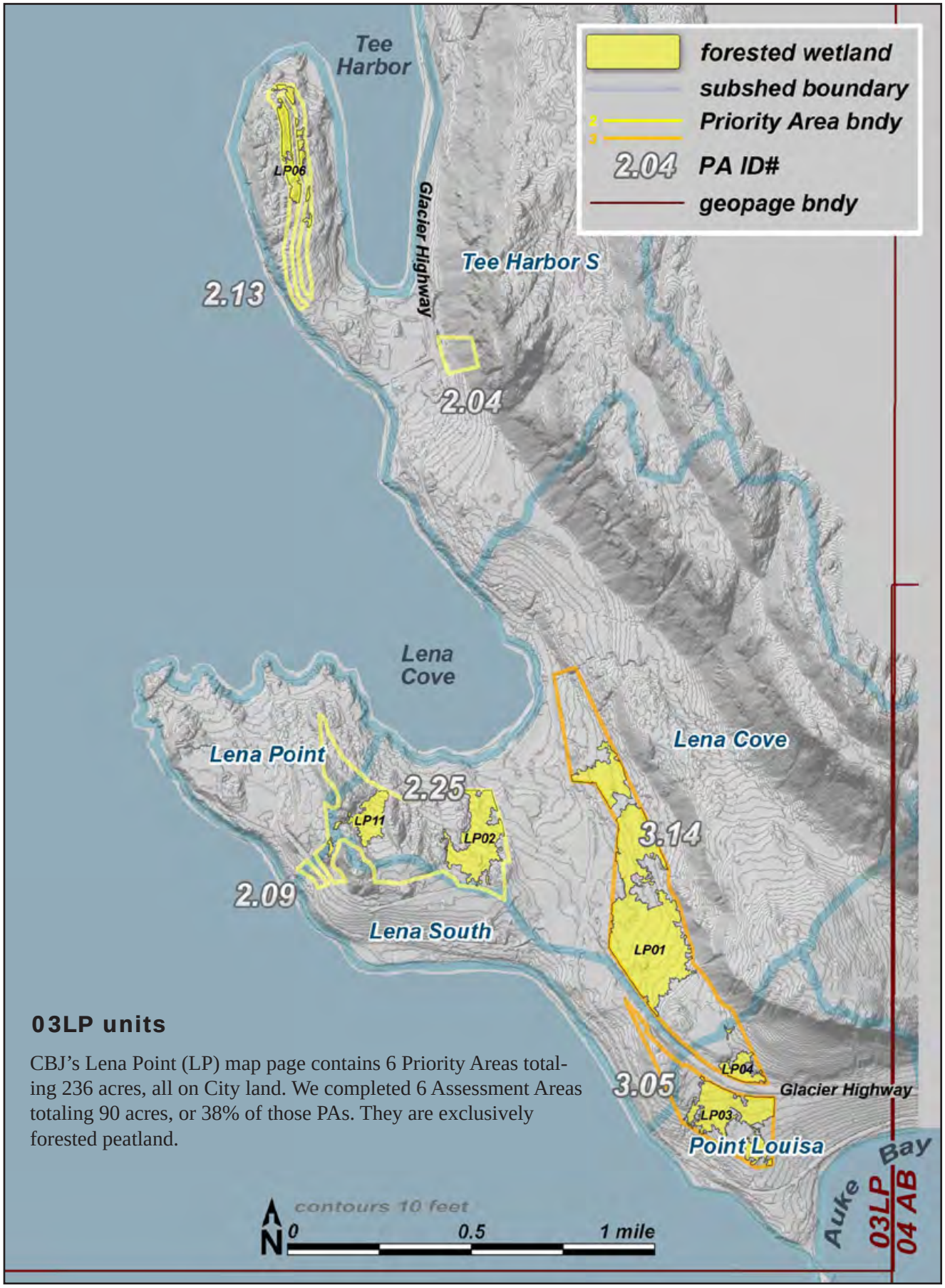
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.60	Higher	6.54	Higher
Waterbird Feeding Habitat	8.07	Higher	6.67	Higher
Nitrate Removal	4.84	Higher	6.31	Higher
Anadromous Fish Habitat	10.00	Higher	6.67	Moderate
Invertebrate Habitat	6.22	Higher	4.70	Moderate
Water Cooling	4.85	Moderate	7.83	Higher
Water Warming	4.12	Moderate	7.68	Higher
Waterbird Nesting Habitat	5.61	Moderate	9.70	Moderate
Songbird, Raptor, & Mammal Habitat	4.76	Moderate	4.93	Moderate
Sediment Retention & Stabilization	3.81	Moderate	2.85	Moderate
Phosphorus Retention	3.78	Moderate	3.78	Moderate
Native Plant Habitat	4.85	Moderate	0.43	Lower
Water Storage	3.98	Moderate	0.56	Lower
Organic Nutrient Export	7.32	Moderate	N.A.	N.A.
Stream Flow Support	2.57	Lower	8.90	Higher
Pollinator Habitat	2.31	Lower	3.26	Moderate
Amphibian Habitat	1.55	Lower	6.14	Moderate
Carbon Sequestration	2.65	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.98	Moderate
Wetland Risk	N.A.	N.A.	5.13	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.30	Lower
Wetland Ecological Condition	N.A.	N.A.	1.16	Lower

ER73 • **type:** forested peatland • **acres:** 2.3 • **boundary criteria**: w-u, pa • **pin**: 3B3901000121 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.42	Higher	4.42	Higher
Nitrate Removal	4.35	Higher	6.77	Higher
Songbird, Raptor, & Mammal Habitat	7.63	Higher	3.33	Moderate
Water Storage	5.94	Higher	1.11	Lower
Carbon Sequestration	6.12	Higher	N.A.	N.A.
Resident Fish Habitat	6.27	Moderate	6.15	Higher
Pollinator Habitat	5.74	Moderate	3.26	Moderate
Anadromous Fish Habitat	4.79	Moderate	6.67	Moderate
Water Warming	4.62	Moderate	4.27	Moderate
Sediment Retention & Stabilization	3.10	Moderate	3.81	Moderate
Water Cooling	5.17	Moderate	1.12	Lower
Native Plant Habitat	3.40	Moderate	0.60	Lower
Amphibian Habitat	2.97	Moderate	3.03	Lower
Waterbird Nesting Habitat	2.78	Moderate	0.00	Lower
Organic Nutrient Export	6.25	Moderate	N.A.	N.A.
Stream Flow Support	2.41	Lower	5.37	Higher
Invertebrate Habitat	1.72	Lower	2.68	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	9.59	Higher
Wetland Risk	N.A.	N.A.	9.30	Higher
Wetland Ecological Condition	N.A.	N.A.	4.32	Moderate
Wetland Sensitivity	N.A.	N.A.	2.15	Lower
Public Use & Recognition	N.A.	N.A.	1.88	Lower

ER74 • **type:** forested peatland • **acres:** 1.1 • **boundary criteria**: w-u, pa • **pin**: 3B4001000070 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.45	Higher	3.33	Moderate
Nitrate Removal	2.17	Moderate	6.82	Higher
Pollinator Habitat	4.93	Moderate	3.26	Moderate
Water Warming	4.62	Moderate	3.16	Moderate
Stream Flow Support	3.51	Moderate	1.74	Moderate
Water Cooling	5.17	Moderate	1.26	Lower
Water Storage	3.52	Moderate	1.11	Lower
Amphibian Habitat	3.28	Moderate	2.88	Lower
Organic Nutrient Export	6.82	Moderate	N.A.	N.A.
Invertebrate Habitat	2.55	Lower	0.59	Lower
Phosphorus Retention	1.77	Lower	1.77	Lower
Native Plant Habitat	1.77	Lower	0.43	Lower
Sediment Retention & Stabilization	1.25	Lower	0.48	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.12	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	7.05	Moderate
Wetland Risk	N.A.	N.A.	5.71	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.29	Lower
Public Use & Recognition	N.A.	N.A.	2.19	Lower

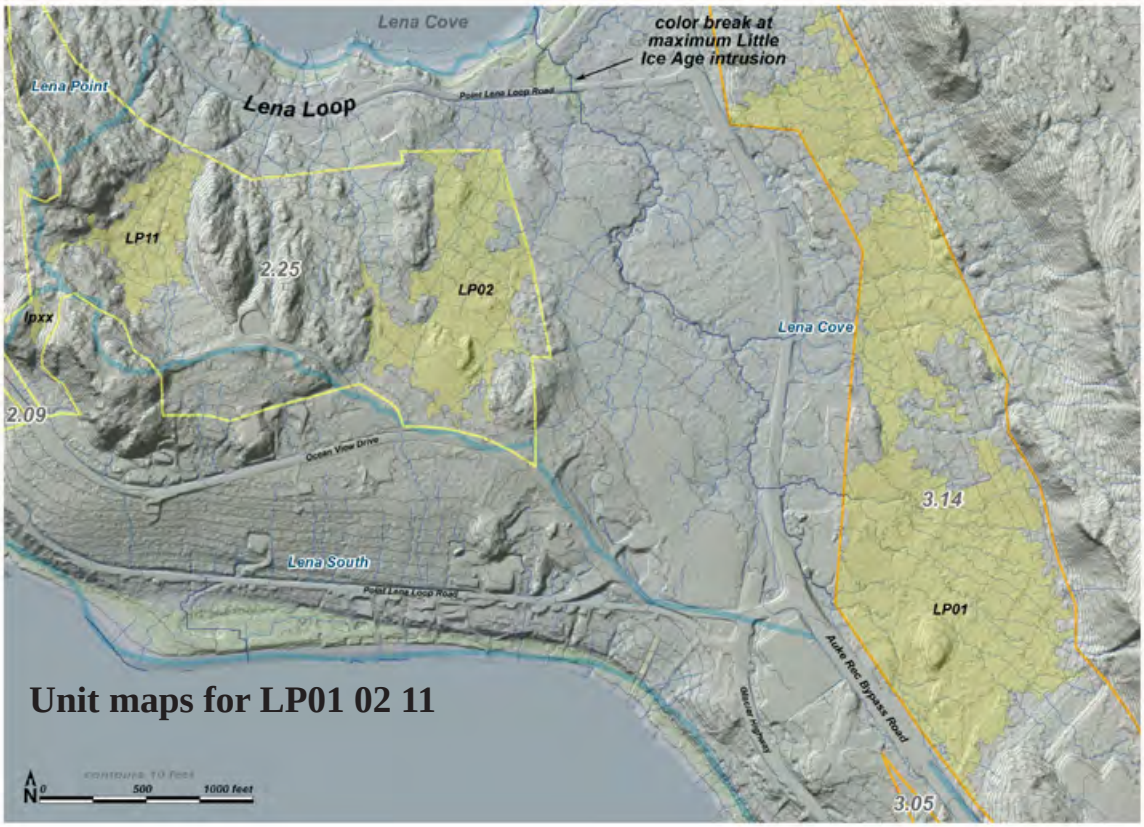


03LP units

CBJ's Lena Point (LP) map page contains 6 Priority Areas totaling 236 acres, all on City land. We completed 6 Assessment Areas totaling 90 acres, or 38% of those PAs. They are exclusively forested peatland.

LP01 • **type:** forested peatland • **acres:** 47.3 • **boundary criteria**: w-u, pa • **pin**: 8B3401000100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	3.27	Higher	3.54	Moderate
Invertebrate Habitat	7.31	Higher	0.57	Lower
Carbon Sequestration	8.22	Higher	N.A.	N.A.
Pollinator Habitat	6.66	Moderate	4.07	Moderate
Native Plant Habitat	4.26	Moderate	2.31	Moderate
Phosphorus Retention	3.85	Moderate	3.85	Moderate
Songbird, Raptor, & Mammal Habitat	6.91	Moderate	2.50	Lower
Water Cooling	4.60	Moderate	1.26	Lower
Amphibian Habitat	3.87	Moderate	2.43	Lower
Sediment Retention & Stabilization	2.55	Moderate	0.28	Lower
Organic Nutrient Export	6.74	Moderate	N.A.	N.A.
Stream Flow Support	2.32	Lower	2.69	Moderate
Water Storage	1.03	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.95	Moderate
Wetland Risk	N.A.	N.A.	5.72	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.56	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower



Unit maps for LP01 02 11

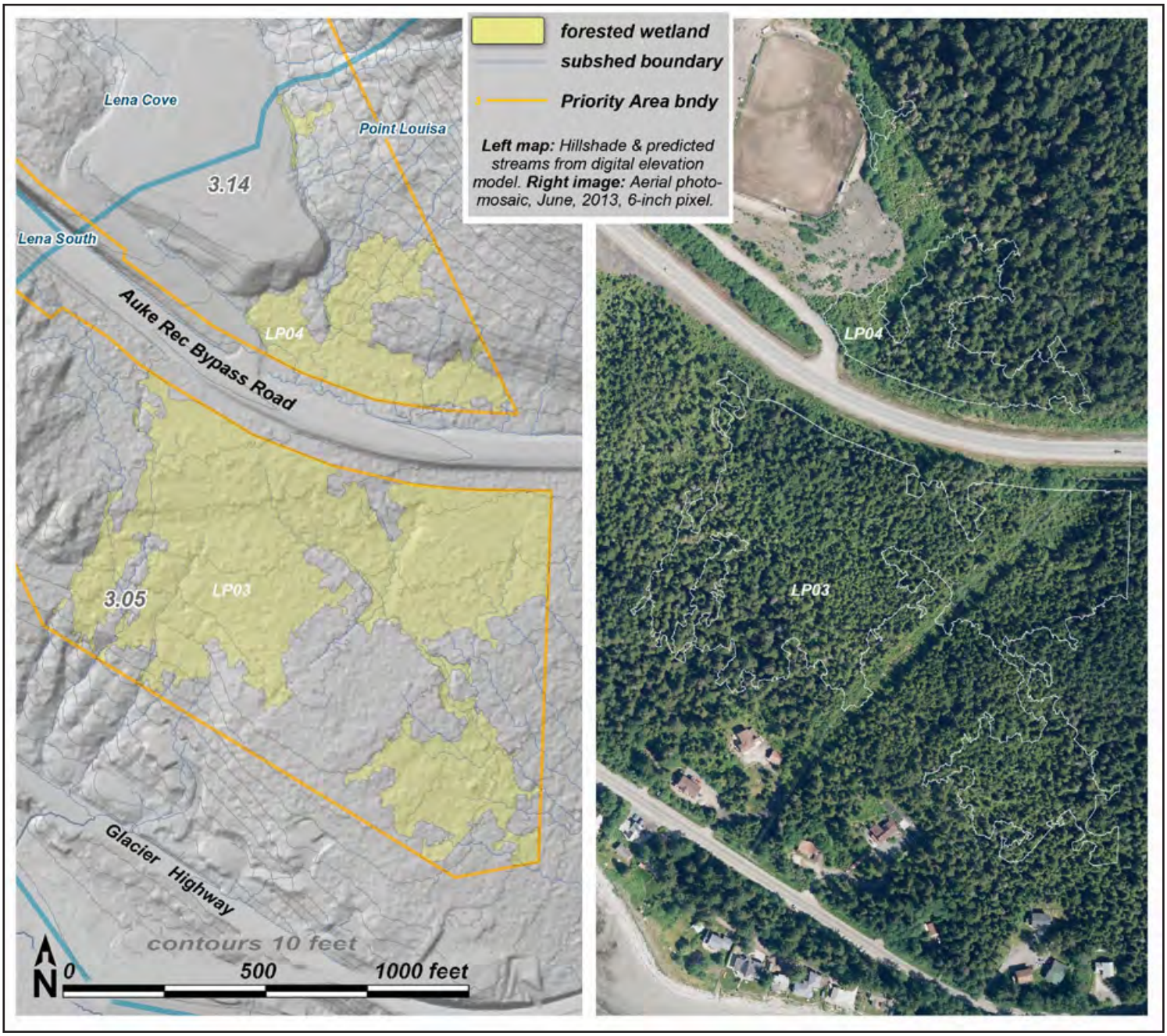
Left map: *Hillshade & predicted streams from digital elevation model.* **Right image:** *Aerial photo-mosaic, June, 2013, 6-inch pixel.*

LP02 • **type:** forested peatland • **acres:** 13.4 • **boundary criteria**: w-u, pa • **pin**: 8B3301070090 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.46	Higher	4.46	Higher
Nitrate Removal	4.01	Higher	5.96	Higher
Pollinator Habitat	8.48	Higher	4.34	Moderate
Stream Flow Support	8.07	Higher	1.96	Moderate
Water Cooling	7.34	Higher	3.07	Moderate
Water Warming	5.97	Higher	3.72	Moderate
Songbird, Raptor, & Mammal Habitat	8.16	Higher	2.50	Lower
Organic Nutrient Export	8.67	Higher	N.A.	N.A.
Water Storage	4.16	Moderate	5.00	Moderate
Native Plant Habitat	3.31	Moderate	2.74	Moderate
Sediment Retention & Stabilization	2.96	Moderate	2.73	Moderate
Waterbird Nesting Habitat	3.81	Moderate	0.00	Lower
Invertebrate Habitat	3.66	Moderate	1.19	Lower
Amphibian Habitat	2.89	Moderate	3.47	Lower
Carbon Sequestration	4.99	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.78	Higher
Wetland Risk	N.A.	N.A.	7.33	Higher
Wetland Ecological Condition	N.A.	N.A.	4.20	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower

LP03 • **type:** forested peatland • **acres:** 14.3 • **boundary criteria**: w-u, pa • **pin**: 8B3401000100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.45	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	7.88	Higher	3.33	Moderate
Organic Nutrient Export	8.01	Higher	N.A.	N.A.
Carbon Sequestration	7.28	Higher	N.A.	N.A.
Water Warming	2.44	Moderate	5.90	Higher
Native Plant Habitat	5.14	Moderate	2.31	Moderate
Water Cooling	4.98	Moderate	3.07	Moderate
Stream Flow Support	4.08	Moderate	1.68	Moderate
Phosphorus Retention	3.60	Moderate	3.60	Moderate
Water Storage	3.31	Moderate	6.11	Moderate
Waterbird Nesting Habitat	2.71	Moderate	0.00	Lower
Nitrate Removal	1.81	Lower	7.37	Higher
Sediment Retention & Stabilization	2.09	Lower	2.85	Moderate
Amphibian Habitat	2.28	Lower	3.23	Lower
Invertebrate Habitat	2.26	Lower	0.92	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.10	Moderate
Wetland Risk	N.A.	N.A.	4.41	Moderate
Public Use & Recognition	N.A.	N.A.	4.06	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.64	Lower



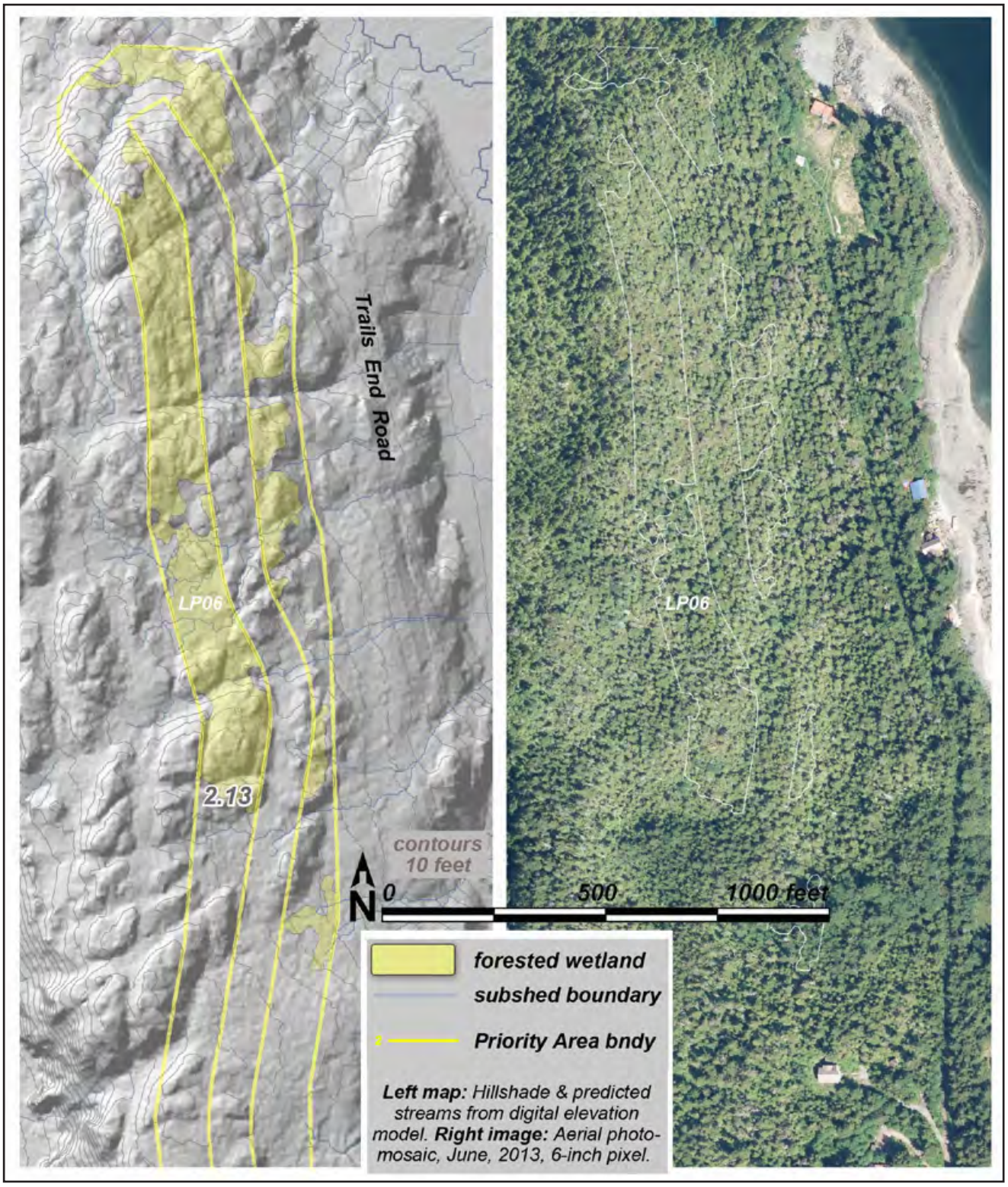
Unit maps for LP03 04

LP04 • **type:** forested peatland • **acres:** 3.1 • **boundary criteria**: w-u, pa • **pin**: 8B3401000100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.67	Higher	3.33	Moderate
Native Plant Habitat	5.37	Higher	2.31	Moderate
Water Warming	5.25	Higher	4.11	Moderate
Water Cooling	5.46	Higher	1.23	Lower
Organic Nutrient Export	8.05	Higher	N.A.	N.A.
Nitrate Removal	2.62	Moderate	7.17	Higher
Pollinator Habitat	6.07	Moderate	4.07	Moderate
Phosphorus Retention	3.79	Moderate	3.79	Moderate
Stream Flow Support	3.26	Moderate	1.66	Moderate
Water Storage	2.88	Moderate	6.11	Moderate
Carbon Sequestration	5.88	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.67	Lower	3.83	Moderate
Invertebrate Habitat	2.18	Lower	0.49	Lower
Amphibian Habitat	2.08	Lower	3.06	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	7.45	Moderate
Wetland Risk	N.A.	N.A.	5.98	Moderate
Public Use & Recognition	N.A.	N.A.	2.69	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.94	Lower

LP06 • **type:** for. peatland • **acres:** 6.1 • **boundary criteria**: w-u, pa • **pin**: 8B3601020070 • no known or probable anadromous fish

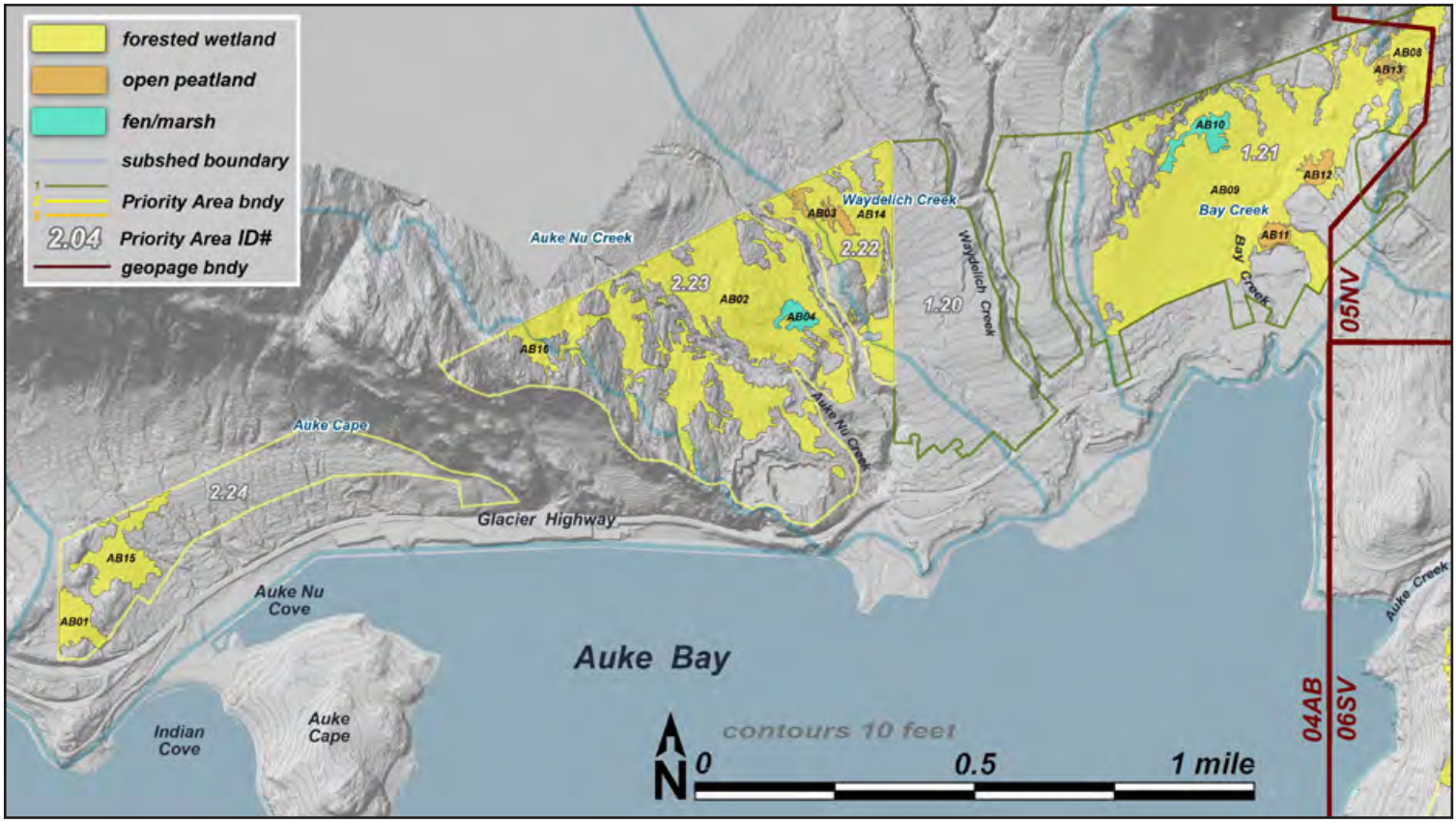
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.34	Higher	10.00	Higher
Water Cooling	5.94	Higher	2.42	Moderate
Resident Fish Habitat	6.65	Moderate	7.69	Higher
Pollinator Habitat	5.11	Moderate	7.99	Higher
Native Plant Habitat	4.21	Moderate	7.14	Higher
Stream Flow Support	3.36	Moderate	6.21	Higher
Nitrate Removal	2.01	Moderate	8.96	Higher
Anadromous Fish Habitat	6.91	Moderate	6.67	Moderate
Water Warming	4.62	Moderate	3.66	Moderate
Phosphorus Retention	3.20	Moderate	3.20	Moderate
Amphibian Habitat	2.88	Moderate	5.00	Moderate
Water Storage	3.82	Moderate	3.06	Lower
Waterbird Nesting Habitat	3.21	Moderate	0.00	Lower
Organic Nutrient Export	7.02	Moderate	N.A.	N.A.
Carbon Sequestration	4.12	Moderate	N.A.	N.A.
Invertebrate Habitat	1.51	Lower	10.00	Higher
Sediment Retention & Stabilization	1.70	Lower	3.04	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	8.12	Higher
Wetland Ecological Condition	N.A.	N.A.	6.88	Higher
Wetland Stressors	N.A.	N.A.	7.40	Moderate
Public Use & Recognition	N.A.	N.A.	3.81	Moderate
Wetland Sensitivity	N.A.	N.A.	2.08	Lower



Unit map for LP06

LP11 • **type:** forested peatland • **acres:** 5.5 • **boundary criteria**: w-u, pa • **pin**: 8B3301070090, 8B3301010120 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.78	Higher	4.34	Moderate
Songbird, Raptor, & Mammal Habitat	8.38	Higher	2.50	Lower
Organic Nutrient Export	8.42	Higher	N.A.	N.A.
Stream Flow Support	5.04	Moderate	5.65	Higher
Water Cooling	4.66	Moderate	6.05	Higher
Water Warming	2.94	Moderate	8.13	Higher
Resident Fish Habitat	6.00	Moderate	4.62	Moderate
Anadromous Fish Habitat	5.48	Moderate	4.00	Moderate
Native Plant Habitat	4.84	Moderate	2.74	Moderate
Water Storage	4.14	Moderate	1.11	Lower
Sediment Retention & Stabilization	2.32	Moderate	0.43	Lower
Carbon Sequestration	5.77	Moderate	N.A.	N.A.
Nitrate Removal	1.72	Lower	3.54	Moderate
Invertebrate Habitat	2.34	Lower	2.39	Lower
Amphibian Habitat	2.10	Lower	3.65	Lower
Phosphorus Retention	1.99	Lower	1.99	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.81	Moderate
Wetland Risk	N.A.	N.A.	5.97	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.45	Moderate
Public Use & Recognition	N.A.	N.A.	1.19	Lower



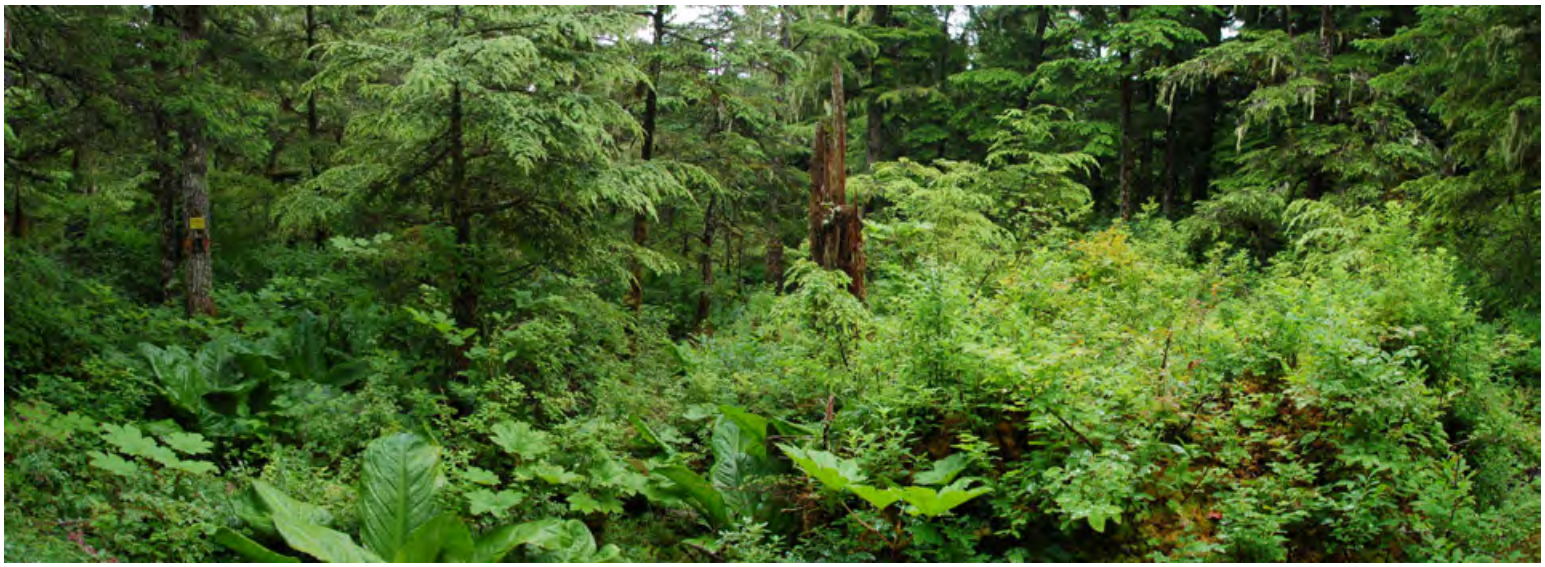
04AB units

CBJ's Auke Bay (AB) map page contains 5 Priority Areas[1] totaling 375 acres, about half of which are on City land. A mile-long band in the middle belongs to the University of Alaska, and another piece framing Waydelich Creek is private.

There are 16 completed wetland Assessment Areas (AAs) on this map page totaling 277 acres, representing 74% of the combined Priority Areas. The large majority of these wetlands are forested (*fw*), with small sphagnum bogs (*op*) on gentle benches to the east, and slightly higher-gradient rich fens (*fm*)

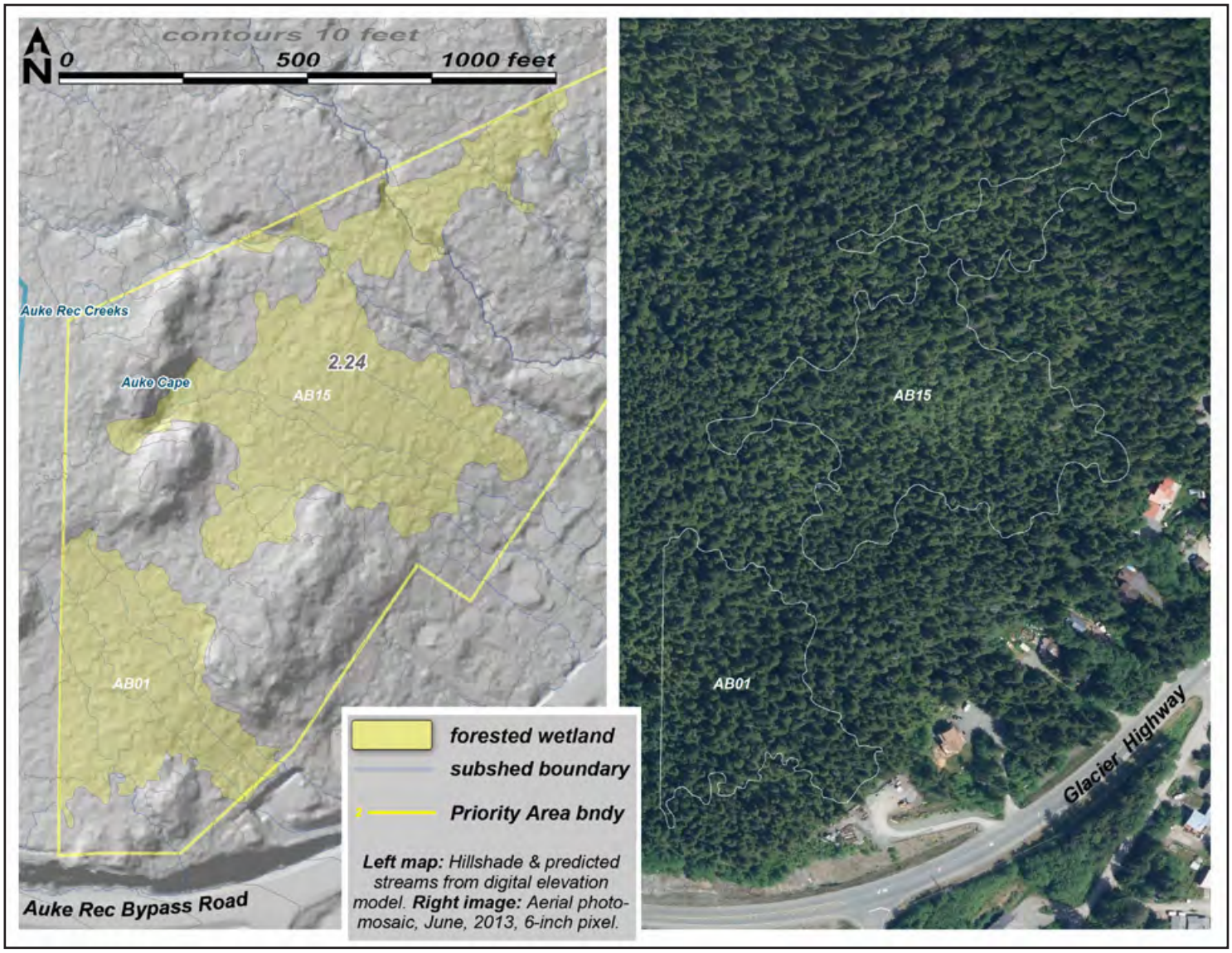
We divided the Auke Bay map page into 5 subsheds, shown here with blue lines. **Auke Cape** subshed drains 0.8 square miles southward through mostly ephemeral channels to beaches on either side of Auke Cape. **Auke Nu Creek** subshed drains 1.6 mi^2 southeast, mostly through the 2 deeply entrenched canyons of the stream it's named for. **Waydelich Creek** subshed drains 2.1 mi^2, in channels that similarly converge and canyonize before passing under Glacier Highway. **Bay Creek** subshed, home of Auke Bay Elementary School, drains 0.4 mi^2.

1 The easternmost PA, 1.21, extends eastward off the Auke Bay map page onto the North Valley map page.

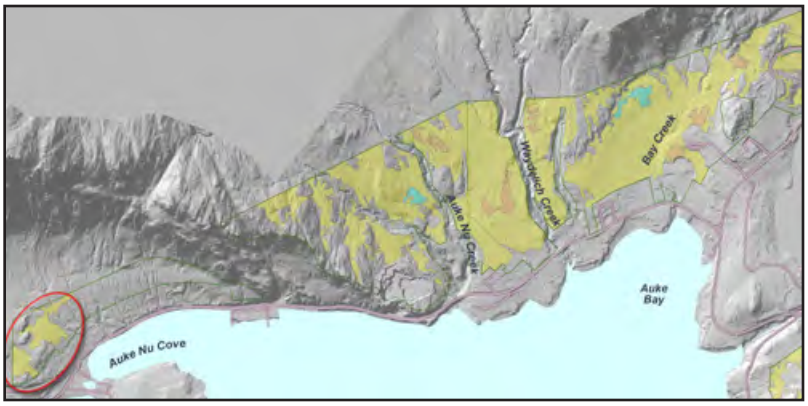


AB01 • **type:** forested peatland • **acres:** 3.7 • **boundary criteria**: w-u, pa • **pin**: 4B3001020020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.85	Higher	4.07	Moderate
Native Plant Habitat	7.79	Higher	2.31	Moderate
Water Warming	7.00	Higher	4.16	Moderate
Songbird, Raptor, & Mammal Habitat	9.38	Higher	2.50	Lower
Water Cooling	6.51	Higher	1.23	Lower
Invertebrate Habitat	5.64	Higher	0.83	Lower
Organic Nutrient Export	8.58	Higher	N.A.	N.A.
Nitrate Removal	2.33	Moderate	6.57	Higher
Stream Flow Support	3.36	Moderate	2.36	Moderate
Water Storage	3.06	Moderate	1.11	Lower
Carbon Sequestration	4.84	Moderate	N.A.	N.A.
Amphibian Habitat	2.63	Lower	4.48	Moderate
Sediment Retention & Stabilization	1.10	Lower	3.81	Moderate
Phosphorus Retention	2.51	Lower	2.51	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.23	Moderate
Wetland Risk	N.A.	N.A.	6.35	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.30	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.16	Lower

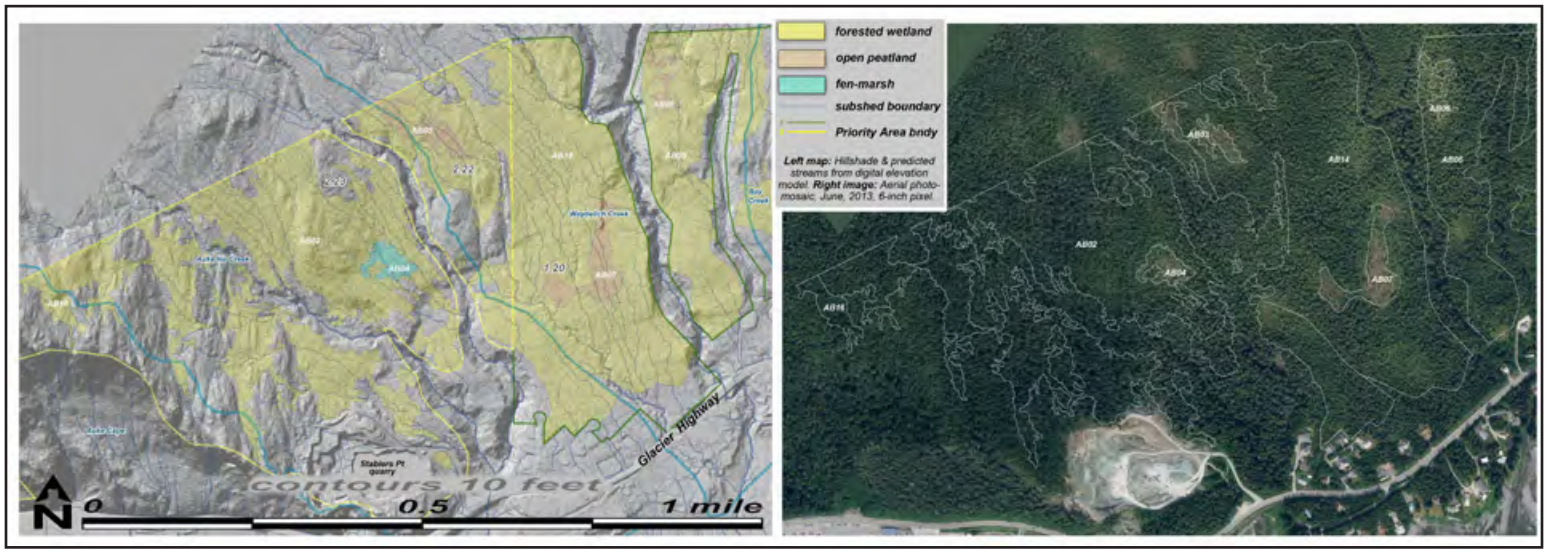


Unit maps for AB01 15

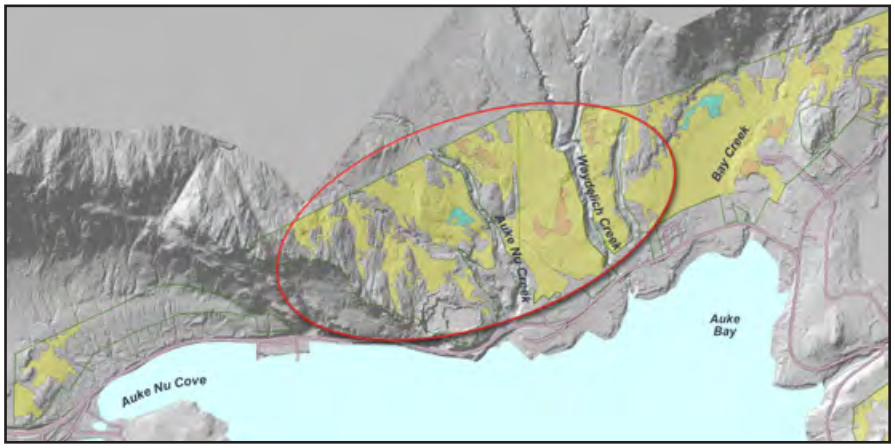


AB02 • **type:** forested peatland • **acres:** 63.2 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B3001020020, 21 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.32	Higher	5.98	Higher
Phosphorus Retention	4.37	Higher	4.37	Higher
Nitrate Removal	4.04	Higher	6.57	Higher
Pollinator Habitat	7.26	Higher	4.07	Moderate
Stream Flow Support	7.23	Higher	2.38	Moderate
Water Cooling	6.32	Higher	3.07	Moderate
Songbird, Raptor, & Mammal Habitat	9.86	Higher	2.50	Lower
Invertebrate Habitat	5.77	Higher	0.94	Lower
Organic Nutrient Export	8.66	Higher	N.A.	N.A.
Native Plant Habitat	3.26	Moderate	2.31	Moderate
Amphibian Habitat	2.91	Moderate	4.89	Moderate
Sediment Retention & Stabilization	2.88	Moderate	3.91	Moderate
Water Storage	4.74	Moderate	1.11	Lower
Carbon Sequestration	5.01	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.86	Moderate
Wetland Risk	N.A.	N.A.	5.08	Moderate
Public Use & Recognition	N.A.	N.A.	2.58	Moderate
Wetland Sensitivity	N.A.	N.A.	2.20	Lower
Wetland Ecological Condition	N.A.	N.A.	1.33	Lower



Unit maps for AB02 03 04 05 06 07 14 16



AB03 • **type:** open peatland • **acres:** 2.0 • **boundary criteria**: type, pa • **pin**: 4B3001020020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.05	Higher	4.47	Moderate
Songbird, Raptor, & Mammal Habitat	7.89	Higher	2.50	Lower
Organic Nutrient Export	7.72	Higher	N.A.	N.A.
Native Plant Habitat	3.85	Moderate	2.95	Moderate
Water Warming	3.57	Moderate	3.61	Moderate
Water Storage	4.22	Moderate	1.11	Lower
Water Cooling	3.42	Moderate	1.23	Lower
Carbon Sequestration	5.93	Moderate	N.A.	N.A.
Nitrate Removal	1.61	Lower	6.31	Higher
Stream Flow Support	2.02	Lower	1.56	Moderate
Sediment Retention & Stabilization	1.46	Lower	3.76	Moderate
Amphibian Habitat	2.32	Lower	3.24	Lower
Invertebrate Habitat	1.70	Lower	0.56	Lower
Phosphorus Retention	1.67	Lower	1.67	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	6.29	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.21	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

AB04 • **type:** fen/marsh • **acres:** 1.5 • **boundary criteria**: type • **pin**: 4B3001020020 60 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.06	Higher	5.00	Moderate
Pollinator Habitat	7.41	Higher	4.47	Moderate
Organic Nutrient Export	7.90	Higher	N.A.	N.A.
Amphibian Habitat	4.72	Moderate	6.44	Higher
Native Plant Habitat	4.34	Moderate	2.95	Moderate
Water Warming	3.70	Moderate	3.82	Moderate
Invertebrate Habitat	4.75	Moderate	1.44	Lower
Waterbird Feeding Habitat	4.48	Moderate	0.00	Lower
Water Storage	4.22	Moderate	1.11	Lower
Water Cooling	3.26	Moderate	1.23	Lower
Carbon Sequestration	5.66	Moderate	N.A.	N.A.
Nitrate Removal	1.79	Lower	6.57	Higher
Stream Flow Support	3.15	Lower	2.18	Moderate
Sediment Retention & Stabilization	1.74	Lower	3.86	Moderate
Phosphorus Retention	1.83	Lower	1.83	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Risk	N.A.	N.A.	6.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.92	Moderate
Public Use & Recognition	N.A.	N.A.	1.59	Lower

AB05 • **type:** forested peatland • **acres:** 23.52 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B2801040270 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.48	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.77	Moderate	7.56	Higher
Pollinator Habitat	4.79	Moderate	8.42	Higher
Native Plant Habitat	4.22	Moderate	7.76	Higher
Invertebrate Habitat	4.10	Moderate	10.00	Higher
Sediment Retention & Stabilization	3.61	Moderate	10.00	Higher
Amphibian Habitat	3.47	Moderate	6.67	Higher
Water Cooling	4.60	Moderate	2.63	Moderate
Stream Flow Support	4.03	Moderate	2.05	Moderate
Phosphorus Retention	3.08	Moderate	3.08	Moderate
Nitrate Removal	2.54	Moderate	3.54	Moderate
Organic Nutrient Export	6.81	Moderate	N.A.	N.A.
Water Storage	1.40	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.73	Higher
Wetland Stressors	N.A.	N.A.	7.13	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.38	Moderate
Wetland Sensitivity	N.A.	N.A.	3.98	Lower
Public Use & Recognition	N.A.	N.A.	1.76	Lower

AB06 • **type:** open peatland • **acres:** 1.09 • **boundary criteria**: type, pa • **pin**: 4B2801040270 • no known or probable anadromous fish • no known or probable anadromous fish

this is just the AB05 table for a placeholder - Paul's xlsx doesn't have the new 2015 additions

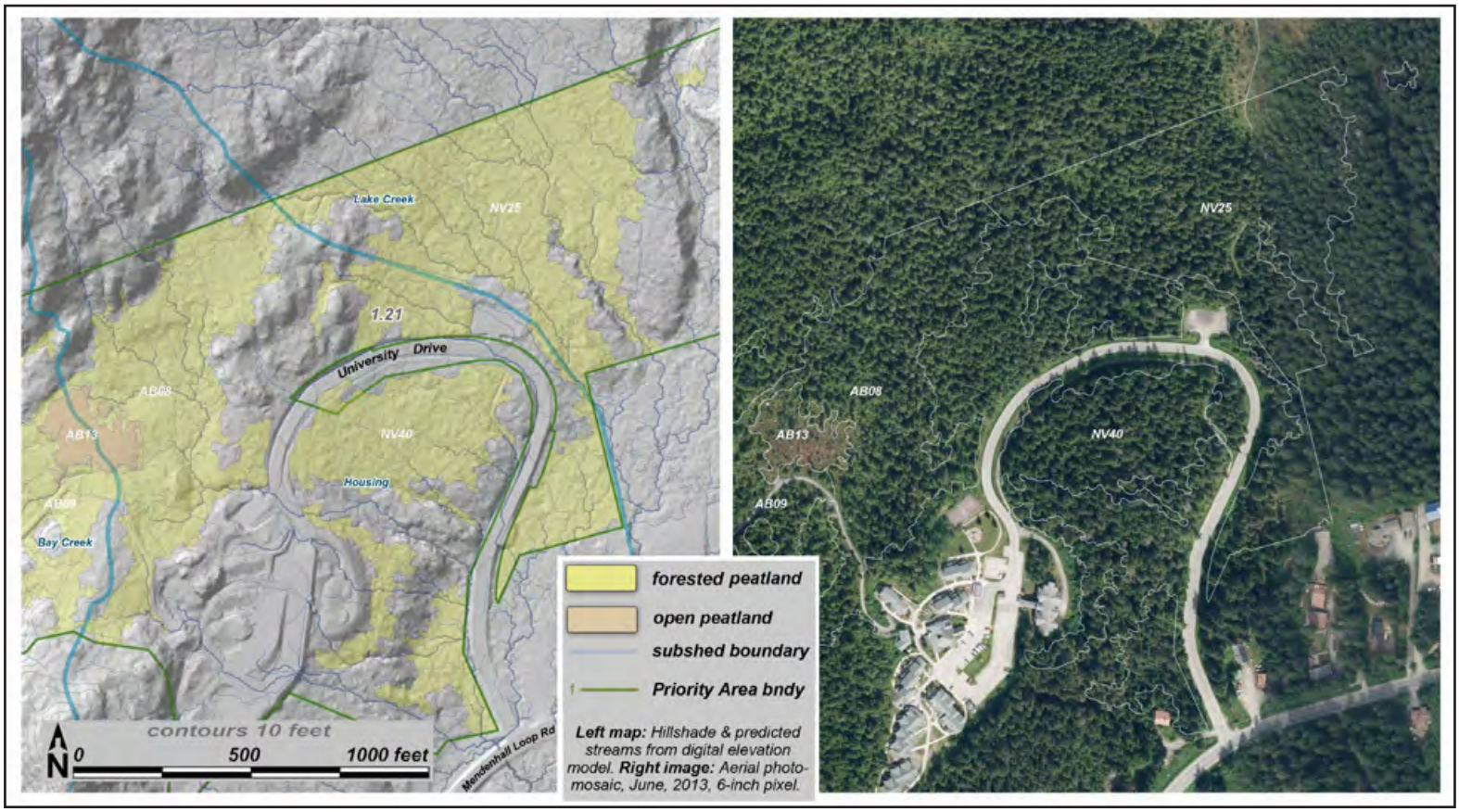
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.48	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.77	Moderate	7.56	Higher
Pollinator Habitat	4.79	Moderate	8.42	Higher
Native Plant Habitat	4.22	Moderate	7.76	Higher
Invertebrate Habitat	4.10	Moderate	10.00	Higher
Sediment Retention & Stabilization	3.61	Moderate	10.00	Higher
Amphibian Habitat	3.47	Moderate	6.67	Higher
Water Cooling	4.60	Moderate	2.63	Moderate
Stream Flow Support	4.03	Moderate	2.05	Moderate
Phosphorus Retention	3.08	Moderate	3.08	Moderate
Nitrate Removal	2.54	Moderate	3.54	Moderate
Organic Nutrient Export	6.81	Moderate	N.A.	N.A.
Water Storage	1.40	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.73	Higher
Wetland Stressors	N.A.	N.A.	7.13	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.38	Moderate
Wetland Sensitivity	N.A.	N.A.	3.98	Lower
Public Use & Recognition	N.A.	N.A.	1.76	Lower

AB07 • **type:** open peatland • **acres:** 3.69 • **boundary criteria**: type • **pin**: 4B2801040270 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.89	Higher	9.40	Higher
Songbird, Raptor, & Mammal Habitat	7.80	Higher	8.67	Higher
Waterbird Nesting Habitat	4.37	Moderate	10.00	Higher
Native Plant Habitat	3.87	Moderate	9.14	Higher
Sediment Retention & Stabilization	2.66	Moderate	10.00	Higher
Nitrate Removal	2.06	Moderate	6.57	Higher
Waterbird Feeding Habitat	4.72	Moderate	5.33	Moderate
Phosphorus Retention	3.74	Moderate	3.74	Moderate
Water Warming	3.19	Moderate	3.47	Moderate
Water Storage	4.76	Moderate	1.11	Lower
Water Cooling	3.96	Moderate	1.23	Lower
Organic Nutrient Export	7.43	Moderate	N.A.	N.A.
Carbon Sequestration	5.60	Moderate	N.A.	N.A.
Invertebrate Habitat	2.70	Lower	10.00	Higher
Amphibian Habitat	0.86	Lower	8.33	Higher
Stream Flow Support	2.27	Lower	1.76	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	6.28	Moderate
Wetland Sensitivity	N.A.	N.A.	5.05	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.19	Moderate
Public Use & Recognition	N.A.	N.A.	1.42	Lower

AB08 • **type:** for. peatland • **acres:** 9.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B2801030131, 40 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.97	Higher	3.97	Higher
Carbon Sequestration	7.82	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.70	Moderate	3.33	Moderate
Pollinator Habitat	4.82	Moderate	4.07	Moderate
Nitrate Removal	2.95	Moderate	3.54	Moderate
Invertebrate Habitat	4.94	Moderate	0.31	Lower
Water Cooling	4.60	Moderate	1.05	Lower
Amphibian Habitat	3.33	Moderate	1.42	Lower
Sediment Retention & Stabilization	3.08	Moderate	0.28	Lower
Organic Nutrient Export	7.04	Moderate	N.A.	N.A.
Stream Flow Support	1.82	Lower	2.21	Moderate
Native Plant Habitat	1.56	Lower	2.31	Moderate
Water Storage	1.09	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.24	Moderate
Wetland Risk	N.A.	N.A.	4.69	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.27	Lower
Wetland Ecological Condition	N.A.	N.A.	1.93	Lower



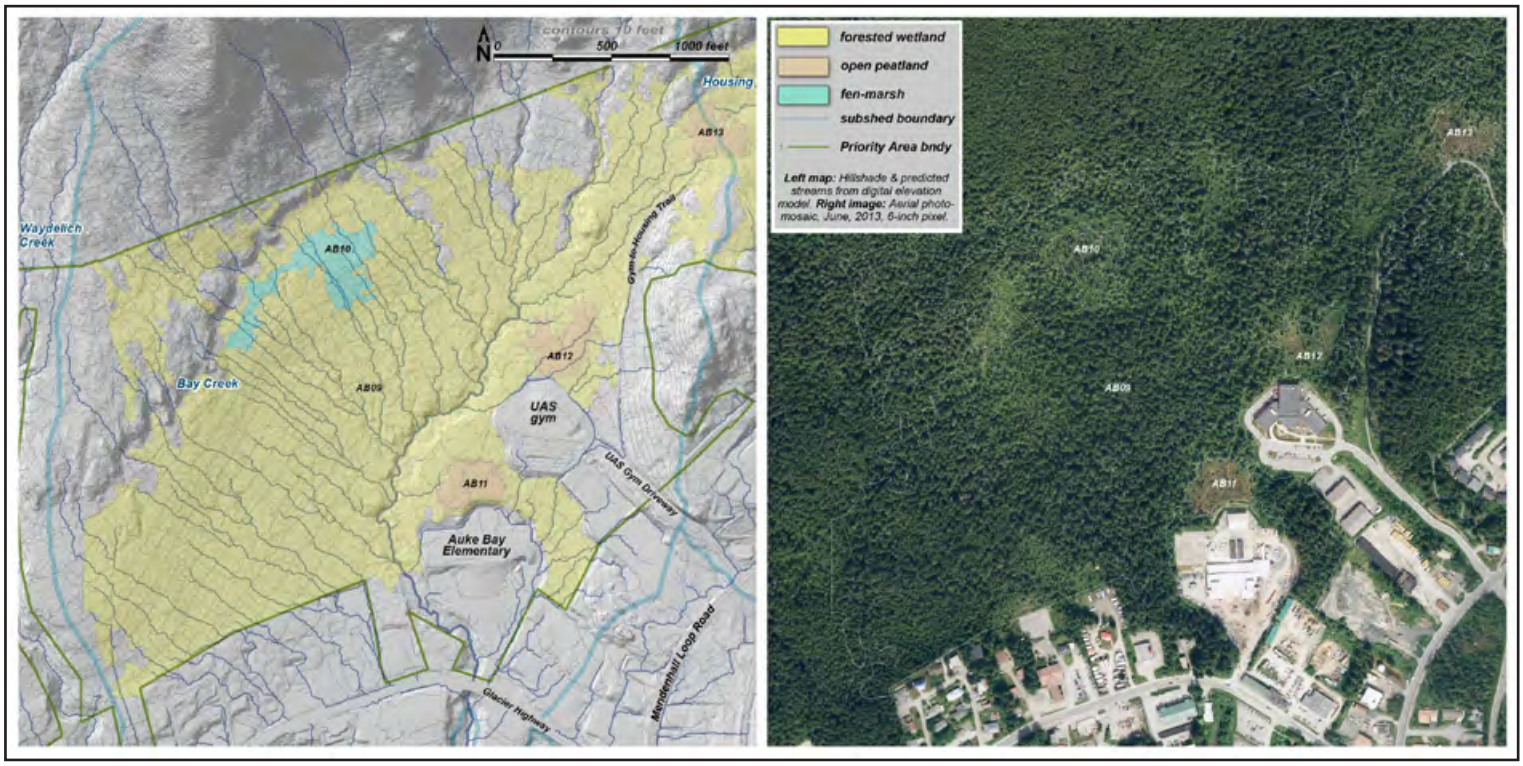
Unit maps for AB08 NV25 40

AB09 • **type:** forested peatland • **acres:** 82.1 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B2801030121, 31, 50 • known or probable anadromous fish

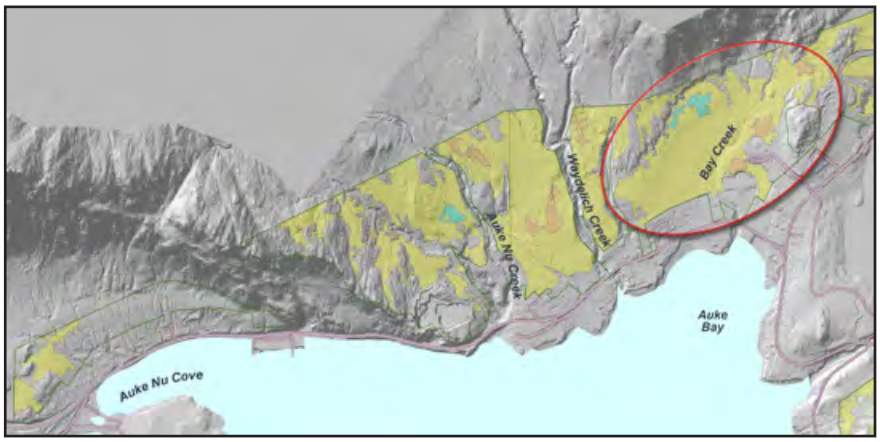
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.89	Higher	3.89	Higher
Anadromous Fish Habitat	8.17	Higher	6.17	Moderate
Songbird, Raptor, & Mammal Habitat	7.77	Higher	3.33	Moderate
Pollinator Habitat	7.70	Higher	4.07	Moderate
Native Plant Habitat	6.15	Higher	3.42	Moderate
Organic Nutrient Export	8.28	Higher	N.A.	N.A.
Carbon Sequestration	6.73	Higher	N.A.	N.A.
Resident Fish Habitat	6.53	Moderate	7.12	Higher
Water Cooling	4.98	Moderate	6.60	Higher
Stream Flow Support	4.29	Moderate	6.85	Higher
Water Warming	2.44	Moderate	5.99	Higher
Nitrate Removal	2.13	Moderate	6.82	Higher
Sediment Retention & Stabilization	2.92	Moderate	3.93	Moderate
Water Storage	4.81	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.33	Moderate	0.00	Lower
Amphibian Habitat	2.96	Moderate	3.14	Lower
Invertebrate Habitat	2.69	Lower	3.36	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.30	Moderate
Wetland Risk	N.A.	N.A.	5.93	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.57	Moderate
Public Use & Recognition	N.A.	N.A.	3.09	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower

AB10 • **type:** fen/marsh • **acres:** 2.7 • **boundary criteria**: type • **pin**: 4B2801030131 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.90	Higher	5.56	Moderate
Pollinator Habitat	7.15	Higher	4.47	Moderate
Native Plant Habitat	5.96	Higher	2.95	Moderate
Amphibian Habitat	5.66	Higher	5.93	Moderate
Water Cooling	5.78	Higher	1.05	Lower
Organic Nutrient Export	8.05	Higher	N.A.	N.A.
Carbon Sequestration	6.41	Higher	N.A.	N.A.
Stream Flow Support	4.50	Moderate	2.26	Moderate
Nitrate Removal	2.89	Moderate	3.54	Moderate
Invertebrate Habitat	5.17	Moderate	1.44	Lower
Water Warming	4.75	Moderate	2.23	Lower
Water Storage	4.59	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.93	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.75	Moderate	0.37	Lower
Phosphorus Retention	1.84	Lower	1.84	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.08	Moderate
Wetland Risk	N.A.	N.A.	6.27	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.47	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.11	Lower



Unit maps for AB09 10 11 12 13



AB11 • **type:** open peatland • **acres:** 1.2 • **boundary criteria**: type • **pin**: 4B2801030121, 31 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Sediment Retention & Stabilization	4.75	Higher	0.09	Lower
Carbon Sequestration	8.66	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.83	Moderate	7.33	Higher
Songbird, Raptor, & Mammal Habitat	5.38	Moderate	5.56	Moderate
Pollinator Habitat	4.88	Moderate	4.47	Moderate
Phosphorus Retention	3.07	Moderate	3.07	Moderate
Invertebrate Habitat	5.20	Moderate	0.80	Lower
Water Cooling	4.60	Moderate	0.00	Lower
Nitrate Removal	2.30	Moderate	3.03	Lower
Native Plant Habitat	2.88	Lower	2.95	Moderate
Amphibian Habitat	2.46	Lower	4.44	Moderate
Water Storage	2.20	Lower	1.67	Lower
Stream Flow Support	0.84	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.53	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	7.54	Higher
Wetland Risk	N.A.	N.A.	7.02	Higher
Wetland Stressors	N.A.	N.A.	7.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.99	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower

AB12 • **type:** open peatland • **acres:** 1.5 • **boundary criteria**: w-u, type • **pin**: 4B2801030121 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.44	Higher	5.56	Moderate
Native Plant Habitat	5.86	Higher	3.01	Moderate
Carbon Sequestration	6.85	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.18	Moderate	10.00	Higher
Pollinator Habitat	6.20	Moderate	4.47	Moderate
Waterbird Feeding Habitat	3.79	Moderate	5.33	Moderate
Water Warming	3.57	Moderate	3.06	Moderate
Phosphorus Retention	3.18	Moderate	3.18	Moderate
Water Cooling	4.18	Moderate	0.61	Lower
Water Storage	3.26	Moderate	1.11	Lower
Organic Nutrient Export	6.57	Moderate	N.A.	N.A.
Nitrate Removal	0.67	Lower	6.57	Higher
Amphibian Habitat	1.94	Lower	5.46	Moderate
Stream Flow Support	1.68	Lower	1.68	Moderate
Sediment Retention & Stabilization	1.15	Lower	2.70	Moderate
Invertebrate Habitat	2.30	Lower	1.52	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.38	Moderate
Wetland Risk	N.A.	N.A.	6.32	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.26	Moderate
Public Use & Recognition	N.A.	N.A.	3.50	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower

AB13 • **type:** open peatland • **acres:** 1.03 • **boundary criteria**: type, subsh • **pin**: 4B2801030140 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	10.00	Higher	10.00	Higher
Water Storage	10.00	Higher	10.00	Higher
Nitrate Removal	10.00	Higher	2.78	Lower
Sediment Retention & Stabilization	10.00	Higher	0.00	Lower
Carbon Sequestration	10.00	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.83	Moderate	6.33	Higher
Songbird, Raptor, & Mammal Habitat	5.06	Moderate	5.56	Moderate
Water Cooling	4.60	Moderate	0.00	Lower
Amphibian Habitat	2.20	Lower	4.18	Moderate
Native Plant Habitat	1.55	Lower	2.95	Moderate
Invertebrate Habitat	2.24	Lower	0.72	Lower
Pollinator Habitat	0.94	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Stream Flow Support	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	0.00	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.43	Moderate
Wetland Risk	N.A.	N.A.	6.10	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.63	Moderate
Public Use & Recognition	N.A.	N.A.	2.58	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower

AB14 • **type:** forested peatland • **acres:** 14.9 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B3001020021 • no known or probable anadromous fish

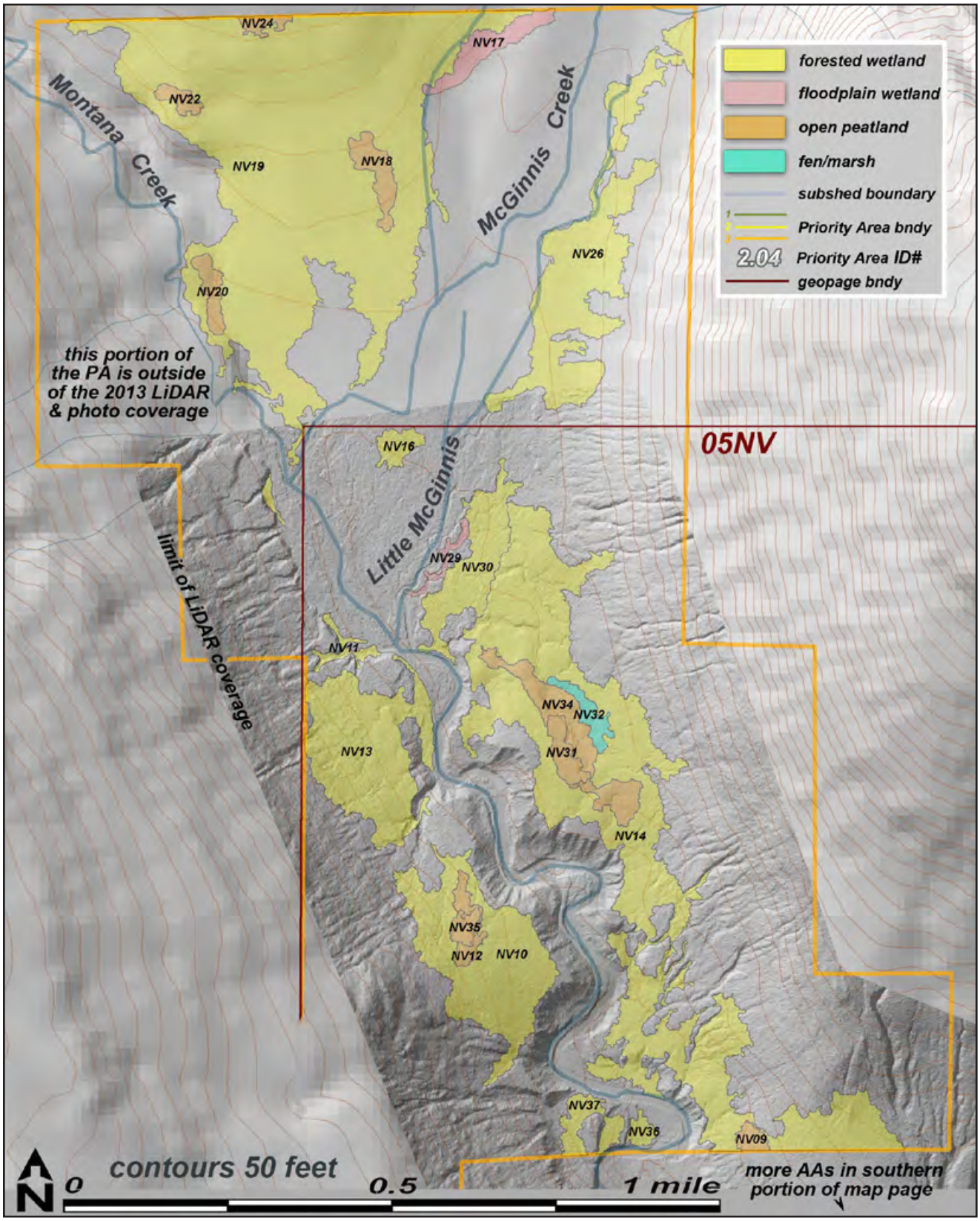
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	7.52	Higher	2.31	Moderate
Water Cooling	5.98	Higher	3.07	Moderate
Songbird, Raptor, & Mammal Habitat	8.21	Higher	2.50	Lower
Organic Nutrient Export	9.16	Higher	N.A.	N.A.
Carbon Sequestration	6.34	Higher	N.A.	N.A.
Nitrate Removal	2.12	Moderate	6.57	Higher
Pollinator Habitat	4.99	Moderate	4.07	Moderate
Stream Flow Support	3.83	Moderate	2.22	Moderate
Water Warming	3.15	Moderate	5.22	Moderate
Phosphorus Retention	2.75	Moderate	2.75	Moderate
Invertebrate Habitat	4.94	Moderate	0.67	Lower
Water Storage	3.50	Moderate	1.11	Lower
Amphibian Habitat	2.86	Moderate	3.50	Lower
Sediment Retention & Stabilization	1.61	Lower	3.71	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.73	Moderate
Wetland Risk	N.A.	N.A.	4.94	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.38	Lower
Wetland Ecological Condition	N.A.	N.A.	1.33	Lower

AB15 • **type:** forested peatland • **acres:** 7.3 • **boundary criteria**: w-u, pa • **pin**: 4B3001020020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.63	Higher	4.07	Moderate
Stream Flow Support	6.72	Higher	1.84	Moderate
Native Plant Habitat	6.05	Higher	2.31	Moderate
Water Cooling	5.94	Higher	2.63	Moderate
Songbird, Raptor, & Mammal Habitat	8.24	Higher	2.50	Lower
Organic Nutrient Export	8.25	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	5.92	Higher
Nitrate Removal	2.32	Moderate	6.57	Higher
Water Storage	4.49	Moderate	1.11	Lower
Sediment Retention & Stabilization	2.65	Moderate	0.43	Lower
Carbon Sequestration	5.44	Moderate	N.A.	N.A.
Invertebrate Habitat	3.05	Lower	0.62	Lower
Amphibian Habitat	2.44	Lower	3.53	Lower
Phosphorus Retention	1.71	Lower	1.71	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.23	Moderate
Wetland Risk	N.A.	N.A.	6.29	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.17	Lower
Public Use & Recognition	N.A.	N.A.	1.88	Lower

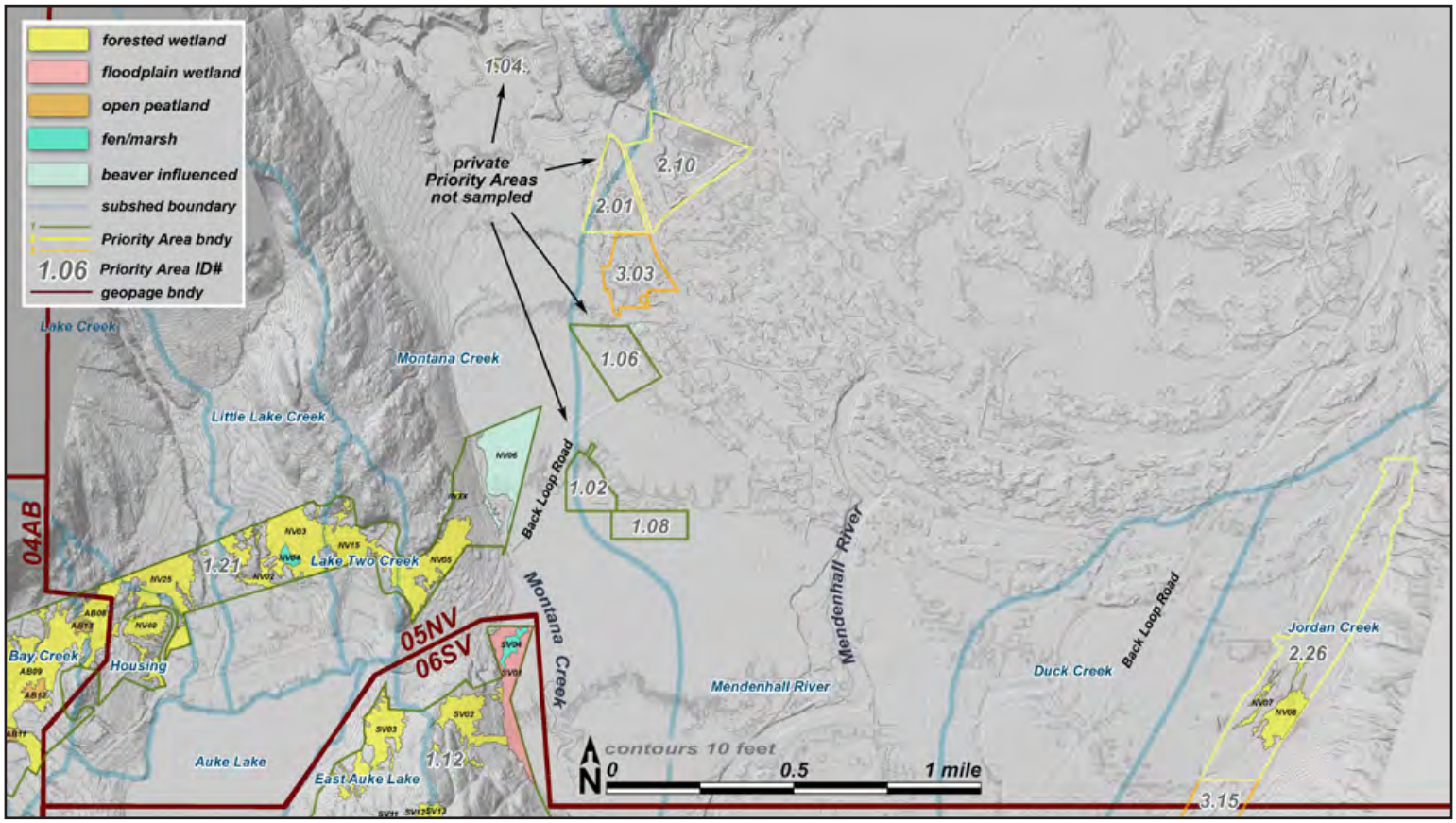
AB16 • **type:** forested peatland • **acres:** 2.2 • **boundary criteria**: w-u, subsh • **pin**: 4B3001020020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	6.52	Higher	2.31	Moderate
Water Warming	5.38	Higher	5.22	Moderate
Songbird, Raptor, & Mammal Habitat	8.35	Higher	2.50	Lower
Organic Nutrient Export	8.34	Higher	N.A.	N.A.
Carbon Sequestration	6.30	Higher	N.A.	N.A.
Pollinator Habitat	6.07	Moderate	4.07	Moderate
Water Cooling	4.73	Moderate	3.07	Moderate
Stream Flow Support	3.83	Moderate	2.10	Moderate
Phosphorus Retention	2.70	Moderate	2.70	Moderate
Invertebrate Habitat	4.38	Moderate	0.69	Lower
Amphibian Habitat	2.83	Moderate	3.62	Lower
Nitrate Removal	1.46	Lower	6.57	Higher
Sediment Retention & Stabilization	0.82	Lower	3.71	Moderate
Water Storage	1.89	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.73	Moderate
Wetland Risk	N.A.	N.A.	5.20	Moderate
Public Use & Recognition	N.A.	N.A.	2.38	Lower
Wetland Ecological Condition	N.A.	N.A.	1.91	Lower



05NV units

Within the North Valley (NV) map page, our Assessment Areas were distributed in 2 well-separated clusters. The northern cluster (mapped above) is far up Montana Creek—extending off the terrain covered by the CBJ imagery and LiDAR, onto State Lands at the confluence of Montana and McGinnis Creeks. The southern units span the portion of Mendenhall Valley abutting the USFS Recreation Area.



CBJ's 05NV map page contains 9 Priority Areas totaling 1,206 acres.[1] Only 78 of these acres are on City land at the base of Thunder Mountain. Another 1,040 acres are in the large PA 3.09 owned by the State of Alaska, at the confluence of Montana and McGinnis Creeks. The remaining 100 acres are on 7 privately owned, mostly unsurveyed PAs. In 2025 we did a few "off-site" assessments for these private parcels, strictly in GIS.

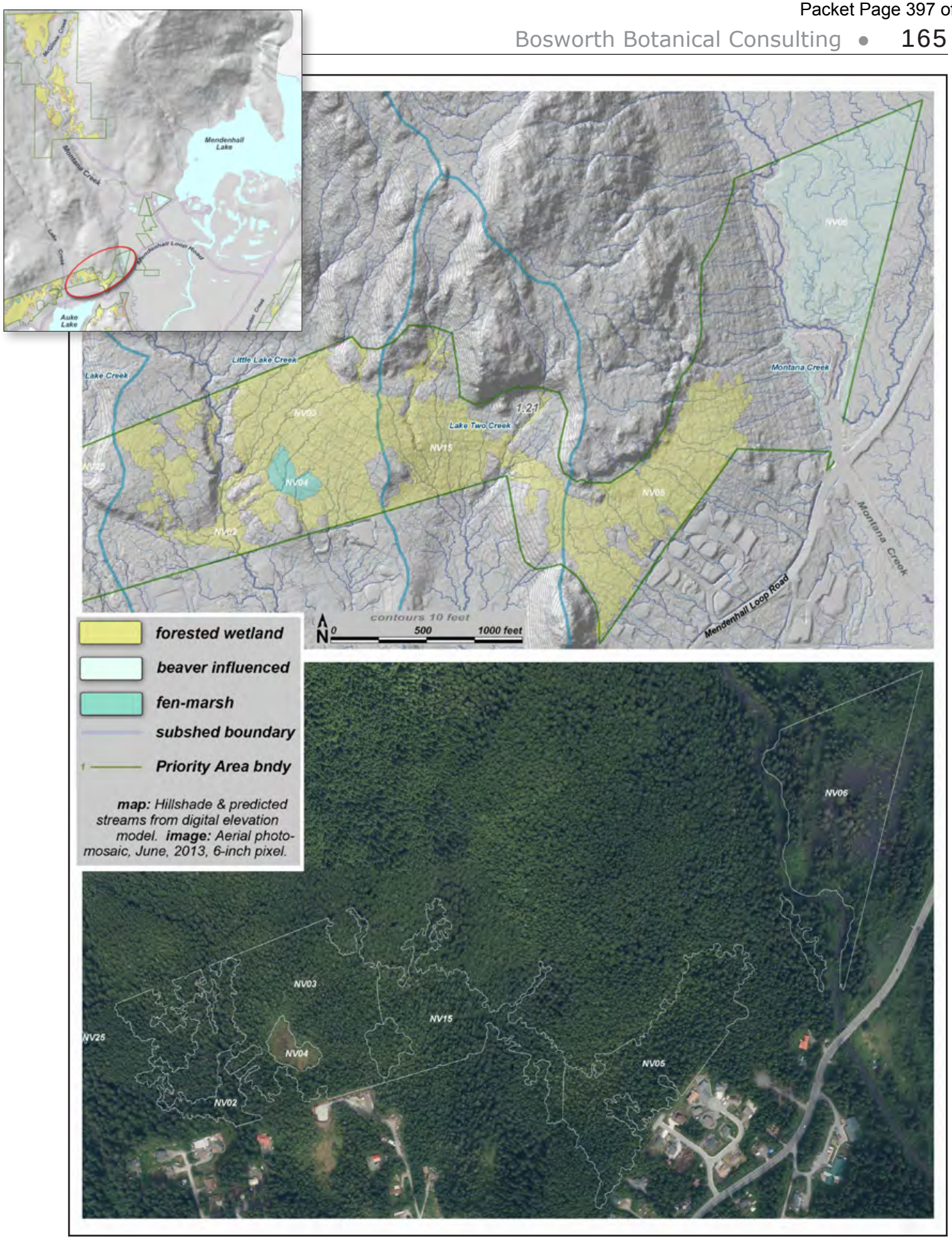
Overall, we completed 31 Assessment Areas on the North Valley map page, totaling 402 acres, or 33% of the combined PAs.

1 This total does not include the portion of PA 1.21, previously described for the Auke Bay map page, that extends eastward onto the NV page.

NV02 • **type:** forested peatland • **acres:** 1.8 • **boundary criteria**: w-u, pa • **pin**: 4B2701080130 • known or probable anadromous fish

This unit was assessed during our training week and was separated from NV03 by a channel—a boundary criteria we later discarded.

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.12	Higher	10.00	Higher
Stream Flow Support	8.03	Higher	6.42	Higher
Pollinator Habitat	7.08	Higher	7.75	Higher
Native Plant Habitat	6.49	Higher	6.81	Higher
Water Warming	5.78	Higher	6.21	Higher
Anadromous Fish Habitat	7.85	Higher	4.50	Moderate
Organic Nutrient Export	8.25	Higher	N.A.	N.A.
Carbon Sequestration	6.33	Higher	N.A.	N.A.
Water Cooling	4.83	Moderate	6.90	Higher
Water Storage	3.98	Moderate	10.00	Higher
Nitrate Removal	2.19	Moderate	6.57	Higher
Resident Fish Habitat	5.85	Moderate	5.19	Moderate
Waterbird Feeding Habitat	5.49	Moderate	4.49	Moderate
Waterbird Nesting Habitat	4.34	Moderate	9.10	Moderate
Phosphorus Retention	3.42	Moderate	3.42	Moderate
Invertebrate Habitat	2.30	Lower	10.00	Higher
Amphibian Habitat	1.77	Lower	8.02	Higher
Sediment Retention & Stabilization	2.11	Lower	3.78	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.32	Moderate
Wetland Sensitivity	N.A.	N.A.	4.95	Moderate
Wetland Stressors	N.A.	N.A.	2.44	Lower
Wetland Risk	N.A.	N.A.	2.17	Lower
Public Use & Recognition	N.A.	N.A.	1.51	Lower



Unit maps for NV02 03 04 05 06 15

NV03 • **type:** for. peatland • **acres:** 17.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B2701080130 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.09	Higher	4.07	Moderate
Native Plant Habitat	5.78	Higher	4.25	Moderate
Songbird, Raptor, & Mammal Habitat	9.59	Higher	2.50	Lower
Organic Nutrient Export	8.59	Higher	N.A.	N.A.
Carbon Sequestration	6.24	Higher	N.A.	N.A.
Stream Flow Support	4.03	Moderate	1.77	Moderate
Water Warming	3.68	Moderate	5.27	Moderate
Water Cooling	3.30	Moderate	3.07	Moderate
Amphibian Habitat	3.24	Moderate	4.66	Moderate
Phosphorus Retention	3.12	Moderate	3.12	Moderate
Sediment Retention & Stabilization	2.40	Moderate	2.81	Moderate
Water Storage	4.20	Moderate	1.11	Lower
Nitrate Removal	1.63	Lower	6.57	Higher
Invertebrate Habitat	2.74	Lower	0.93	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.73	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Risk	N.A.	N.A.	4.94	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.72	Moderate
Public Use & Recognition	N.A.	N.A.	1.42	Lower

NV04 • **type:** fen/marsh • **acres:** 1.1 • **boundary criteria**: type • **pin**: 4B2701080130 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.15	Higher	5.00	Moderate
Carbon Sequestration	7.75	Higher	N.A.	N.A.
Waterbird Nesting Habitat	3.67	Moderate	10.00	Higher
Native Plant Habitat	3.96	Moderate	2.95	Moderate
Waterbird Feeding Habitat	3.76	Moderate	5.00	Moderate
Water Cooling	4.50	Moderate	0.53	Lower
Water Storage	4.24	Moderate	1.11	Lower
Water Warming	3.07	Moderate	1.02	Lower
Organic Nutrient Export	6.05	Moderate	N.A.	N.A.
Pollinator Habitat	4.00	Lower	4.47	Moderate
Amphibian Habitat	1.91	Lower	5.19	Moderate
Nitrate Removal	1.79	Lower	3.54	Moderate
Stream Flow Support	1.76	Lower	1.55	Moderate
Phosphorus Retention	2.56	Lower	2.56	Lower
Sediment Retention & Stabilization	2.05	Lower	0.33	Lower
Invertebrate Habitat	1.64	Lower	1.39	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.23	Higher
Wetland Stressors	N.A.	N.A.	7.39	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.91	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.27	Lower

NV05 • **type:** forested peatland • **acres:** 13.1 • **boundary criteria**: w-u, pa, subsh • **pin**: 4B2701080130 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.00	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	9.36	Higher	2.50	Lower
Invertebrate Habitat	5.52	Higher	0.93	Lower
Organic Nutrient Export	7.81	Higher	N.A.	N.A.
Water Cooling	5.08	Moderate	2.63	Moderate
Native Plant Habitat	4.54	Moderate	2.31	Moderate
Stream Flow Support	4.29	Moderate	2.33	Moderate
Phosphorus Retention	3.79	Moderate	3.79	Moderate
Amphibian Habitat	3.60	Moderate	4.47	Moderate
Water Warming	3.36	Moderate	4.94	Moderate
Nitrate Removal	2.54	Moderate	3.54	Moderate
Water Storage	4.14	Moderate	1.11	Lower
Carbon Sequestration	5.63	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.71	Lower	0.43	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Stressors	N.A.	N.A.	4.80	Lower
Wetland Risk	N.A.	N.A.	3.50	Lower
Wetland Ecological Condition	N.A.	N.A.	2.69	Lower
Public Use & Recognition	N.A.	N.A.	1.04	Lower

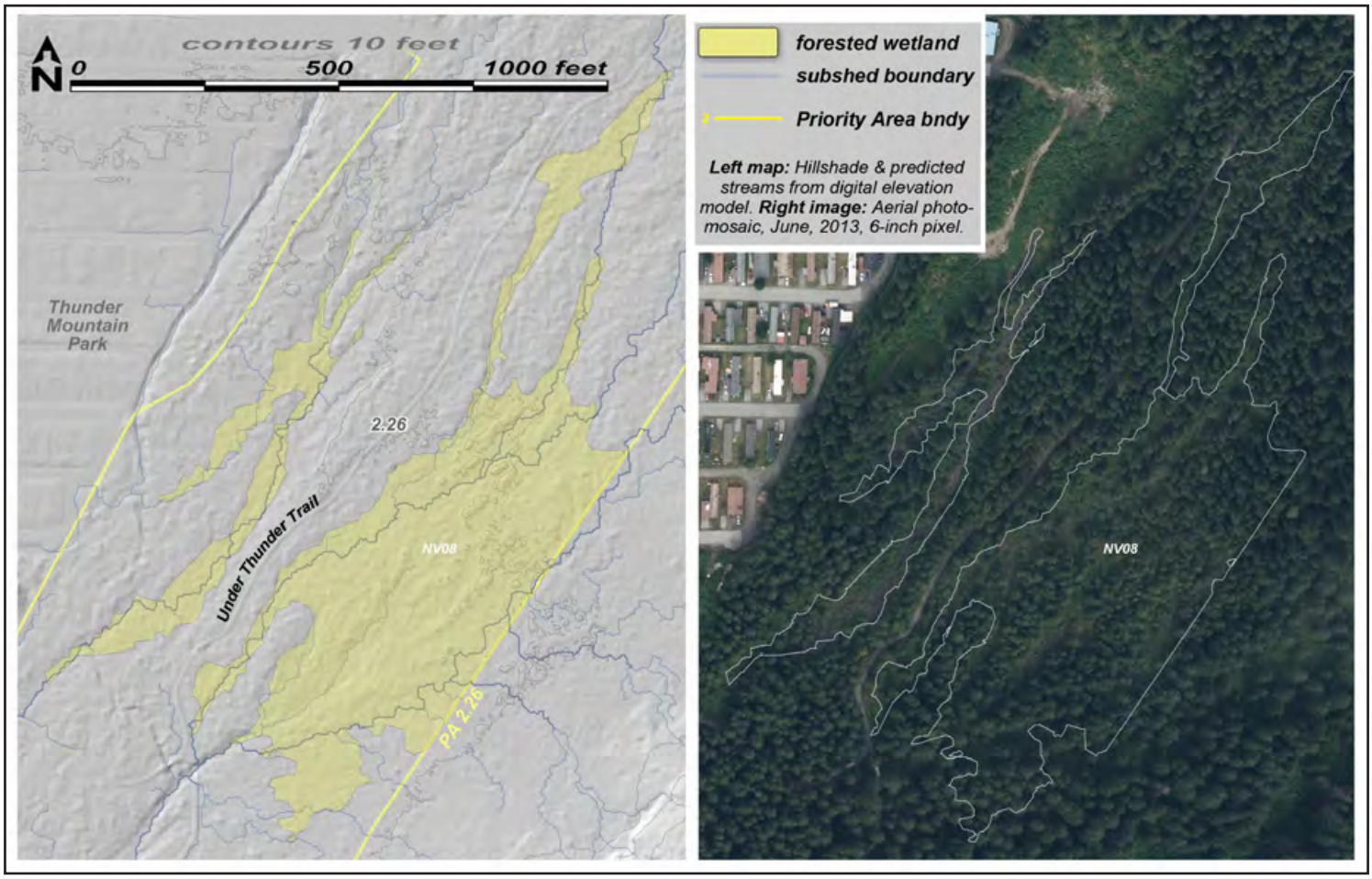
NV06 • **type:** beaver influenced • **acres:** 17.3 • **boundary criteria**: w-u, pa • **pin**: 4B2701080130 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	9.89	Higher	7.83	Higher
Resident Fish Habitat	8.75	Higher	9.04	Higher
Pollinator Habitat	7.74	Higher	8.05	Higher
Stream Flow Support	7.73	Higher	8.76	Higher
Water Storage	6.80	Higher	10.00	Higher
Water Warming	6.51	Higher	5.98	Higher
Native Plant Habitat	6.22	Higher	7.24	Higher
Water Cooling	5.52	Higher	7.78	Higher
Nitrate Removal	5.49	Higher	6.57	Higher
Invertebrate Habitat	5.47	Higher	10.00	Higher
Phosphorus Retention	5.01	Higher	5.01	Higher
Sediment Retention & Stabilization	5.56	Higher	2.40	Moderate
Waterbird Nesting Habitat	6.58	Higher	0.00	Lower
Songbird, Raptor, & Mammal Habitat	6.38	Moderate	10.00	Higher
Amphibian Habitat	2.91	Moderate	2.50	Lower
Organic Nutrient Export	7.04	Moderate	N.A.	N.A.
Carbon Sequestration	4.35	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	8.48	Higher
Wetland Ecological Condition	N.A.	N.A.	8.33	Higher
Public Use & Recognition	N.A.	N.A.	8.03	Higher
Wetland Stressors	N.A.	N.A.	7.12	Moderate
Wetland Sensitivity	N.A.	N.A.	5.30	Moderate

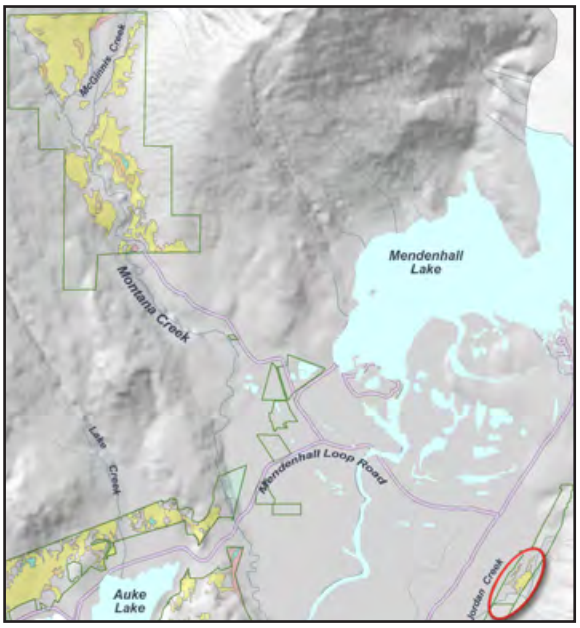
NV08 • **type:** for.peatland • **acres:** 8.6 • **boundary criteria**: w-u, pa • **pin**: 5B2401370171 • no known or probable anadromous fish

table in error: will be recalculated

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.42	Higher	4.42	Higher
Nitrate Removal	4.13	Higher	5.93	Higher
Native Plant Habitat	5.31	Higher	0.48	Lower
Resident Fish Habitat	4.74	Moderate	7.12	Higher
Pollinator Habitat	6.62	Moderate	3.29	Moderate
Songbird, Raptor, & Mammal Habitat	6.45	Moderate	0.00	Lower
Invertebrate Habitat	4.79	Moderate	1.18	Lower
Water Cooling	4.60	Moderate	1.26	Lower
Sediment Retention & Stabilization	3.85	Moderate	1.93	Lower
Amphibian Habitat	3.54	Moderate	2.04	Lower
Carbon Sequestration	5.65	Moderate	N.A.	N.A.
Water Storage	0.55	Lower	10.00	Higher
Stream Flow Support	1.51	Lower	3.79	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.09	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	8.08	Higher
Wetland Stressors	N.A.	N.A.	8.08	Higher
Wetland Ecological Condition	N.A.	N.A.	5.17	Moderate
Public Use & Recognition	N.A.	N.A.	3.64	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower

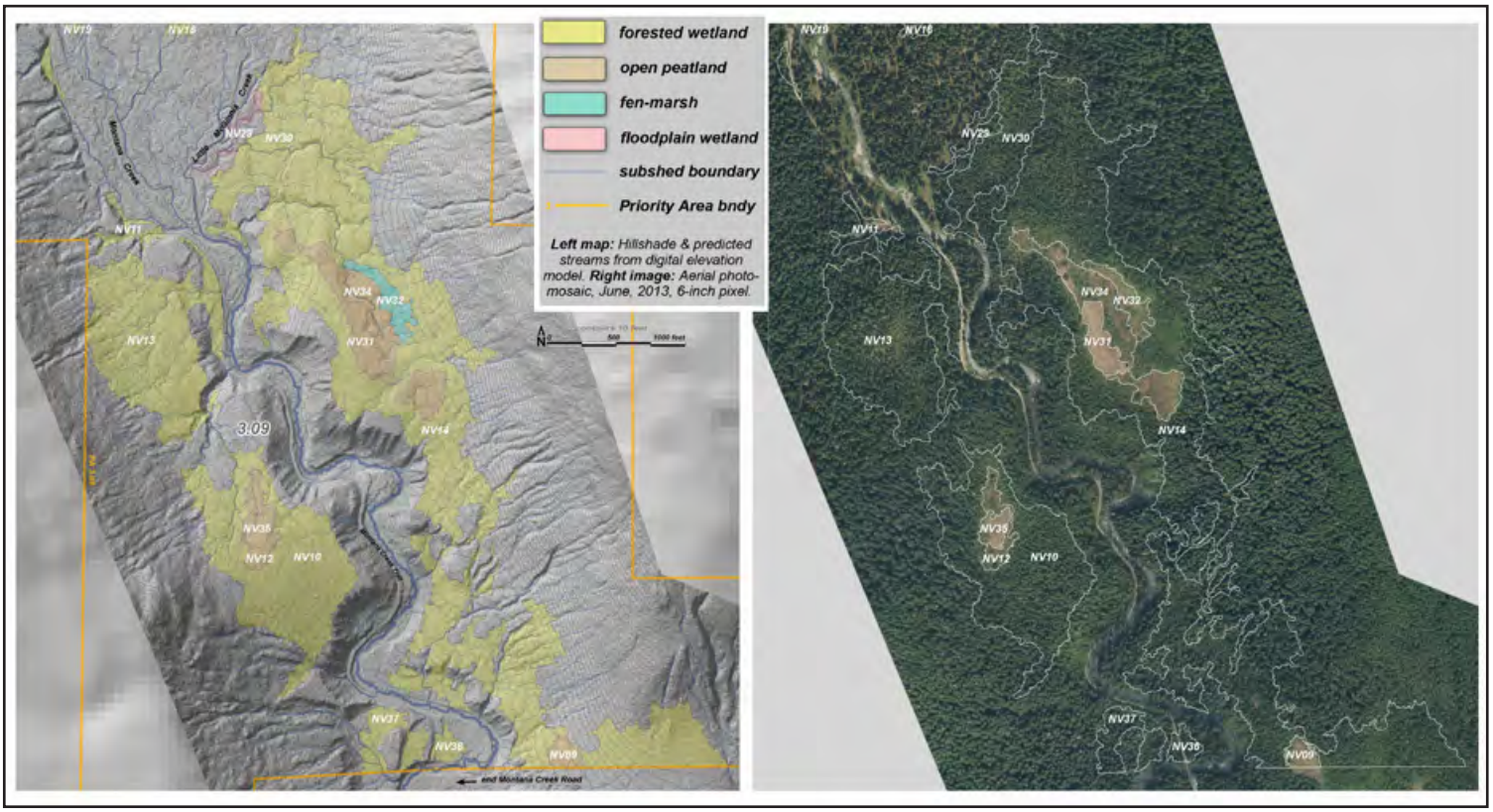


Unit map for NV08

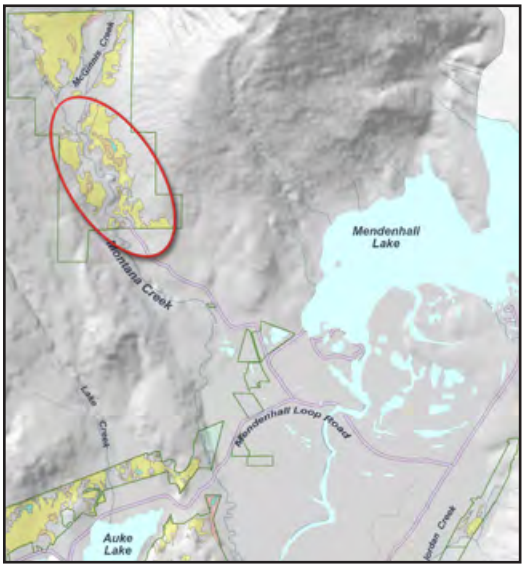


NV09 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 4B2901420050 • no known or probable anadromous fishtables

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.43	Higher	4.95	Moderate
Water Warming	5.46	Higher	2.26	Lower
Native Plant Habitat	5.34	Higher	0.48	Lower
Carbon Sequestration	6.20	Higher	N.A.	N.A.
Pollinator Habitat	4.76	Moderate	3.29	Moderate
Waterbird Feeding Habitat	3.17	Moderate	0.00	Lower
Water Cooling	2.75	Moderate	1.26	Lower
Organic Nutrient Export	7.17	Moderate	N.A.	N.A.
Water Storage	2.52	Lower	10.00	Higher
Stream Flow Support	2.77	Lower	1.44	Moderate
Amphibian Habitat	0.41	Lower	5.02	Moderate
Phosphorus Retention	1.52	Lower	1.52	Lower
Invertebrate Habitat	1.06	Lower	0.69	Lower
Sediment Retention & Stabilization	0.22	Lower	0.24	Lower
Nitrate Removal	0.00	Lower	2.32	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.93	Moderate
Wetland Risk	N.A.	N.A.	5.92	Moderate
Public Use & Recognition	N.A.	N.A.	4.41	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Ecological Condition	N.A.	N.A.	3.06	Lower



Unit maps for NV09 10 11 12 13 14 29 30 31 32 34 35 36 37



NV10 • **type:** for. peatland • **acres:** 22.8 • **boundary criteria**: w-u, type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.30	Higher	7.99	Higher
Songbird, Raptor, & Mammal Habitat	7.54	Higher	10.00	Higher
Stream Flow Support	6.72	Higher	1.43	Moderate
Water Cooling	5.94	Higher	3.07	Moderate
Water Storage	3.45	Moderate	10.00	Higher
Nitrate Removal	1.93	Moderate	4.34	Moderate
Water Warming	4.62	Moderate	2.47	Lower
Waterbird Nesting Habitat	3.35	Moderate	0.00	Lower
Organic Nutrient Export	7.08	Moderate	N.A.	N.A.
Carbon Sequestration	5.58	Moderate	N.A.	N.A.
Native Plant Habitat	1.91	Lower	7.14	Higher
Invertebrate Habitat	1.05	Lower	10.00	Higher
Amphibian Habitat	1.93	Lower	5.83	Moderate
Sediment Retention & Stabilization	1.88	Lower	3.74	Moderate
Phosphorus Retention	1.30	Lower	1.30	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.35	Higher
Wetland Ecological Condition	N.A.	N.A.	6.88	Higher
Public Use & Recognition	N.A.	N.A.	0.71	Lower
Wetland Risk	N.A.	N.A.	0.28	Lower
Wetland Stressors	N.A.	N.A.	0.00	Lower

NV11 • **type:** for. peatland • **acres:** 1.9 • **boundary criteria**: w-u • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.28	Higher	2.00	Moderate
Water Cooling	6.26	Higher	3.51	Moderate
Songbird, Raptor, & Mammal Habitat	7.70	Higher	2.22	Lower
Organic Nutrient Export	8.19	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	6.20	Higher
Water Storage	4.11	Moderate	10.00	Higher
Nitrate Removal	2.70	Moderate	6.06	Higher
Pollinator Habitat	5.86	Moderate	3.29	Moderate
Native Plant Habitat	5.12	Moderate	0.66	Lower
Amphibian Habitat	4.58	Moderate	3.08	Lower
Waterbird Nesting Habitat	4.13	Moderate	0.00	Lower
Invertebrate Habitat	3.86	Moderate	1.35	Lower
Carbon Sequestration	5.48	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.02	Lower	3.00	Moderate
Phosphorus Retention	2.35	Lower	2.35	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.37	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.11	Lower
Wetland Stressors	N.A.	N.A.	0.37	Lower
Wetland Risk	N.A.	N.A.	0.00	Lower

NV12 • **type:** open peatland • **acres:** 1.8 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.28	Higher	4.02	Moderate
Waterbird Nesting Habitat	6.04	Higher	9.40	Moderate
Water Warming	5.76	Higher	1.37	Lower
Carbon Sequestration	7.58	Higher	N.A.	N.A.
Water Storage	3.17	Moderate	10.00	Higher
Waterbird Feeding Habitat	4.72	Moderate	4.21	Moderate
Phosphorus Retention	3.64	Moderate	3.64	Moderate
Water Cooling	4.57	Moderate	0.74	Lower
Organic Nutrient Export	6.58	Moderate	N.A.	N.A.
Pollinator Habitat	3.07	Lower	3.15	Moderate
Stream Flow Support	2.27	Lower	1.79	Moderate
Amphibian Habitat	0.77	Lower	5.96	Moderate
Invertebrate Habitat	2.84	Lower	1.75	Lower
Native Plant Habitat	2.82	Lower	0.29	Lower
Sediment Retention & Stabilization	1.85	Lower	0.24	Lower
Nitrate Removal	0.68	Lower	1.72	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	3.96	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.83	Lower
Public Use & Recognition	N.A.	N.A.	2.11	Lower
Wetland Risk	N.A.	N.A.	1.98	Lower

NV13 • **type:** for. peatland • **acres:** 22.4 • **boundary criteria**: w-u, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.02	Higher	10.00	Higher
Pollinator Habitat	8.97	Higher	3.29	Moderate
Stream Flow Support	7.98	Higher	1.91	Moderate
Water Cooling	6.26	Higher	3.95	Moderate
Native Plant Habitat	5.74	Higher	1.65	Lower
Water Warming	4.12	Moderate	7.01	Higher
Water Storage	3.05	Moderate	10.00	Higher
Nitrate Removal	2.46	Moderate	4.75	Moderate
Invertebrate Habitat	3.40	Moderate	0.56	Lower
Organic Nutrient Export	7.67	Moderate	N.A.	N.A.
Carbon Sequestration	5.38	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.75	Lower	3.81	Moderate
Amphibian Habitat	2.13	Lower	3.35	Lower
Phosphorus Retention	1.78	Lower	1.78	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.10	Higher
Wetland Sensitivity	N.A.	N.A.	6.56	Moderate
Public Use & Recognition	N.A.	N.A.	3.50	Moderate
Wetland Risk	N.A.	N.A.	3.44	Lower
Wetland Stressors	N.A.	N.A.	2.89	Lower

NV14 • **type:** for. peatland • **acres:** 76.2 • **boundary criteria**: w-u, type, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

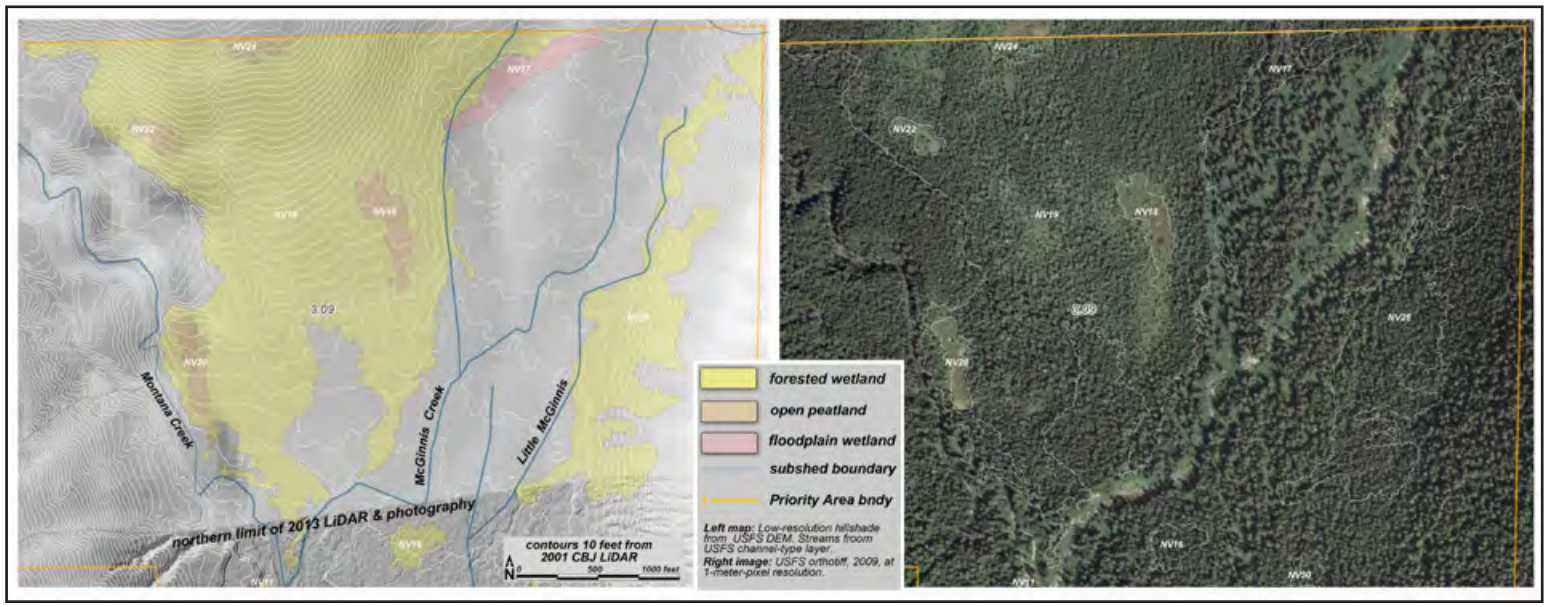
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.02	Higher	10.00	Higher
Water Warming	7.14	Higher	5.91	Higher
Pollinator Habitat	7.40	Higher	3.15	Moderate
Stream Flow Support	7.23	Higher	1.72	Moderate
Organic Nutrient Export	7.93	Higher	N.A.	N.A.
Carbon Sequestration	6.39	Higher	N.A.	N.A.
Water Cooling	3.26	Moderate	3.51	Moderate
Phosphorus Retention	3.15	Moderate	3.15	Moderate
Nitrate Removal	2.23	Moderate	5.00	Moderate
Waterbird Nesting Habitat	3.57	Moderate	0.00	Lower
Water Storage	2.69	Lower	10.00	Higher
Sediment Retention & Stabilization	0.79	Lower	4.28	Moderate
Invertebrate Habitat	2.47	Lower	1.08	Lower
Amphibian Habitat	2.39	Lower	3.35	Lower
Native Plant Habitat	1.88	Lower	1.21	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.35	Higher
Wetland Ecological Condition	N.A.	N.A.	6.16	Higher
Wetland Risk	N.A.	N.A.	2.86	Lower
Wetland Stressors	N.A.	N.A.	2.74	Lower
Public Use & Recognition	N.A.	N.A.	0.71	Lower

NV15 • **type:** forested peatland • **acres:** 9.9 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2701080130 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.04	Higher	4.07	Moderate
Water Cooling	6.36	Higher	3.07	Moderate
Native Plant Habitat	6.29	Higher	3.63	Moderate
Songbird, Raptor, & Mammal Habitat	8.22	Higher	2.50	Lower
Invertebrate Habitat	7.07	Higher	0.76	Lower
Organic Nutrient Export	9.33	Higher	N.A.	N.A.
Carbon Sequestration	6.38	Higher	N.A.	N.A.
Nitrate Removal	2.26	Moderate	6.57	Higher
Stream Flow Support	4.08	Moderate	2.64	Moderate
Water Warming	2.52	Moderate	5.33	Moderate
Amphibian Habitat	3.70	Moderate	3.51	Lower
Water Storage	3.53	Moderate	1.11	Lower
Sediment Retention & Stabilization	2.08	Lower	2.31	Moderate
Phosphorus Retention	2.55	Lower	2.55	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.66	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Risk	N.A.	N.A.	4.62	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.17	Lower
Public Use & Recognition	N.A.	N.A.	0.95	Lower

NV16 • **type:** forested peatland • **acres:** 1.9 • **boundary criteria**: w-u • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.15	Higher	10.00	Higher
Pollinator Habitat	7.08	Higher	3.29	Moderate
Native Plant Habitat	5.76	Higher	1.58	Lower
Water Storage	3.69	Moderate	10.00	Higher
Water Warming	3.68	Moderate	6.15	Higher
Amphibian Habitat	4.20	Moderate	4.29	Moderate
Stream Flow Support	3.53	Moderate	1.88	Moderate
Water Cooling	3.30	Moderate	3.51	Moderate
Sediment Retention & Stabilization	2.64	Moderate	3.02	Moderate
Nitrate Removal	2.37	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.46	Moderate	0.00	Lower
Invertebrate Habitat	3.26	Moderate	1.58	Lower
Phosphorus Retention	1.92	Lower	1.92	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.19	Lower	N.A.	N.A.
Carbon Sequestration	3.58	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	6.23	Higher
Wetland Sensitivity	N.A.	N.A.	3.98	Lower
Wetland Risk	N.A.	N.A.	3.54	Lower
Wetland Stressors	N.A.	N.A.	3.35	Lower
Public Use & Recognition	N.A.	N.A.	2.04	Lower



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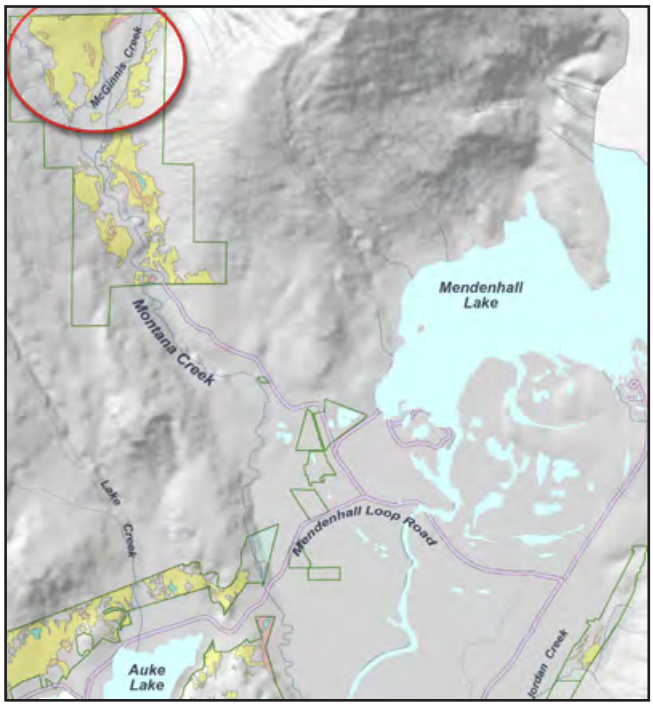


NV17 • **type:** floodplain wetland • **acres:** 4.1 • **boundary criteria**: w-u, type, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

fish probable -table to be recalculated

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	7.73	Higher	9.80	Higher
Waterbird Feeding Habitat	6.87	Higher	4.29	Moderate
Water Cooling	6.51	Higher	3.51	Moderate
Nitrate Removal	4.20	Higher	5.00	Moderate
Invertebrate Habitat	7.17	Higher	2.14	Lower
Native Plant Habitat	6.35	Higher	0.48	Lower
Water Storage	5.90	Higher	0.56	Lower
Songbird, Raptor, & Mammal Habitat	6.20	Moderate	10.00	Higher
Water Warming	2.44	Moderate	5.76	Higher
Pollinator Habitat	4.66	Moderate	3.29	Moderate
Stream Flow Support	3.78	Moderate	2.66	Moderate
Sediment Retention & Stabilization	3.77	Moderate	2.92	Moderate
Organic Nutrient Export	7.47	Moderate	N.A.	N.A.
Amphibian Habitat	1.22	Lower	6.52	Higher
Phosphorus Retention	1.71	Lower	1.71	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.22	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	5.82	Higher
Wetland Sensitivity	N.A.	N.A.	3.98	Lower
Wetland Stressors	N.A.	N.A.	2.67	Lower
Wetland Risk	N.A.	N.A.	2.64	Lower
Public Use & Recognition	N.A.	N.A.	0.77	Lower

NV18 • **type:** open peatland • **acres:** 3.0 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.75	Higher	4.02	Moderate
Pollinator Habitat	7.37	Higher	3.15	Moderate
Water Warming	6.39	Higher	4.84	Moderate
Carbon Sequestration	7.89	Higher	N.A.	N.A.
Amphibian Habitat	2.83	Moderate	6.60	Higher
Stream Flow Support	5.80	Moderate	2.07	Moderate
Waterbird Nesting Habitat	5.48	Moderate	9.40	Moderate
Waterbird Feeding Habitat	5.09	Moderate	4.21	Moderate
Water Cooling	4.09	Moderate	2.63	Moderate
Phosphorus Retention	3.18	Moderate	3.18	Moderate
Invertebrate Habitat	4.24	Moderate	2.02	Lower
Native Plant Habitat	4.18	Moderate	1.10	Lower
Water Storage	2.95	Moderate	1.11	Lower
Organic Nutrient Export	7.17	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.62	Lower	0.24	Lower
Nitrate Removal	1.17	Lower	1.72	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	7.26	Higher
Wetland Ecological Condition	N.A.	N.A.	4.47	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	2.82	Lower
Wetland Risk	N.A.	N.A.	2.19	Lower

NV19 • **type:** forested peatland • **acres:** 118.9 • **boundary criteria**: w-u, type, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.89	Higher	10.00	Higher
Water Cooling	8.17	Higher	3.07	Moderate
Pollinator Habitat	8.06	Higher	3.29	Moderate
Stream Flow Support	5.97	Higher	2.34	Moderate
Native Plant Habitat	5.75	Higher	1.34	Lower
Amphibian Habitat	5.59	Higher	3.24	Lower
Invertebrate Habitat	5.55	Higher	1.44	Lower
Organic Nutrient Export	8.18	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	5.20	Moderate
Phosphorus Retention	3.71	Moderate	3.71	Moderate
Nitrate Removal	2.67	Moderate	4.24	Moderate
Waterbird Nesting Habitat	3.75	Moderate	0.00	Lower
Water Storage	2.86	Moderate	1.11	Lower
Sediment Retention & Stabilization	2.26	Lower	2.67	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.69	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	9.35	Higher
Wetland Ecological Condition	N.A.	N.A.	5.15	Moderate
Wetland Stressors	N.A.	N.A.	3.35	Lower
Wetland Risk	N.A.	N.A.	3.06	Lower
Public Use & Recognition	N.A.	N.A.	1.93	Lower

NV20 • **type:** open peatland • **acres:** 2.0 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	5.69	Higher	0.48	Lower
Carbon Sequestration	6.82	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.64	Moderate	3.70	Moderate
Pollinator Habitat	4.88	Moderate	3.29	Moderate
Waterbird Feeding Habitat	4.52	Moderate	3.96	Moderate
Amphibian Habitat	2.81	Moderate	4.45	Moderate
Water Cooling	4.60	Moderate	0.53	Lower
Sediment Retention & Stabilization	3.12	Moderate	0.28	Lower
Nitrate Removal	2.21	Moderate	1.72	Lower
Stream Flow Support	1.68	Lower	1.70	Moderate
Invertebrate Habitat	2.39	Lower	0.84	Lower
Phosphorus Retention	2.01	Lower	2.01	Lower
Water Storage	1.50	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.72	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	3.41	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Wetland Ecological Condition	N.A.	N.A.	2.76	Lower
Wetland Stressors	N.A.	N.A.	2.76	Lower
Wetland Risk	N.A.	N.A.	1.37	Lower

NV22 • **type:** open peatland • **acres:** 1.2 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

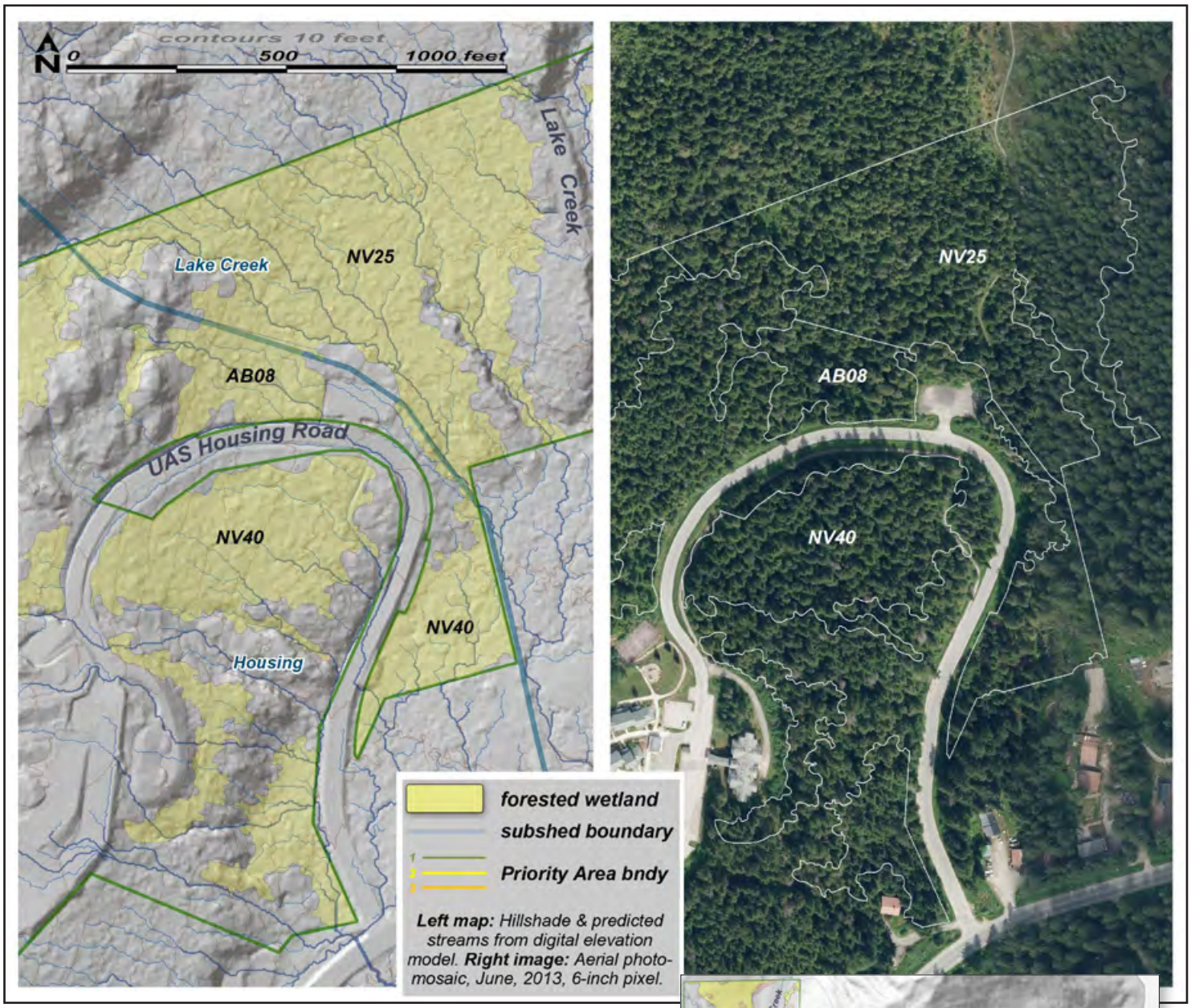
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	7.50	Higher	6.62	Higher
Waterbird Nesting Habitat	6.63	Higher	9.80	Higher
Songbird, Raptor, & Mammal Habitat	7.51	Higher	3.70	Moderate
Water Storage	6.94	Higher	1.67	Lower
Native Plant Habitat	6.10	Higher	0.48	Lower
Waterbird Feeding Habitat	5.42	Moderate	3.96	Moderate
Phosphorus Retention	2.64	Moderate	2.64	Moderate
Water Cooling	3.86	Moderate	0.00	Lower
Water Warming	3.82	Moderate	0.00	Lower
Sediment Retention & Stabilization	3.79	Moderate	0.43	Lower
Invertebrate Habitat	3.27	Moderate	2.70	Lower
Nitrate Removal	2.23	Moderate	1.72	Lower
Organic Nutrient Export	6.39	Moderate	N.A.	N.A.
Carbon Sequestration	5.19	Moderate	N.A.	N.A.
Pollinator Habitat	3.75	Lower	3.29	Moderate
Stream Flow Support	1.09	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Stressors	N.A.	N.A.	2.68	Lower
Wetland Ecological Condition	N.A.	N.A.	2.38	Lower
Public Use & Recognition	N.A.	N.A.	2.02	Lower
Wetland Risk	N.A.	N.A.	1.12	Lower

NV24 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.73	Higher	3.60	Moderate
Native Plant Habitat	5.35	Higher	0.89	Lower
Pollinator Habitat	6.63	Moderate	3.15	Moderate
Water Warming	4.45	Moderate	0.95	Lower
Waterbird Feeding Habitat	4.44	Moderate	0.00	Lower
Water Storage	3.49	Moderate	1.11	Lower
Water Cooling	3.38	Moderate	0.53	Lower
Amphibian Habitat	2.19	Lower	6.14	Moderate
Stream Flow Support	1.85	Lower	1.67	Moderate
Phosphorus Retention	2.50	Lower	2.50	Lower
Invertebrate Habitat	2.25	Lower	1.10	Lower
Sediment Retention & Stabilization	2.04	Lower	0.24	Lower
Nitrate Removal	0.18	Lower	1.72	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.02	Lower	N.A.	N.A.
Carbon Sequestration	3.71	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Stressors	N.A.	N.A.	2.68	Lower
Wetland Ecological Condition	N.A.	N.A.	2.12	Lower
Public Use & Recognition	N.A.	N.A.	2.02	Lower
Wetland Risk	N.A.	N.A.	1.01	Lower

NV25 • **type:** forested peatland • **acres:** 9.8 • **boundary criteria**: w-u, pa, subsh • **pin**: 4B2801030131 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.66	Higher	4.66	Higher
Pollinator Habitat	7.26	Higher	4.07	Moderate
Stream Flow Support	6.72	Higher	1.60	Moderate
Water Cooling	5.46	Higher	3.07	Moderate
Water Warming	5.25	Higher	5.29	Moderate
Songbird, Raptor, & Mammal Habitat	8.01	Higher	2.50	Lower
Water Storage	3.62	Moderate	10.00	Higher
Nitrate Removal	2.72	Moderate	6.67	Higher
Native Plant Habitat	4.62	Moderate	2.31	Moderate
Amphibian Habitat	3.38	Moderate	3.34	Lower
Waterbird Nesting Habitat	3.17	Moderate	0.00	Lower
Organic Nutrient Export	7.56	Moderate	N.A.	N.A.
Carbon Sequestration	5.84	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.89	Lower	2.75	Moderate
Invertebrate Habitat	1.90	Lower	1.13	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.13	Moderate
Wetland Risk	N.A.	N.A.	5.51	Moderate
Wetland Sensitivity	N.A.	N.A.	4.62	Moderate
Public Use & Recognition	N.A.	N.A.	2.23	Lower
Wetland Ecological Condition	N.A.	N.A.	1.65	Lower



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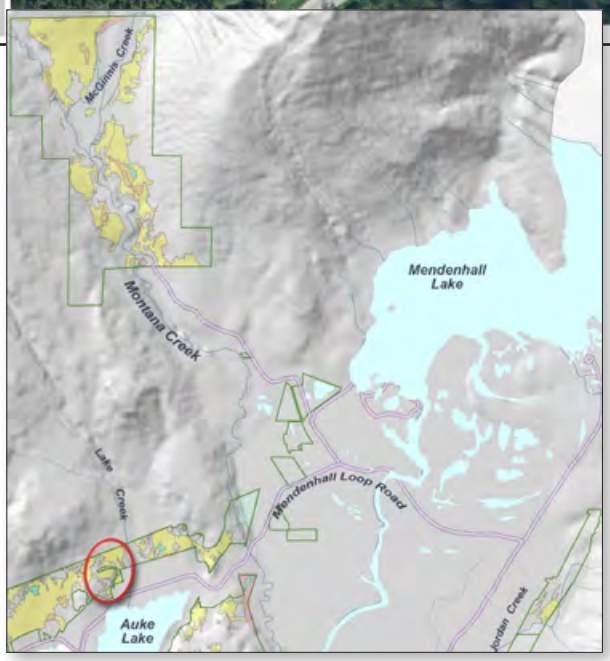


NV26 • **type:** forested peatland • **acres:** 27.8 • **boundary criteria**: w-u, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.18	Higher	10.00	Higher
Water Warming	5.15	Higher	6.16	Higher
Pollinator Habitat	7.62	Higher	3.29	Moderate
Stream Flow Support	7.48	Higher	1.76	Moderate
Water Cooling	5.21	Moderate	3.16	Moderate
Amphibian Habitat	4.27	Moderate	4.31	Moderate
Phosphorus Retention	2.88	Moderate	2.88	Moderate
Water Storage	4.43	Moderate	1.11	Lower
Native Plant Habitat	4.36	Moderate	1.74	Lower
Waterbird Nesting Habitat	3.78	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.43	Moderate	0.60	Lower
Nitrate Removal	1.97	Moderate	1.72	Lower
Invertebrate Habitat	2.68	Lower	1.50	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.64	Lower	N.A.	N.A.
Carbon Sequestration	2.91	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	7.41	Higher
Wetland Sensitivity	N.A.	N.A.	5.05	Moderate
Wetland Risk	N.A.	N.A.	3.42	Lower
Wetland Stressors	N.A.	N.A.	2.74	Lower
Public Use & Recognition	N.A.	N.A.	1.23	Lower

NV29 • **type:** floodplain wetland • **acres:** 1.0 • **boundary criteria**: w-u, type • **pin**: 4B2901420050 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.91	Higher	6.22	Higher
Songbird, Raptor, & Mammal Habitat	8.24	Higher	10.00	Higher
Water Cooling	7.82	Higher	7.64	Higher
Stream Flow Support	6.52	Higher	9.61	Higher
Nitrate Removal	4.37	Higher	6.82	Higher
Invertebrate Habitat	10.00	Higher	5.43	Moderate
Anadromous Fish Habitat	9.57	Higher	5.39	Moderate
Pollinator Habitat	9.27	Higher	3.15	Moderate
Waterbird Nesting Habitat	8.40	Higher	9.40	Moderate
Waterbird Feeding Habitat	7.89	Higher	4.21	Moderate
Native Plant Habitat	6.56	Higher	1.82	Lower
Water Storage	4.49	Moderate	10.00	Higher
Water Warming	3.99	Moderate	5.61	Moderate
Sediment Retention & Stabilization	2.80	Moderate	2.88	Moderate
Organic Nutrient Export	7.44	Moderate	N.A.	N.A.
Carbon Sequestration	4.80	Moderate	N.A.	N.A.
Amphibian Habitat	0.00	Lower	8.92	Higher
Phosphorus Retention	2.32	Lower	2.32	Lower
Wetland Sensitivity	N.A.	N.A.	5.84	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.03	Moderate
Wetland Stressors	N.A.	N.A.	2.99	Lower
Wetland Risk	N.A.	N.A.	2.63	Lower
Public Use & Recognition	N.A.	N.A.	1.46	Lower

NV30 • **type:** forested peatland • **acres:** 10.1 • **boundary criteria**: w-u, type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	7.69	Higher	10.00	Higher
Invertebrate Habitat	6.77	Higher	0.31	Lower
Sediment Retention & Stabilization	5.11	Higher	0.53	Lower
Carbon Sequestration	6.92	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.30	Moderate	10.00	Higher
Pollinator Habitat	4.73	Moderate	3.15	Moderate
Phosphorus Retention	3.28	Moderate	3.28	Moderate
Native Plant Habitat	3.26	Moderate	0.29	Lower
Nitrate Removal	2.99	Moderate	1.97	Lower
Organic Nutrient Export	6.41	Moderate	N.A.	N.A.
Stream Flow Support	2.52	Lower	2.58	Moderate
Amphibian Habitat	2.42	Lower	1.92	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	5.05	Moderate
Wetland Stressors	N.A.	N.A.	2.83	Lower
Wetland Ecological Condition	N.A.	N.A.	2.35	Lower
Public Use & Recognition	N.A.	N.A.	2.11	Lower
Wetland Risk	N.A.	N.A.	1.26	Lower

NV31 • **type:** open peatland • **acres:** 2.2 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.28	Higher	4.12	Moderate
Carbon Sequestration	6.63	Higher	N.A.	N.A.
Water Storage	4.71	Moderate	10.00	Higher
Waterbird Nesting Habitat	4.50	Moderate	9.80	Higher
Waterbird Feeding Habitat	4.05	Moderate	6.29	Higher
Pollinator Habitat	4.84	Moderate	3.29	Moderate
Phosphorus Retention	2.86	Moderate	2.86	Moderate
Sediment Retention & Stabilization	2.79	Moderate	2.65	Moderate
Water Cooling	4.50	Moderate	1.23	Lower
Water Warming	3.32	Moderate	1.60	Lower
Organic Nutrient Export	6.88	Moderate	N.A.	N.A.
Stream Flow Support	2.90	Lower	1.47	Moderate
Nitrate Removal	1.59	Lower	3.99	Moderate
Amphibian Habitat	0.49	Lower	5.50	Moderate
Native Plant Habitat	3.06	Lower	0.48	Lower
Invertebrate Habitat	1.24	Lower	1.41	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	3.17	Lower
Wetland Ecological Condition	N.A.	N.A.	3.06	Lower
Wetland Risk	N.A.	N.A.	1.94	Lower
Public Use & Recognition	N.A.	N.A.	0.97	Lower

NV32 • **type:** fen/marsh • **acres:** 2.0 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	5.80	Higher	9.80	Higher
Songbird, Raptor, & Mammal Habitat	7.39	Higher	4.12	Moderate
Stream Flow Support	7.06	Higher	2.34	Moderate
Invertebrate Habitat	5.57	Higher	2.11	Lower
Organic Nutrient Export	7.82	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.79	Moderate	6.29	Higher
Water Storage	4.65	Moderate	10.00	Higher
Water Warming	2.56	Moderate	6.13	Higher
Pollinator Habitat	5.02	Moderate	3.29	Moderate
Water Cooling	4.82	Moderate	3.51	Moderate
Amphibian Habitat	4.10	Moderate	6.09	Moderate
Phosphorus Retention	3.23	Moderate	3.23	Moderate
Sediment Retention & Stabilization	2.34	Moderate	4.43	Moderate
Native Plant Habitat	4.70	Moderate	0.48	Lower
Carbon Sequestration	4.38	Moderate	N.A.	N.A.
Nitrate Removal	1.58	Lower	5.00	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	3.42	Lower
Public Use & Recognition	N.A.	N.A.	1.11	Lower
Wetland Risk	N.A.	N.A.	0.90	Lower
Wetland Ecological Condition	N.A.	N.A.	0.11	Lower

NV34 • **type:** open peatland • **acres:** 7.4 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.44	Higher	7.52	Higher
Native Plant Habitat	5.34	Higher	6.95	Higher
Phosphorus Retention	4.49	Higher	4.49	Higher
Carbon Sequestration	6.24	Higher	N.A.	N.A.
Pollinator Habitat	6.45	Moderate	7.85	Higher
Water Storage	4.99	Moderate	10.00	Higher
Waterbird Feeding Habitat	4.71	Moderate	6.21	Higher
Waterbird Nesting Habitat	5.65	Moderate	9.40	Moderate
Sediment Retention & Stabilization	2.96	Moderate	2.78	Moderate
Water Cooling	3.86	Moderate	0.00	Lower
Water Warming	3.82	Moderate	1.15	Lower
Invertebrate Habitat	1.71	Lower	10.00	Higher
Nitrate Removal	1.73	Lower	4.49	Moderate
Amphibian Habitat	0.57	Lower	6.08	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Stream Flow Support	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.89	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	8.39	Higher
Wetland Ecological Condition	N.A.	N.A.	4.61	Moderate
Wetland Stressors	N.A.	N.A.	2.87	Lower
Wetland Risk	N.A.	N.A.	2.31	Lower
Public Use & Recognition	N.A.	N.A.	1.32	Lower

NV35 • **type:** open peatland • **acres:** 1.1 • **boundary criteria**: type • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.23	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.76	Moderate	4.12	Moderate
Pollinator Habitat	4.45	Moderate	3.29	Moderate
Water Cooling	4.60	Moderate	0.53	Lower
Waterbird Feeding Habitat	4.32	Moderate	0.00	Lower
Native Plant Habitat	3.26	Moderate	0.48	Lower
Water Storage	0.90	Lower	10.00	Higher
Stream Flow Support	1.68	Lower	1.67	Moderate
Amphibian Habitat	0.70	Lower	4.41	Moderate
Invertebrate Habitat	2.24	Lower	0.60	Lower
Sediment Retention & Stabilization	2.06	Lower	0.19	Lower
Nitrate Removal	1.65	Lower	1.46	Lower
Phosphorus Retention	0.80	Lower	0.80	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.74	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Stressors	N.A.	N.A.	2.83	Lower
Wetland Ecological Condition	N.A.	N.A.	2.67	Lower
Public Use & Recognition	N.A.	N.A.	2.11	Lower
Wetland Risk	N.A.	N.A.	1.40	Lower

NV36 • **type:** for. peatland • **acres:** 1.1 • **boundary criteria**: w-u • **pin**: 4B2901420050 • known or probable anadromous

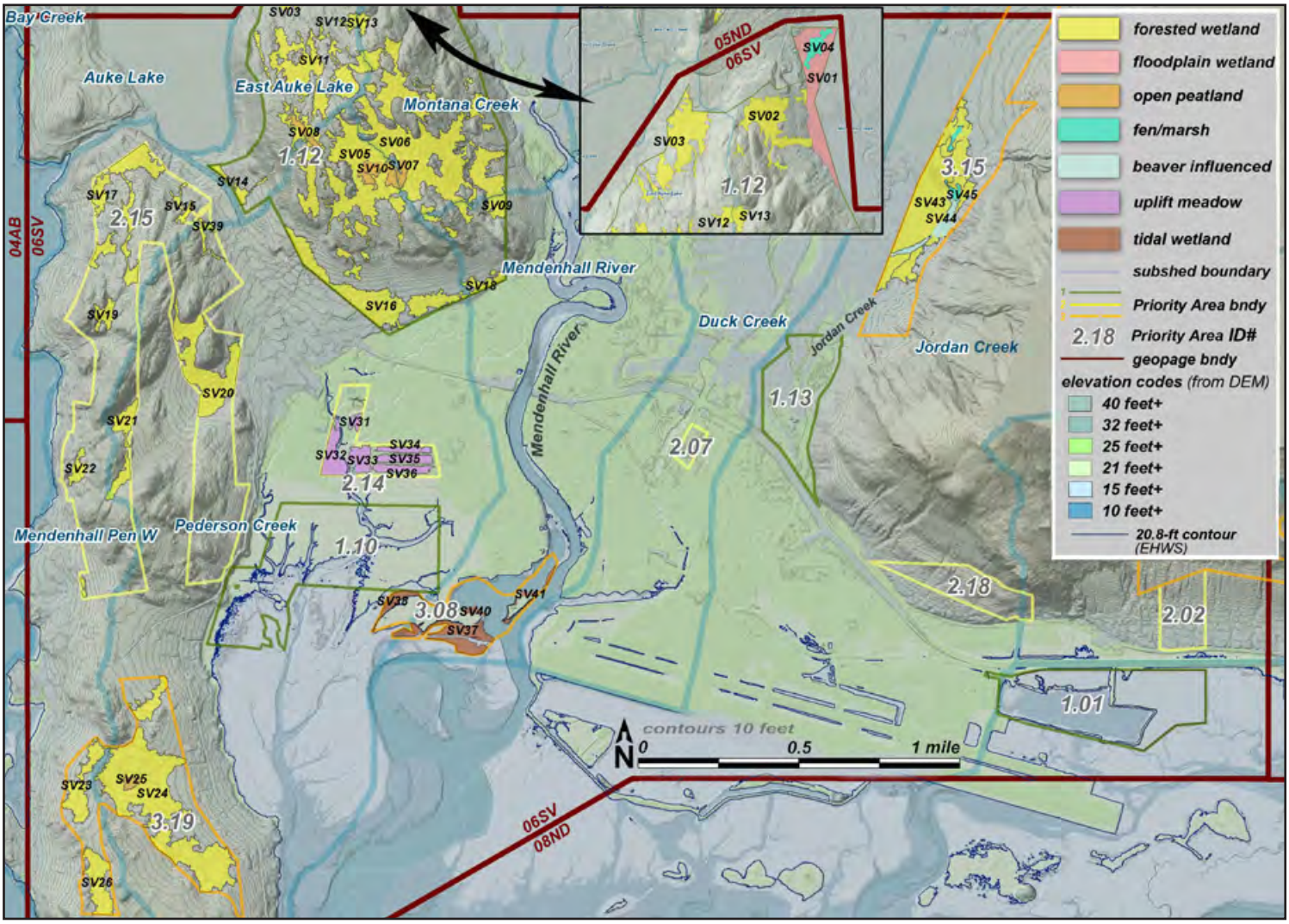
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.45	Higher	10.00	Higher
Waterbird Feeding Habitat	6.38	Higher	5.71	Higher
Water Cooling	6.58	Higher	1.21	Lower
Native Plant Habitat	5.74	Higher	0.29	Lower
Organic Nutrient Export	7.70	Higher	N.A.	N.A.
Resident Fish Habitat	7.11	Moderate	8.85	Higher
Anadromous Fish Habitat	5.91	Moderate	8.04	Higher
Water Storage	4.42	Moderate	10.00	Higher
Nitrate Removal	2.32	Moderate	7.07	Higher
Waterbird Nesting Habitat	5.63	Moderate	9.40	Moderate
Invertebrate Habitat	5.15	Moderate	3.87	Moderate
Water Warming	2.94	Moderate	3.37	Moderate
Amphibian Habitat	0.04	Lower	7.23	Higher
Pollinator Habitat	3.93	Lower	3.15	Moderate
Sediment Retention & Stabilization	2.06	Lower	3.12	Moderate
Phosphorus Retention	1.51	Lower	1.51	Lower
Stream Flow Support	1.04	Lower	0.00	Lower
Carbon Sequestration	2.08	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.73	Higher
Wetland Stressors	N.A.	N.A.	6.63	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.57	Moderate
Wetland Sensitivity	N.A.	N.A.	5.05	Moderate
Public Use & Recognition	N.A.	N.A.	2.67	Moderate

NV37 • **type:** for. peatland • **acres:** 3.2 • **boundary criteria**: w-u, pa • **pin**: 4B2901420050 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	8.40	Higher	5.98	Higher
Water Cooling	8.43	Higher	3.16	Moderate
Stream Flow Support	7.73	Higher	2.38	Moderate
Invertebrate Habitat	5.78	Higher	0.46	Lower
Songbird, Raptor, & Mammal Habitat	6.86	Moderate	10.00	Higher
Pollinator Habitat	5.73	Moderate	3.15	Moderate
Native Plant Habitat	4.39	Moderate	0.29	Lower
Amphibian Habitat	2.91	Moderate	2.38	Lower
Nitrate Removal	2.72	Moderate	2.58	Lower
Carbon Sequestration	5.43	Moderate	N.A.	N.A.
Water Storage	1.09	Lower	10.00	Higher
Phosphorus Retention	2.12	Lower	2.12	Lower
Sediment Retention & Stabilization	0.86	Lower	0.37	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.57	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.40	Moderate
Wetland Risk	N.A.	N.A.	6.08	Moderate
Wetland Sensitivity	N.A.	N.A.	4.95	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.69	Moderate
Public Use & Recognition	N.A.	N.A.	1.03	Lower

NV40 • **type:** for. peatland • **acres:** 8.4 • **boundary criteria**: w-u, pa, subsh • **pin**: 4B2801030140, 50 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.06	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	7.63	Higher	2.50	Lower
Carbon Sequestration	6.74	Higher	N.A.	N.A.
Nitrate Removal	2.25	Moderate	7.58	Higher
Native Plant Habitat	5.09	Moderate	3.45	Moderate
Water Cooling	4.66	Moderate	3.07	Moderate
Stream Flow Support	4.03	Moderate	1.60	Moderate
Phosphorus Retention	3.61	Moderate	3.61	Moderate
Water Storage	3.51	Moderate	6.11	Moderate
Water Warming	2.94	Moderate	5.29	Moderate
Amphibian Habitat	3.38	Moderate	3.03	Lower
Organic Nutrient Export	7.60	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.38	Lower	4.06	Moderate
Invertebrate Habitat	1.86	Lower	0.63	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.42	Moderate
Wetland Risk	N.A.	N.A.	5.43	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.17	Lower
Public Use & Recognition	N.A.	N.A.	2.29	Lower



06SV units

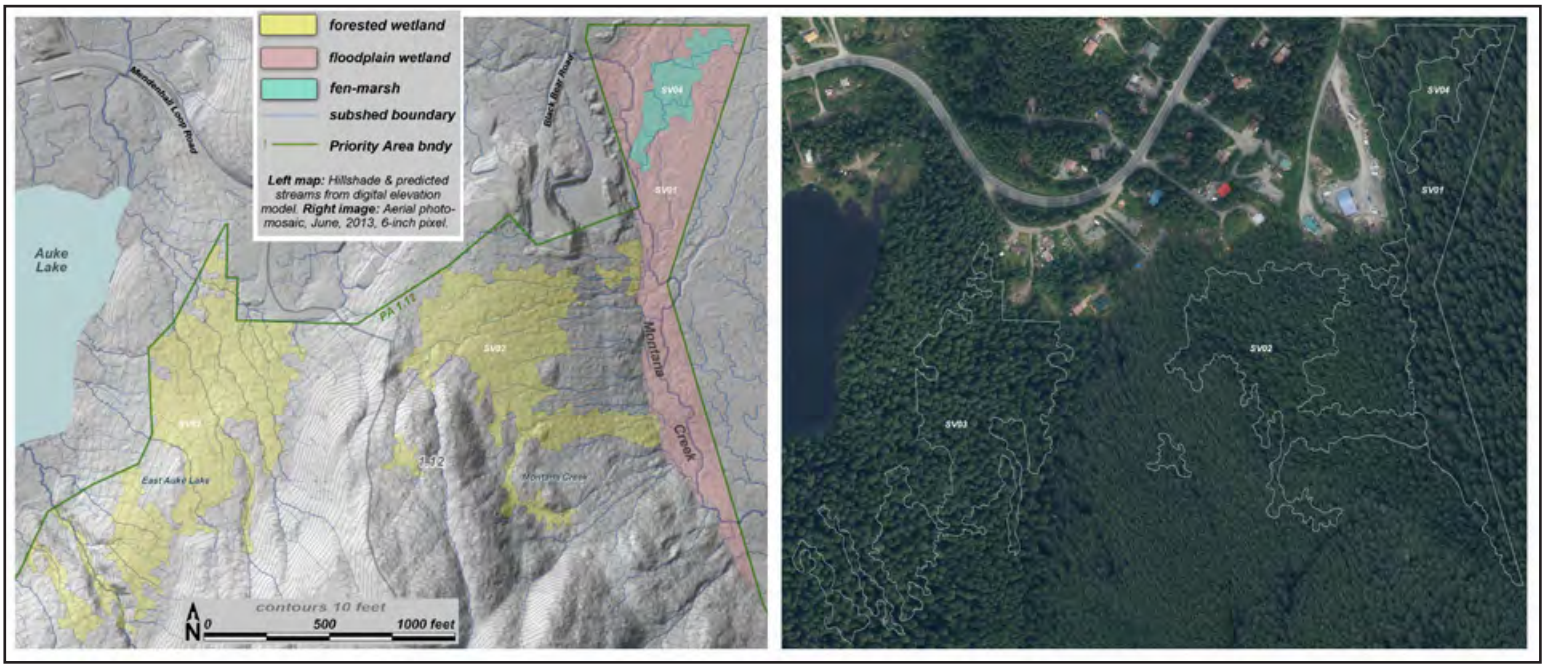
CBJ's South Valley (SV) map page contains 12 Priority Areas totaling 1,161 acres. About 770 acres are on City land. The eastern half of PA 1.12 (Hill 560) belongs to the University of Alaska and another large parcel between Glacier Valley school and Thunder Mountain is State land. The rest of the scattered PAs on the South Valley map page are private, totaling 480 acres. We did not survey them.

We delineated 8 'subsheds' on the South Valley map page, shown here with blue lines.

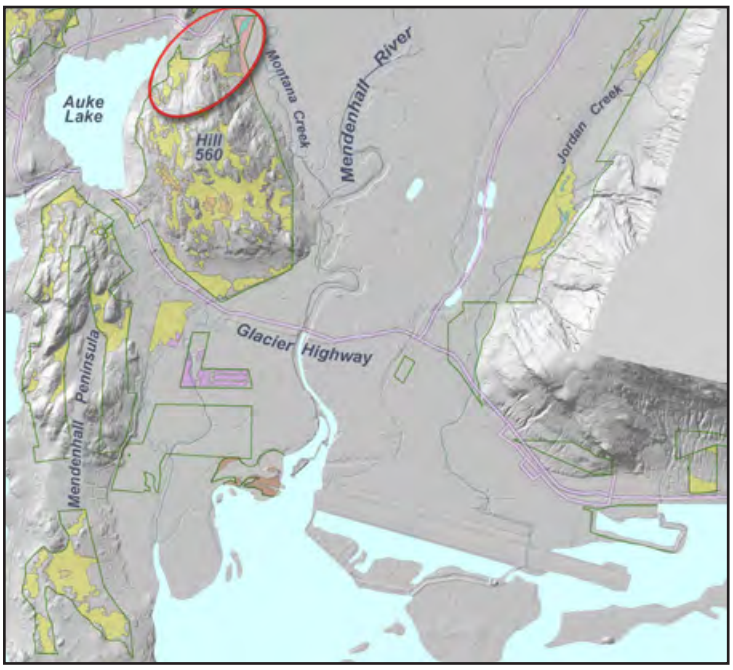
We completed 43 Assessment Areas on the SV page, totaling 409 acres, or 35% of the combined PAs. Discounting the unsurveyed private PAs, that percentage increases substantially.

SV01 • **type:** floodplain wetland • **acres:** 10.5 • **boundary criteria**: w-u, type, pa • **pin**: 4B2201010010, 21 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.45	Higher	6.45	Higher
Waterbird Feeding Habitat	8.19	Higher	6.67	Higher
Water Storage	6.22	Higher	10.00	Higher
Phosphorus Retention	4.81	Higher	4.81	Higher
Pollinator Habitat	9.83	Higher	4.07	Moderate
Anadromous Fish Habitat	9.72	Higher	5.59	Moderate
Songbird, Raptor, & Mammal Habitat	8.37	Higher	4.14	Moderate
Native Plant Habitat	7.97	Higher	2.31	Moderate
Waterbird Nesting Habitat	6.79	Higher	9.10	Moderate
Invertebrate Habitat	5.36	Higher	5.31	Moderate
Sediment Retention & Stabilization	4.57	Higher	2.53	Moderate
Organic Nutrient Export	8.20	Higher	N.A.	N.A.
Water Cooling	4.82	Moderate	7.71	Higher
Stream Flow Support	3.63	Moderate	8.58	Higher
Nitrate Removal	2.90	Moderate	7.07	Higher
Water Warming	2.56	Moderate	5.70	Higher
Carbon Sequestration	4.66	Moderate	N.A.	N.A.
Amphibian Habitat	0.77	Lower	9.23	Higher
Public Use & Recognition	N.A.	N.A.	7.68	Higher
Wetland Risk	N.A.	N.A.	6.43	Higher
Wetland Stressors	N.A.	N.A.	7.25	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.45	Moderate
Wetland Sensitivity	N.A.	N.A.	3.85	Lower



Unit maps for SV01 02 03 04



SV02 • **type:** forested peatland • **acres:** 9.3 • **boundary criteria**: w-u, type, pa • **pin**: 4B2201010021 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	7.00	Higher	6.06	Higher
Stream Flow Support	7.23	Higher	1.95	Moderate
Pollinator Habitat	7.15	Higher	4.07	Moderate
Water Cooling	6.51	Higher	3.51	Moderate
Songbird, Raptor, & Mammal Habitat	9.27	Higher	1.67	Lower
Organic Nutrient Export	8.37	Higher	N.A.	N.A.
Nitrate Removal	2.15	Moderate	6.82	Higher
Native Plant Habitat	4.15	Moderate	3.75	Moderate
Amphibian Habitat	3.56	Moderate	4.39	Moderate
Water Storage	3.76	Moderate	1.11	Lower
Invertebrate Habitat	3.62	Moderate	0.91	Lower
Carbon Sequestration	4.62	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.24	Lower	4.43	Moderate
Phosphorus Retention	2.08	Lower	2.08	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.77	Moderate
Wetland Risk	N.A.	N.A.	5.64	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower
Wetland Ecological Condition	N.A.	N.A.	2.79	Lower
Public Use & Recognition	N.A.	N.A.	1.56	Lower

SV03 • **type:** forested peatland • **acres:** 11.8 • **boundary criteria**: w-u, pa • **pin**: 4B2201010010 • no known or probable anadromous fish

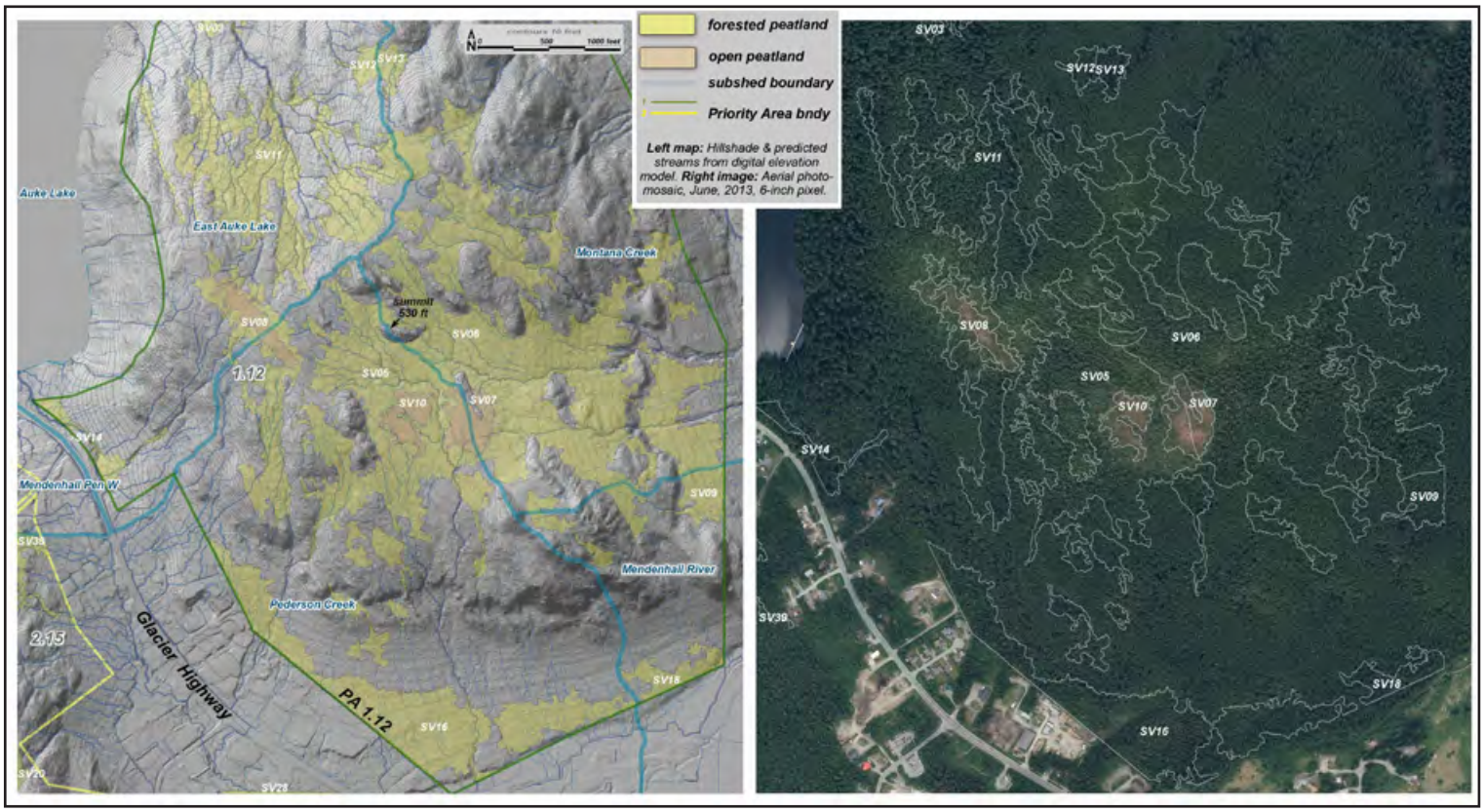
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	6.46	Higher
Stream Flow Support	7.48	Higher	2.02	Moderate
Water Cooling	6.99	Higher	3.51	Moderate
Songbird, Raptor, & Mammal Habitat	9.32	Higher	1.67	Lower
Nitrate Removal	2.20	Moderate	6.82	Higher
Pollinator Habitat	6.58	Moderate	4.07	Moderate
Native Plant Habitat	4.37	Moderate	3.65	Moderate
Amphibian Habitat	3.75	Moderate	4.43	Moderate
Invertebrate Habitat	3.95	Moderate	0.94	Lower
Water Storage	3.76	Moderate	1.11	Lower
Organic Nutrient Export	7.62	Moderate	N.A.	N.A.
Carbon Sequestration	4.84	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.67	Lower	4.43	Moderate
Phosphorus Retention	0.77	Lower	0.77	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.11	Moderate
Wetland Risk	N.A.	N.A.	5.72	Moderate
Public Use & Recognition	N.A.	N.A.	3.21	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower
Wetland Ecological Condition	N.A.	N.A.	2.18	Lower

SV04 • **type:** fen/marsh • **acres:** 1.8 • **boundary criteria**: w-u, type, pa • **pin**: 4B2201010021 • known or probable anadromous fish

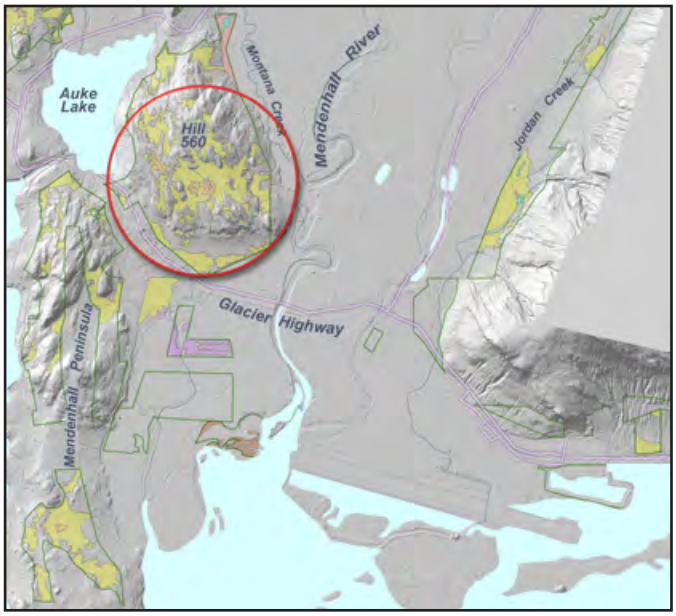
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.41	Higher	6.73	Higher
Waterbird Feeding Habitat	6.64	Higher	6.67	Higher
Waterbird Nesting Habitat	5.95	Higher	10.00	Higher
Water Storage	5.56	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	7.91	Higher	4.44	Moderate
Amphibian Habitat	5.07	Moderate	7.79	Higher
Nitrate Removal	2.56	Moderate	5.81	Higher
Pollinator Habitat	6.34	Moderate	4.47	Moderate
Anadromous Fish Habitat	5.29	Moderate	5.83	Moderate
Native Plant Habitat	5.12	Moderate	2.95	Moderate
Water Cooling	4.98	Moderate	2.14	Moderate
Sediment Retention & Stabilization	3.67	Moderate	2.09	Moderate
Phosphorus Retention	3.64	Moderate	3.64	Moderate
Water Warming	2.44	Moderate	2.01	Lower
Organic Nutrient Export	6.81	Moderate	N.A.	N.A.
Carbon Sequestration	4.85	Moderate	N.A.	N.A.
Stream Flow Support	3.05	Lower	5.96	Higher
Invertebrate Habitat	1.86	Lower	4.53	Moderate
Public Use & Recognition	N.A.	N.A.	7.48	Higher
Wetland Stressors	N.A.	N.A.	7.15	Moderate
Wetland Risk	N.A.	N.A.	5.08	Moderate
Wetland Sensitivity	N.A.	N.A.	3.76	Lower
Wetland Ecological Condition	N.A.	N.A.	0.63	Lower

SV05 • **type:** forested peatland • **acres:** 35.9 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2201010100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.97	Higher	3.05	Moderate
Native Plant Habitat	5.54	Higher	4.11	Moderate
Songbird, Raptor, & Mammal Habitat	9.20	Higher	1.11	Lower
Invertebrate Habitat	5.90	Higher	0.77	Lower
Organic Nutrient Export	8.60	Higher	N.A.	N.A.
Carbon Sequestration	6.46	Higher	N.A.	N.A.
Water Cooling	5.08	Moderate	2.63	Moderate
Stream Flow Support	4.29	Moderate	2.41	Moderate
Water Warming	3.36	Moderate	5.16	Moderate
Phosphorus Retention	2.81	Moderate	2.81	Moderate
Water Storage	4.03	Moderate	1.11	Lower
Amphibian Habitat	2.39	Lower	4.33	Moderate
Nitrate Removal	1.85	Lower	3.54	Moderate
Sediment Retention & Stabilization	1.89	Lower	0.38	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	4.11	Lower
Wetland Ecological Condition	N.A.	N.A.	3.02	Lower
Wetland Risk	N.A.	N.A.	2.92	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower



Unit maps for SV05 06 07 08 09 10 11 12 13 14 16 18



SV06 • **type:** forested peatland • **acres:** 58.2 • **boundary criteria**: w-u, type, subsh, pa • **pin**: 4B2201010021 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.93	Higher	3.93	Higher
Pollinator Habitat	6.83	Higher	3.05	Moderate
Songbird, Raptor, & Mammal Habitat	8.16	Higher	1.11	Lower
Water Cooling	5.79	Higher	1.26	Lower
Water Storage	4.13	Moderate	10.00	Higher
Nitrate Removal	2.87	Moderate	3.28	Moderate
Native Plant Habitat	4.81	Moderate	1.11	Lower
Invertebrate Habitat	4.70	Moderate	1.28	Lower
Waterbird Nesting Habitat	4.51	Moderate	0.00	Lower
Water Warming	3.31	Moderate	2.54	Lower
Amphibian Habitat	2.80	Moderate	3.47	Lower
Organic Nutrient Export	7.53	Moderate	N.A.	N.A.
Carbon Sequestration	5.78	Moderate	N.A.	N.A.
Stream Flow Support	2.39	Lower	2.17	Moderate
Sediment Retention & Stabilization	2.03	Lower	0.24	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	3.44	Lower
Public Use & Recognition	N.A.	N.A.	2.38	Lower
Wetland Sensitivity	N.A.	N.A.	2.20	Lower
Wetland Ecological Condition	N.A.	N.A.	1.65	Lower
Wetland Risk	N.A.	N.A.	1.59	Lower

SV07 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2201010100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	5.84	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	9.08	Higher	3.33	Moderate
Pollinator Habitat	8.41	Higher	3.36	Moderate
Waterbird Nesting Habitat	5.35	Moderate	10.00	Higher
Waterbird Feeding Habitat	5.10	Moderate	6.67	Higher
Water Warming	3.05	Moderate	5.71	Higher
Stream Flow Support	5.80	Moderate	1.69	Moderate
Native Plant Habitat	4.38	Moderate	3.96	Moderate
Water Cooling	3.68	Moderate	3.16	Moderate
Phosphorus Retention	2.75	Moderate	2.75	Moderate
Nitrate Removal	2.21	Moderate	3.28	Moderate
Sediment Retention & Stabilization	3.14	Moderate	0.37	Lower
Carbon Sequestration	5.74	Moderate	N.A.	N.A.
Amphibian Habitat	0.78	Lower	7.71	Higher
Invertebrate Habitat	2.31	Lower	1.99	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.78	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	4.16	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Wetland Stressors	N.A.	N.A.	3.73	Lower
Wetland Risk	N.A.	N.A.	3.02	Lower
Public Use & Recognition	N.A.	N.A.	1.47	Lower

SV08 • **type:** open peatland • **acres:** 2.0 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2201010010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.67	Higher	3.33	Moderate
Nitrate Removal	3.32	Higher	3.28	Moderate
Invertebrate Habitat	6.60	Higher	1.70	Lower
Water Warming	6.30	Higher	0.00	Lower
Carbon Sequestration	6.28	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.93	Moderate	6.67	Higher
Waterbird Nesting Habitat	4.52	Moderate	10.00	Higher
Pollinator Habitat	6.10	Moderate	3.36	Moderate
Native Plant Habitat	5.00	Moderate	3.06	Moderate
Phosphorus Retention	3.50	Moderate	3.50	Moderate
Water Storage	4.79	Moderate	1.67	Lower
Water Cooling	3.68	Moderate	0.00	Lower
Amphibian Habitat	1.50	Lower	6.42	Higher
Sediment Retention & Stabilization	2.16	Lower	1.93	Lower
Stream Flow Support	0.92	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.96	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	4.33	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.73	Lower
Wetland Risk	N.A.	N.A.	3.10	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

SV09 • **type:** for. peatland • **acres:** 5.0 • **boundary criteria**: w-u, subsh, pa • **pin**: 4B2201010080 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.62	Higher	3.05	Moderate
Nitrate Removal	3.70	Higher	3.54	Moderate
Water Cooling	8.43	Higher	0.53	Lower
Water Warming	8.40	Higher	1.00	Lower
Invertebrate Habitat	6.96	Higher	0.45	Lower
Carbon Sequestration	7.06	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.07	Moderate	1.11	Lower
Amphibian Habitat	4.03	Moderate	1.72	Lower
Native Plant Habitat	3.93	Moderate	0.50	Lower
Sediment Retention & Stabilization	3.30	Moderate	0.28	Lower
Water Storage	1.09	Lower	10.00	Higher
Stream Flow Support	2.24	Lower	2.62	Moderate
Phosphorus Retention	2.07	Lower	2.07	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.42	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	3.22	Lower
Wetland Ecological Condition	N.A.	N.A.	3.03	Lower
Wetland Risk	N.A.	N.A.	1.99	Lower
Public Use & Recognition	N.A.	N.A.	0.87	Lower

SV10 • **type:** open peatland • **acres:** 3.6 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2201010100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.68	Higher	4.68	Higher
Songbird, Raptor, & Mammal Habitat	9.28	Higher	4.14	Moderate
Stream Flow Support	6.05	Higher	2.48	Moderate
Water Cooling	5.56	Higher	3.16	Moderate
Invertebrate Habitat	6.24	Higher	2.30	Lower
Water Storage	5.84	Higher	0.00	Lower
Carbon Sequestration	6.61	Higher	N.A.	N.A.
Waterbird Feeding Habitat	5.18	Moderate	6.67	Higher
Amphibian Habitat	3.03	Moderate	7.93	Higher
Water Warming	2.52	Moderate	6.37	Higher
Pollinator Habitat	6.63	Moderate	4.07	Moderate
Waterbird Nesting Habitat	5.49	Moderate	9.10	Moderate
Native Plant Habitat	4.00	Moderate	3.65	Moderate
Nitrate Removal	3.00	Moderate	3.79	Moderate
Sediment Retention & Stabilization	3.39	Moderate	0.54	Lower
Organic Nutrient Export	6.67	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.80	Moderate
Wetland Risk	N.A.	N.A.	6.30	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.20	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.50	Lower

SV11 • **type:** forested peatland • **acres:** 26.9 • **boundary criteria**: w-u, type, subsh • **pin**: 4B2201010100 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.82	Higher	3.05	Moderate
Stream Flow Support	7.03	Higher	1.89	Moderate
Water Cooling	5.56	Higher	3.51	Moderate
Organic Nutrient Export	8.66	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	6.29	Higher
Nitrate Removal	2.46	Moderate	6.82	Higher
Native Plant Habitat	4.89	Moderate	3.15	Moderate
Phosphorus Retention	2.82	Moderate	2.82	Moderate
Songbird, Raptor, & Mammal Habitat	6.76	Moderate	1.11	Lower
Invertebrate Habitat	3.31	Moderate	0.39	Lower
Carbon Sequestration	5.27	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.10	Lower	3.78	Moderate
Water Storage	2.75	Lower	1.11	Lower
Amphibian Habitat	2.43	Lower	2.30	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	3.42	Lower
Public Use & Recognition	N.A.	N.A.	2.38	Lower
Wetland Ecological Condition	N.A.	N.A.	2.27	Lower
Wetland Risk	N.A.	N.A.	1.86	Lower

SV12 • **type:** for. peatland • **acres:** 1.1 • **boundary criteria**: w-u, subsh • **pin**: 4B2201010010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.77	Higher	N.A.	N.A.
Nitrate Removal	2.38	Moderate	3.54	Moderate
Songbird, Raptor, & Mammal Habitat	5.33	Moderate	1.11	Lower
Invertebrate Habitat	4.64	Moderate	0.16	Lower
Water Cooling	4.60	Moderate	1.26	Lower
Native Plant Habitat	3.93	Moderate	0.14	Lower
Organic Nutrient Export	6.00	Moderate	N.A.	N.A.
Water Storage	1.06	Lower	10.00	Higher
Pollinator Habitat	3.23	Lower	3.05	Moderate
Stream Flow Support	2.32	Lower	2.16	Moderate
Amphibian Habitat	2.48	Lower	1.11	Lower
Phosphorus Retention	2.22	Lower	2.22	Lower
Sediment Retention & Stabilization	1.36	Lower	0.28	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	3.44	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.38	Lower
Wetland Ecological Condition	N.A.	N.A.	1.75	Lower
Wetland Risk	N.A.	N.A.	1.64	Lower

SV13 • **type:** forested peatland • **acres:** 1.3 • **boundary criteria**: w-u, subsh • **pin**: 4B2201010010 • no known or probable anadromous fish

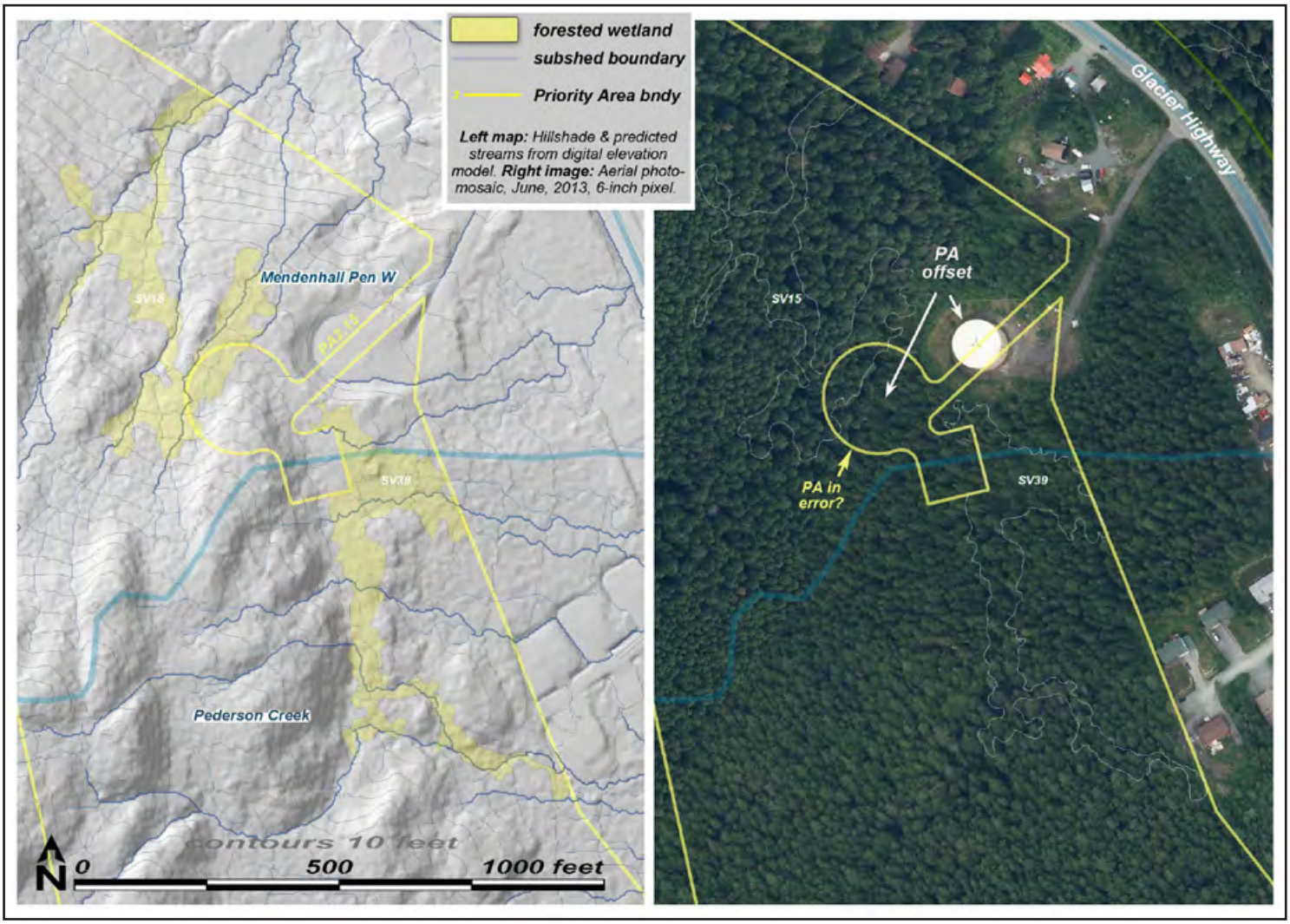
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.41	Higher	3.05	Moderate
Songbird, Raptor, & Mammal Habitat	7.94	Higher	1.11	Lower
Water Storage	4.03	Moderate	10.00	Higher
Water Cooling	4.98	Moderate	3.16	Moderate
Stream Flow Support	4.59	Moderate	1.78	Moderate
Water Warming	2.44	Moderate	5.52	Moderate
Waterbird Nesting Habitat	3.87	Moderate	0.00	Lower
Native Plant Habitat	3.46	Moderate	1.19	Lower
Nitrate Removal	1.26	Lower	3.54	Moderate
Invertebrate Habitat	2.80	Lower	1.09	Lower
Amphibian Habitat	2.22	Lower	3.28	Lower
Sediment Retention & Stabilization	1.86	Lower	0.43	Lower
Phosphorus Retention	1.76	Lower	1.76	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.33	Lower	N.A.	N.A.
Carbon Sequestration	3.54	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Stressors	N.A.	N.A.	3.22	Lower
Wetland Ecological Condition	N.A.	N.A.	1.32	Lower
Wetland Risk	N.A.	N.A.	1.22	Lower
Public Use & Recognition	N.A.	N.A.	0.64	Lower

SV14 • **type:** for. peatland • **acres:** 2.1 • **boundary criteria**: w-u, pa • **pin**: 4B2201010010 • no known or probable anadromous fish

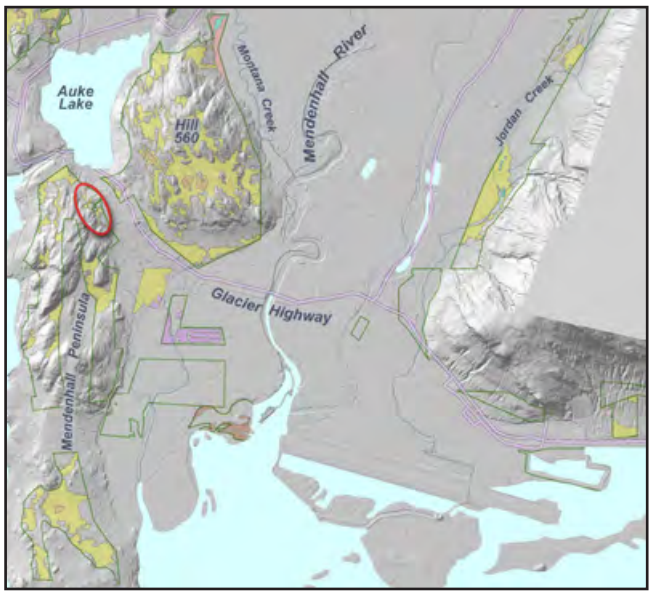
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.10	Higher	N.A.	N.A.
Pollinator Habitat	5.24	Moderate	4.07	Moderate
Native Plant Habitat	4.28	Moderate	2.31	Moderate
Phosphorus Retention	3.57	Moderate	3.57	Moderate
Nitrate Removal	3.02	Moderate	4.14	Moderate
Songbird, Raptor, & Mammal Habitat	5.89	Moderate	1.67	Lower
Invertebrate Habitat	4.99	Moderate	0.42	Lower
Water Cooling	4.60	Moderate	1.05	Lower
Amphibian Habitat	4.01	Moderate	1.58	Lower
Organic Nutrient Export	6.42	Moderate	N.A.	N.A.
Stream Flow Support	1.82	Lower	2.22	Moderate
Sediment Retention & Stabilization	2.10	Lower	0.75	Lower
Water Storage	1.03	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	8.13	Higher
Wetland Risk	N.A.	N.A.	6.70	Higher
Public Use & Recognition	N.A.	N.A.	6.03	Higher
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	1.95	Lower

SV15 • **type:** for. peatland • **acres:** 1.7 • **boundary criteria**: w-u, pa • **pin**: 4B2301010170 • no known or probable anadromous

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	7.79	Higher	3.95	Moderate
Stream Flow Support	7.78	Higher	2.03	Moderate
Organic Nutrient Export	8.78	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	7.48	Higher
Nitrate Removal	2.72	Moderate	6.57	Higher
Pollinator Habitat	4.59	Moderate	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	6.53	Moderate	2.50	Lower
Invertebrate Habitat	4.02	Moderate	0.40	Lower
Amphibian Habitat	2.89	Moderate	2.11	Lower
Carbon Sequestration	5.02	Moderate	N.A.	N.A.
Native Plant Habitat	3.10	Lower	2.31	Moderate
Sediment Retention & Stabilization	2.23	Lower	3.71	Moderate
Water Storage	2.64	Lower	1.11	Lower
Phosphorus Retention	2.43	Lower	2.43	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	7.19	Moderate
Wetland Risk	N.A.	N.A.	5.41	Moderate
Public Use & Recognition	N.A.	N.A.	3.94	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.30	Lower



Unit maps for SV15 39

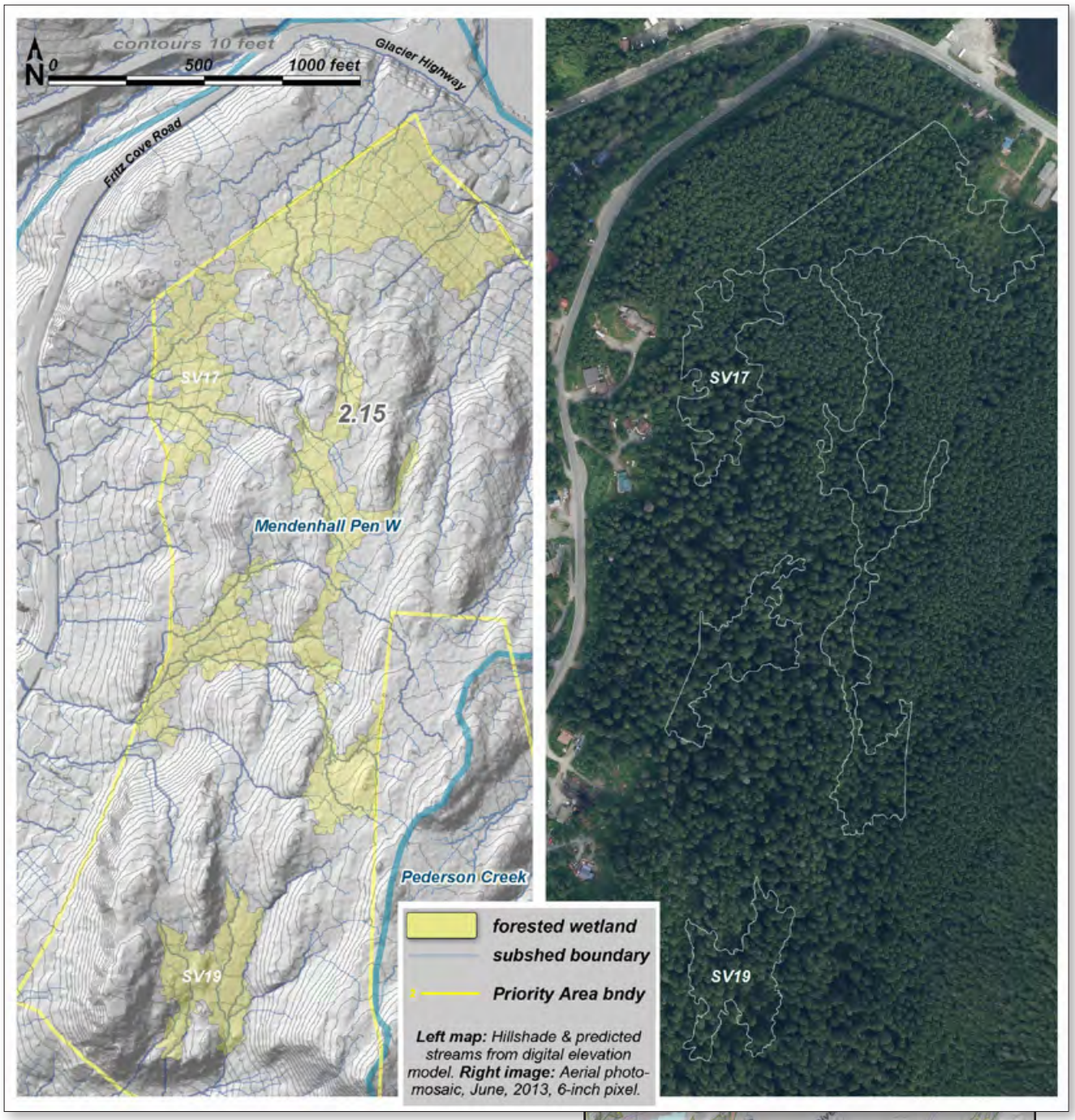


SV16 • **type:** for. peatland • **acres:** 20.4 • **boundary criteria**: w-u, pa • **pin**: 4B2201010100, 80 • no known or probable anadromous fish

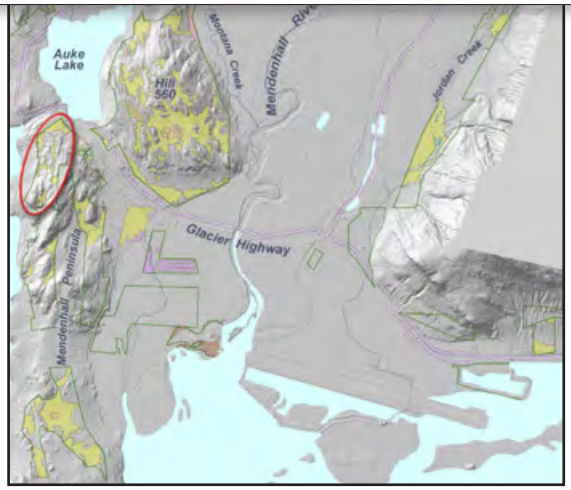
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.06	Higher	10.00	Higher
Pollinator Habitat	9.21	Higher	4.07	Moderate
Stream Flow Support	6.72	Higher	1.78	Moderate
Water Cooling	5.56	Higher	3.07	Moderate
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Nitrate Removal	2.26	Moderate	6.31	Higher
Water Warming	4.62	Moderate	5.34	Moderate
Native Plant Habitat	4.36	Moderate	2.31	Moderate
Phosphorus Retention	3.14	Moderate	3.14	Moderate
Amphibian Habitat	3.77	Moderate	3.38	Lower
Water Storage	3.44	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.41	Moderate	0.00	Lower
Organic Nutrient Export	7.46	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.19	Lower	3.61	Moderate
Invertebrate Habitat	2.78	Lower	1.21	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.56	Moderate
Wetland Risk	N.A.	N.A.	5.12	Moderate
Public Use & Recognition	N.A.	N.A.	2.81	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.12	Lower

SV17 • **type:** forested peatland • **acres:** 15.2 • **boundary criteria**: w-u, pa • **pin**: 4B2301010170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.23	Higher	1.88	Moderate
Pollinator Habitat	6.97	Higher	4.07	Moderate
Organic Nutrient Export	8.25	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	7.05	Higher
Nitrate Removal	3.05	Moderate	6.57	Higher
Water Cooling	5.17	Moderate	3.51	Moderate
Native Plant Habitat	4.01	Moderate	2.31	Moderate
Songbird, Raptor, & Mammal Habitat	5.94	Moderate	2.50	Lower
Invertebrate Habitat	3.25	Moderate	0.26	Lower
Water Storage	2.95	Moderate	1.11	Lower
Carbon Sequestration	4.65	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.27	Lower	3.81	Moderate
Amphibian Habitat	2.49	Lower	1.62	Lower
Phosphorus Retention	2.01	Lower	2.01	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Risk	N.A.	N.A.	6.82	Higher
Public Use & Recognition	N.A.	N.A.	5.45	Higher
Wetland Stressors	N.A.	N.A.	7.26	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.29	Moderate



Unit maps for SV17 19



SV18 • **type:** for. peatland • **acres:** 2.5 • **boundary criteria**: w-u, pa • **pin**: 4B2201010100, 80 • no known or probable anadromous fish

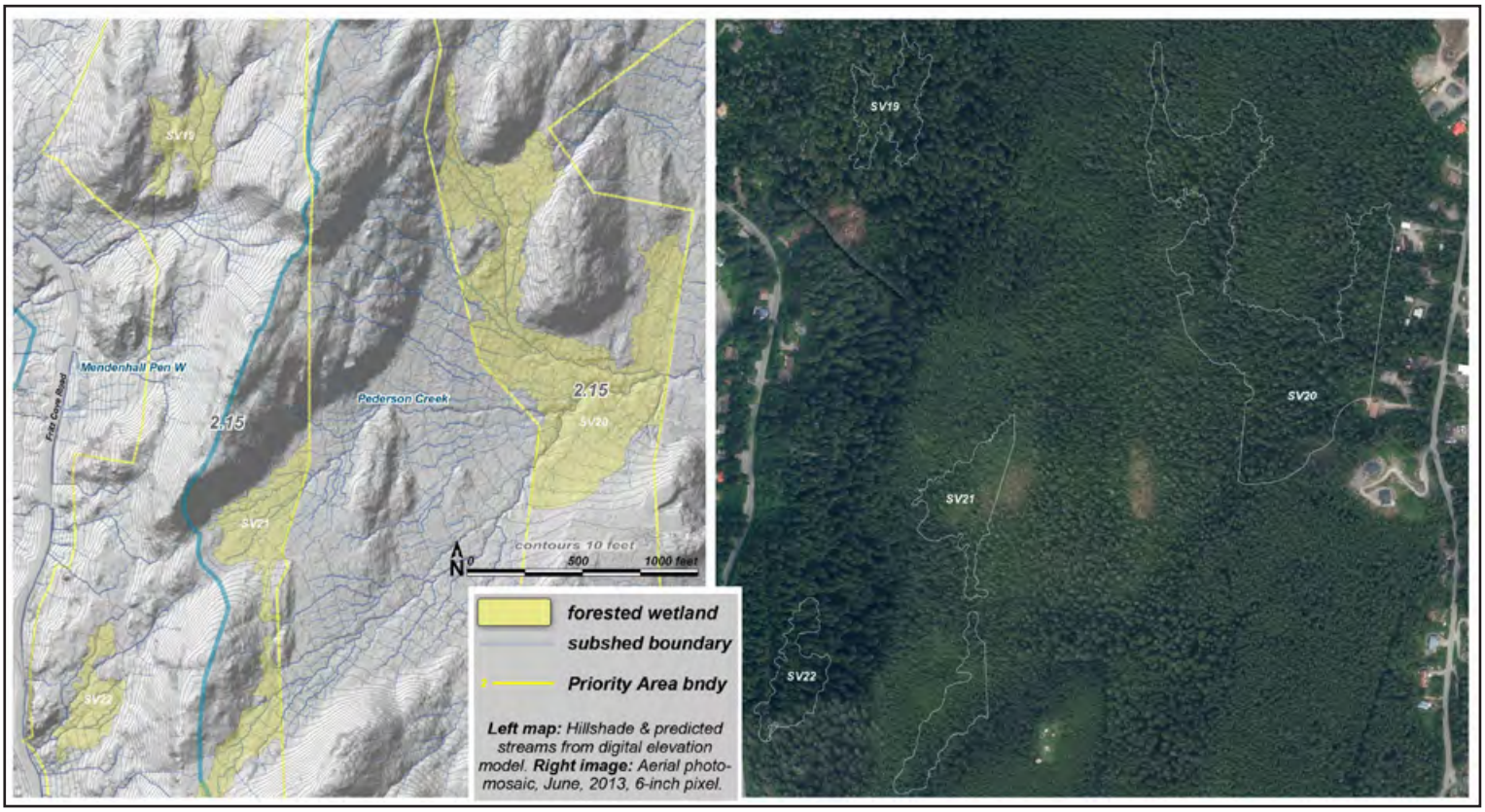
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.01	Higher	10.00	Higher
Pollinator Habitat	8.20	Higher	4.07	Moderate
Carbon Sequestration	7.02	Higher	N.A.	N.A.
Native Plant Habitat	4.33	Moderate	2.31	Moderate
Water Warming	2.94	Moderate	4.24	Moderate
Water Cooling	4.66	Moderate	1.40	Lower
Amphibian Habitat	3.52	Moderate	3.34	Lower
Organic Nutrient Export	6.92	Moderate	N.A.	N.A.
Nitrate Removal	1.01	Lower	6.57	Higher
Stream Flow Support	2.27	Lower	1.68	Moderate
Sediment Retention & Stabilization	0.39	Lower	3.67	Moderate
Water Storage	2.57	Lower	0.56	Lower
Invertebrate Habitat	2.28	Lower	0.71	Lower
Phosphorus Retention	2.09	Lower	2.09	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Stressors	N.A.	N.A.	6.56	Moderate
Wetland Risk	N.A.	N.A.	5.61	Moderate
Public Use & Recognition	N.A.	N.A.	2.70	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.23	Lower

SV19 • **type:** forested peatland • **acres:** 2.5 • **boundary criteria**: w-u • **pin**: 4B2301010170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.52	Higher	1.80	Moderate
Water Cooling	5.56	Higher	3.07	Moderate
Organic Nutrient Export	8.22	Higher	N.A.	N.A.
Nitrate Removal	2.04	Moderate	6.57	Higher
Pollinator Habitat	5.31	Moderate	4.07	Moderate
Water Warming	4.62	Moderate	5.15	Moderate
Phosphorus Retention	2.80	Moderate	2.80	Moderate
Songbird, Raptor, & Mammal Habitat	6.63	Moderate	2.50	Lower
Carbon Sequestration	5.31	Moderate	N.A.	N.A.
Native Plant Habitat	2.60	Lower	2.31	Moderate
Sediment Retention & Stabilization	0.56	Lower	3.71	Moderate
Invertebrate Habitat	2.87	Lower	0.35	Lower
Amphibian Habitat	2.27	Lower	2.19	Lower
Water Storage	1.97	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.66	Moderate
Wetland Risk	N.A.	N.A.	5.34	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.39	Lower
Public Use & Recognition	N.A.	N.A.	0.99	Lower

SV20 • **type:** for. peatland • **acres:** 17.6 • **boundary criteria**: w-u, pa • **pin**: 4B2301010170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	6.36	Higher	3.07	Moderate
Songbird, Raptor, & Mammal Habitat	7.80	Higher	2.50	Lower
Invertebrate Habitat	6.05	Higher	1.01	Lower
Organic Nutrient Export	8.61	Higher	N.A.	N.A.
Carbon Sequestration	6.40	Higher	N.A.	N.A.
Nitrate Removal	2.28	Moderate	6.82	Higher
Pollinator Habitat	6.69	Moderate	4.07	Moderate
Native Plant Habitat	4.76	Moderate	3.22	Moderate
Stream Flow Support	4.29	Moderate	2.44	Moderate
Phosphorus Retention	3.68	Moderate	3.68	Moderate
Water Warming	2.52	Moderate	5.16	Moderate
Sediment Retention & Stabilization	2.40	Moderate	4.42	Moderate
Water Storage	4.79	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.37	Moderate	0.00	Lower
Amphibian Habitat	2.38	Lower	3.17	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.62	Higher
Wetland Stressors	N.A.	N.A.	6.95	Moderate
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.58	Moderate
Public Use & Recognition	N.A.	N.A.	2.10	Lower



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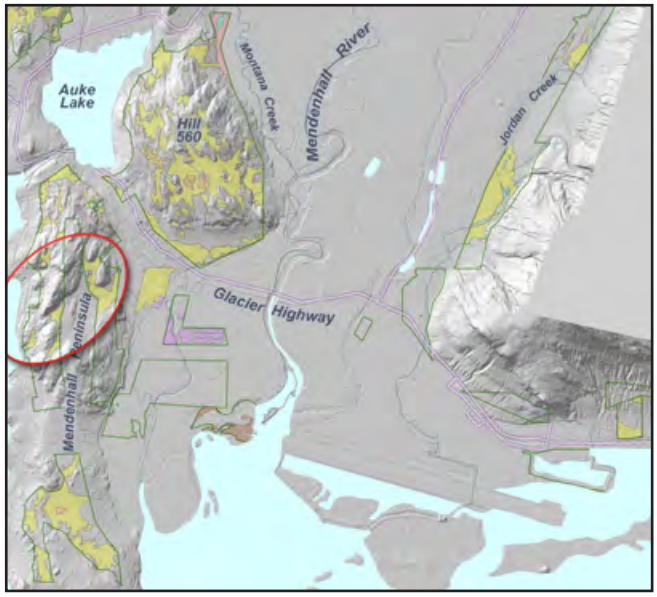
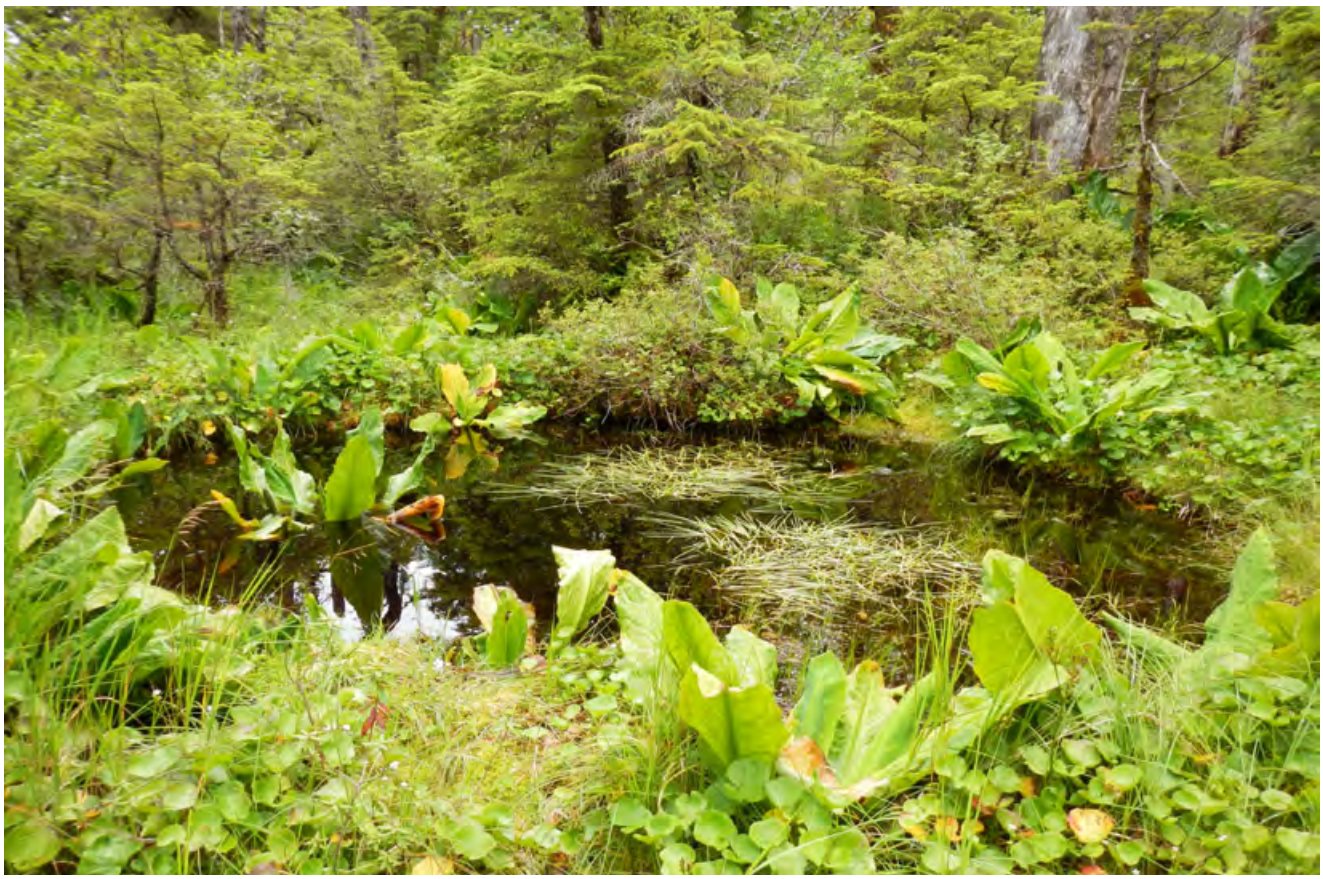




SV21 • **type:** for. peatland • **acres:** 5.7 • **boundary criteria**: w-u, pa • **pin**: 4B2301010170 • no known or probable anadromous fish

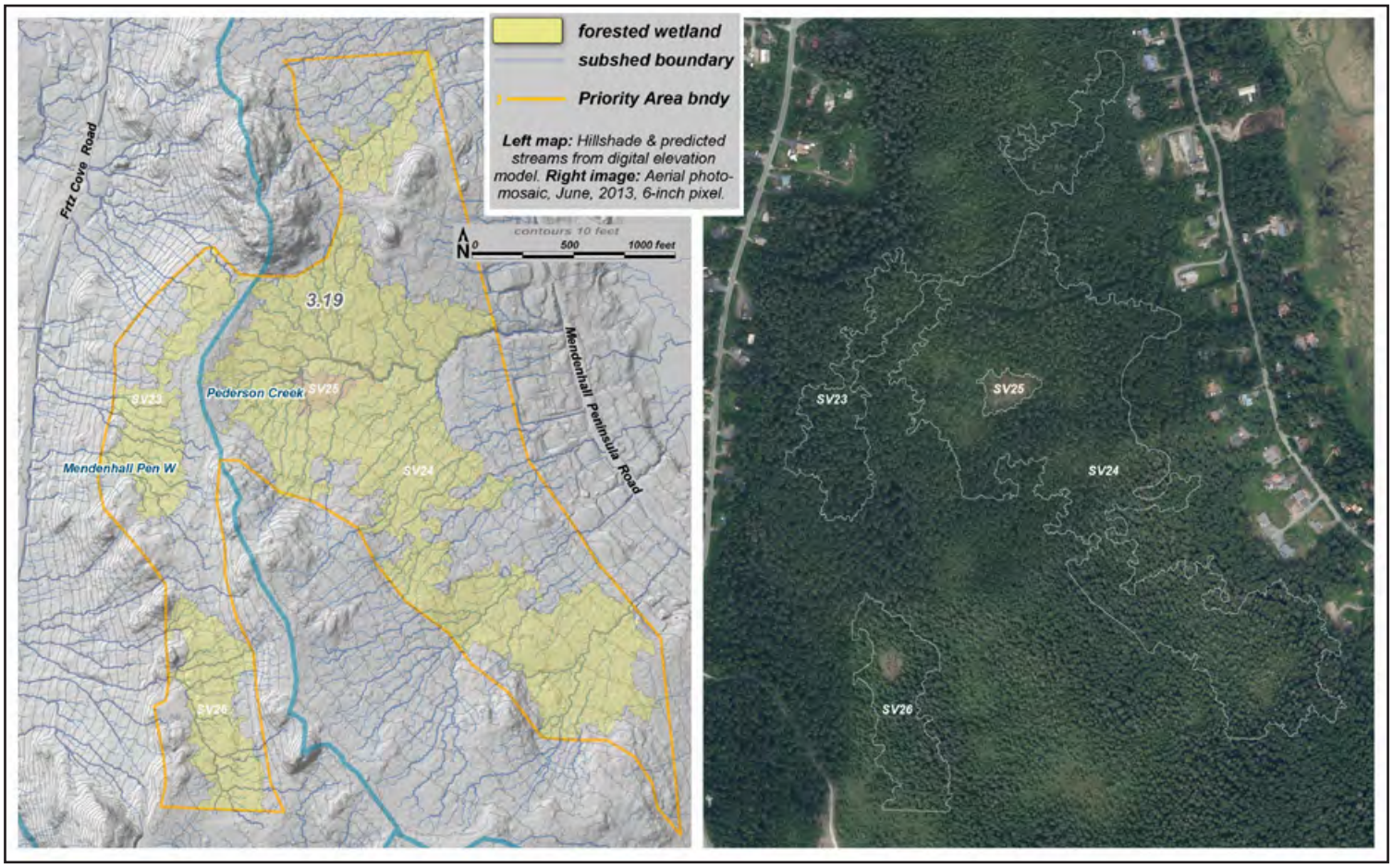
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.26	Higher	4.07	Moderate
Native Plant Habitat	5.84	Higher	2.31	Moderate
Songbird, Raptor, & Mammal Habitat	8.27	Higher	2.50	Lower
Water Cooling	6.26	Higher	1.23	Lower
Organic Nutrient Export	8.15	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	3.58	Moderate
Stream Flow Support	3.49	Moderate	1.91	Moderate
Water Storage	3.82	Moderate	1.11	Lower
Invertebrate Habitat	3.42	Moderate	0.58	Lower
Carbon Sequestration	5.92	Moderate	N.A.	N.A.
Nitrate Removal	1.84	Lower	6.82	Higher
Sediment Retention & Stabilization	2.18	Lower	3.93	Moderate
Phosphorus Retention	2.21	Lower	2.21	Lower
Amphibian Habitat	2.02	Lower	3.56	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	6.30	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.23	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

SV22 • **type:** forested peatland • **acres:** 2.2 • **boundary criteria**: w-u • **pin**: 4B2301010170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.04	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	8.18	Higher	2.50	Lower
Carbon Sequestration	6.50	Higher	N.A.	N.A.
Water Warming	2.94	Moderate	5.90	Higher
Native Plant Habitat	4.63	Moderate	2.31	Moderate
Water Cooling	4.28	Moderate	3.07	Moderate
Stream Flow Support	4.03	Moderate	1.80	Moderate
Water Storage	4.11	Moderate	1.11	Lower
Organic Nutrient Export	7.50	Moderate	N.A.	N.A.
Nitrate Removal	1.58	Lower	6.82	Higher
Sediment Retention & Stabilization	1.61	Lower	3.93	Moderate
Invertebrate Habitat	2.89	Lower	0.60	Lower
Amphibian Habitat	2.31	Lower	3.48	Lower
Phosphorus Retention	0.44	Lower	0.44	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.04	Moderate
Wetland Risk	N.A.	N.A.	6.36	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.79	Moderate
Wetland Sensitivity	N.A.	N.A.	4.44	Lower
Public Use & Recognition	N.A.	N.A.	1.28	Lower

SV23 • **type:** forested peatland • **acres:** 7.7 • **boundary criteria**: w-u, pa, subsh • **pin**: 4B1901070010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.12	Higher	4.12	Higher
Pollinator Habitat	7.75	Higher	3.05	Moderate
Songbird, Raptor, & Mammal Habitat	8.91	Higher	2.22	Lower
Invertebrate Habitat	6.12	Higher	1.30	Lower
Organic Nutrient Export	9.06	Higher	N.A.	N.A.
Carbon Sequestration	6.49	Higher	N.A.	N.A.
Water Warming	4.20	Moderate	7.17	Higher
Nitrate Removal	1.98	Moderate	6.31	Higher
Water Cooling	4.60	Moderate	3.16	Moderate
Amphibian Habitat	3.44	Moderate	4.09	Moderate
Stream Flow Support	3.33	Moderate	2.45	Moderate
Native Plant Habitat	4.19	Moderate	1.66	Lower
Waterbird Nesting Habitat	3.30	Moderate	0.00	Lower
Water Storage	3.16	Moderate	1.11	Lower
Sediment Retention & Stabilization	1.81	Lower	0.24	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.47	Lower
Public Use & Recognition	N.A.	N.A.	2.04	Lower
Wetland Ecological Condition	N.A.	N.A.	1.93	Lower
Wetland Risk	N.A.	N.A.	1.76	Lower



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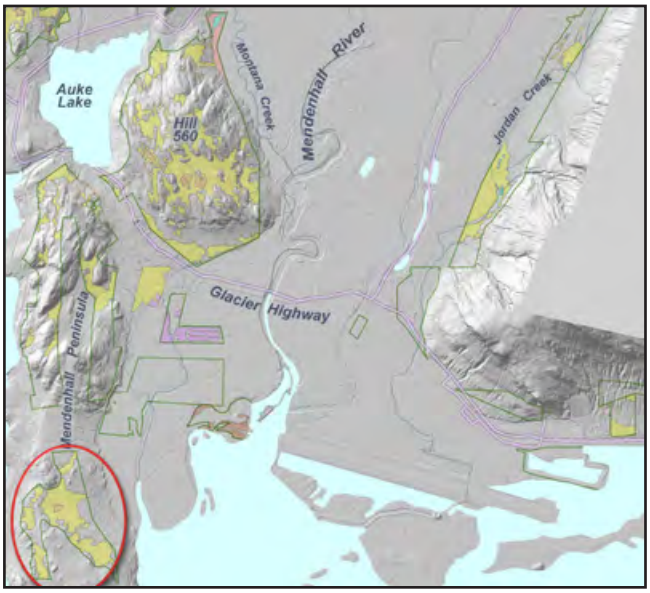


SV24 • **type:** for. peatland • **acres:** 50.0 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 4B1901070010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.93	Higher	3.33	Moderate
Pollinator Habitat	7.27	Higher	4.07	Moderate
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Carbon Sequestration	6.54	Higher	N.A.	N.A.
Native Plant Habitat	4.20	Moderate	2.31	Moderate
Phosphorus Retention	2.65	Moderate	2.65	Moderate
Water Warming	2.44	Moderate	5.25	Moderate
Water Cooling	4.98	Moderate	1.58	Lower
Invertebrate Habitat	3.53	Moderate	0.65	Lower
Amphibian Habitat	3.08	Moderate	3.27	Lower
Water Storage	2.92	Moderate	1.11	Lower
Nitrate Removal	1.32	Lower	6.57	Higher
Stream Flow Support	2.55	Lower	1.93	Moderate
Sediment Retention & Stabilization	1.84	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.89	Moderate
Wetland Risk	N.A.	N.A.	5.99	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.32	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.82	Lower

SV25 • **type:** open peatland • **acres:** 1.1 • **boundary criteria**: type • **pin**: 4B1901070010 • no known or probable anadromous fish

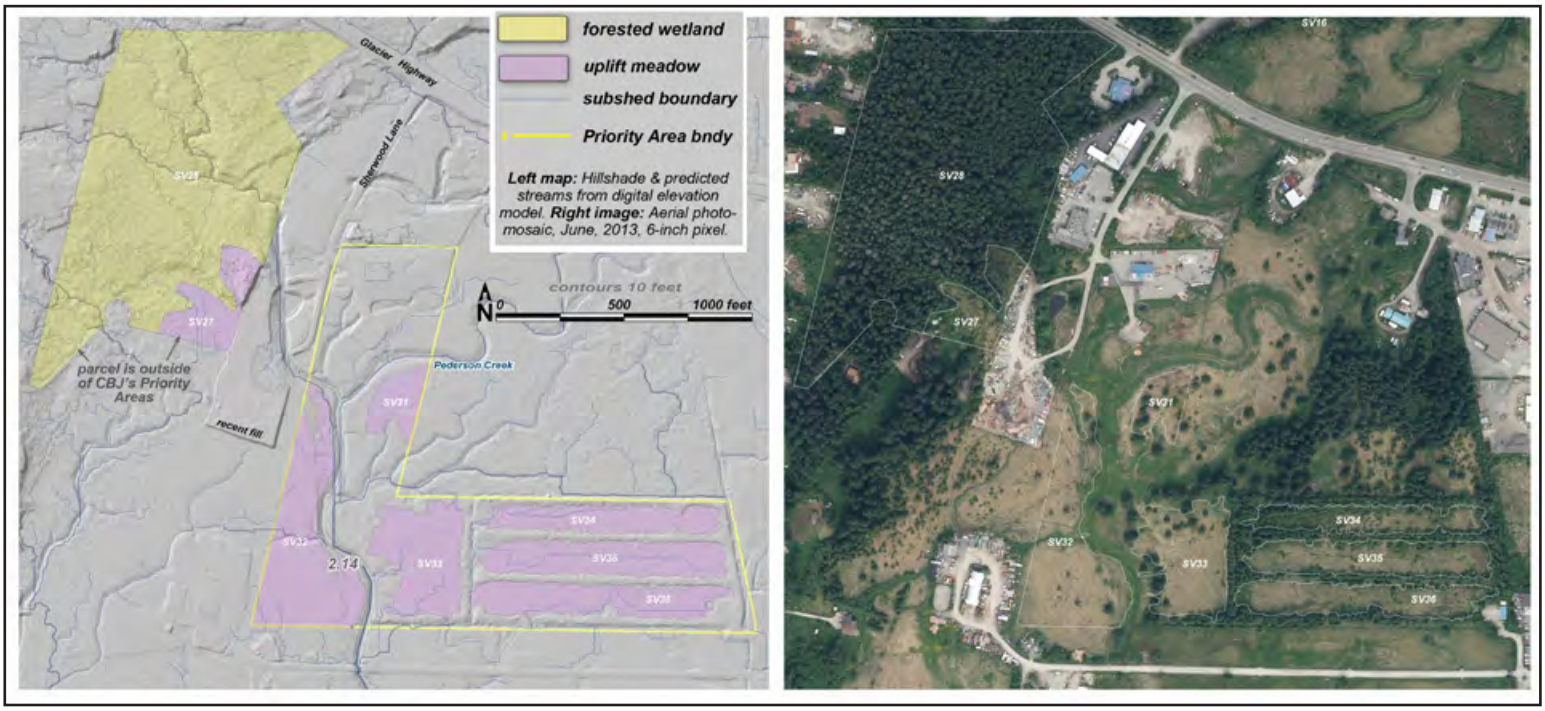
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.69	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.05	Moderate	5.56	Moderate
Pollinator Habitat	4.35	Moderate	4.47	Moderate
Stream Flow Support	3.53	Moderate	1.91	Moderate
Water Cooling	4.60	Moderate	1.47	Lower
Waterbird Feeding Habitat	3.63	Moderate	0.00	Lower
Invertebrate Habitat	3.43	Moderate	0.51	Lower
Native Plant Habitat	2.98	Lower	2.95	Moderate
Nitrate Removal	0.55	Lower	3.54	Moderate
Amphibian Habitat	1.69	Lower	3.35	Lower
Phosphorus Retention	1.06	Lower	1.06	Lower
Sediment Retention & Stabilization	0.99	Lower	0.28	Lower
Water Storage	0.79	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.64	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.90	Moderate
Wetland Risk	N.A.	N.A.	5.61	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.43	Lower
Public Use & Recognition	N.A.	N.A.	1.94	Lower

SV26 • **type:** forested peatland • **acres:** 7.4 • **boundary criteria**: w-u, pa • **pin**: 4B1901070010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.50	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	8.00	Higher	3.33	Moderate
Organic Nutrient Export	8.46	Higher	N.A.	N.A.
Carbon Sequestration	6.18	Higher	N.A.	N.A.
Water Warming	2.94	Moderate	6.41	Higher
Nitrate Removal	2.39	Moderate	6.57	Higher
Native Plant Habitat	5.01	Moderate	2.31	Moderate
Stream Flow Support	4.34	Moderate	1.68	Moderate
Water Cooling	4.28	Moderate	3.51	Moderate
Water Storage	3.58	Moderate	1.11	Lower
Amphibian Habitat	3.33	Moderate	3.33	Lower
Sediment Retention & Stabilization	1.57	Lower	2.70	Moderate
Phosphorus Retention	2.43	Lower	2.43	Lower
Invertebrate Habitat	2.26	Lower	0.68	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.80	Moderate
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Risk	N.A.	N.A.	5.59	Moderate
Public Use & Recognition	N.A.	N.A.	3.77	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.60	Lower

SV27 • **type:** uplift meadow • **acres:** 1.7 • **boundary criteria**: type, pa • **pin**: 4B1701130020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.40	Higher	7.20	Higher
Phosphorus Retention	4.43	Higher	4.43	Higher
Water Storage	5.76	Higher	2.78	Lower
Organic Nutrient Export	7.73	Higher	N.A.	N.A.
Waterbird Nesting Habitat	5.02	Moderate	9.80	Higher
Pollinator Habitat	4.83	Moderate	7.99	Higher
Amphibian Habitat	4.21	Moderate	6.92	Higher
Native Plant Habitat	4.16	Moderate	7.14	Higher
Sediment Retention & Stabilization	3.41	Moderate	10.00	Higher
Nitrate Removal	2.25	Moderate	6.57	Higher
Waterbird Feeding Habitat	4.77	Moderate	4.96	Moderate
Water Warming	3.68	Moderate	2.99	Moderate
Water Cooling	3.30	Moderate	1.75	Lower
Invertebrate Habitat	2.20	Lower	10.00	Higher
Stream Flow Support	0.76	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.97	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	8.14	Higher
Wetland Ecological Condition	N.A.	N.A.	7.46	Higher
Wetland Stressors	N.A.	N.A.	7.18	Moderate
Wetland Sensitivity	N.A.	N.A.	2.90	Lower
Public Use & Recognition	N.A.	N.A.	1.92	Lower



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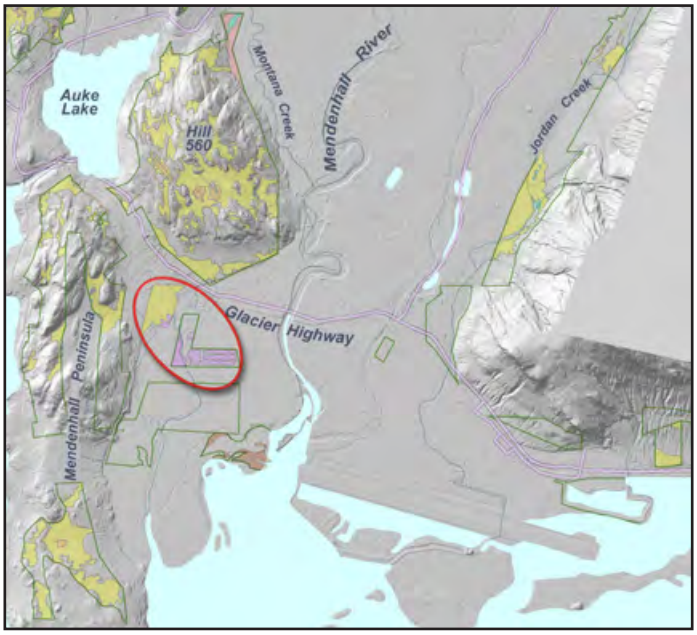
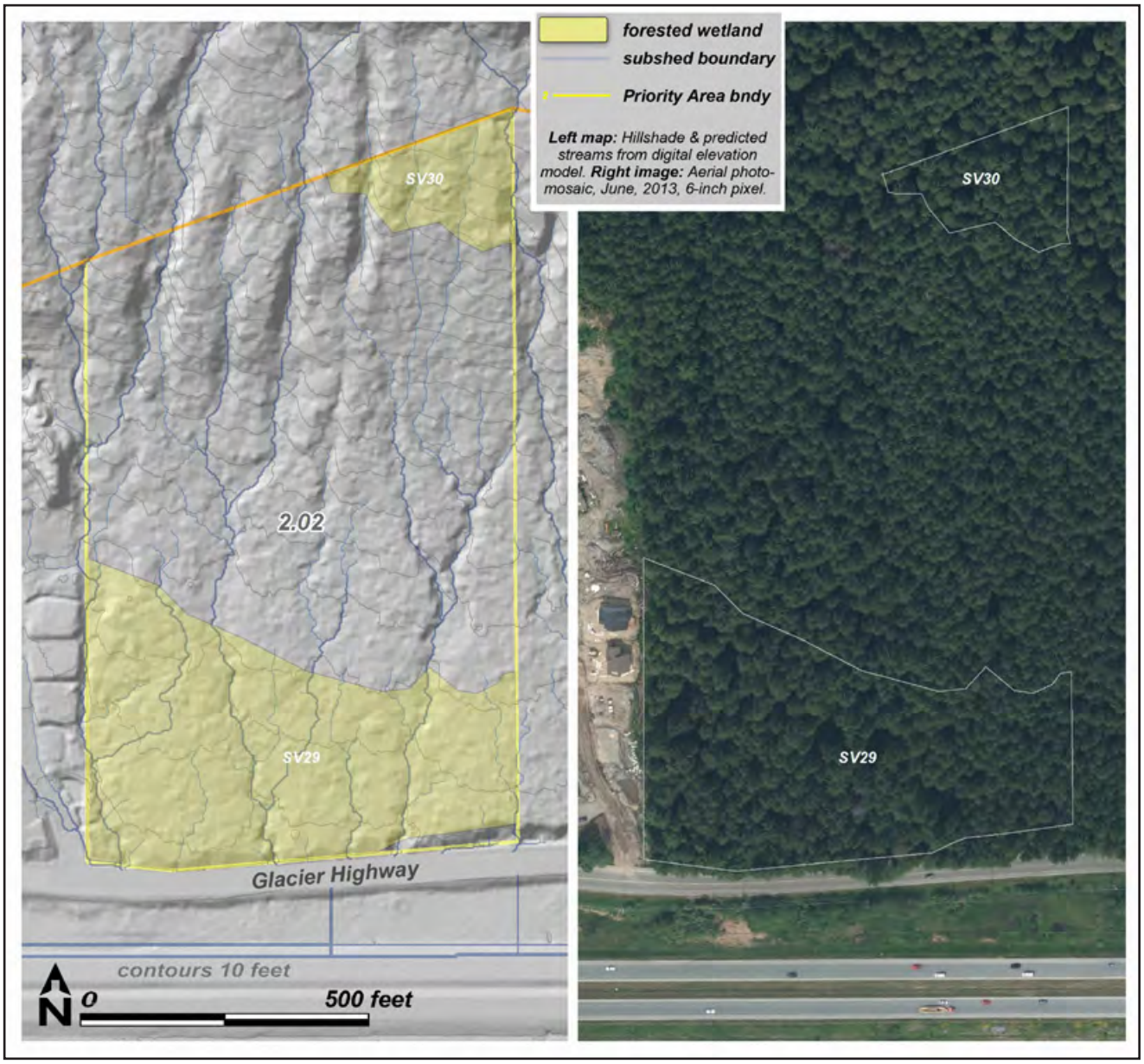


SV28 • **type:** for. peatland • **acres:** 21.3 • **boundary criteria**: type, pa • **pin**: 4B1701130020 • known or probable anadromous fish

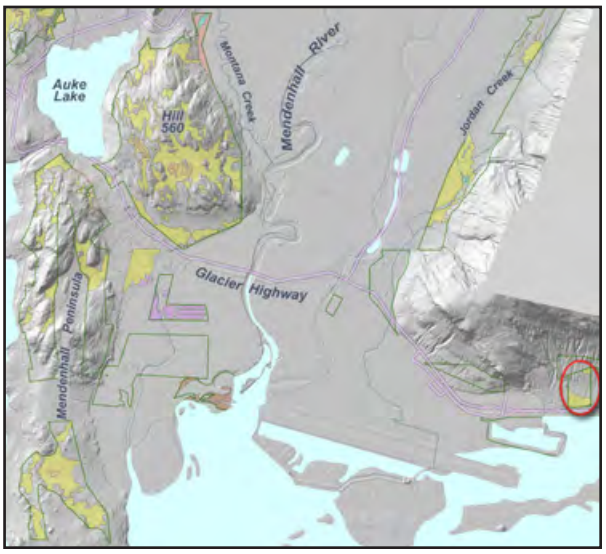
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.93	Higher	3.33	Moderate
Pollinator Habitat	7.27	Higher	4.07	Moderate
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Carbon Sequestration	6.54	Higher	N.A.	N.A.
Native Plant Habitat	4.20	Moderate	2.31	Moderate
Phosphorus Retention	2.65	Moderate	2.65	Moderate
Water Warming	2.44	Moderate	5.25	Moderate
Water Cooling	4.98	Moderate	1.58	Lower
Invertebrate Habitat	3.53	Moderate	0.65	Lower
Amphibian Habitat	3.08	Moderate	3.27	Lower
Water Storage	2.92	Moderate	1.11	Lower
Nitrate Removal	1.32	Lower	6.57	Higher
Stream Flow Support	2.55	Lower	1.93	Moderate
Sediment Retention & Stabilization	1.84	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.89	Moderate
Wetland Risk	N.A.	N.A.	5.99	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.32	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.82	Lower

SV29 • **type:** for. peatland • **acres:** 6.3 • **boundary criteria**: w-u, pa • **pin**: 5B1401010010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Invertebrate Habitat	5.71	Higher	0.18	Lower
Carbon Sequestration	6.65	Higher	N.A.	N.A.
Pollinator Habitat	6.28	Moderate	4.43	Moderate
Native Plant Habitat	3.68	Moderate	2.88	Moderate
Songbird, Raptor, & Mammal Habitat	5.45	Moderate	0.83	Lower
Water Cooling	4.60	Moderate	1.05	Lower
Organic Nutrient Export	6.30	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.01	Lower	10.00	Higher
Stream Flow Support	2.02	Lower	2.37	Moderate
Nitrate Removal	1.60	Lower	3.64	Moderate
Amphibian Habitat	2.51	Lower	1.21	Lower
Phosphorus Retention	1.44	Lower	1.44	Lower
Water Storage	0.85	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	9.33	Higher
Wetland Risk	N.A.	N.A.	8.25	Higher
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Public Use & Recognition	N.A.	N.A.	2.48	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.58	Lower



Unit maps for SV29 30



SV30 • **type:** for. peatland • **acres:** 1.1 • **boundary criteria**: w-u, pa • **pin**: 5B1401010010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	8.43	Higher	1.05	Lower
Water Warming	8.40	Higher	2.08	Lower
Invertebrate Habitat	7.11	Higher	0.37	Lower
Pollinator Habitat	6.14	Moderate	4.43	Moderate
Native Plant Habitat	4.51	Moderate	2.88	Moderate
Nitrate Removal	2.82	Moderate	3.54	Moderate
Songbird, Raptor, & Mammal Habitat	6.47	Moderate	1.67	Lower
Organic Nutrient Export	7.33	Moderate	N.A.	N.A.
Carbon Sequestration	5.14	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.08	Lower	10.00	Higher
Stream Flow Support	3.16	Lower	2.65	Moderate
Amphibian Habitat	2.70	Lower	2.06	Lower
Phosphorus Retention	1.36	Lower	1.36	Lower
Water Storage	0.18	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	7.10	Moderate
Wetland Risk	N.A.	N.A.	5.75	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.27	Lower
Public Use & Recognition	N.A.	N.A.	0.99	Lower

SV31 • **type:** uplift meadow • **acres:** 1.0 • **boundary criteria**: w-u, pa • **pin**: 4B1701100120 4B1701100210 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.01	Higher	4.01	Higher
Water Storage	7.26	Higher	5.00	Moderate
Sediment Retention & Stabilization	7.74	Higher	1.93	Lower
Nitrate Removal	3.68	Higher	2.78	Lower
Carbon Sequestration	6.07	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.38	Moderate	10.00	Higher
Amphibian Habitat	3.83	Moderate	4.17	Moderate
Pollinator Habitat	3.31	Lower	6.61	Higher
Invertebrate Habitat	2.97	Lower	10.00	Higher
Native Plant Habitat	0.97	Lower	5.19	Moderate
Stream Flow Support	0.54	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.97	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.43	Moderate
Wetland Sensitivity	N.A.	N.A.	6.24	Moderate
Wetland Risk	N.A.	N.A.	5.63	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.60	Moderate
Public Use & Recognition	N.A.	N.A.	2.83	Moderate

SV32 • **type:** uplift meadow • **acres:** 4.9 • **boundary criteria**: w-u, pa • **pin**: 4B1701100120 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	7.26	Higher	10.00	Higher
Phosphorus Retention	4.34	Higher	4.34	Higher
Sediment Retention & Stabilization	7.74	Higher	1.93	Lower
Nitrate Removal	4.11	Higher	2.78	Lower
Songbird, Raptor, & Mammal Habitat	4.05	Moderate	10.00	Higher
Amphibian Habitat	3.78	Moderate	4.17	Moderate
Carbon Sequestration	5.68	Moderate	N.A.	N.A.
Invertebrate Habitat	2.97	Lower	10.00	Higher
Pollinator Habitat	2.40	Lower	6.61	Higher
Native Plant Habitat	1.62	Lower	5.19	Moderate
Stream Flow Support	0.27	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.17	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.27	Moderate
Wetland Sensitivity	N.A.	N.A.	6.24	Moderate
Wetland Risk	N.A.	N.A.	5.56	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.80	Moderate
Public Use & Recognition	N.A.	N.A.	2.74	Moderate

SV33 • **type:** uplift meadow • **acres:** 3.0 • **boundary criteria**: w-u, pa • **pin**: 4B1701100120 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.26	Higher	10.00	Higher
Waterbird Feeding Habitat	7.04	Higher	10.00	Higher
Waterbird Nesting Habitat	6.42	Higher	10.00	Higher
Water Cooling	5.72	Higher	0.92	Lower
Resident Fish Habitat	5.77	Moderate	7.12	Higher
Amphibian Habitat	4.23	Moderate	7.52	Higher
Invertebrate Habitat	3.81	Moderate	10.00	Higher
Anadromous Fish Habitat	4.60	Moderate	6.17	Moderate
Native Plant Habitat	4.12	Moderate	5.19	Moderate
Water Storage	3.94	Moderate	5.00	Moderate
Phosphorus Retention	3.43	Moderate	3.43	Moderate
Water Warming	4.08	Moderate	0.93	Lower
Nitrate Removal	3.08	Moderate	2.78	Lower
Carbon Sequestration	4.37	Moderate	N.A.	N.A.
Pollinator Habitat	2.23	Lower	6.61	Higher
Sediment Retention & Stabilization	2.26	Lower	1.93	Lower
Stream Flow Support	0.67	Lower	0.00	Lower
Organic Nutrient Export	5.28	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	7.63	Moderate
Wetland Risk	N.A.	N.A.	6.02	Moderate
Public Use & Recognition	N.A.	N.A.	2.60	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower
Wetland Ecological Condition	N.A.	N.A.	1.61	Lower

SV34 • **type:** uplift meadow • **acres:** 2.0 • **boundary criteria**: w-u • **pin**: 4B1701100120 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.38	Higher	10.00	Higher
Waterbird Feeding Habitat	7.03	Higher	10.00	Higher
Resident Fish Habitat	5.73	Moderate	7.12	Higher
Waterbird Nesting Habitat	5.52	Moderate	10.00	Higher
Water Cooling	5.17	Moderate	5.29	Higher
Amphibian Habitat	3.85	Moderate	7.61	Higher
Anadromous Fish Habitat	6.14	Moderate	6.17	Moderate
Water Storage	4.86	Moderate	5.00	Moderate
Phosphorus Retention	2.70	Moderate	2.70	Moderate
Nitrate Removal	3.06	Moderate	2.78	Lower
Sediment Retention & Stabilization	2.96	Moderate	1.93	Lower
Organic Nutrient Export	6.81	Moderate	N.A.	N.A.
Pollinator Habitat	3.86	Lower	6.61	Higher
Stream Flow Support	2.37	Lower	5.66	Higher
Invertebrate Habitat	1.68	Lower	10.00	Higher
Native Plant Habitat	2.15	Lower	5.19	Moderate
Water Warming	1.43	Lower	3.85	Moderate
Carbon Sequestration	2.52	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	7.00	Moderate
Wetland Risk	N.A.	N.A.	5.23	Moderate
Public Use & Recognition	N.A.	N.A.	2.97	Moderate
Wetland Sensitivity	N.A.	N.A.	3.82	Lower
Wetland Ecological Condition	N.A.	N.A.	1.34	Lower

SV35 • **type:** uplift meadow • **acres:** 2.9 • **boundary criteria**: w-u • **pin**: 4B1701100120 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.10	Higher	10.00	Higher
Water Storage	5.34	Higher	5.00	Moderate
Nitrate Removal	3.20	Higher	3.03	Lower
Songbird, Raptor, & Mammal Habitat	6.93	Moderate	10.00	Higher
Resident Fish Habitat	5.73	Moderate	7.12	Higher
Waterbird Nesting Habitat	5.53	Moderate	10.00	Higher
Amphibian Habitat	3.92	Moderate	7.29	Higher
Anadromous Fish Habitat	4.32	Moderate	6.17	Moderate
Water Cooling	4.21	Moderate	0.90	Lower
Sediment Retention & Stabilization	2.69	Moderate	1.93	Lower
Water Warming	2.44	Moderate	0.92	Lower
Organic Nutrient Export	6.39	Moderate	N.A.	N.A.
Carbon Sequestration	4.58	Moderate	N.A.	N.A.
Pollinator Habitat	3.32	Lower	6.61	Higher
Invertebrate Habitat	1.96	Lower	10.00	Higher
Native Plant Habitat	2.46	Lower	5.19	Moderate
Phosphorus Retention	2.48	Lower	2.48	Lower
Stream Flow Support	0.69	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.91	Higher
Wetland Risk	N.A.	N.A.	6.05	Moderate
Public Use & Recognition	N.A.	N.A.	3.43	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower
Wetland Ecological Condition	N.A.	N.A.	1.02	Lower

SV36 • **type:** uplift meadow • **acres:** 2.7 • **boundary criteria**: w-u • **pin**: 4B1701100120 • known or probable anadromous fish

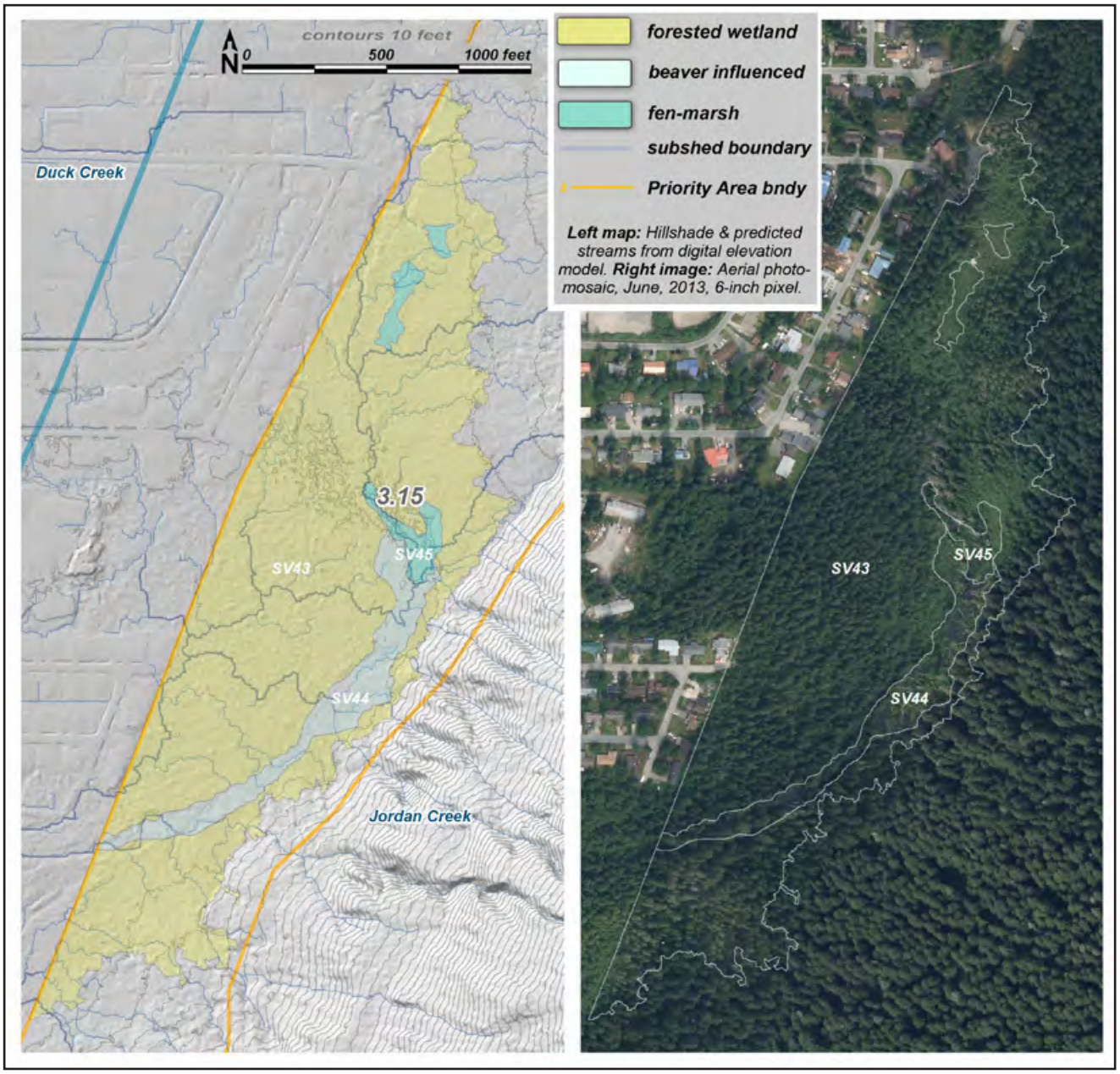
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	7.25	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	7.12	Higher	10.00	Higher
Water Storage	5.34	Higher	5.00	Moderate
Nitrate Removal	3.20	Higher	3.03	Lower
Resident Fish Habitat	5.73	Moderate	6.15	Higher
Waterbird Nesting Habitat	5.59	Moderate	10.00	Higher
Amphibian Habitat	3.81	Moderate	7.55	Higher
Anadromous Fish Habitat	4.32	Moderate	5.33	Moderate
Water Cooling	4.21	Moderate	0.90	Lower
Sediment Retention & Stabilization	2.69	Moderate	1.93	Lower
Water Warming	2.44	Moderate	0.92	Lower
Organic Nutrient Export	6.40	Moderate	N.A.	N.A.
Carbon Sequestration	4.04	Moderate	N.A.	N.A.
Pollinator Habitat	3.51	Lower	6.61	Higher
Invertebrate Habitat	2.00	Lower	10.00	Higher
Native Plant Habitat	2.99	Lower	5.19	Moderate
Phosphorus Retention	2.48	Lower	2.48	Lower
Stream Flow Support	0.69	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.77	Moderate
Wetland Risk	N.A.	N.A.	4.85	Moderate
Public Use & Recognition	N.A.	N.A.	3.62	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Ecological Condition	N.A.	N.A.	1.02	Lower

SV39 • **type:** for. peatland • **acres:** 1.6 • **boundary criteria**: w-u, pa • **pin**: 4B2301010170 • no known or probable anadromous fish

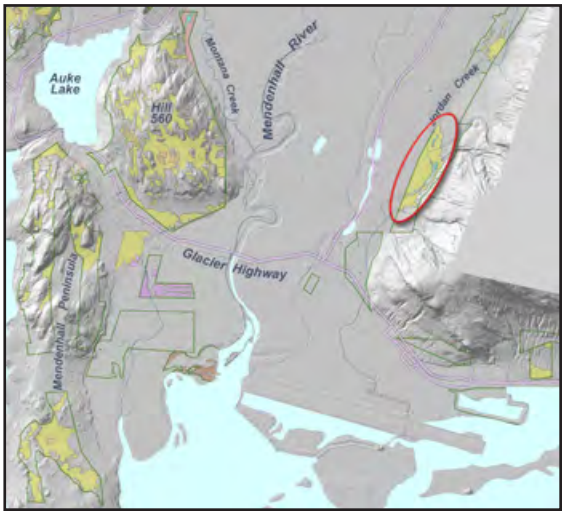
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.75	Higher	4.07	Moderate
Songbird, Raptor, & Mammal Habitat	9.07	Higher	2.50	Lower
Organic Nutrient Export	8.36	Higher	N.A.	N.A.
Water Warming	3.05	Moderate	7.35	Higher
Stream Flow Support	5.09	Moderate	1.76	Moderate
Water Cooling	3.68	Moderate	3.95	Moderate
Water Storage	3.58	Moderate	1.11	Lower
Carbon Sequestration	6.02	Moderate	N.A.	N.A.
Nitrate Removal	1.11	Lower	6.31	Higher
Native Plant Habitat	3.04	Lower	2.31	Moderate
Sediment Retention & Stabilization	2.04	Lower	3.77	Moderate
Amphibian Habitat	1.86	Lower	4.22	Moderate
Invertebrate Habitat	2.69	Lower	0.69	Lower
Phosphorus Retention	2.51	Lower	2.51	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	6.16	Moderate
Wetland Risk	N.A.	N.A.	4.74	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.23	Lower

SV43 • **type:** forested peatland • **acres:** 38.4 • **boundary criteria**: w-u, type, pa • **pin**: 5B2101520140 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	7.57	Higher	6.73	Higher
Pollinator Habitat	7.08	Higher	10.00	Higher
Stream Flow Support	6.47	Higher	7.69	Higher
Water Cooling	5.49	Higher	7.47	Higher
Nitrate Removal	4.69	Higher	7.07	Higher
Anadromous Fish Habitat	9.16	Higher	5.83	Moderate
Native Plant Habitat	4.76	Moderate	10.00	Higher
Water Storage	4.20	Moderate	10.00	Higher
Water Warming	4.12	Moderate	6.41	Higher
Invertebrate Habitat	3.40	Moderate	10.00	Higher
Amphibian Habitat	3.31	Moderate	6.67	Higher
Songbird, Raptor, & Mammal Habitat	5.81	Moderate	6.67	Moderate
Sediment Retention & Stabilization	3.13	Moderate	3.09	Moderate
Waterbird Nesting Habitat	4.37	Moderate	0.00	Lower
Phosphorus Retention	2.11	Lower	2.11	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.77	Lower	N.A.	N.A.
Carbon Sequestration	2.63	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Ecological Condition	N.A.	N.A.	7.27	Higher
Wetland Risk	N.A.	N.A.	6.84	Higher
Wetland Stressors	N.A.	N.A.	6.03	Moderate
Public Use & Recognition	N.A.	N.A.	2.37	Lower



Unit maps for SV43 44 45

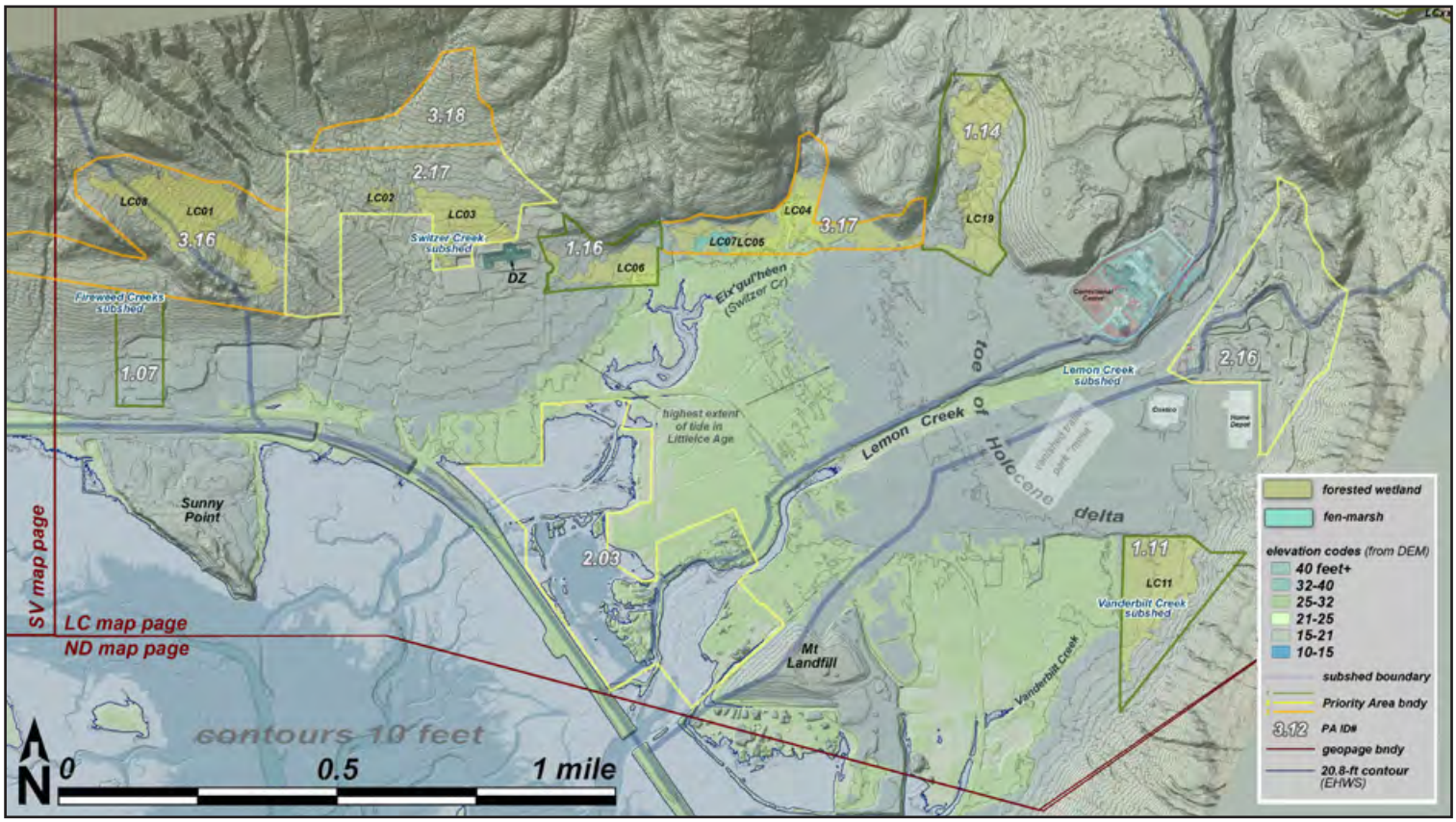


SV44 • **type:** beaver influenced • **acres:** 3.5 • **boundary criteria**: type • **pin**: 5B2101520140 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Nesting Habitat	9.58	Higher	9.80	Higher
Resident Fish Habitat	8.97	Higher	7.03	Higher
Native Plant Habitat	7.36	Higher	10.00	Higher
Amphibian Habitat	5.78	Higher	6.67	Higher
Invertebrate Habitat	5.76	Higher	10.00	Higher
Nitrate Removal	3.60	Higher	6.82	Higher
Waterbird Feeding Habitat	8.93	Higher	3.96	Moderate
Anadromous Fish Habitat	8.26	Higher	6.10	Moderate
Water Warming	5.67	Higher	4.71	Moderate
Pollinator Habitat	5.31	Moderate	10.00	Higher
Stream Flow Support	3.53	Moderate	8.32	Higher
Water Cooling	3.99	Moderate	2.83	Moderate
Phosphorus Retention	2.62	Moderate	2.62	Moderate
Water Storage	2.30	Lower	10.00	Higher
Sediment Retention & Stabilization	2.05	Lower	2.97	Moderate
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.86	Lower	N.A.	N.A.
Carbon Sequestration	2.24	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.07	Higher
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.67	Moderate
Public Use & Recognition	N.A.	N.A.	1.51	Lower
Wetland Sensitivity	N.A.	N.A.	N.A.	N.A.

SV45 • **type:** fen/marsh • **acres:** 1.3 • **boundary criteria**: type • **pin**: 5B2101520140 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	8.74	Higher	7.09	Higher
Waterbird Feeding Habitat	8.24	Higher	5.94	Higher
Nitrate Removal	3.27	Higher	6.82	Higher
Anadromous Fish Habitat	8.49	Higher	5.67	Moderate
Waterbird Nesting Habitat	7.33	Higher	9.70	Moderate
Amphibian Habitat	5.57	Higher	2.29	Lower
Resident Fish Habitat	6.92	Moderate	6.54	Higher
Water Storage	4.70	Moderate	10.00	Higher
Water Cooling	4.21	Moderate	7.18	Higher
Water Warming	3.19	Moderate	6.70	Higher
Sediment Retention & Stabilization	2.63	Moderate	2.55	Moderate
Native Plant Habitat	4.98	Moderate	0.43	Lower
Organic Nutrient Export	6.52	Moderate	N.A.	N.A.
Invertebrate Habitat	2.69	Lower	4.14	Moderate
Phosphorus Retention	2.19	Lower	2.19	Lower
Pollinator Habitat	0.86	Lower	0.00	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.54	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	8.10	Higher
Wetland Stressors	N.A.	N.A.	7.37	Moderate
Wetland Risk	N.A.	N.A.	5.66	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Ecological Condition	N.A.	N.A.	1.42	Lower



Three private-land Priority Areas on the LC map page extend up Lemon Creek beyond this view.

07LC units

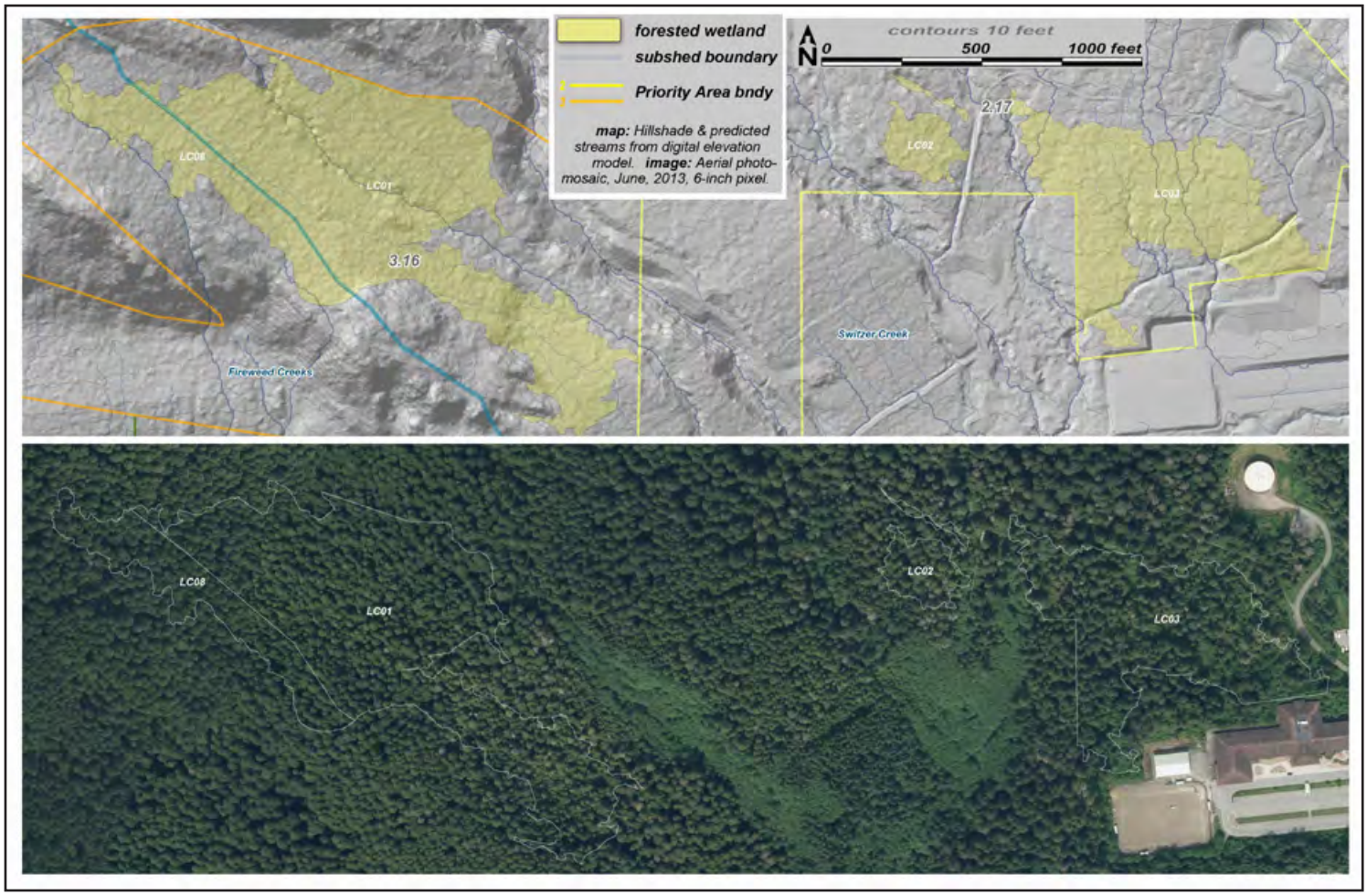
CBJ's Lemon Creek (LC) map page contains 13 Priority Areas totaling 613 acres. The 9 City-owned PAs total 281 acres. The remaining 4 are private, totaling 332 acres, and were not surveyed. The PAs in which we were allowed to survey totalled only 263 acres.

We completed 10 Assessment Areas on the LC page, totaling 74 acres, or 28% of the surveyed PAs.

We divided the greater Lemon Creek watershed into 4 'subsheds,' shown here with blue lines.

LC01 • **type:** for. peatl. • **acres:** 13.3 • **boundary criteria**: w-u, pa, subsh • **pin**: 5B1401000170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.22	Higher	10.00	Higher
Pollinator Habitat	7.90	Higher	9.33	Higher
Stream Flow Support	6.72	Higher	1.76	Moderate
Water Cooling	5.56	Higher	3.07	Moderate
Organic Nutrient Export	8.66	Higher	N.A.	N.A.
Native Plant Habitat	4.32	Moderate	9.05	Higher
Water Storage	3.77	Moderate	10.00	Higher
Nitrate Removal	2.37	Moderate	6.94	Higher
Water Warming	4.62	Moderate	5.14	Moderate
Carbon Sequestration	5.56	Moderate	N.A.	N.A.
Invertebrate Habitat	2.68	Lower	10.00	Higher
Amphibian Habitat	2.24	Lower	7.50	Higher
Sediment Retention & Stabilization	1.78	Lower	4.03	Moderate
Phosphorus Retention	2.37	Lower	2.37	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	8.27	Higher
Wetland Risk	N.A.	N.A.	7.96	Higher
Wetland Stressors	N.A.	N.A.	6.67	Moderate
Wetland Sensitivity	N.A.	N.A.	3.69	Lower
Public Use & Recognition	N.A.	N.A.	1.70	Lower



Unit maps for LC01 02 03 08

LC02 • **type:** for. peatl. • **acres:** 1.1 • **boundary criteria**: w-u • **pin**: 5B1401000170 • no known or probable anadromous fish

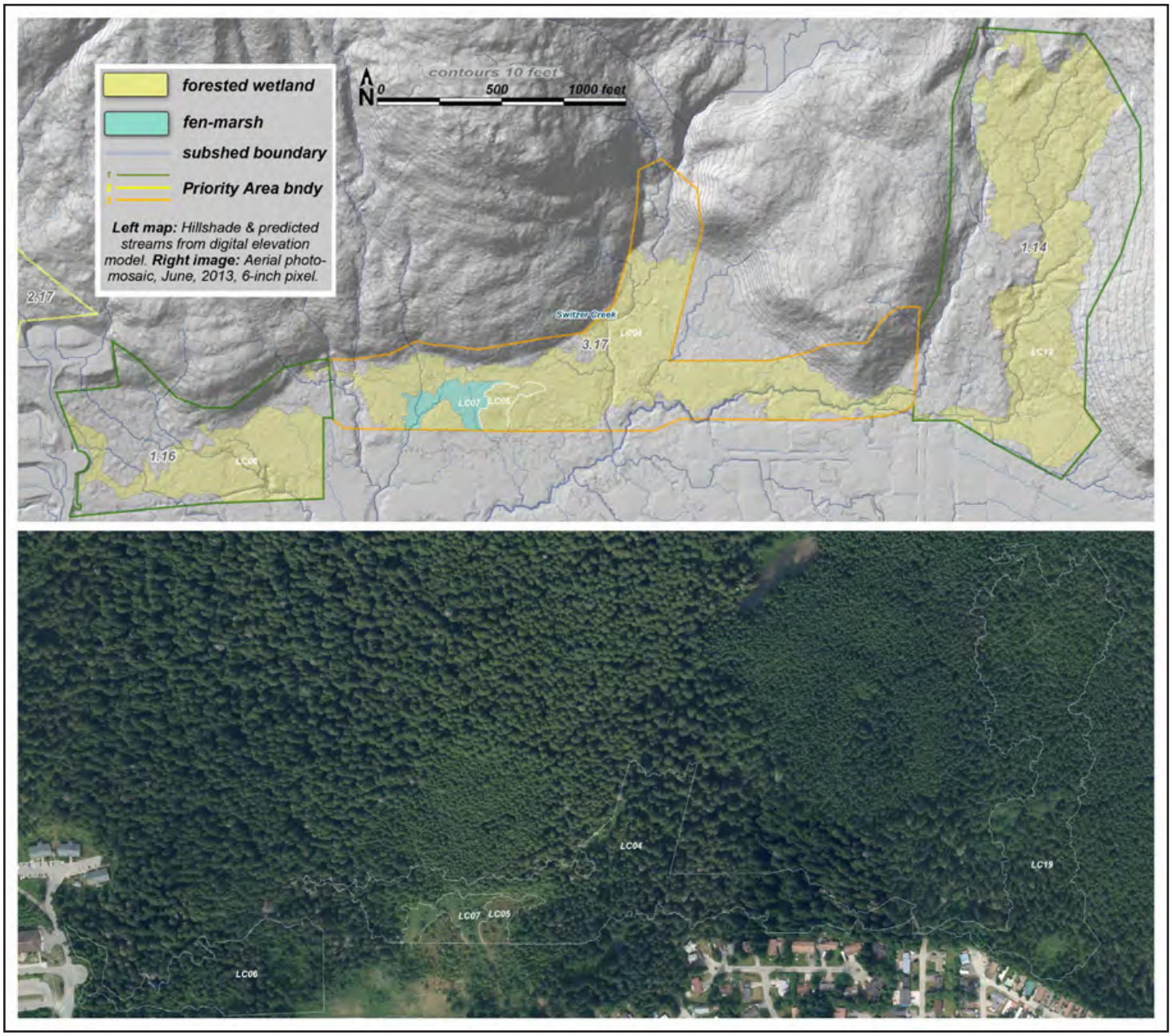
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.28	Higher	10.00	Higher
Pollinator Habitat	8.84	Higher	8.66	Higher
Native Plant Habitat	5.65	Higher	8.10	Higher
Resident Fish Habitat	5.76	Moderate	4.62	Moderate
Water Warming	3.68	Moderate	3.57	Moderate
Waterbird Nesting Habitat	3.58	Moderate	0.00	Lower
Water Cooling	3.30	Moderate	1.23	Lower
Organic Nutrient Export	7.49	Moderate	N.A.	N.A.
Carbon Sequestration	4.68	Moderate	N.A.	N.A.
Water Storage	1.73	Lower	10.00	Higher
Nitrate Removal	1.30	Lower	6.94	Higher
Invertebrate Habitat	1.20	Lower	10.00	Higher
Stream Flow Support	1.92	Lower	3.41	Moderate
Amphibian Habitat	1.91	Lower	5.83	Moderate
Sediment Retention & Stabilization	0.33	Lower	3.78	Moderate
Phosphorus Retention	2.32	Lower	2.32	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.35	Higher
Wetland Risk	N.A.	N.A.	7.74	Higher
Wetland Ecological Condition	N.A.	N.A.	7.26	Higher
Public Use & Recognition	N.A.	N.A.	5.60	Higher
Wetland Stressors	N.A.	N.A.	6.88	Moderate

LC03 • **type:** for. peatl. • **acres:** 7.4 • **boundary criteria**: w-u, pa • **pin**: 5B1401000170 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.74	Higher	8.66	Higher
Songbird, Raptor, & Mammal Habitat	8.07	Higher	10.00	Higher
Native Plant Habitat	5.99	Higher	8.10	Higher
Phosphorus Retention	4.12	Higher	4.12	Higher
Water Cooling	6.58	Higher	2.27	Moderate
Water Warming	5.46	Higher	3.56	Moderate
Resident Fish Habitat	6.26	Moderate	6.73	Higher
Stream Flow Support	4.03	Moderate	5.90	Higher
Water Storage	3.60	Moderate	10.00	Higher
Nitrate Removal	3.13	Moderate	8.99	Higher
Anadromous Fish Habitat	6.03	Moderate	5.83	Moderate
Waterbird Nesting Habitat	2.85	Moderate	0.00	Lower
Organic Nutrient Export	7.66	Moderate	N.A.	N.A.
Carbon Sequestration	4.51	Moderate	N.A.	N.A.
Invertebrate Habitat	2.21	Lower	10.00	Higher
Sediment Retention & Stabilization	2.19	Lower	3.00	Moderate
Amphibian Habitat	1.77	Lower	5.83	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	9.90	Higher
Wetland Sensitivity	N.A.	N.A.	9.78	Higher
Wetland Stressors	N.A.	N.A.	8.73	Higher
Wetland Ecological Condition	N.A.	N.A.	7.70	Higher
Public Use & Recognition	N.A.	N.A.	3.42	Moderate

LC04 • **type:** for. peatl. • **acres:** 12.8 • **boundary criteria**: w-u, type, pa • **pin**: 5B1401000170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.03	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	7.04	Higher	10.00	Higher
Invertebrate Habitat	6.37	Higher	10.00	Higher
Nitrate Removal	4.30	Higher	5.81	Higher
Water Cooling	8.43	Higher	2.63	Moderate
Water Warming	8.40	Higher	5.31	Moderate
Stream Flow Support	6.72	Higher	4.52	Moderate
Carbon Sequestration	6.97	Higher	N.A.	N.A.
Resident Fish Habitat	5.97	Moderate	6.54	Higher
Native Plant Habitat	4.56	Moderate	10.00	Higher
Amphibian Habitat	3.58	Moderate	9.17	Higher
Phosphorus Retention	3.06	Moderate	3.06	Moderate
Sediment Retention & Stabilization	2.39	Moderate	0.84	Lower
Water Storage	1.42	Lower	10.00	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.91	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	9.16	Higher
Public Use & Recognition	N.A.	N.A.	8.89	Higher
Wetland Risk	N.A.	N.A.	8.73	Higher
Wetland Stressors	N.A.	N.A.	7.01	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate



Unit maps for LC05 05 06 07 19

LC05 • **type:** for. peatl. • **acres:** 1.0 • **boundary criteria**: w-u, type, pa • **pin**: 5B1401000170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	10.00	Higher	10.00	Higher
Nitrate Removal	10.00	Higher	4.55	Moderate
Sediment Retention & Stabilization	5.48	Higher	0.09	Lower
Carbon Sequestration	8.31	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.34	Moderate	8.68	Higher
Pollinator Habitat	6.21	Moderate	9.97	Higher
Invertebrate Habitat	4.81	Moderate	10.00	Higher
Phosphorus Retention	3.12	Moderate	3.12	Moderate
Amphibian Habitat	2.16	Lower	9.17	Higher
Native Plant Habitat	1.06	Lower	9.95	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Stream Flow Support	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	0.00	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	8.19	Higher
Wetland Ecological Condition	N.A.	N.A.	7.84	Higher
Wetland Stressors	N.A.	N.A.	7.06	Moderate
Public Use & Recognition	N.A.	N.A.	3.44	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower

LC06 • **type:** for. peatl. • **acres:** 5.7 • **boundary criteria**: w-u, pa • **pin**: 5B1401000170 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.34	Higher	10.00	Higher
Water Cooling	5.94	Higher	2.42	Moderate
Resident Fish Habitat	6.65	Moderate	7.69	Higher
Pollinator Habitat	5.11	Moderate	7.99	Higher
Native Plant Habitat	4.21	Moderate	7.14	Higher
Stream Flow Support	3.36	Moderate	6.21	Higher
Nitrate Removal	2.01	Moderate	8.96	Higher
Anadromous Fish Habitat	6.91	Moderate	6.67	Moderate
Water Warming	4.62	Moderate	3.66	Moderate
Phosphorus Retention	3.20	Moderate	3.20	Moderate
Amphibian Habitat	2.88	Moderate	5.00	Moderate
Water Storage	3.82	Moderate	3.06	Lower
Waterbird Nesting Habitat	3.21	Moderate	0.00	Lower
Organic Nutrient Export	7.02	Moderate	N.A.	N.A.
Carbon Sequestration	4.12	Moderate	N.A.	N.A.
Invertebrate Habitat	1.51	Lower	10.00	Higher
Sediment Retention & Stabilization	1.70	Lower	3.04	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	8.12	Higher
Wetland Ecological Condition	N.A.	N.A.	6.88	Higher
Wetland Stressors	N.A.	N.A.	7.40	Moderate
Public Use & Recognition	N.A.	N.A.	3.81	Moderate
Wetland Sensitivity	N.A.	N.A.	2.08	Lower

LC07 • **type:** fen/marsh • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 5B1401000170 • no known or probable anadromous fish

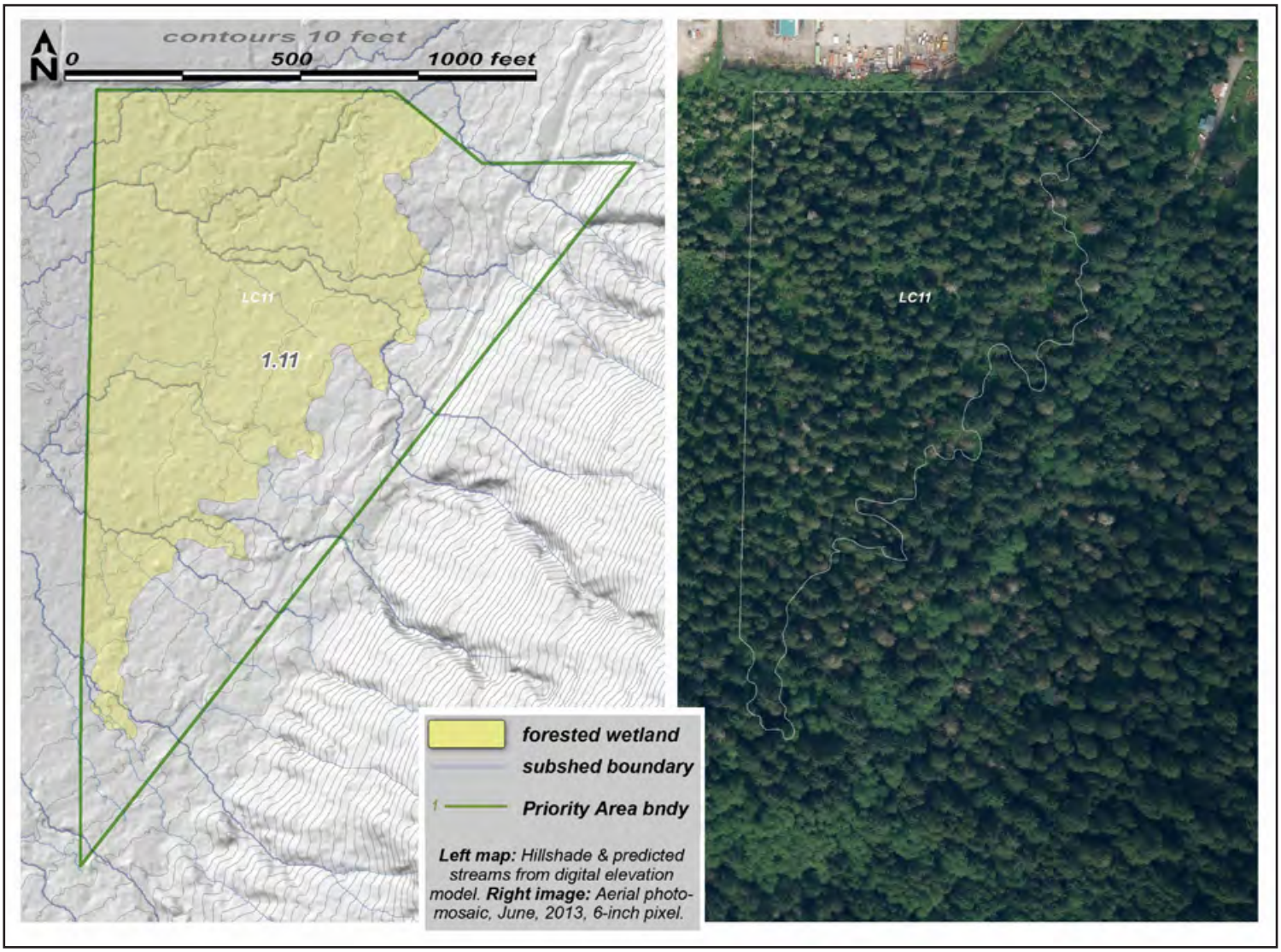
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.03	Higher	9.97	Higher
Songbird, Raptor, & Mammal Habitat	8.02	Higher	8.68	Higher
Amphibian Habitat	5.79	Higher	9.17	Higher
Nitrate Removal	3.40	Higher	8.33	Higher
Waterbird Nesting Habitat	7.12	Higher	9.70	Moderate
Water Warming	6.30	Higher	3.92	Moderate
Water Cooling	7.82	Higher	1.23	Lower
Waterbird Feeding Habitat	5.83	Moderate	6.94	Higher
Invertebrate Habitat	5.22	Moderate	10.00	Higher
Native Plant Habitat	5.17	Moderate	9.95	Higher
Water Storage	4.36	Moderate	10.00	Higher
Stream Flow Support	5.04	Moderate	2.27	Moderate
Organic Nutrient Export	6.22	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.10	Lower	2.73	Moderate
Phosphorus Retention	1.82	Lower	1.82	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.04	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.02	Moderate
Wetland Risk	N.A.	N.A.	4.75	Moderate
Public Use & Recognition	N.A.	N.A.	3.88	Moderate
Wetland Sensitivity	N.A.	N.A.	4.44	Lower
Wetland Ecological Condition	N.A.	N.A.	2.60	Lower

LC08 • **type:** for. peatl. • **acres:** 3.0 • **boundary criteria**: w-u, subsh • **pin**: 5B1401000170 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	3.51	Higher	3.54	Moderate
Water Cooling	8.43	Higher	1.26	Lower
Water Warming	8.40	Higher	2.52	Lower
Carbon Sequestration	6.34	Higher	N.A.	N.A.
Stream Flow Support	3.66	Moderate	1.61	Moderate
Phosphorus Retention	3.38	Moderate	3.38	Moderate
Songbird, Raptor, & Mammal Habitat	6.16	Moderate	1.11	Lower
Sediment Retention & Stabilization	3.74	Moderate	0.28	Lower
Pollinator Habitat	1.76	Lower	3.29	Moderate
Native Plant Habitat	3.00	Lower	0.48	Lower
Amphibian Habitat	2.46	Lower	1.80	Lower
Invertebrate Habitat	1.92	Lower	0.29	Lower
Water Storage	1.31	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.93	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.80	Moderate
Wetland Risk	N.A.	N.A.	5.76	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	3.00	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

LC11 • **type:** for. peatl. • **acres:** 13.5 • **boundary criteria**: w-u, pa • **pin**: 5B1201000160 • known or probable anadromous fish

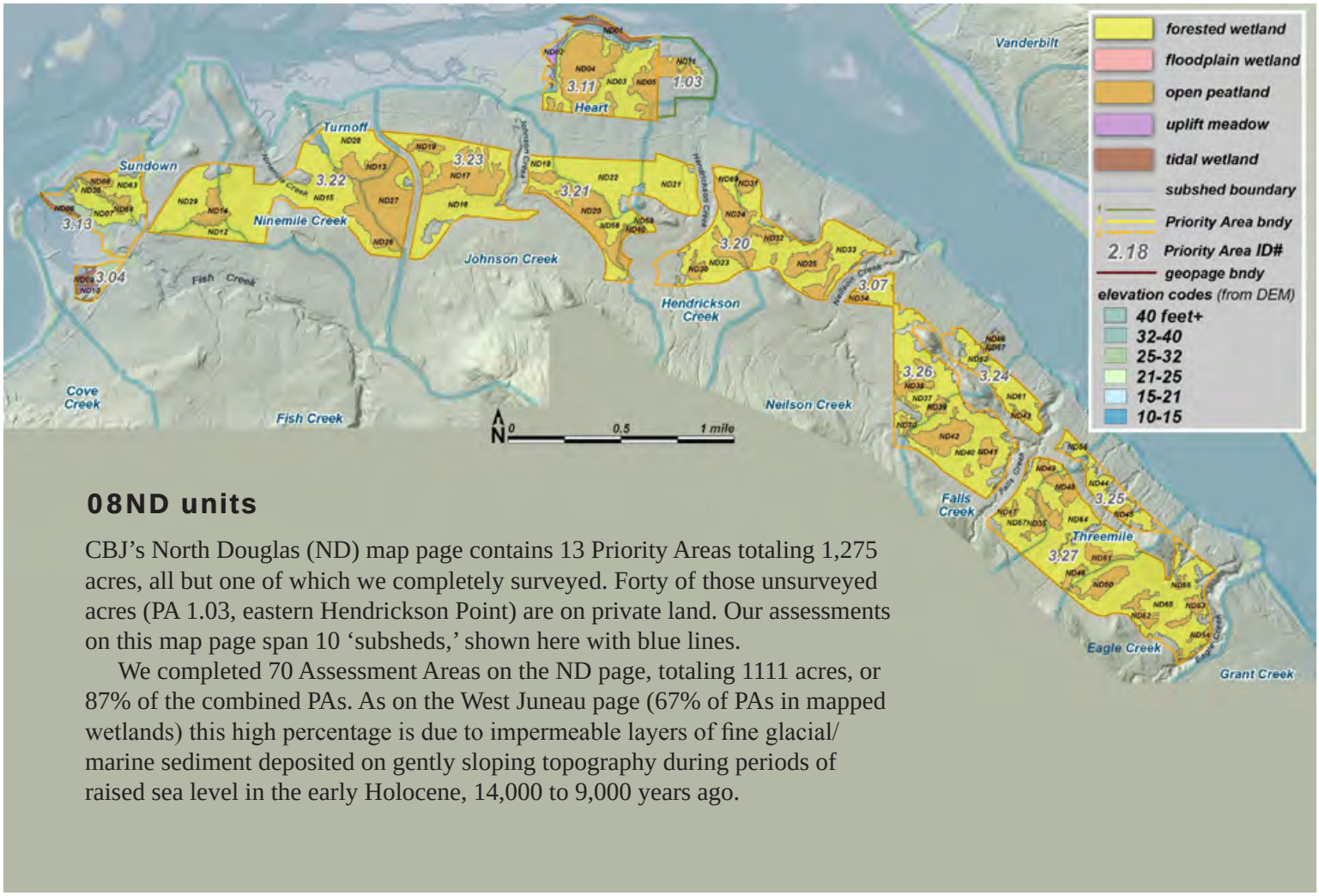
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	7.48	Higher	6.29	Higher
Water Cooling	5.49	Higher	6.63	Higher
Nitrate Removal	3.37	Higher	7.58	Higher
Pollinator Habitat	9.25	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	8.43	Higher	2.50	Lower
Organic Nutrient Export	7.73	Higher	N.A.	N.A.
Resident Fish Habitat	5.76	Moderate	6.15	Higher
Water Warming	4.12	Moderate	6.40	Higher
Anadromous Fish Habitat	7.23	Moderate	5.33	Moderate
Water Storage	4.65	Moderate	5.56	Moderate
Native Plant Habitat	3.95	Moderate	3.94	Moderate
Phosphorus Retention	3.41	Moderate	3.41	Moderate
Waterbird Nesting Habitat	3.75	Moderate	0.00	Lower
Amphibian Habitat	3.23	Moderate	3.69	Lower
Carbon Sequestration	5.91	Moderate	N.A.	N.A.
Invertebrate Habitat	2.88	Lower	3.28	Moderate
Sediment Retention & Stabilization	2.09	Lower	4.39	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.94	Higher
Wetland Stressors	N.A.	N.A.	6.89	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.45	Moderate
Wetland Sensitivity	N.A.	N.A.	4.71	Moderate
Public Use & Recognition	N.A.	N.A.	1.76	Lower



Unit map for LC11

LC19 • **type:** for. peatl. • **acres:** 15.2 • **boundary criteria**: w-u, pa • **pin**: 5B1201340020 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.64	Higher	10.00	Higher
Water Cooling	7.51	Higher	6.60	Higher
Stream Flow Support	6.52	Higher	7.03	Higher
Native Plant Habitat	6.02	Higher	7.14	Higher
Anadromous Fish Habitat	8.18	Higher	5.83	Moderate
Water Warming	5.25	Higher	5.24	Moderate
Organic Nutrient Export	8.57	Higher	N.A.	N.A.
Resident Fish Habitat	6.79	Moderate	6.73	Higher
Pollinator Habitat	5.00	Moderate	7.99	Higher
Water Storage	3.20	Moderate	10.00	Higher
Nitrate Removal	2.02	Moderate	8.96	Higher
Amphibian Habitat	3.01	Moderate	5.00	Moderate
Phosphorus Retention	2.93	Moderate	2.93	Moderate
Waterbird Nesting Habitat	3.59	Moderate	0.00	Lower
Invertebrate Habitat	3.17	Lower	10.00	Higher
Sediment Retention & Stabilization	0.70	Lower	4.18	Moderate
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.04	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	7.23	Higher
Wetland Stressors	N.A.	N.A.	7.18	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.40	Moderate
Public Use & Recognition	N.A.	N.A.	3.07	Moderate
Wetland Sensitivity	N.A.	N.A.	N.A.	N.A.



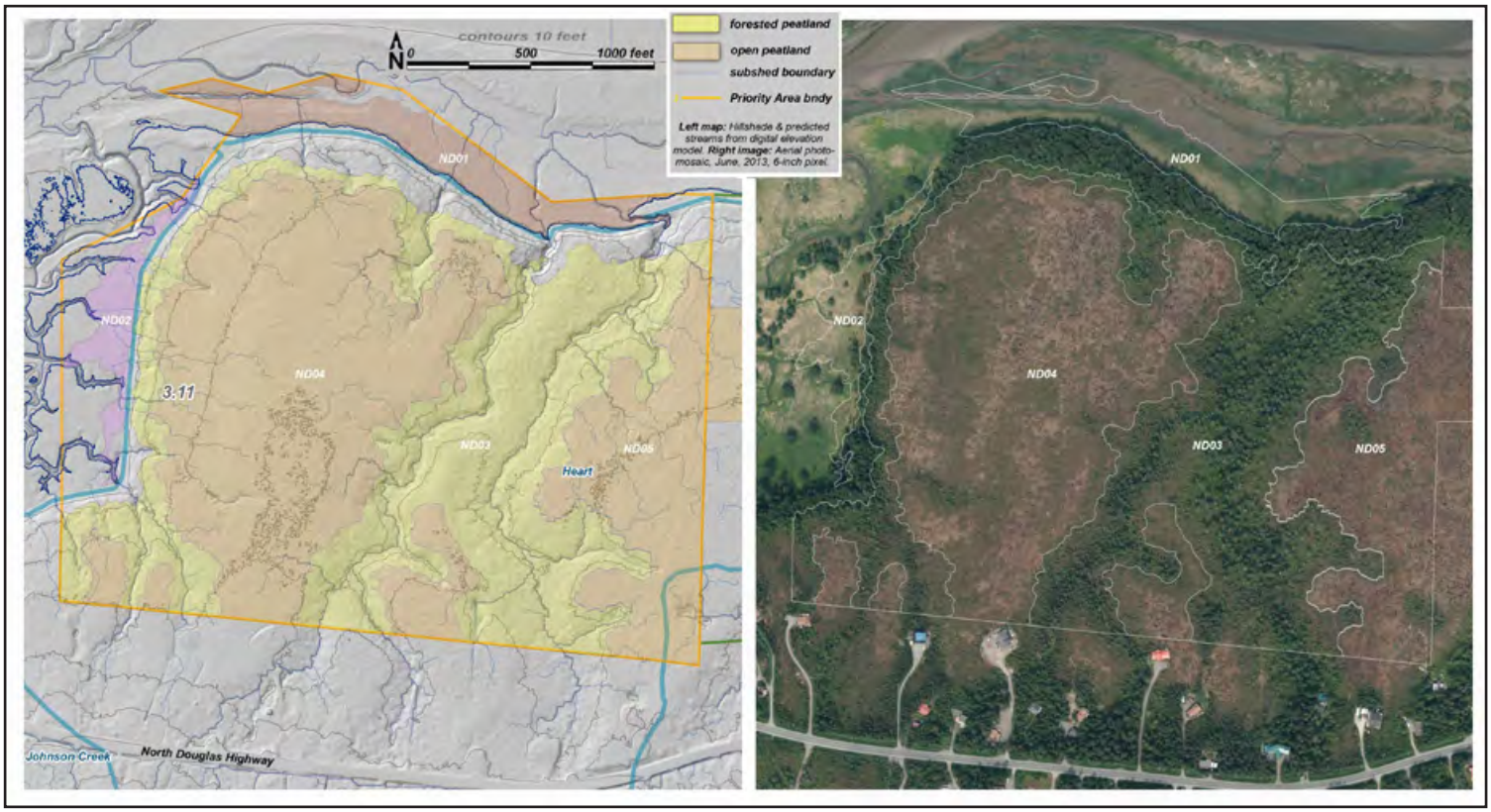
08ND units

CBJ's North Douglas (ND) map page contains 13 Priority Areas totaling 1,275 acres, all but one of which we completely surveyed. Forty of those unsurveyed acres (PA 1.03, eastern Hendrickson Point) are on private land. Our assessments on this map page span 10 'subsheds,' shown here with blue lines.

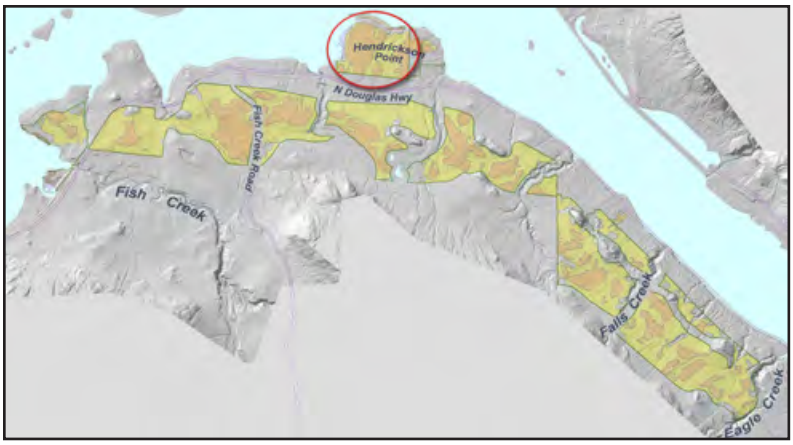
We completed 70 Assessment Areas on the ND page, totaling 1111 acres, or 87% of the combined PAs. As on the West Juneau page (67% of PAs in mapped wetlands) this high percentage is due to impermeable layers of fine glacial/marine sediment deposited on gently sloping topography during periods of raised sea level in the early Holocene, 14,000 to 9,000 years ago.

ND02 • **type:** uplift meadow • **acres:** 2.5 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1001040010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.40	Higher	10.00	Higher
Waterbird Nesting Habitat	6.07	Higher	10.00	Higher
Phosphorus Retention	3.94	Higher	3.94	Higher
Invertebrate Habitat	5.63	Higher	2.51	Lower
Waterbird Feeding Habitat	5.80	Moderate	10.00	Higher
Amphibian Habitat	4.77	Moderate	7.62	Higher
Nitrate Removal	2.40	Moderate	6.31	Higher
Native Plant Habitat	4.41	Moderate	2.83	Moderate
Water Storage	4.36	Moderate	1.11	Lower
Water Cooling	3.93	Moderate	1.40	Lower
Water Warming	3.36	Moderate	1.62	Lower
Organic Nutrient Export	6.15	Moderate	N.A.	N.A.
Pollinator Habitat	3.95	Lower	4.34	Moderate
Sediment Retention & Stabilization	2.10	Lower	2.82	Moderate
Stream Flow Support	1.39	Lower	2.35	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.59	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.67	Higher
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.78	Moderate
Public Use & Recognition	N.A.	N.A.	2.08	Lower



Unit maps for ND02 03 04 05



ND03 • **type:** for. peatland • **acres:** 38.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1001040010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.92	Higher	4.92	Higher
Nitrate Removal	3.23	Higher	6.31	Higher
Songbird, Raptor, & Mammal Habitat	9.23	Higher	1.67	Lower
Invertebrate Habitat	5.86	Higher	1.55	Lower
Carbon Sequestration	6.42	Higher	N.A.	N.A.
Pollinator Habitat	6.63	Moderate	4.38	Moderate
Amphibian Habitat	4.10	Moderate	4.36	Moderate
Native Plant Habitat	3.63	Moderate	3.64	Moderate
Water Warming	3.36	Moderate	5.61	Moderate
Sediment Retention & Stabilization	2.74	Moderate	2.70	Moderate
Water Storage	4.58	Moderate	1.11	Lower
Waterbird Nesting Habitat	4.23	Moderate	0.00	Lower
Water Cooling	3.93	Moderate	1.40	Lower
Organic Nutrient Export	7.50	Moderate	N.A.	N.A.
Stream Flow Support	2.39	Lower	2.40	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.64	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.84	Lower
Public Use & Recognition	N.A.	N.A.	1.94	Lower
Wetland Ecological Condition	N.A.	N.A.	1.44	Lower

ND04 • **type:** open peatland • **acres:** 40.0 • **boundary criteria**: type, pa • **pin**: 6D1001040010 • no known or probable anadromous fish

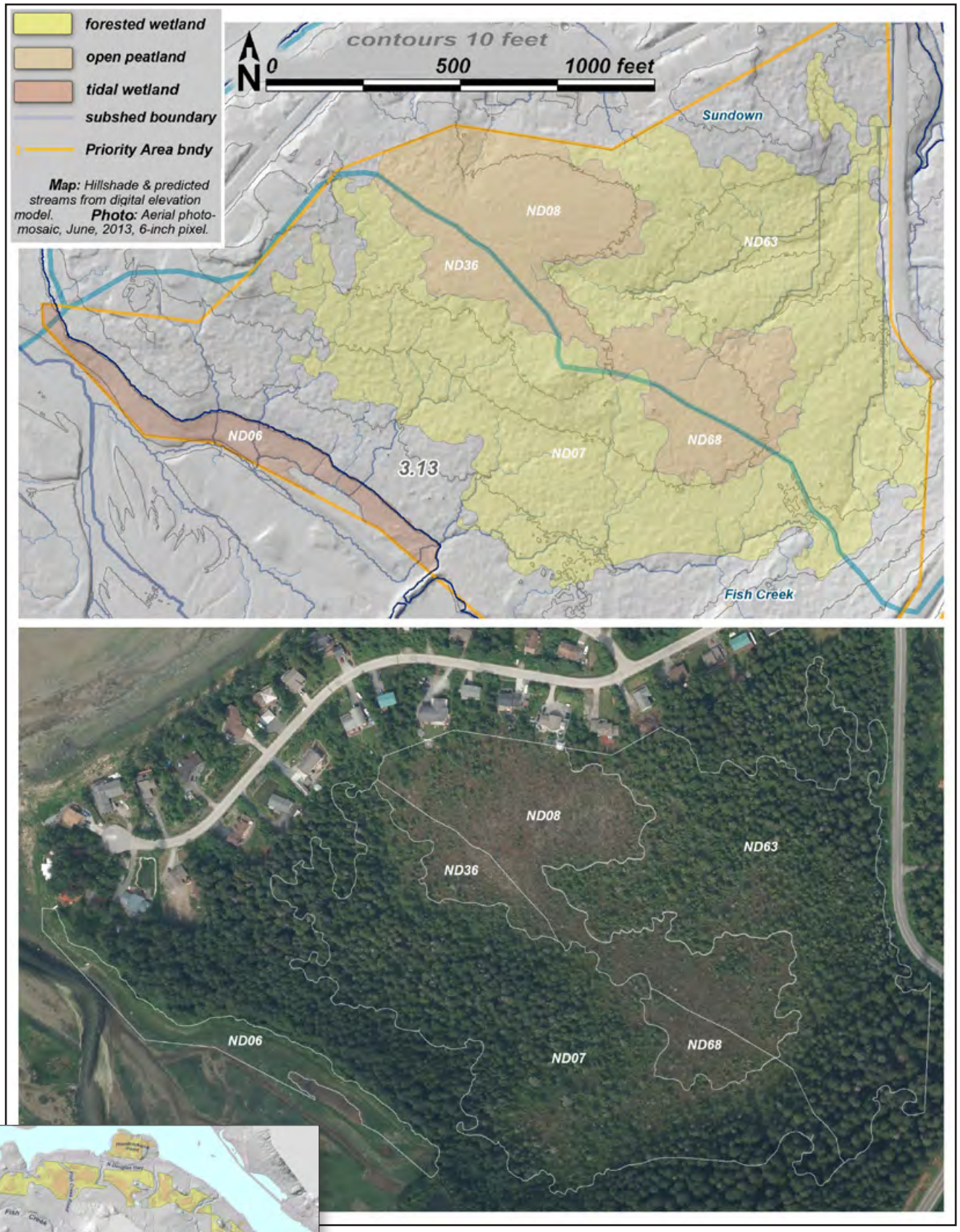
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.49	Higher	4.34	Moderate
Water Warming	6.01	Higher	3.07	Moderate
Carbon Sequestration	6.45	Higher	N.A.	N.A.
Nitrate Removal	2.91	Moderate	5.81	Higher
Waterbird Feeding Habitat	5.16	Moderate	4.61	Moderate
Pollinator Habitat	4.98	Moderate	4.34	Moderate
Water Storage	4.94	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.26	Moderate	9.70	Moderate
Stream Flow Support	3.99	Moderate	1.64	Moderate
Phosphorus Retention	3.71	Moderate	3.71	Moderate
Sediment Retention & Stabilization	2.90	Moderate	2.65	Moderate
Water Cooling	4.05	Moderate	1.23	Lower
Organic Nutrient Export	6.83	Moderate	N.A.	N.A.
Amphibian Habitat	2.15	Lower	6.42	Higher
Native Plant Habitat	1.41	Lower	2.78	Moderate
Invertebrate Habitat	2.07	Lower	1.74	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.64	Moderate
Wetland Risk	N.A.	N.A.	4.22	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.30	Lower
Public Use & Recognition	N.A.	N.A.	1.94	Lower

ND05 • **type:** open peatland • **acres:** 20.3 • **boundary criteria**: type, pa • **pin**: 6D0901040080 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.04	Higher	4.34	Moderate
Waterbird Feeding Habitat	4.76	Moderate	4.61	Moderate
Water Storage	4.52	Moderate	5.00	Moderate
Waterbird Nesting Habitat	3.89	Moderate	9.70	Moderate
Phosphorus Retention	3.66	Moderate	3.66	Moderate
Water Warming	4.33	Moderate	1.73	Lower
Water Cooling	3.54	Moderate	1.05	Lower
Sediment Retention & Stabilization	3.05	Moderate	0.12	Lower
Organic Nutrient Export	6.60	Moderate	N.A.	N.A.
Carbon Sequestration	5.48	Moderate	N.A.	N.A.
Native Plant Habitat	2.65	Lower	2.74	Moderate
Stream Flow Support	2.65	Lower	1.55	Moderate
Amphibian Habitat	1.82	Lower	5.78	Moderate
Pollinator Habitat	1.56	Lower	4.34	Moderate
Nitrate Removal	1.80	Lower	2.78	Lower
Invertebrate Habitat	1.64	Lower	1.53	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.12	Moderate
Public Use & Recognition	N.A.	N.A.	2.45	Moderate
Wetland Risk	N.A.	N.A.	3.88	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	0.40	Lower

ND07 • **type:** forested peatland • **acres:** 14.2 • **boundary criteria**: w-u, type, subsh • **pin**: 6D1201050010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.38	Higher	5.38	Higher
Nitrate Removal	4.20	Higher	6.31	Higher
Pollinator Habitat	7.85	Higher	4.38	Moderate
Native Plant Habitat	5.33	Higher	2.81	Moderate
Songbird, Raptor, & Mammal Habitat	9.37	Higher	1.67	Lower
Invertebrate Habitat	5.99	Higher	1.58	Lower
Carbon Sequestration	6.53	Higher	N.A.	N.A.
Amphibian Habitat	4.41	Moderate	4.48	Moderate
Water Warming	3.36	Moderate	4.85	Moderate
Water Storage	4.40	Moderate	1.11	Lower
Waterbird Nesting Habitat	4.04	Moderate	0.00	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Organic Nutrient Export	7.61	Moderate	N.A.	N.A.
Stream Flow Support	2.14	Lower	2.43	Moderate
Sediment Retention & Stabilization	1.95	Lower	2.70	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.21	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.94	Lower
Wetland Ecological Condition	N.A.	N.A.	1.79	Lower



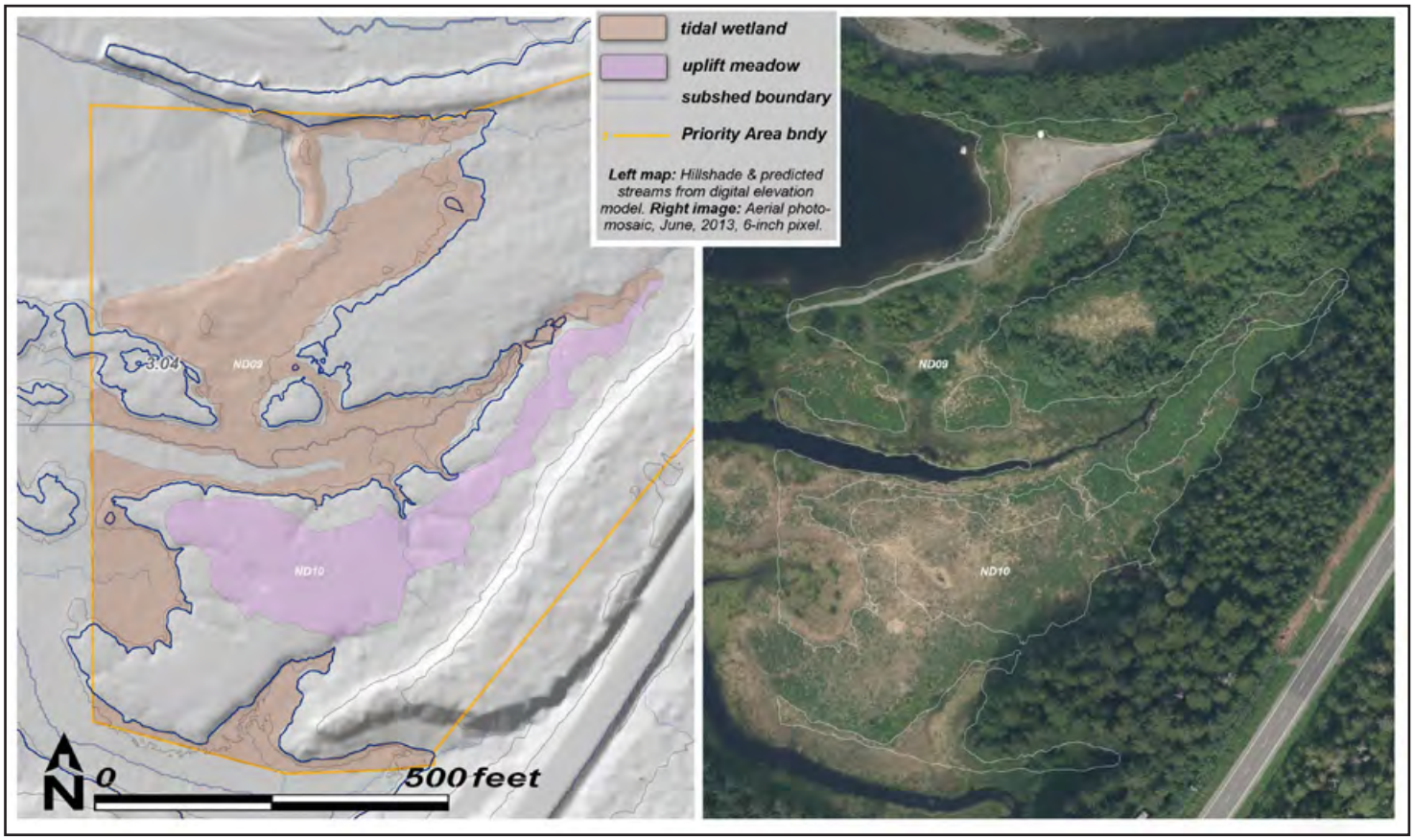
Unit maps for ND07 08 36 63 68

ND08 • **type:** open peatland • **acres:** 7.3 • **boundary criteria**: type, pa, subsh • **pin**: 6D1201050010 • no known or probable anadromous fish

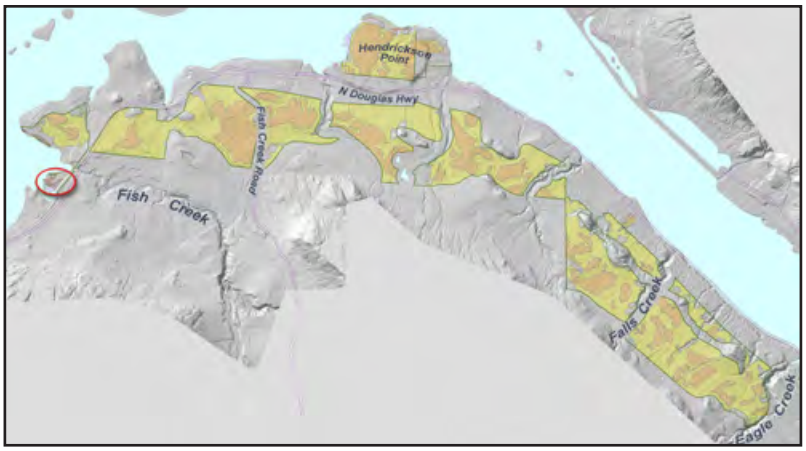
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	8.14	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.14	Moderate	4.34	Moderate
Stream Flow Support	5.04	Moderate	2.06	Moderate
Water Cooling	4.60	Moderate	2.63	Moderate
Waterbird Feeding Habitat	4.54	Moderate	4.61	Moderate
Phosphorus Retention	3.24	Moderate	3.24	Moderate
Invertebrate Habitat	4.17	Moderate	0.89	Lower
Sediment Retention & Stabilization	2.58	Moderate	0.05	Lower
Pollinator Habitat	3.97	Lower	4.34	Moderate
Native Plant Habitat	2.63	Lower	2.74	Moderate
Amphibian Habitat	2.50	Lower	4.88	Moderate
Water Storage	1.82	Lower	5.00	Moderate
Nitrate Removal	1.83	Lower	3.03	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	4.24	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.46	Moderate
Wetland Risk	N.A.	N.A.	5.08	Moderate
Public Use & Recognition	N.A.	N.A.	3.69	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.28	Lower

ND10 • **type:** uplift meadow • **acres:** 1.2 • **boundary criteria**: w-u, type • **pin**: 6D1201070010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	9.14	Higher	7.83	Higher
Songbird, Raptor, & Mammal Habitat	7.79	Higher	10.00	Higher
Resident Fish Habitat	7.65	Higher	9.04	Higher
Waterbird Feeding Habitat	7.51	Higher	10.00	Higher
Amphibian Habitat	7.39	Higher	8.28	Higher
Native Plant Habitat	6.57	Higher	7.24	Higher
Waterbird Nesting Habitat	6.04	Higher	10.00	Higher
Phosphorus Retention	4.53	Higher	4.53	Higher
Water Storage	5.23	Higher	6.11	Moderate
Pollinator Habitat	6.10	Moderate	8.05	Higher
Water Cooling	4.50	Moderate	7.46	Higher
Stream Flow Support	3.28	Moderate	7.42	Higher
Nitrate Removal	2.47	Moderate	7.32	Higher
Water Warming	3.32	Moderate	4.22	Moderate
Sediment Retention & Stabilization	3.24	Moderate	3.05	Moderate
Invertebrate Habitat	1.96	Lower	10.00	Higher
Organic Nutrient Export	5.91	Lower	N.A.	N.A.
Carbon Sequestration	3.67	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Risk	N.A.	N.A.	6.65	Higher
Wetland Stressors	N.A.	N.A.	7.35	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.71	Moderate
Wetland Sensitivity	N.A.	N.A.	2.47	Lower

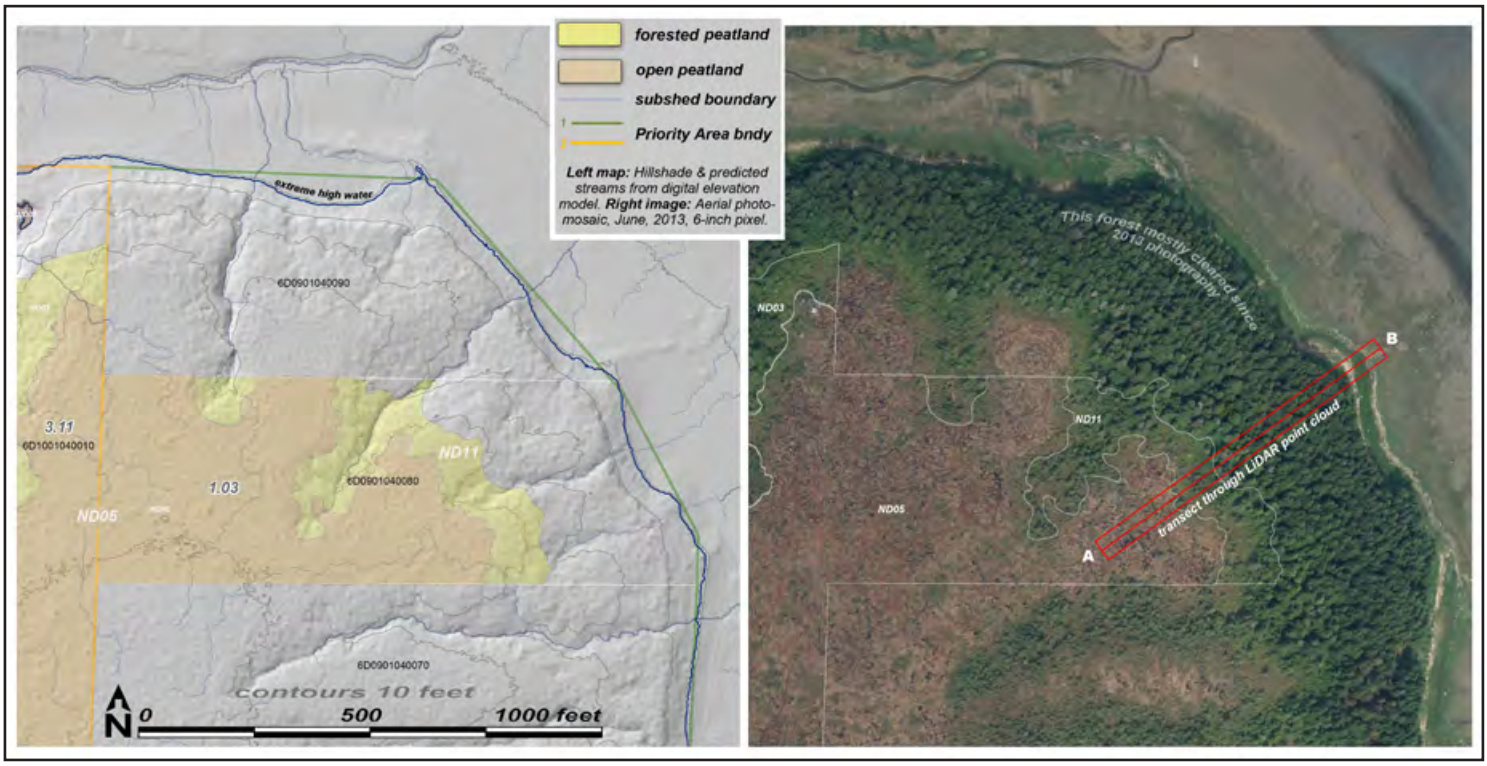


Unit map for ND10

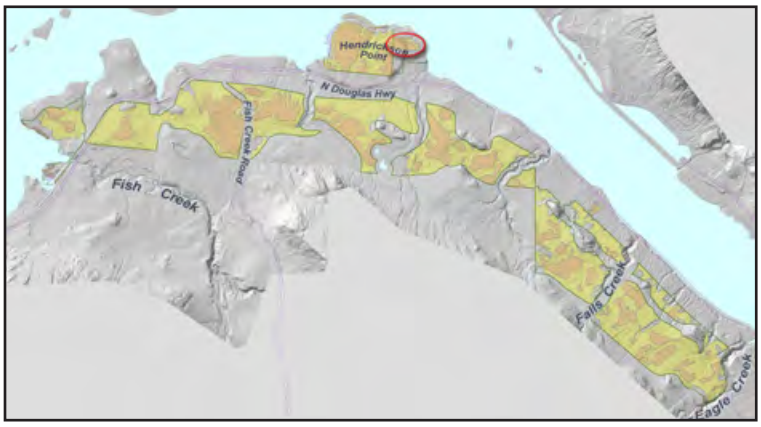


ND11 • **type:** for. peatland • **acres:** 2.4 • **boundary criteria**: w-u, type, pa • **pin**: 6D0901040080 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.35	Higher	4.38	Moderate
Native Plant Habitat	5.31	Higher	2.81	Moderate
Songbird, Raptor, & Mammal Habitat	9.16	Higher	1.67	Lower
Invertebrate Habitat	7.17	Higher	1.55	Lower
Organic Nutrient Export	8.57	Higher	N.A.	N.A.
Carbon Sequestration	6.06	Higher	N.A.	N.A.
Water Warming	3.36	Moderate	7.25	Higher
Water Cooling	5.08	Moderate	3.16	Moderate
Stream Flow Support	4.79	Moderate	2.66	Moderate
Amphibian Habitat	4.04	Moderate	4.30	Moderate
Phosphorus Retention	3.70	Moderate	3.70	Moderate
Nitrate Removal	1.91	Moderate	3.28	Moderate
Water Storage	4.50	Moderate	1.11	Lower
Waterbird Nesting Habitat	4.35	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.28	Lower	0.31	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.67	Moderate
Wetland Risk	N.A.	N.A.	5.44	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.59	Lower
Public Use & Recognition	N.A.	N.A.	1.10	Lower

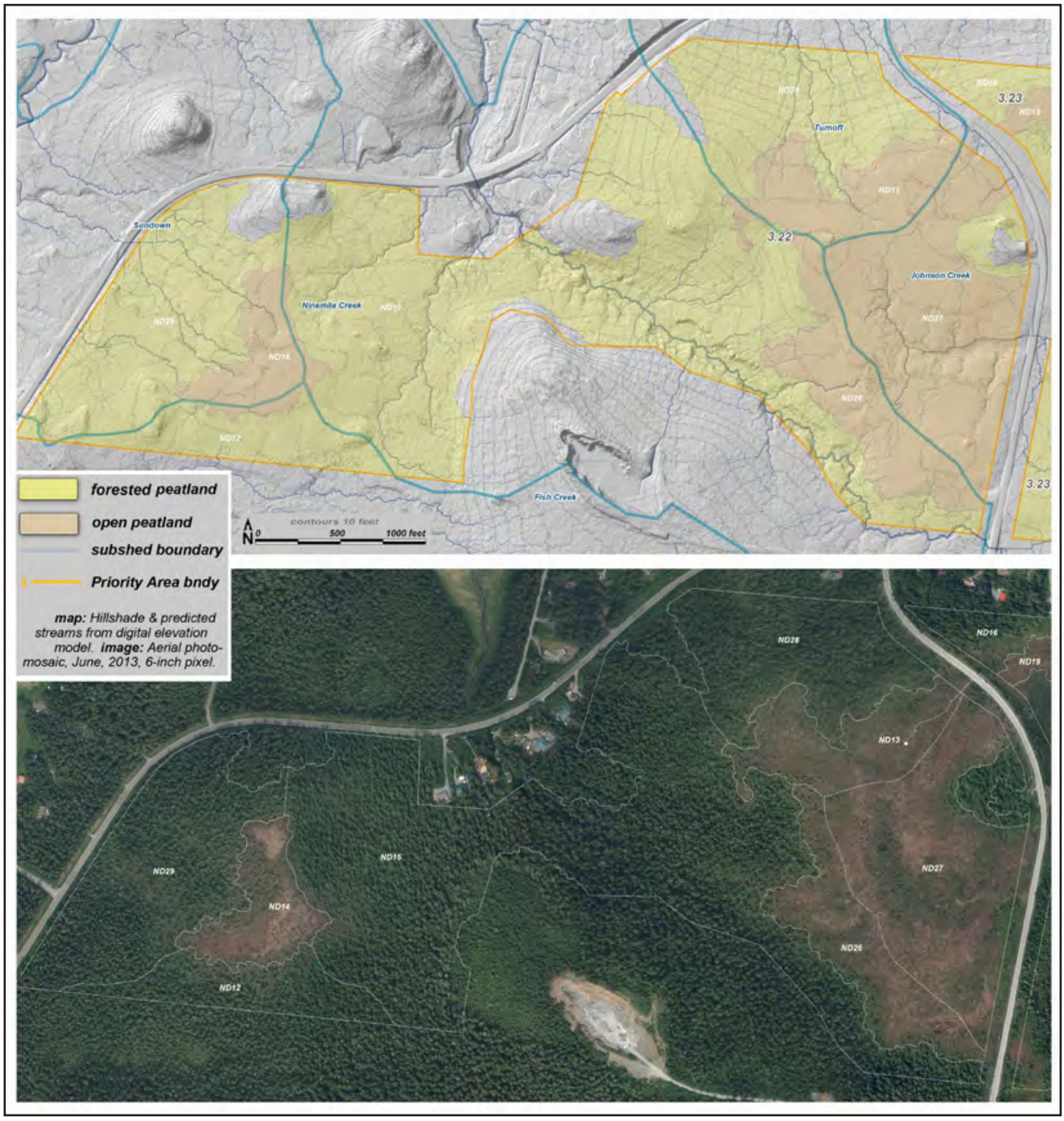


Unit maps for ND11 ND05



ND12 • **type:** for. peatland • **acres:** 9.9 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.06	Higher	4.06	Higher
Nitrate Removal	3.90	Higher	3.54	Moderate
Invertebrate Habitat	5.68	Higher	0.43	Lower
Carbon Sequestration	7.82	Higher	N.A.	N.A.
Pollinator Habitat	6.36	Moderate	4.38	Moderate
Water Cooling	4.60	Moderate	2.63	Moderate
Native Plant Habitat	4.51	Moderate	2.81	Moderate
Stream Flow Support	3.63	Moderate	2.36	Moderate
Songbird, Raptor, & Mammal Habitat	6.07	Moderate	1.67	Lower
Amphibian Habitat	3.89	Moderate	1.72	Lower
Sediment Retention & Stabilization	1.89	Lower	0.28	Lower
Water Storage	1.19	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.93	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.88	Moderate
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Risk	N.A.	N.A.	5.62	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.50	Lower
Public Use & Recognition	N.A.	N.A.	2.05	Lower



Unit maps for ND12 13 14 15 26 27 28 29

ND13 • **type:** open peatland • **acres:** 12.5 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.53	Higher	4.34	Moderate
Carbon Sequestration	7.30	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.94	Moderate	6.61	Higher
Waterbird Nesting Habitat	4.34	Moderate	9.70	Moderate
Water Storage	3.80	Moderate	5.00	Moderate
Phosphorus Retention	3.25	Moderate	3.25	Moderate
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.15	Lower
Organic Nutrient Export	7.65	Moderate	N.A.	N.A.
Amphibian Habitat	2.20	Lower	6.46	Higher
Stream Flow Support	2.65	Lower	1.63	Moderate
Pollinator Habitat	2.04	Lower	4.34	Moderate
Native Plant Habitat	1.16	Lower	2.74	Moderate
Invertebrate Habitat	2.04	Lower	1.76	Lower
Nitrate Removal	1.67	Lower	2.78	Lower
Sediment Retention & Stabilization	1.46	Lower	0.12	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.95	Moderate
Wetland Risk	N.A.	N.A.	5.89	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.94	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

ND14 • **type:** open peatland • **acres:** 8.8 • **boundary criteria**: type, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

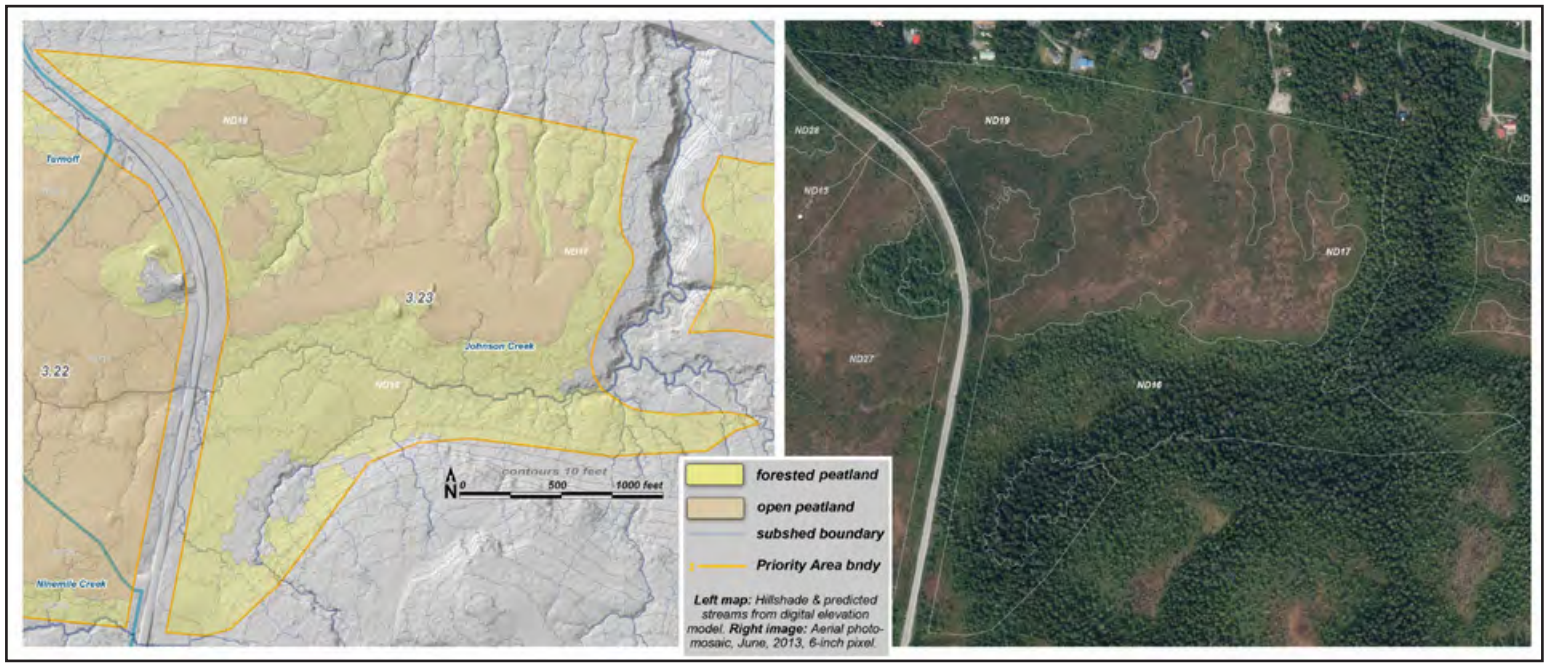
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.50	Higher	4.34	Moderate
Carbon Sequestration	7.01	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.93	Moderate	6.61	Higher
Pollinator Habitat	4.53	Moderate	4.34	Moderate
Water Storage	4.13	Moderate	5.00	Moderate
Waterbird Nesting Habitat	3.74	Moderate	9.70	Moderate
Phosphorus Retention	2.60	Moderate	2.60	Moderate
Water Warming	4.33	Moderate	1.14	Lower
Water Cooling	3.54	Moderate	1.05	Lower
Organic Nutrient Export	6.20	Moderate	N.A.	N.A.
Stream Flow Support	2.65	Lower	1.61	Moderate
Native Plant Habitat	2.60	Lower	2.74	Moderate
Amphibian Habitat	1.94	Lower	5.59	Moderate
Invertebrate Habitat	1.95	Lower	1.49	Lower
Sediment Retention & Stabilization	1.90	Lower	0.16	Lower
Nitrate Removal	1.12	Lower	3.03	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.02	Moderate
Wetland Risk	N.A.	N.A.	5.70	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.35	Lower
Public Use & Recognition	N.A.	N.A.	1.96	Lower

ND15 • **type:** forested peatland • **acres:** 80.8 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

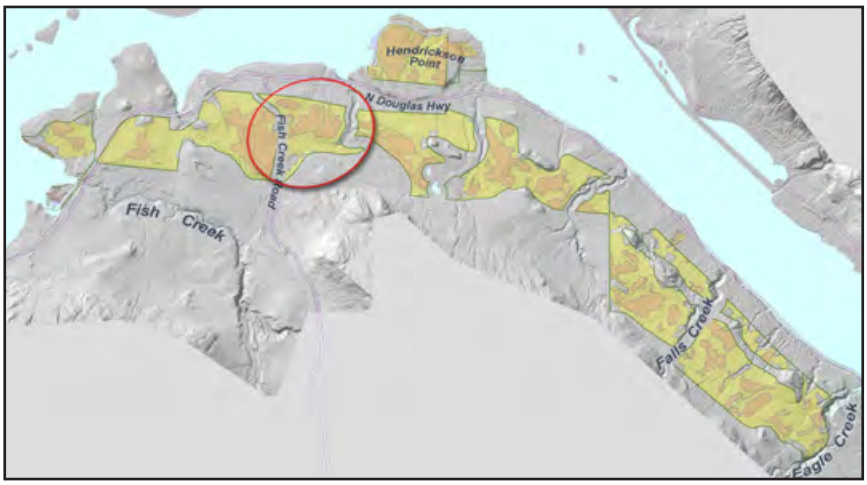
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.81	Higher	4.81	Higher
Nitrate Removal	3.43	Higher	6.69	Higher
Pollinator Habitat	7.75	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.25	Higher	1.67	Lower
Invertebrate Habitat	5.86	Higher	1.49	Lower
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Carbon Sequestration	6.38	Higher	N.A.	N.A.
Amphibian Habitat	3.87	Moderate	4.37	Moderate
Water Storage	3.82	Moderate	3.61	Moderate
Sediment Retention & Stabilization	2.40	Moderate	2.80	Moderate
Water Cooling	3.93	Moderate	1.58	Lower
Waterbird Nesting Habitat	3.92	Moderate	0.00	Lower
Water Warming	3.36	Moderate	1.67	Lower
Native Plant Habitat	2.83	Lower	2.81	Moderate
Stream Flow Support	2.55	Lower	2.40	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Risk	N.A.	N.A.	5.78	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.76	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower

ND16 • **type:** forested peatland • **acres:** 68.3 • **boundary criteria**: w-u, type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.81	Higher	4.81	Higher
Songbird, Raptor, & Mammal Habitat	9.17	Higher	4.38	Moderate
Pollinator Habitat	7.21	Higher	4.38	Moderate
Invertebrate Habitat	6.45	Higher	1.98	Lower
Organic Nutrient Export	8.31	Higher	N.A.	N.A.
Carbon Sequestration	6.81	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.65	Moderate	9.80	Higher
Waterbird Feeding Habitat	4.07	Moderate	6.63	Higher
Nitrate Removal	3.17	Moderate	6.69	Higher
Water Storage	3.82	Moderate	3.61	Moderate
Sediment Retention & Stabilization	2.40	Moderate	2.80	Moderate
Water Cooling	3.93	Moderate	1.58	Lower
Water Warming	3.36	Moderate	1.64	Lower
Amphibian Habitat	2.62	Lower	7.09	Higher
Stream Flow Support	3.05	Lower	2.52	Moderate
Native Plant Habitat	2.63	Lower	3.74	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Risk	N.A.	N.A.	5.48	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.10	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower



Unit maps for ND16 17 19

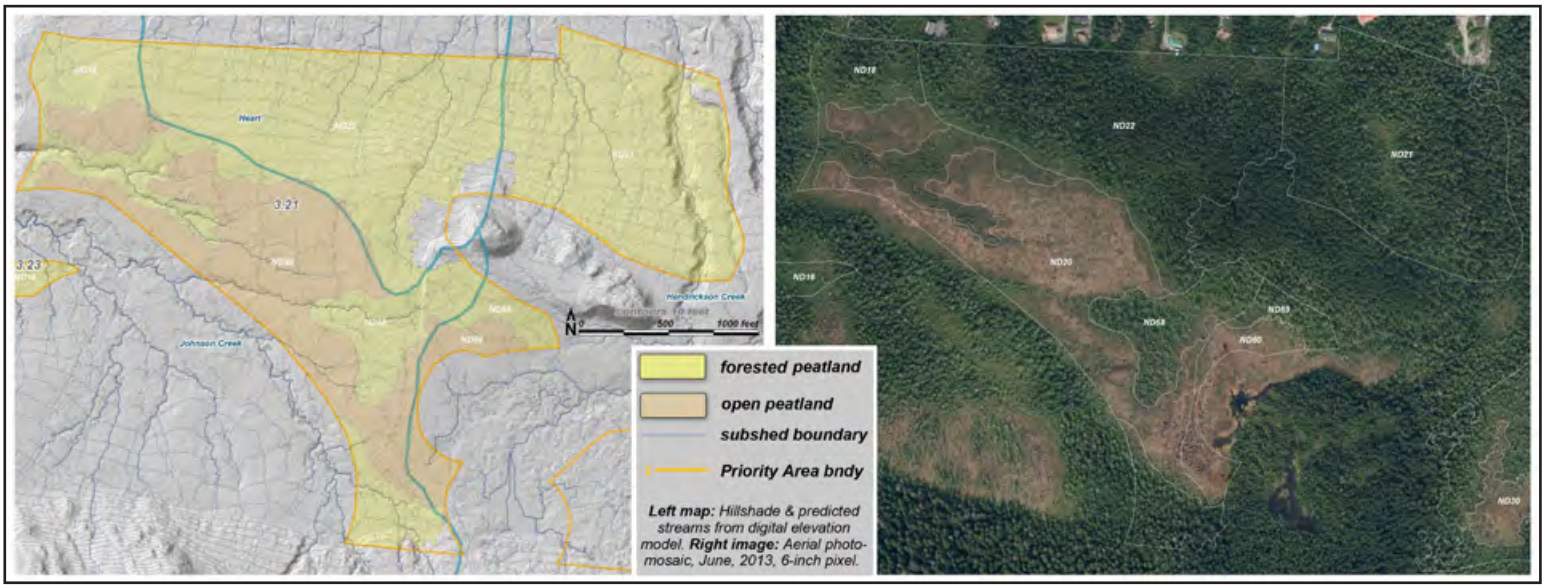


ND17 • **type:** open peatland • **acres:** 26.8 • **boundary criteria**: type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.84	Higher	4.34	Moderate
Invertebrate Habitat	5.30	Higher	1.96	Lower
Carbon Sequestration	7.25	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.35	Moderate	6.61	Higher
Pollinator Habitat	6.49	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.65	Moderate	9.70	Moderate
Phosphorus Retention	3.84	Moderate	3.84	Moderate
Water Warming	3.36	Moderate	2.83	Moderate
Water Storage	4.07	Moderate	1.11	Lower
Water Cooling	3.93	Moderate	1.26	Lower
Nitrate Removal	2.00	Moderate	3.03	Lower
Organic Nutrient Export	6.99	Moderate	N.A.	N.A.
Amphibian Habitat	2.62	Lower	7.00	Higher
Stream Flow Support	2.90	Lower	2.29	Moderate
Native Plant Habitat	1.88	Lower	3.49	Moderate
Sediment Retention & Stabilization	1.76	Lower	0.20	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.80	Moderate
Wetland Risk	N.A.	N.A.	6.14	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.84	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.71	Lower

ND18 • **type:** forested peatland • **acres:** 11.9 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Invertebrate Habitat	5.97	Higher	0.50	Lower
Carbon Sequestration	7.77	Higher	N.A.	N.A.
Pollinator Habitat	4.82	Moderate	4.38	Moderate
Native Plant Habitat	3.96	Moderate	2.81	Moderate
Phosphorus Retention	3.17	Moderate	3.17	Moderate
Nitrate Removal	2.19	Moderate	3.54	Moderate
Songbird, Raptor, & Mammal Habitat	6.53	Moderate	1.67	Lower
Water Cooling	4.60	Moderate	1.26	Lower
Amphibian Habitat	3.80	Moderate	2.11	Lower
Sediment Retention & Stabilization	3.55	Moderate	0.28	Lower
Organic Nutrient Export	7.12	Moderate	N.A.	N.A.
Stream Flow Support	2.32	Lower	2.42	Moderate
Water Storage	1.18	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Stressors	N.A.	N.A.	6.96	Moderate
Wetland Risk	N.A.	N.A.	5.31	Moderate
Public Use & Recognition	N.A.	N.A.	2.22	Lower
Wetland Ecological Condition	N.A.	N.A.	1.61	Lower



Unit maps for ND18 20 21 22 58 59 60

ND19 • **type:** open peatland • **acres:** 4.2 • **boundary criteria**: type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.74	Higher	4.74	Higher
Songbird, Raptor, & Mammal Habitat	8.78	Higher	4.34	Moderate
Carbon Sequestration	7.16	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.84	Moderate	6.61	Higher
Pollinator Habitat	5.91	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.57	Moderate	9.70	Moderate
Water Storage	4.40	Moderate	5.00	Moderate
Invertebrate Habitat	4.12	Moderate	1.99	Lower
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.17	Lower
Nitrate Removal	2.62	Moderate	2.78	Lower
Sediment Retention & Stabilization	2.54	Moderate	0.12	Lower
Organic Nutrient Export	6.51	Moderate	N.A.	N.A.
Amphibian Habitat	2.46	Lower	7.29	Higher
Stream Flow Support	2.65	Lower	2.05	Moderate
Native Plant Habitat	0.86	Lower	2.74	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.48	Higher
Wetland Stressors	N.A.	N.A.	7.00	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.12	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.95	Lower

ND20 • **type:** open peatland • **acres:** 28.1 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.17	Higher	4.17	Higher
Songbird, Raptor, & Mammal Habitat	8.63	Higher	4.34	Moderate
Carbon Sequestration	6.94	Higher	N.A.	N.A.
Water Storage	4.31	Moderate	5.00	Moderate
Waterbird Feeding Habitat	3.70	Moderate	4.61	Moderate
Waterbird Nesting Habitat	3.52	Moderate	9.70	Moderate
Water Cooling	3.68	Moderate	1.05	Lower
Water Warming	3.05	Moderate	1.14	Lower
Sediment Retention & Stabilization	2.57	Moderate	0.29	Lower
Organic Nutrient Export	7.23	Moderate	N.A.	N.A.
Amphibian Habitat	1.87	Lower	6.38	Higher
Pollinator Habitat	3.48	Lower	4.34	Moderate
Native Plant Habitat	2.81	Lower	2.74	Moderate
Stream Flow Support	2.65	Lower	1.22	Moderate
Nitrate Removal	1.07	Lower	3.28	Moderate
Invertebrate Habitat	0.00	Lower	1.60	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.90	Moderate
Wetland Risk	N.A.	N.A.	5.99	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.26	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.82	Lower

ND21 • **type:** forested peatland • **acres:** 29.5 • **boundary criteria**: w-u, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.06	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	7.73	Higher	1.67	Lower
Organic Nutrient Export	8.51	Higher	N.A.	N.A.
Water Warming	1.93	Moderate	7.52	Higher
Stream Flow Support	5.34	Moderate	1.73	Moderate
Water Cooling	5.30	Moderate	3.95	Moderate
Native Plant Habitat	3.36	Moderate	2.81	Moderate
Phosphorus Retention	3.20	Moderate	3.20	Moderate
Sediment Retention & Stabilization	2.48	Moderate	3.86	Moderate
Water Storage	3.69	Moderate	1.11	Lower
Amphibian Habitat	3.20	Moderate	3.10	Lower
Carbon Sequestration	5.84	Moderate	N.A.	N.A.
Nitrate Removal	0.93	Lower	6.57	Higher
Invertebrate Habitat	2.55	Lower	0.63	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.95	Moderate
Wetland Risk	N.A.	N.A.	5.65	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.40	Lower
Public Use & Recognition	N.A.	N.A.	2.10	Lower

ND22 • **type:** for. peatland • **acres:** 33.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.85	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	7.88	Higher	1.67	Lower
Organic Nutrient Export	8.38	Higher	N.A.	N.A.
Carbon Sequestration	6.58	Higher	N.A.	N.A.
Native Plant Habitat	3.77	Moderate	3.49	Moderate
Phosphorus Retention	2.92	Moderate	2.92	Moderate
Water Warming	2.44	Moderate	5.26	Moderate
Water Cooling	4.98	Moderate	1.58	Lower
Invertebrate Habitat	3.22	Moderate	0.65	Lower
Amphibian Habitat	3.19	Moderate	3.23	Lower
Nitrate Removal	0.62	Lower	6.82	Higher
Stream Flow Support	2.55	Lower	1.87	Moderate
Sediment Retention & Stabilization	0.15	Lower	4.32	Moderate
Water Storage	2.19	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.08	Moderate
Wetland Risk	N.A.	N.A.	6.21	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.37	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.19	Lower

ND23 • **type:** for. peatland • **acres:** 24.8 • **boundary criteria**: w-u, type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.57	Higher	4.57	Higher
Pollinator Habitat	7.21	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.57	Higher	1.67	Lower
Invertebrate Habitat	7.12	Higher	1.89	Lower
Waterbird Nesting Habitat	6.47	Higher	0.00	Lower
Organic Nutrient Export	8.72	Higher	N.A.	N.A.
Carbon Sequestration	6.17	Higher	N.A.	N.A.
Nitrate Removal	2.56	Moderate	6.31	Higher
Stream Flow Support	5.34	Moderate	2.65	Moderate
Water Cooling	4.41	Moderate	3.95	Moderate
Amphibian Habitat	3.89	Moderate	4.64	Moderate
Native Plant Habitat	3.17	Moderate	2.81	Moderate
Sediment Retention & Stabilization	2.74	Moderate	3.76	Moderate
Water Warming	2.52	Moderate	3.80	Moderate
Water Storage	4.47	Moderate	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.03	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower
Wetland Ecological Condition	N.A.	N.A.	1.38	Lower

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ND24 • **type:** open peatland • **acres:** 20.5 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.65	Higher	4.34	Moderate
Organic Nutrient Export	7.82	Higher	N.A.	N.A.
Carbon Sequestration	7.32	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.98	Moderate	6.61	Higher
Stream Flow Support	5.29	Moderate	1.66	Moderate
Pollinator Habitat	4.98	Moderate	4.34	Moderate
Water Warming	4.33	Moderate	2.87	Moderate
Water Storage	3.89	Moderate	5.00	Moderate
Waterbird Nesting Habitat	3.78	Moderate	9.70	Moderate
Phosphorus Retention	3.03	Moderate	3.03	Moderate
Water Cooling	2.78	Moderate	3.07	Moderate
Nitrate Removal	1.25	Lower	5.81	Higher
Amphibian Habitat	2.09	Lower	5.76	Moderate
Sediment Retention & Stabilization	1.53	Lower	2.60	Moderate
Native Plant Habitat	1.06	Lower	2.74	Moderate
Invertebrate Habitat	2.18	Lower	1.54	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	6.31	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.98	Moderate
Wetland Sensitivity	N.A.	N.A.	2.90	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND25 • **type:** open peatland • **acres:** 16.0 • **boundary criteria**: type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.64	Higher	4.34	Moderate
Carbon Sequestration	7.27	Higher	N.A.	N.A.
Waterbird Feeding Habitat	5.18	Moderate	6.61	Higher
Nitrate Removal	2.14	Moderate	6.31	Higher
Pollinator Habitat	5.65	Moderate	4.34	Moderate
Stream Flow Support	5.29	Moderate	1.66	Moderate
Water Storage	4.43	Moderate	5.00	Moderate
Water Warming	4.33	Moderate	2.88	Moderate
Waterbird Nesting Habitat	4.13	Moderate	9.70	Moderate
Phosphorus Retention	3.74	Moderate	3.74	Moderate
Water Cooling	2.78	Moderate	3.07	Moderate
Organic Nutrient Export	6.71	Moderate	N.A.	N.A.
Amphibian Habitat	2.20	Lower	6.57	Higher
Sediment Retention & Stabilization	2.10	Lower	3.74	Moderate
Native Plant Habitat	1.13	Lower	2.74	Moderate
Invertebrate Habitat	2.18	Lower	1.76	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	6.27	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.17	Moderate
Wetland Sensitivity	N.A.	N.A.	2.90	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND26 • **type:** open peatland • **acres:** 14.0 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.74	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.85	Moderate	6.61	Higher
Songbird, Raptor, & Mammal Habitat	5.61	Moderate	4.34	Moderate
Phosphorus Retention	2.61	Moderate	2.61	Moderate
Water Cooling	4.60	Moderate	1.05	Lower
Sediment Retention & Stabilization	2.39	Moderate	0.05	Lower
Pollinator Habitat	2.33	Lower	4.34	Moderate
Stream Flow Support	2.32	Lower	1.40	Moderate
Native Plant Habitat	2.21	Lower	2.74	Moderate
Amphibian Habitat	2.04	Lower	3.97	Moderate
Water Storage	1.12	Lower	5.00	Moderate
Nitrate Removal	1.24	Lower	3.03	Lower
Invertebrate Habitat	0.91	Lower	0.67	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.87	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.98	Moderate
Wetland Risk	N.A.	N.A.	5.01	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.29	Lower
Wetland Ecological Condition	N.A.	N.A.	0.89	Lower

ND27 • **type:** open peatland • **acres:** 29.5 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.48	Higher	5.48	Higher
Songbird, Raptor, & Mammal Habitat	8.82	Higher	4.38	Moderate
Water Storage	5.12	Higher	5.00	Moderate
Carbon Sequestration	7.41	Higher	N.A.	N.A.
Waterbird Nesting Habitat	4.65	Moderate	9.80	Higher
Waterbird Feeding Habitat	4.21	Moderate	6.63	Higher
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.15	Lower
Nitrate Removal	2.84	Moderate	2.78	Lower
Sediment Retention & Stabilization	2.54	Moderate	0.18	Lower
Organic Nutrient Export	7.28	Moderate	N.A.	N.A.
Amphibian Habitat	2.23	Lower	6.88	Higher
Stream Flow Support	2.65	Lower	1.54	Moderate
Pollinator Habitat	2.04	Lower	4.38	Moderate
Native Plant Habitat	0.41	Lower	2.81	Moderate
Invertebrate Habitat	1.60	Lower	1.89	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.77	Moderate
Wetland Risk	N.A.	N.A.	4.53	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.68	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND28 • **type:** for. peatland • **acres:** 20.9 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.17	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.28	Higher	1.67	Lower
Invertebrate Habitat	5.73	Higher	1.44	Lower
Organic Nutrient Export	8.53	Higher	N.A.	N.A.
Carbon Sequestration	6.38	Higher	N.A.	N.A.
Nitrate Removal	2.15	Moderate	6.31	Higher
Amphibian Habitat	3.80	Moderate	4.40	Moderate
Phosphorus Retention	3.71	Moderate	3.71	Moderate
Water Cooling	3.93	Moderate	1.58	Lower
Waterbird Nesting Habitat	3.61	Moderate	0.00	Lower
Water Storage	3.51	Moderate	1.11	Lower
Water Warming	3.36	Moderate	1.52	Lower
Stream Flow Support	2.55	Lower	2.38	Moderate
Native Plant Habitat	2.54	Lower	2.81	Moderate
Sediment Retention & Stabilization	1.75	Lower	3.71	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.53	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.50	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND29 • **type:** for. peatland • **acres:** 26.8 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Storage	6.28	Higher	1.11	Lower
Invertebrate Habitat	5.43	Higher	0.49	Lower
Carbon Sequestration	8.27	Higher	N.A.	N.A.
Pollinator Habitat	5.40	Moderate	4.38	Moderate
Phosphorus Retention	3.19	Moderate	3.19	Moderate
Nitrate Removal	3.13	Moderate	3.54	Moderate
Songbird, Raptor, & Mammal Habitat	6.58	Moderate	1.67	Lower
Amphibian Habitat	3.64	Moderate	2.15	Lower
Sediment Retention & Stabilization	3.03	Moderate	0.40	Lower
Stream Flow Support	2.52	Lower	2.31	Moderate
Native Plant Habitat	2.22	Lower	2.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Cooling	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.90	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.98	Moderate
Wetland Risk	N.A.	N.A.	5.55	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.29	Lower
Wetland Ecological Condition	N.A.	N.A.	2.11	Lower

ND30 • **type:** open peatland • **acres:** 3.0 • **boundary criteria**: type • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.92	Higher	4.34	Moderate
Carbon Sequestration	6.94	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.31	Moderate	6.61	Higher
Nitrate Removal	1.92	Moderate	6.31	Higher
Pollinator Habitat	5.86	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.53	Moderate	9.70	Moderate
Water Storage	4.13	Moderate	5.00	Moderate
Phosphorus Retention	3.78	Moderate	3.78	Moderate
Invertebrate Habitat	3.99	Moderate	1.92	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Water Warming	3.36	Moderate	2.04	Lower
Organic Nutrient Export	7.33	Moderate	N.A.	N.A.
Amphibian Habitat	2.40	Lower	7.04	Higher
Stream Flow Support	2.65	Lower	2.02	Moderate
Sediment Retention & Stabilization	1.74	Lower	3.74	Moderate
Native Plant Habitat	1.73	Lower	2.74	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.99	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.54	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND31 • **type:** open peatland • **acres:** 4.0 • **boundary criteria**: type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.69	Higher	4.34	Moderate
Carbon Sequestration	7.07	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.75	Moderate	5.61	Higher
Pollinator Habitat	5.46	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.18	Moderate	9.70	Moderate
Water Storage	3.80	Moderate	5.00	Moderate
Phosphorus Retention	3.25	Moderate	3.25	Moderate
Invertebrate Habitat	3.99	Moderate	1.76	Lower
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.16	Lower
Organic Nutrient Export	7.56	Moderate	N.A.	N.A.
Amphibian Habitat	2.31	Lower	6.46	Higher
Stream Flow Support	2.65	Lower	2.02	Moderate
Native Plant Habitat	0.57	Lower	3.23	Moderate
Nitrate Removal	1.67	Lower	2.78	Lower
Sediment Retention & Stabilization	1.46	Lower	0.12	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.15	Moderate
Wetland Risk	N.A.	N.A.	6.16	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	3.07	Lower
Public Use & Recognition	N.A.	N.A.	2.30	Lower

ND32 • **type:** open peatland • **acres:** 6.9 • **boundary criteria**: type, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

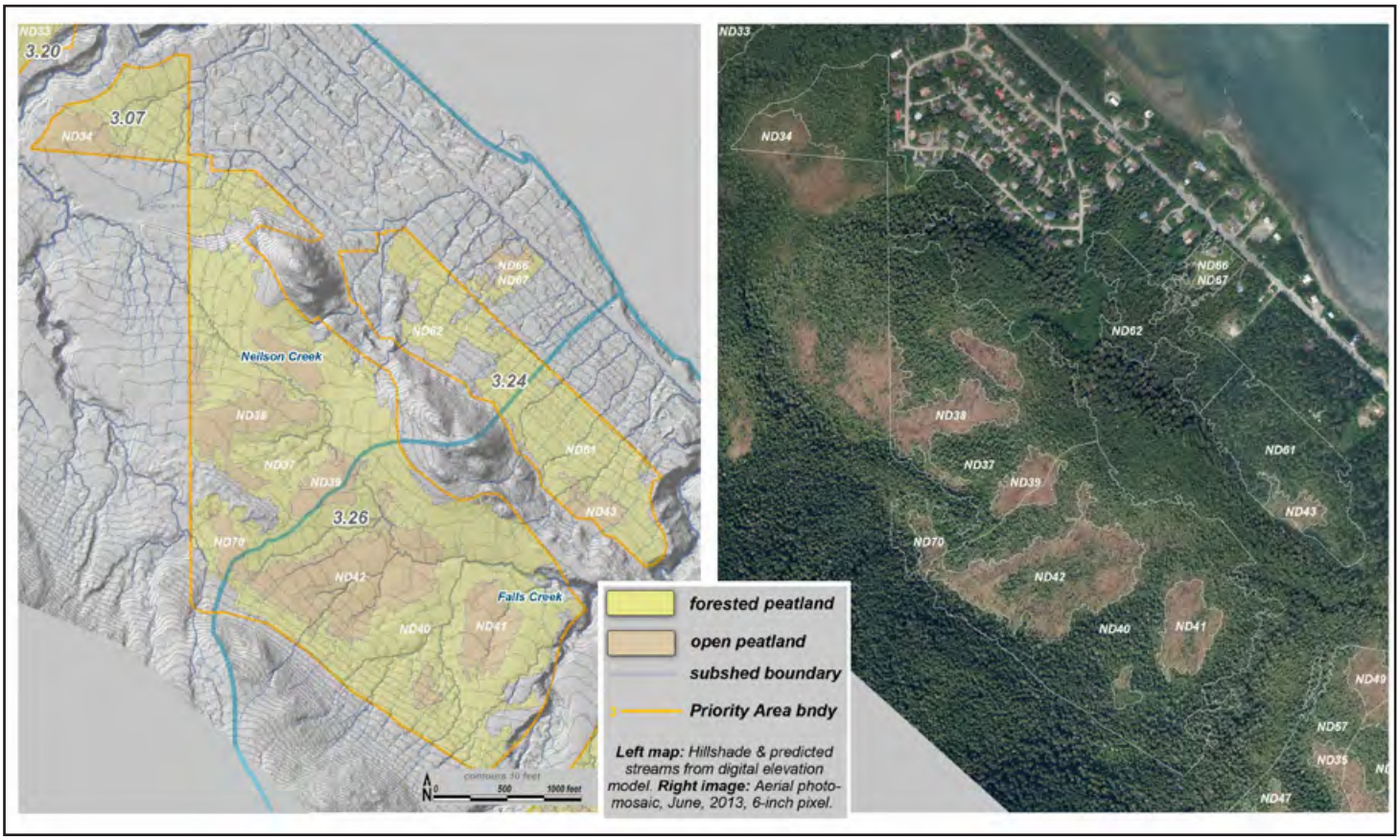
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.52	Higher	1.67	Lower
Carbon Sequestration	6.82	Higher	N.A.	N.A.
Pollinator Habitat	4.98	Moderate	4.34	Moderate
Water Warming	4.33	Moderate	4.50	Moderate
Phosphorus Retention	3.06	Moderate	3.06	Moderate
Water Storage	4.22	Moderate	1.11	Lower
Amphibian Habitat	3.45	Moderate	2.93	Lower
Waterbird Nesting Habitat	3.44	Moderate	0.00	Lower
Water Cooling	2.78	Moderate	1.40	Lower
Organic Nutrient Export	6.99	Moderate	N.A.	N.A.
Nitrate Removal	1.83	Lower	6.57	Higher
Stream Flow Support	2.39	Lower	1.70	Moderate
Native Plant Habitat	1.81	Lower	2.74	Moderate
Sediment Retention & Stabilization	1.55	Lower	3.81	Moderate
Invertebrate Habitat	2.35	Lower	1.10	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.73	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.95	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND33 • **type:** forested peatland • **acres:** 55.6 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.60	Higher	4.60	Higher
Pollinator Habitat	7.79	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.05	Higher	1.67	Lower
Invertebrate Habitat	7.24	Higher	1.52	Lower
Organic Nutrient Export	9.43	Higher	N.A.	N.A.
Carbon Sequestration	6.17	Higher	N.A.	N.A.
Nitrate Removal	2.96	Moderate	6.57	Higher
Water Warming	2.52	Moderate	8.34	Higher
Stream Flow Support	5.34	Moderate	2.68	Moderate
Water Cooling	4.41	Moderate	3.95	Moderate
Amphibian Habitat	3.72	Moderate	4.21	Moderate
Sediment Retention & Stabilization	2.82	Moderate	3.86	Moderate
Waterbird Nesting Habitat	4.53	Moderate	0.00	Lower
Water Storage	4.25	Moderate	1.11	Lower
Native Plant Habitat	2.68	Lower	2.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.03	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.71	Lower
Wetland Ecological Condition	N.A.	N.A.	1.39	Lower

ND34 • **type:** open peatland • **acres:** 3.2 • **boundary criteria**: type, pa • **pin**: 6D1011000010 • no known or probable anadromous fish

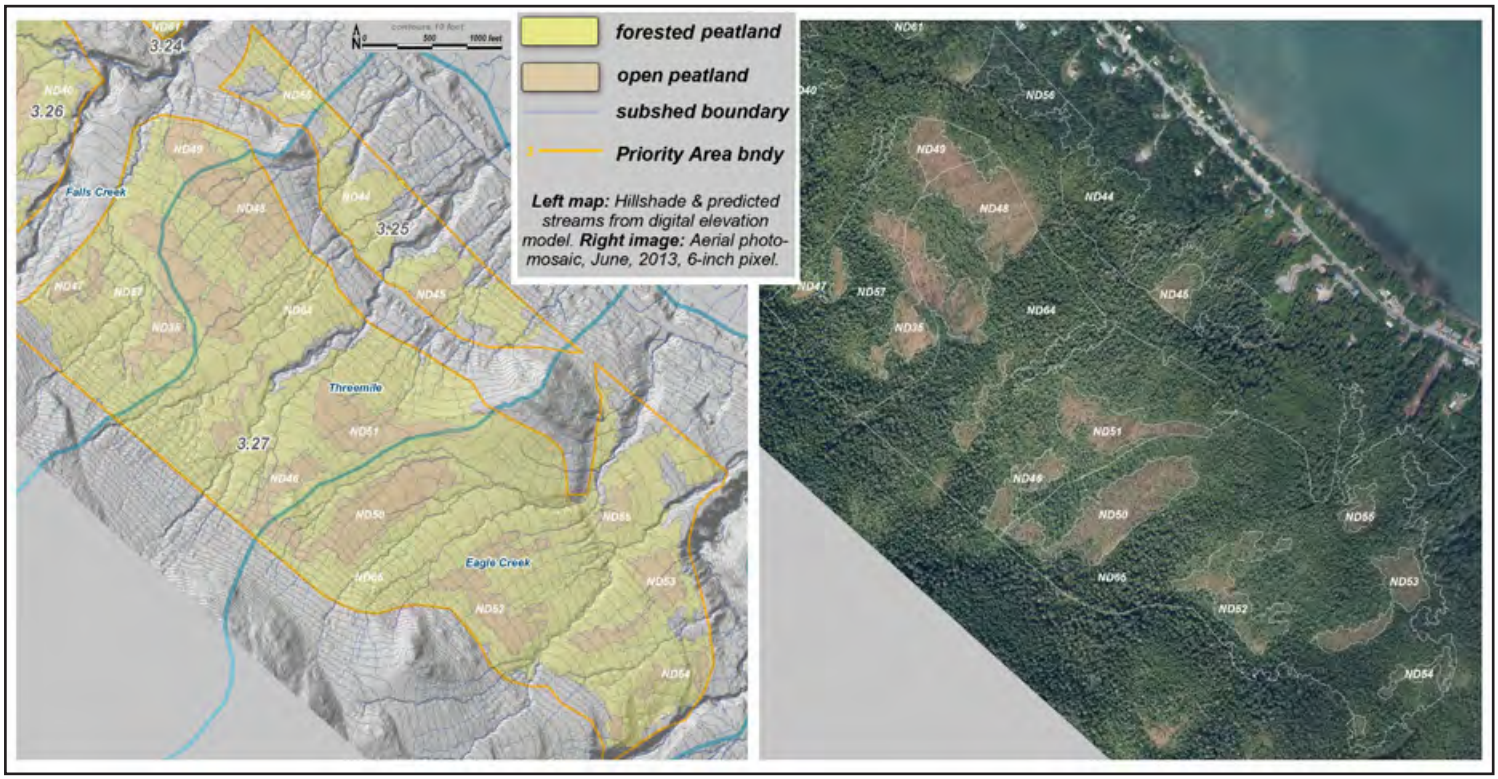
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.78	Higher	4.34	Moderate
Carbon Sequestration	6.81	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.21	Moderate	6.61	Higher
Pollinator Habitat	5.91	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.45	Moderate	9.70	Moderate
Water Storage	4.09	Moderate	5.00	Moderate
Phosphorus Retention	3.35	Moderate	3.35	Moderate
Invertebrate Habitat	3.99	Moderate	1.88	Lower
Water Cooling	3.93	Moderate	1.23	Lower
Water Warming	3.36	Moderate	0.58	Lower
Organic Nutrient Export	7.08	Moderate	N.A.	N.A.
Amphibian Habitat	2.40	Lower	6.85	Higher
Nitrate Removal	1.86	Lower	6.06	Higher
Stream Flow Support	2.65	Lower	2.02	Moderate
Native Plant Habitat	1.55	Lower	2.74	Moderate
Sediment Retention & Stabilization	1.52	Lower	2.63	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	6.30	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.96	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower



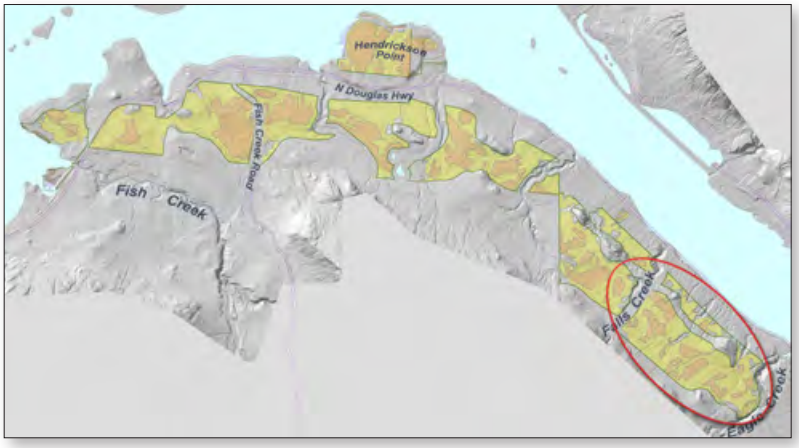
Unit maps for ND34 37 38 39 40 41 42 43 61 66 67

ND35 • **type:** open peatland • **acres:** 4.4 • **boundary criteria**: type, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	5.80	Higher	6.97	Higher
Phosphorus Retention	4.44	Higher	4.44	Higher
Songbird, Raptor, & Mammal Habitat	9.03	Higher	4.09	Moderate
Pollinator Habitat	7.21	Higher	3.26	Moderate
Water Cooling	5.56	Higher	1.23	Lower
Organic Nutrient Export	8.02	Higher	N.A.	N.A.
Carbon Sequestration	7.11	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.08	Moderate	7.27	Higher
Nitrate Removal	1.96	Moderate	8.21	Higher
Waterbird Nesting Habitat	5.10	Moderate	9.70	Moderate
Water Storage	4.71	Moderate	5.00	Moderate
Native Plant Habitat	4.34	Moderate	3.70	Moderate
Sediment Retention & Stabilization	2.72	Moderate	3.93	Moderate
Invertebrate Habitat	5.20	Moderate	2.37	Lower
Water Warming	2.52	Moderate	2.34	Lower
Stream Flow Support	2.77	Lower	2.27	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.62	Higher
Wetland Ecological Condition	N.A.	N.A.	7.21	Higher
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower



Unit maps for ND35 44-5-6-7 -8-9, 50-1-2-3-4-5-6-7, 64 65



ND36 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type, subsh • **pin**: 6D1201050010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.78	Higher	4.78	Higher
Songbird, Raptor, & Mammal Habitat	8.76	Higher	4.34	Moderate
Carbon Sequestration	7.29	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.06	Moderate	6.61	Higher
Pollinator Habitat	4.89	Moderate	4.34	Moderate
Water Storage	4.19	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.05	Moderate	9.70	Moderate
Nitrate Removal	2.48	Moderate	3.33	Moderate
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.16	Lower
Invertebrate Habitat	3.33	Moderate	1.80	Lower
Organic Nutrient Export	6.41	Moderate	N.A.	N.A.
Amphibian Habitat	2.36	Lower	6.74	Higher
Stream Flow Support	2.65	Lower	1.89	Moderate
Native Plant Habitat	0.38	Lower	3.14	Moderate
Sediment Retention & Stabilization	1.52	Lower	0.18	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	8.55	Higher
Wetland Risk	N.A.	N.A.	7.60	Higher
Public Use & Recognition	N.A.	N.A.	2.60	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.98	Lower

ND37 • **type:** forested peatland • **acres:** 47.6 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0801110010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.15	Higher	4.15	Higher
Pollinator Habitat	9.05	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.38	Higher	1.67	Lower
Invertebrate Habitat	7.12	Higher	1.55	Lower
Organic Nutrient Export	9.09	Higher	N.A.	N.A.
Carbon Sequestration	6.35	Higher	N.A.	N.A.
Water Warming	2.52	Moderate	7.60	Higher
Nitrate Removal	2.42	Moderate	6.57	Higher
Stream Flow Support	5.34	Moderate	2.65	Moderate
Water Cooling	4.41	Moderate	3.95	Moderate
Amphibian Habitat	3.82	Moderate	4.48	Moderate
Sediment Retention & Stabilization	2.65	Moderate	3.86	Moderate
Waterbird Nesting Habitat	4.22	Moderate	0.00	Lower
Water Storage	4.20	Moderate	1.11	Lower
Native Plant Habitat	2.53	Lower	2.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.79	Moderate
Wetland Risk	N.A.	N.A.	5.47	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.37	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND38 • **type:** open peatland • **acres:** 8.9 • **boundary criteria**: type, pa • **pin**: 6D0801110010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.51	Higher	4.34	Moderate
Water Warming	4.88	Higher	2.05	Lower
Carbon Sequestration	7.32	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.21	Moderate	6.61	Higher
Nitrate Removal	2.20	Moderate	6.31	Higher
Pollinator Habitat	5.56	Moderate	4.34	Moderate
Water Storage	4.18	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.05	Moderate	9.70	Moderate
Phosphorus Retention	3.57	Moderate	3.57	Moderate
Invertebrate Habitat	4.14	Moderate	1.63	Lower
Water Cooling	3.72	Moderate	1.23	Lower
Organic Nutrient Export	7.58	Moderate	N.A.	N.A.
Stream Flow Support	2.65	Lower	2.05	Moderate
Amphibian Habitat	2.50	Lower	5.80	Moderate
Sediment Retention & Stabilization	1.97	Lower	3.74	Moderate
Native Plant Habitat	1.66	Lower	2.74	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	6.05	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.39	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND39 • **type:** open peatland • **acres:** 2.2 • **boundary criteria**: type, subsh • **pin**: 6D0801110010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.32	Higher	4.32	Higher
Songbird, Raptor, & Mammal Habitat	8.47	Higher	4.34	Moderate
Waterbird Feeding Habitat	5.03	Moderate	6.61	Higher
Waterbird Nesting Habitat	4.65	Moderate	9.70	Moderate
Water Storage	4.34	Moderate	5.00	Moderate
Water Cooling	3.93	Moderate	1.05	Lower
Water Warming	3.36	Moderate	1.15	Lower
Nitrate Removal	2.48	Moderate	2.78	Lower
Sediment Retention & Stabilization	2.31	Moderate	0.12	Lower
Organic Nutrient Export	6.45	Moderate	N.A.	N.A.
Carbon Sequestration	5.80	Moderate	N.A.	N.A.
Amphibian Habitat	2.10	Lower	7.16	Higher
Stream Flow Support	2.65	Lower	1.78	Moderate
Pollinator Habitat	2.04	Lower	4.34	Moderate
Native Plant Habitat	0.39	Lower	2.74	Moderate
Invertebrate Habitat	2.75	Lower	1.93	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Risk	N.A.	N.A.	5.12	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower
Wetland Ecological Condition	N.A.	N.A.	1.27	Lower

ND40 • **type:** forested peatland • **acres:** 48.4 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.33	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.20	Higher	1.67	Lower
Organic Nutrient Export	9.01	Higher	N.A.	N.A.
Carbon Sequestration	6.35	Higher	N.A.	N.A.
Water Warming	2.42	Moderate	7.53	Higher
Nitrate Removal	2.07	Moderate	6.57	Higher
Stream Flow Support	5.34	Moderate	1.95	Moderate
Phosphorus Retention	3.56	Moderate	3.56	Moderate
Amphibian Habitat	3.25	Moderate	4.33	Moderate
Water Cooling	3.14	Moderate	3.95	Moderate
Sediment Retention & Stabilization	2.36	Moderate	3.86	Moderate
Water Storage	3.76	Moderate	1.11	Lower
Invertebrate Habitat	3.63	Moderate	0.87	Lower
Native Plant Habitat	1.75	Lower	2.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	5.84	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.92	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND41 • **type:** open peatland • **acres:** 5.4 • **boundary criteria**: type • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.00	Higher	4.00	Higher
Songbird, Raptor, & Mammal Habitat	8.92	Higher	4.34	Moderate
Organic Nutrient Export	7.78	Higher	N.A.	N.A.
Carbon Sequestration	7.04	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.16	Moderate	6.61	Higher
Pollinator Habitat	6.62	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.87	Moderate	9.70	Moderate
Water Storage	4.67	Moderate	5.00	Moderate
Nitrate Removal	1.96	Moderate	3.28	Moderate
Invertebrate Habitat	4.48	Moderate	1.94	Lower
Water Cooling	4.41	Moderate	1.05	Lower
Sediment Retention & Stabilization	2.54	Moderate	0.35	Lower
Water Warming	2.52	Moderate	1.16	Lower
Amphibian Habitat	2.31	Lower	6.94	Higher
Stream Flow Support	2.77	Lower	2.12	Moderate
Native Plant Habitat	0.51	Lower	2.74	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.92	Moderate
Wetland Risk	N.A.	N.A.	6.05	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.37	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND42 • **type:** open peatland • **acres:** 16.6 • **boundary criteria**: type, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.52	Higher	4.34	Moderate
Organic Nutrient Export	7.83	Higher	N.A.	N.A.
Carbon Sequestration	7.47	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.30	Moderate	6.61	Higher
Pollinator Habitat	6.01	Moderate	4.34	Moderate
Stream Flow Support	5.55	Moderate	1.77	Moderate
Water Storage	4.70	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.31	Moderate	9.70	Moderate
Water Warming	3.82	Moderate	2.87	Moderate
Phosphorus Retention	3.35	Moderate	3.35	Moderate
Water Cooling	3.10	Moderate	3.07	Moderate
Sediment Retention & Stabilization	2.38	Moderate	3.79	Moderate
Nitrate Removal	1.47	Lower	6.31	Higher
Amphibian Habitat	2.10	Lower	5.87	Moderate
Native Plant Habitat	0.93	Lower	2.74	Moderate
Invertebrate Habitat	2.74	Lower	1.64	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	6.39	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.17	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND43 • **type:** open peatland • **acres:** 1.8 • **boundary criteria**: type, pa • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.65	Higher	4.34	Moderate
Carbon Sequestration	7.32	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.20	Moderate	6.61	Higher
Pollinator Habitat	4.98	Moderate	4.34	Moderate
Water Storage	4.18	Moderate	5.00	Moderate
Waterbird Nesting Habitat	3.87	Moderate	9.70	Moderate
Phosphorus Retention	2.81	Moderate	2.81	Moderate
Water Warming	4.33	Moderate	2.01	Lower
Water Cooling	2.78	Moderate	1.23	Lower
Organic Nutrient Export	6.67	Moderate	N.A.	N.A.
Nitrate Removal	1.65	Lower	6.57	Higher
Stream Flow Support	2.65	Lower	1.66	Moderate
Amphibian Habitat	2.14	Lower	5.91	Moderate
Sediment Retention & Stabilization	1.41	Lower	4.31	Moderate
Native Plant Habitat	1.06	Lower	2.74	Moderate
Invertebrate Habitat	2.18	Lower	1.59	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.91	Moderate
Wetland Risk	N.A.	N.A.	6.28	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.91	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.73	Lower

ND44 • **type:** forested peatland • **acres:** 15.2 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	8.27	Higher
Songbird, Raptor, & Mammal Habitat	9.32	Higher	3.33	Moderate
Stream Flow Support	7.78	Higher	4.50	Moderate
Pollinator Habitat	7.75	Higher	4.38	Moderate
Water Cooling	6.99	Higher	3.95	Moderate
Organic Nutrient Export	9.33	Higher	N.A.	N.A.
Resident Fish Habitat	6.71	Moderate	6.54	Higher
Native Plant Habitat	4.95	Moderate	3.89	Moderate
Amphibian Habitat	3.16	Moderate	4.44	Moderate
Invertebrate Habitat	5.05	Moderate	1.90	Lower
Water Storage	3.42	Moderate	1.11	Lower
Carbon Sequestration	5.51	Moderate	N.A.	N.A.
Nitrate Removal	1.58	Lower	6.57	Higher
Sediment Retention & Stabilization	1.81	Lower	4.06	Moderate
Phosphorus Retention	2.51	Lower	2.51	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	4.67	Lower
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.58	Lower
Wetland Ecological Condition	N.A.	N.A.	3.17	Lower
Public Use & Recognition	N.A.	N.A.	1.93	Lower

ND45 • **type:** open peatland • **acres:** 2.0 • **boundary criteria**: type, pa • **pin**: 6D0611000010 • no known or probable anadromous fish

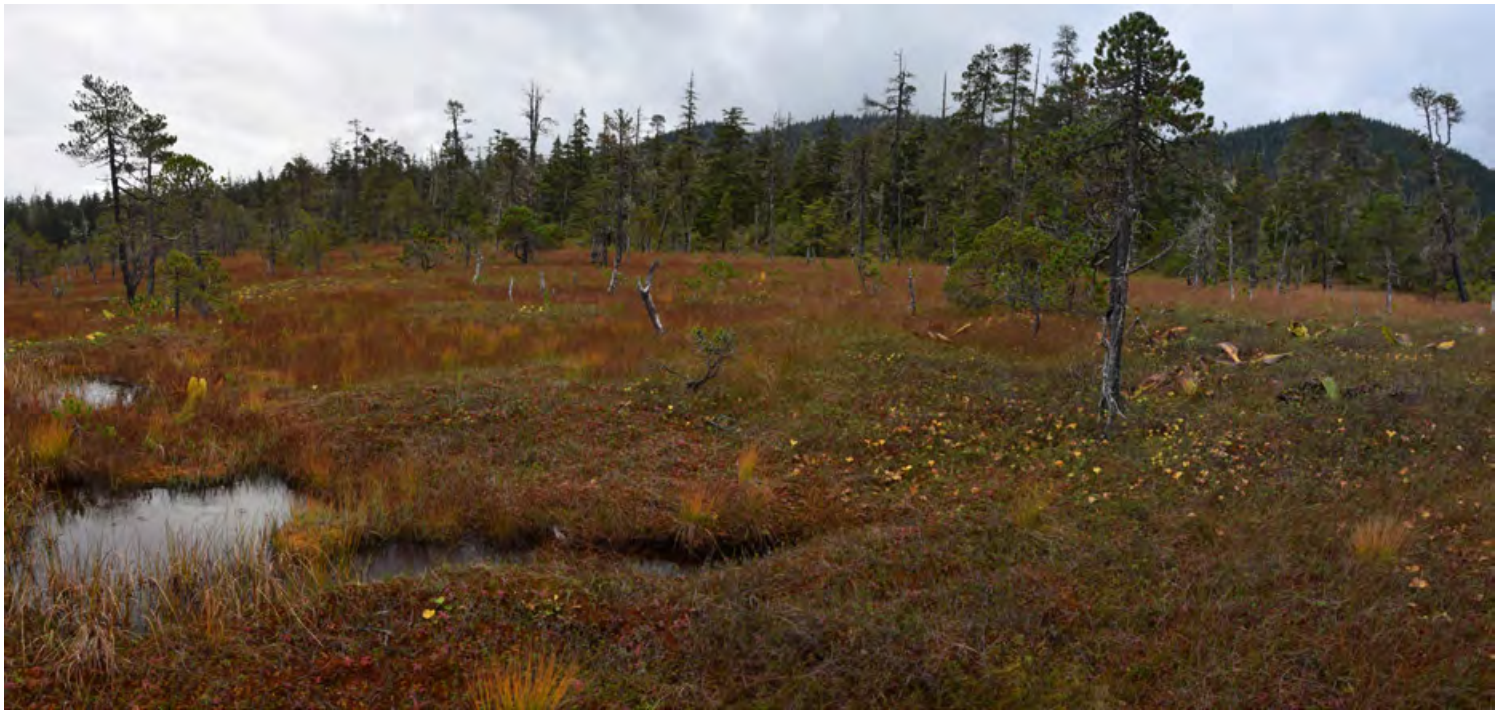
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.89	Higher	3.89	Higher
Songbird, Raptor, & Mammal Habitat	8.66	Higher	5.46	Moderate
Water Warming	5.32	Higher	2.95	Moderate
Water Cooling	7.47	Higher	1.47	Lower
Invertebrate Habitat	5.81	Higher	1.86	Lower
Carbon Sequestration	6.56	Higher	N.A.	N.A.
Pollinator Habitat	5.46	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.91	Moderate	9.70	Moderate
Stream Flow Support	4.62	Moderate	2.39	Moderate
Waterbird Feeding Habitat	4.08	Moderate	5.27	Moderate
Native Plant Habitat	3.31	Moderate	3.22	Moderate
Water Storage	3.40	Moderate	0.56	Lower
Organic Nutrient Export	7.57	Moderate	N.A.	N.A.
Amphibian Habitat	2.03	Lower	6.67	Higher
Nitrate Removal	1.16	Lower	3.79	Moderate
Sediment Retention & Stabilization	1.49	Lower	0.71	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.57	Moderate
Wetland Stressors	N.A.	N.A.	4.11	Lower
Wetland Risk	N.A.	N.A.	3.61	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.68	Lower

ND46 • **type:** open peatland • **acres:** 2.8 • **boundary criteria**: type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	8.14	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.82	Moderate	5.46	Moderate
Native Plant Habitat	3.50	Moderate	2.74	Moderate
Water Cooling	4.60	Moderate	0.74	Lower
Waterbird Feeding Habitat	4.04	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.83	Moderate	0.56	Lower
Organic Nutrient Export	6.52	Moderate	N.A.	N.A.
Pollinator Habitat	3.18	Lower	4.34	Moderate
Stream Flow Support	2.35	Lower	1.70	Moderate
Nitrate Removal	0.79	Lower	3.54	Moderate
Invertebrate Habitat	2.39	Lower	0.41	Lower
Phosphorus Retention	1.24	Lower	1.24	Lower
Water Storage	0.96	Lower	1.11	Lower
Amphibian Habitat	0.68	Lower	3.45	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.49	Moderate
Wetland Stressors	N.A.	N.A.	3.44	Lower
Wetland Risk	N.A.	N.A.	3.30	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.29	Lower

ND47 • **type:** open peatland • **acres:** 1.4 • **boundary criteria**: type • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.72	Higher	5.46	Moderate
Organic Nutrient Export	8.31	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Pollinator Habitat	6.62	Moderate	4.34	Moderate
Native Plant Habitat	4.53	Moderate	3.48	Moderate
Water Warming	3.36	Moderate	5.14	Moderate
Water Cooling	5.08	Moderate	1.58	Lower
Invertebrate Habitat	4.71	Moderate	1.09	Lower
Water Storage	4.13	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.40	Moderate	0.00	Lower
Nitrate Removal	0.90	Lower	6.57	Higher
Stream Flow Support	3.15	Lower	2.17	Moderate
Amphibian Habitat	1.87	Lower	6.25	Moderate
Sediment Retention & Stabilization	1.62	Lower	4.06	Moderate
Phosphorus Retention	2.26	Lower	2.26	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.63	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Risk	N.A.	N.A.	3.22	Lower
Public Use & Recognition	N.A.	N.A.	1.50	Lower



ND48 • **type:** open peatland • **acres:** 13.2 • **boundary criteria**: type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.26	Higher	4.26	Higher
Songbird, Raptor, & Mammal Habitat	8.69	Higher	5.46	Moderate
Organic Nutrient Export	8.43	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.76	Moderate	7.27	Higher
Pollinator Habitat	5.46	Moderate	4.34	Moderate
Water Storage	4.76	Moderate	5.00	Moderate
Waterbird Nesting Habitat	4.69	Moderate	9.70	Moderate
Native Plant Habitat	4.53	Moderate	3.23	Moderate
Sediment Retention & Stabilization	2.48	Moderate	3.99	Moderate
Water Cooling	5.08	Moderate	1.23	Lower
Invertebrate Habitat	3.52	Moderate	1.79	Lower
Water Warming	3.36	Moderate	2.00	Lower
Amphibian Habitat	1.97	Lower	6.48	Higher
Nitrate Removal	1.43	Lower	6.31	Higher
Stream Flow Support	2.65	Lower	1.93	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.66	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.23	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND49 • **type:** open peatland • **acres:** 2.7 • **boundary criteria**: type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.69	Higher	5.46	Moderate
Organic Nutrient Export	7.94	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.76	Moderate	7.27	Higher
Pollinator Habitat	5.46	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.69	Moderate	9.70	Moderate
Native Plant Habitat	4.53	Moderate	3.23	Moderate
Water Warming	3.36	Moderate	5.15	Moderate
Phosphorus Retention	3.33	Moderate	3.33	Moderate
Water Cooling	5.08	Moderate	1.58	Lower
Invertebrate Habitat	4.71	Moderate	1.79	Lower
Water Storage	4.67	Moderate	1.11	Lower
Amphibian Habitat	1.97	Lower	6.48	Higher
Nitrate Removal	1.19	Lower	6.57	Higher
Stream Flow Support	3.15	Lower	2.17	Moderate
Sediment Retention & Stabilization	1.90	Lower	4.06	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.63	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Risk	N.A.	N.A.	3.22	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND50 • **type:** open peatland • **acres:** 8.9 • **boundary criteria**: type, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.43	Higher	5.46	Moderate
Water Storage	5.88	Higher	1.11	Lower
Organic Nutrient Export	8.32	Higher	N.A.	N.A.
Carbon Sequestration	7.58	Higher	N.A.	N.A.
Pollinator Habitat	6.14	Moderate	4.34	Moderate
Water Warming	4.33	Moderate	5.02	Moderate
Native Plant Habitat	4.29	Moderate	3.00	Moderate
Sediment Retention & Stabilization	3.35	Moderate	4.06	Moderate
Water Cooling	3.54	Moderate	1.58	Lower
Waterbird Feeding Habitat	3.25	Moderate	0.00	Lower
Nitrate Removal	1.41	Lower	6.57	Higher
Stream Flow Support	3.15	Lower	1.73	Moderate
Amphibian Habitat	0.50	Lower	5.07	Moderate
Invertebrate Habitat	2.52	Lower	0.71	Lower
Phosphorus Retention	2.44	Lower	2.44	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.66	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.23	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND51 • **type:** open peatland • **acres:** 5.7 • **boundary criteria**: type • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.69	Higher	5.46	Moderate
Organic Nutrient Export	8.18	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.76	Moderate	7.27	Higher
Pollinator Habitat	6.62	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.69	Moderate	9.70	Moderate
Native Plant Habitat	4.53	Moderate	3.47	Moderate
Phosphorus Retention	3.76	Moderate	3.76	Moderate
Water Warming	3.36	Moderate	5.05	Moderate
Water Cooling	5.08	Moderate	1.58	Lower
Invertebrate Habitat	4.71	Moderate	1.66	Lower
Water Storage	4.71	Moderate	1.11	Lower
Nitrate Removal	1.25	Lower	6.57	Higher
Amphibian Habitat	0.81	Lower	6.48	Higher
Stream Flow Support	3.15	Lower	2.17	Moderate
Sediment Retention & Stabilization	2.13	Lower	4.06	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.63	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Risk	N.A.	N.A.	3.22	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND52 • **type:** open peatland • **acres:** 5.7 • **boundary criteria**: type • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	6.10	Higher
Songbird, Raptor, & Mammal Habitat	8.79	Higher	5.46	Moderate
Stream Flow Support	8.49	Higher	2.39	Moderate
Water Cooling	6.99	Higher	3.51	Moderate
Native Plant Habitat	5.85	Higher	3.41	Moderate
Invertebrate Habitat	5.81	Higher	1.00	Lower
Organic Nutrient Export	9.02	Higher	N.A.	N.A.
Carbon Sequestration	6.09	Higher	N.A.	N.A.
Pollinator Habitat	6.18	Moderate	4.34	Moderate
Phosphorus Retention	2.81	Moderate	2.81	Moderate
Water Storage	3.67	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.40	Moderate	0.00	Lower
Nitrate Removal	1.81	Lower	6.57	Higher
Sediment Retention & Stabilization	1.89	Lower	4.06	Moderate
Amphibian Habitat	0.96	Lower	6.31	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.18	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.46	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND53 • **type:** open peatland • **acres:** 3.6 • **boundary criteria**: type • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.92	Higher	3.92	Higher
Songbird, Raptor, & Mammal Habitat	8.67	Higher	5.46	Moderate
Pollinator Habitat	7.07	Higher	4.34	Moderate
Native Plant Habitat	5.95	Higher	3.56	Moderate
Invertebrate Habitat	6.02	Higher	1.70	Lower
Organic Nutrient Export	8.15	Higher	N.A.	N.A.
Carbon Sequestration	7.14	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.91	Moderate	7.27	Higher
Waterbird Nesting Habitat	4.69	Moderate	9.70	Moderate
Water Warming	3.36	Moderate	4.28	Moderate
Water Cooling	5.08	Moderate	1.40	Lower
Water Storage	3.91	Moderate	1.11	Lower
Nitrate Removal	1.18	Lower	6.57	Higher
Amphibian Habitat	1.00	Lower	6.56	Higher
Stream Flow Support	2.90	Lower	2.43	Moderate
Sediment Retention & Stabilization	1.56	Lower	4.01	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.78	Higher
Wetland Risk	N.A.	N.A.	4.18	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND54 • **type:** open peatland • **acres:** 1.5 • **boundary criteria**: type, pa • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	8.14	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.35	Moderate	5.46	Moderate
Native Plant Habitat	3.22	Moderate	2.74	Moderate
Water Cooling	4.60	Moderate	1.26	Lower
Waterbird Feeding Habitat	3.21	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.61	Moderate	0.56	Lower
Organic Nutrient Export	6.62	Moderate	N.A.	N.A.
Stream Flow Support	3.03	Lower	1.67	Moderate
Nitrate Removal	0.84	Lower	3.54	Moderate
Invertebrate Habitat	2.24	Lower	0.22	Lower
Phosphorus Retention	1.59	Lower	1.59	Lower
Water Storage	0.91	Lower	1.11	Lower
Amphibian Habitat	0.61	Lower	2.49	Lower
Pollinator Habitat	0.58	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.37	Moderate
Wetland Stressors	N.A.	N.A.	4.22	Lower
Wetland Risk	N.A.	N.A.	3.64	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.82	Lower

ND55 • **type:** open peatland • **acres:** 1.2 • **boundary criteria**: type • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.63	Higher	5.46	Moderate
Native Plant Habitat	5.95	Higher	3.22	Moderate
Organic Nutrient Export	8.04	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.76	Moderate	7.27	Higher
Pollinator Habitat	5.46	Moderate	4.34	Moderate
Waterbird Nesting Habitat	4.69	Moderate	9.70	Moderate
Water Warming	3.36	Moderate	4.27	Moderate
Phosphorus Retention	3.33	Moderate	3.33	Moderate
Water Cooling	5.08	Moderate	1.40	Lower
Invertebrate Habitat	4.84	Moderate	1.66	Lower
Water Storage	4.67	Moderate	1.11	Lower
Nitrate Removal	1.34	Lower	6.57	Higher
Amphibian Habitat	0.91	Lower	6.43	Higher
Stream Flow Support	2.90	Lower	2.19	Moderate
Sediment Retention & Stabilization	1.90	Lower	4.06	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.69	Moderate
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.69	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND56 • **type:** for peatland • **acres:** 3.9 • **boundary criteria**: w-u, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.01	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.85	Moderate	3.33	Moderate
Stream Flow Support	5.65	Moderate	2.21	Moderate
Pollinator Habitat	4.81	Moderate	4.38	Moderate
Water Cooling	4.60	Moderate	3.68	Moderate
Invertebrate Habitat	4.89	Moderate	0.35	Lower
Amphibian Habitat	3.44	Moderate	1.54	Lower
Organic Nutrient Export	7.28	Moderate	N.A.	N.A.
Native Plant Habitat	2.56	Lower	2.81	Moderate
Nitrate Removal	0.77	Lower	3.79	Moderate
Phosphorus Retention	1.40	Lower	1.40	Lower
Sediment Retention & Stabilization	1.31	Lower	0.65	Lower
Water Storage	0.21	Lower	0.56	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Stressors	N.A.	N.A.	4.11	Lower
Wetland Ecological Condition	N.A.	N.A.	2.88	Lower
Wetland Risk	N.A.	N.A.	2.86	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower

ND57 • **type:** forested peatland • **acres:** 26.2 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.91	Higher	3.33	Moderate
Pollinator Habitat	7.85	Higher	4.38	Moderate
Organic Nutrient Export	8.89	Higher	N.A.	N.A.
Carbon Sequestration	6.49	Higher	N.A.	N.A.
Water Warming	3.70	Moderate	7.51	Higher
Stream Flow Support	5.09	Moderate	1.89	Moderate
Native Plant Habitat	4.74	Moderate	2.81	Moderate
Water Cooling	4.02	Moderate	3.95	Moderate
Phosphorus Retention	3.76	Moderate	3.76	Moderate
Sediment Retention & Stabilization	2.78	Moderate	4.06	Moderate
Water Storage	4.27	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.59	Moderate	0.00	Lower
Invertebrate Habitat	3.33	Moderate	1.15	Lower
Amphibian Habitat	3.16	Moderate	3.26	Lower
Nitrate Removal	1.35	Lower	6.57	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.48	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.72	Lower
Wetland Risk	N.A.	N.A.	3.15	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND58 • **type:** forested peatland • **acres:** 11.3 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Sediment Retention & Stabilization	6.00	Higher	0.37	Lower
Carbon Sequestration	8.04	Higher	N.A.	N.A.
Native Plant Habitat	3.89	Moderate	2.81	Moderate
Phosphorus Retention	3.27	Moderate	3.27	Moderate
Songbird, Raptor, & Mammal Habitat	6.47	Moderate	1.67	Lower
Water Cooling	4.60	Moderate	0.00	Lower
Amphibian Habitat	3.89	Moderate	2.06	Lower
Organic Nutrient Export	6.27	Moderate	N.A.	N.A.
Pollinator Habitat	2.66	Lower	4.38	Moderate
Nitrate Removal	1.23	Lower	3.79	Moderate
Water Storage	2.11	Lower	1.67	Lower
Invertebrate Habitat	1.68	Lower	0.50	Lower
Stream Flow Support	0.84	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.74	Higher
Wetland Stressors	N.A.	N.A.	7.02	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.68	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.96	Lower

ND59 • **type:** for. peatland • **acres:** 2.2 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.99	Higher	N.A.	N.A.
Native Plant Habitat	4.49	Moderate	2.81	Moderate
Songbird, Raptor, & Mammal Habitat	6.29	Moderate	1.67	Lower
Water Cooling	4.60	Moderate	1.05	Lower
Amphibian Habitat	3.85	Moderate	1.91	Lower
Pollinator Habitat	3.62	Lower	4.38	Moderate
Stream Flow Support	2.02	Lower	1.56	Moderate
Nitrate Removal	0.99	Lower	3.79	Moderate
Phosphorus Retention	1.77	Lower	1.77	Lower
Invertebrate Habitat	1.68	Lower	0.47	Lower
Water Storage	1.33	Lower	1.11	Lower
Sediment Retention & Stabilization	1.08	Lower	0.37	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.85	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.90	Moderate
Wetland Risk	N.A.	N.A.	5.71	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.64	Lower
Public Use & Recognition	N.A.	N.A.	1.82	Lower

ND60 • **type:** open peatland • **acres:** 4.1 • **boundary criteria**: type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.06	Higher	5.06	Higher
Songbird, Raptor, & Mammal Habitat	7.46	Higher	4.34	Moderate
Waterbird Nesting Habitat	5.92	Higher	9.70	Moderate
Water Storage	5.28	Higher	5.00	Moderate
Water Warming	7.31	Higher	0.59	Lower
Carbon Sequestration	7.06	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.72	Moderate	6.61	Higher
Native Plant Habitat	4.34	Moderate	2.74	Moderate
Nitrate Removal	2.64	Moderate	3.28	Moderate
Invertebrate Habitat	3.52	Moderate	1.96	Lower
Sediment Retention & Stabilization	3.21	Moderate	0.35	Lower
Water Cooling	3.13	Moderate	0.53	Lower
Organic Nutrient Export	6.67	Moderate	N.A.	N.A.
Amphibian Habitat	2.61	Lower	6.10	Moderate
Stream Flow Support	1.85	Lower	1.93	Moderate
Pollinator Habitat	1.56	Lower	4.34	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.02	Moderate
Wetland Risk	N.A.	N.A.	6.23	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.53	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.96	Lower

ND61 • **type:** forested peatland • **acres:** 15.5 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.04	Higher	4.04	Higher
Nitrate Removal	3.46	Higher	6.82	Higher
Pollinator Habitat	7.75	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.57	Higher	1.67	Lower
Invertebrate Habitat	5.57	Higher	0.99	Lower
Organic Nutrient Export	9.24	Higher	N.A.	N.A.
Carbon Sequestration	6.35	Higher	N.A.	N.A.
Water Warming	3.36	Moderate	5.84	Higher
Amphibian Habitat	3.77	Moderate	4.64	Moderate
Native Plant Habitat	3.21	Moderate	2.81	Moderate
Water Cooling	3.93	Moderate	1.58	Lower
Water Storage	3.91	Moderate	1.11	Lower
Stream Flow Support	2.55	Lower	2.34	Moderate
Sediment Retention & Stabilization	2.17	Lower	4.43	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.86	Moderate
Wetland Risk	N.A.	N.A.	5.82	Moderate
Public Use & Recognition	N.A.	N.A.	2.58	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	3.00	Lower

ND62 • **type:** forested peatland • **acres:** 11.0 • **boundary criteria**: w-u, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.53	Higher	4.53	Higher
Nitrate Removal	3.46	Higher	6.82	Higher
Pollinator Habitat	7.17	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.57	Higher	1.67	Lower
Invertebrate Habitat	7.24	Higher	0.99	Lower
Organic Nutrient Export	9.07	Higher	N.A.	N.A.
Carbon Sequestration	6.57	Higher	N.A.	N.A.
Water Warming	2.52	Moderate	5.84	Higher
Amphibian Habitat	3.77	Moderate	4.64	Moderate
Sediment Retention & Stabilization	2.46	Moderate	4.43	Moderate
Water Cooling	4.41	Moderate	1.58	Lower
Water Storage	3.91	Moderate	1.11	Lower
Native Plant Habitat	3.06	Lower	2.81	Moderate
Stream Flow Support	2.67	Lower	2.68	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.86	Moderate
Wetland Risk	N.A.	N.A.	5.81	Moderate
Public Use & Recognition	N.A.	N.A.	2.58	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.97	Lower

ND63 • **type:** for. peatland • **acres:** 12.9 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1201050010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.38	Higher	4.38	Higher
Pollinator Habitat	7.75	Higher	4.38	Moderate
Songbird, Raptor, & Mammal Habitat	9.35	Higher	1.67	Lower
Water Warming	7.56	Higher	1.68	Lower
Water Cooling	6.80	Higher	1.58	Lower
Organic Nutrient Export	8.60	Higher	N.A.	N.A.
Nitrate Removal	3.03	Moderate	6.57	Higher
Stream Flow Support	4.56	Moderate	2.24	Moderate
Amphibian Habitat	4.13	Moderate	4.46	Moderate
Native Plant Habitat	3.32	Moderate	3.90	Moderate
Invertebrate Habitat	5.05	Moderate	1.56	Lower
Waterbird Nesting Habitat	4.10	Moderate	0.00	Lower
Water Storage	3.24	Moderate	1.11	Lower
Carbon Sequestration	5.05	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.17	Lower	2.21	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	8.06	Higher
Wetland Risk	N.A.	N.A.	6.37	Moderate
Public Use & Recognition	N.A.	N.A.	2.58	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	1.36	Lower

ND64 • **type:** forested peatland • **acres:** 55.5 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.05	Higher	3.92	Moderate
Carbon Sequestration	7.88	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.02	Moderate	3.33	Moderate
Resident Fish Habitat	5.76	Moderate	5.00	Moderate
Pollinator Habitat	5.25	Moderate	4.38	Moderate
Water Cooling	4.60	Moderate	3.68	Moderate
Native Plant Habitat	3.39	Moderate	2.81	Moderate
Invertebrate Habitat	3.75	Moderate	1.21	Lower
Amphibian Habitat	3.06	Moderate	1.68	Lower
Sediment Retention & Stabilization	2.95	Moderate	0.37	Lower
Organic Nutrient Export	7.57	Moderate	N.A.	N.A.
Phosphorus Retention	1.95	Lower	1.95	Lower
Water Storage	0.86	Lower	1.11	Lower
Nitrate Removal	0.42	Lower	3.03	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	3.71	Moderate
Wetland Stressors	N.A.	N.A.	3.73	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Risk	N.A.	N.A.	2.83	Lower
Public Use & Recognition	N.A.	N.A.	1.59	Lower

ND65 • **type:** forested peatland • **acres:** 78.2 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D0611000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.69	Higher	3.33	Moderate
Stream Flow Support	7.28	Higher	1.82	Moderate
Water Cooling	6.26	Higher	3.51	Moderate
Organic Nutrient Export	9.13	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	6.22	Higher
Pollinator Habitat	6.59	Moderate	4.38	Moderate
Native Plant Habitat	4.92	Moderate	2.81	Moderate
Phosphorus Retention	3.15	Moderate	3.15	Moderate
Carbon Sequestration	5.66	Moderate	N.A.	N.A.
Nitrate Removal	0.05	Lower	6.57	Higher
Sediment Retention & Stabilization	0.05	Lower	3.96	Moderate
Invertebrate Habitat	2.97	Lower	0.47	Lower
Amphibian Habitat	1.84	Lower	3.08	Lower
Water Storage	0.38	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	3.38	Moderate
Wetland Stressors	N.A.	N.A.	4.80	Lower
Wetland Risk	N.A.	N.A.	3.81	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.96	Lower

ND66 • **type:** open peatland • **acres:** 1.4 • **boundary criteria**: w-u, type • **pin**: 6D0801050010, 20 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.25	Higher	2.30	Moderate
Invertebrate Habitat	5.35	Higher	0.47	Lower
Organic Nutrient Export	7.92	Higher	N.A.	N.A.
Pollinator Habitat	6.31	Moderate	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	4.84	Moderate	4.09	Moderate
Water Cooling	4.60	Moderate	3.68	Moderate
Waterbird Feeding Habitat	3.60	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.53	Moderate	0.28	Lower
Nitrate Removal	1.68	Lower	6.36	Higher
Phosphorus Retention	1.85	Lower	1.85	Lower
Amphibian Habitat	1.73	Lower	3.16	Lower
Native Plant Habitat	1.38	Lower	0.43	Lower
Water Storage	0.00	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.36	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Stressors	N.A.	N.A.	6.62	Moderate
Wetland Risk	N.A.	N.A.	4.29	Moderate
Public Use & Recognition	N.A.	N.A.	2.84	Moderate
Wetland Ecological Condition	N.A.	N.A.	0.12	Lower

ND67 • **type:** for. peatland • **acres:** 1.3 • **boundary criteria**: w-u, type, pa • **pin**: 6D0801050010, 20 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.66	Higher	2.22	Lower
Organic Nutrient Export	7.95	Higher	N.A.	N.A.
Carbon Sequestration	6.95	Higher	N.A.	N.A.
Pollinator Habitat	6.15	Moderate	3.29	Moderate
Phosphorus Retention	3.75	Moderate	3.75	Moderate
Water Warming	2.94	Moderate	4.14	Moderate
Water Cooling	4.66	Moderate	0.00	Lower
Amphibian Habitat	3.32	Moderate	3.05	Lower
Native Plant Habitat	3.13	Moderate	0.73	Lower
Nitrate Removal	0.37	Lower	9.60	Higher
Sediment Retention & Stabilization	1.42	Lower	3.76	Moderate
Invertebrate Habitat	2.69	Lower	0.63	Lower
Water Storage	1.97	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Stream Flow Support	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.98	Moderate
Public Use & Recognition	N.A.	N.A.	2.77	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Risk	N.A.	N.A.	3.86	Lower
Wetland Ecological Condition	N.A.	N.A.	0.69	Lower

ND68 • **type:** open peatland • **acres:** 1.1 • **boundary criteria**: type, subsh • **pin**: 6D1201050010 • no known or probable anadromous fish

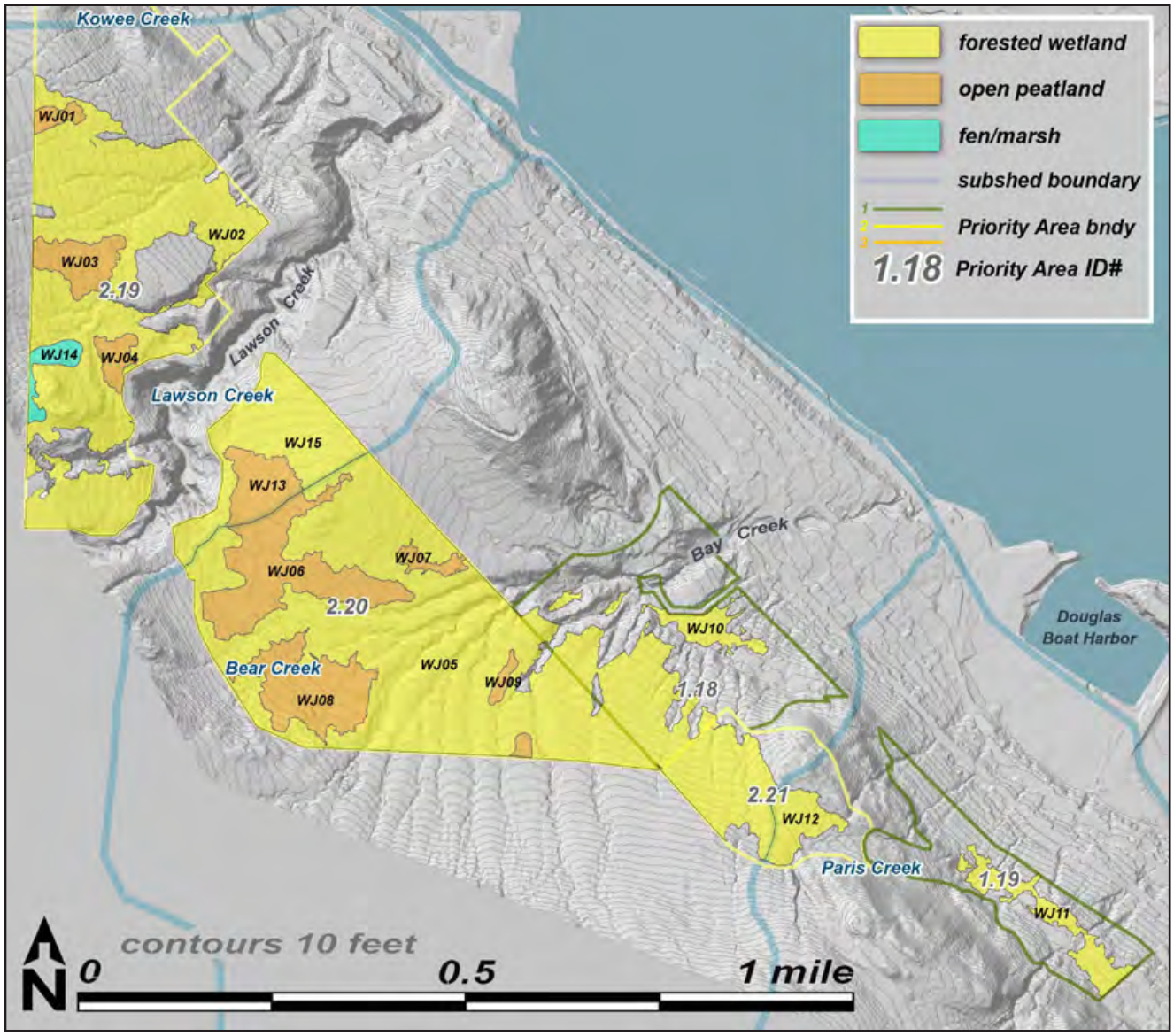
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	3.96	Higher	3.96	Higher
Nitrate Removal	3.22	Higher	9.34	Higher
Water Storage	5.21	Higher	5.00	Moderate
Invertebrate Habitat	6.42	Higher	1.30	Lower
Amphibian Habitat	5.99	Higher	1.97	Lower
Native Plant Habitat	5.49	Higher	0.43	Lower
Pollinator Habitat	5.29	Moderate	3.26	Moderate
Waterbird Feeding Habitat	4.57	Moderate	4.94	Moderate
Waterbird Nesting Habitat	4.26	Moderate	9.70	Moderate
Sediment Retention & Stabilization	3.77	Moderate	2.78	Moderate
Water Cooling	4.06	Moderate	1.40	Lower
Water Warming	2.52	Moderate	1.50	Lower
Organic Nutrient Export	7.17	Moderate	N.A.	N.A.
Carbon Sequestration	4.41	Moderate	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	2.62	Lower	3.68	Moderate
Stream Flow Support	2.39	Lower	2.51	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Risk	N.A.	N.A.	7.52	Higher
Wetland Ecological Condition	N.A.	N.A.	6.84	Higher
Wetland Stressors	N.A.	N.A.	6.85	Moderate
Public Use & Recognition	N.A.	N.A.	1.54	Lower

ND69 • **type:** forested peatland • **acres:** 5.7 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.33	Higher	5.33	Higher
Songbird, Raptor, & Mammal Habitat	9.26	Higher	1.67	Lower
Invertebrate Habitat	6.12	Higher	1.40	Lower
Organic Nutrient Export	8.22	Higher	N.A.	N.A.
Carbon Sequestration	6.42	Higher	N.A.	N.A.
Nitrate Removal	1.97	Moderate	6.67	Higher
Pollinator Habitat	6.63	Moderate	3.26	Moderate
Amphibian Habitat	3.74	Moderate	4.38	Moderate
Water Cooling	4.60	Moderate	0.00	Lower
Water Storage	4.53	Moderate	1.67	Lower
Native Plant Habitat	4.40	Moderate	1.50	Lower
Water Warming	4.20	Moderate	0.00	Lower
Waterbird Nesting Habitat	3.40	Moderate	0.00	Lower
Sediment Retention & Stabilization	2.93	Moderate	0.60	Lower
Stream Flow Support	0.67	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.65	Moderate
Wetland Risk	N.A.	N.A.	6.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.75	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.28	Lower

ND70 • **type:** open peatland • **acres:** 1.4 • **boundary criteria**: type, subsh • **pin**: 6D1011000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.00	Higher	5.00	Higher
Songbird, Raptor, & Mammal Habitat	8.74	Higher	3.68	Moderate
Pollinator Habitat	7.21	Higher	3.26	Moderate
Water Warming	5.32	Higher	4.41	Moderate
Water Cooling	7.47	Higher	1.40	Lower
Invertebrate Habitat	6.47	Higher	1.86	Lower
Organic Nutrient Export	7.88	Higher	N.A.	N.A.
Carbon Sequestration	6.71	Higher	N.A.	N.A.
Nitrate Removal	2.72	Moderate	9.60	Higher
Waterbird Nesting Habitat	4.60	Moderate	9.70	Moderate
Native Plant Habitat	4.29	Moderate	3.61	Moderate
Waterbird Feeding Habitat	3.93	Moderate	4.94	Moderate
Stream Flow Support	3.87	Moderate	2.52	Moderate
Sediment Retention & Stabilization	3.22	Moderate	3.86	Moderate
Water Storage	4.53	Moderate	1.11	Lower
Amphibian Habitat	2.43	Lower	6.63	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.27	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	2.91	Lower
Wetland Risk	N.A.	N.A.	2.21	Lower
Public Use & Recognition	N.A.	N.A.	1.33	Lower



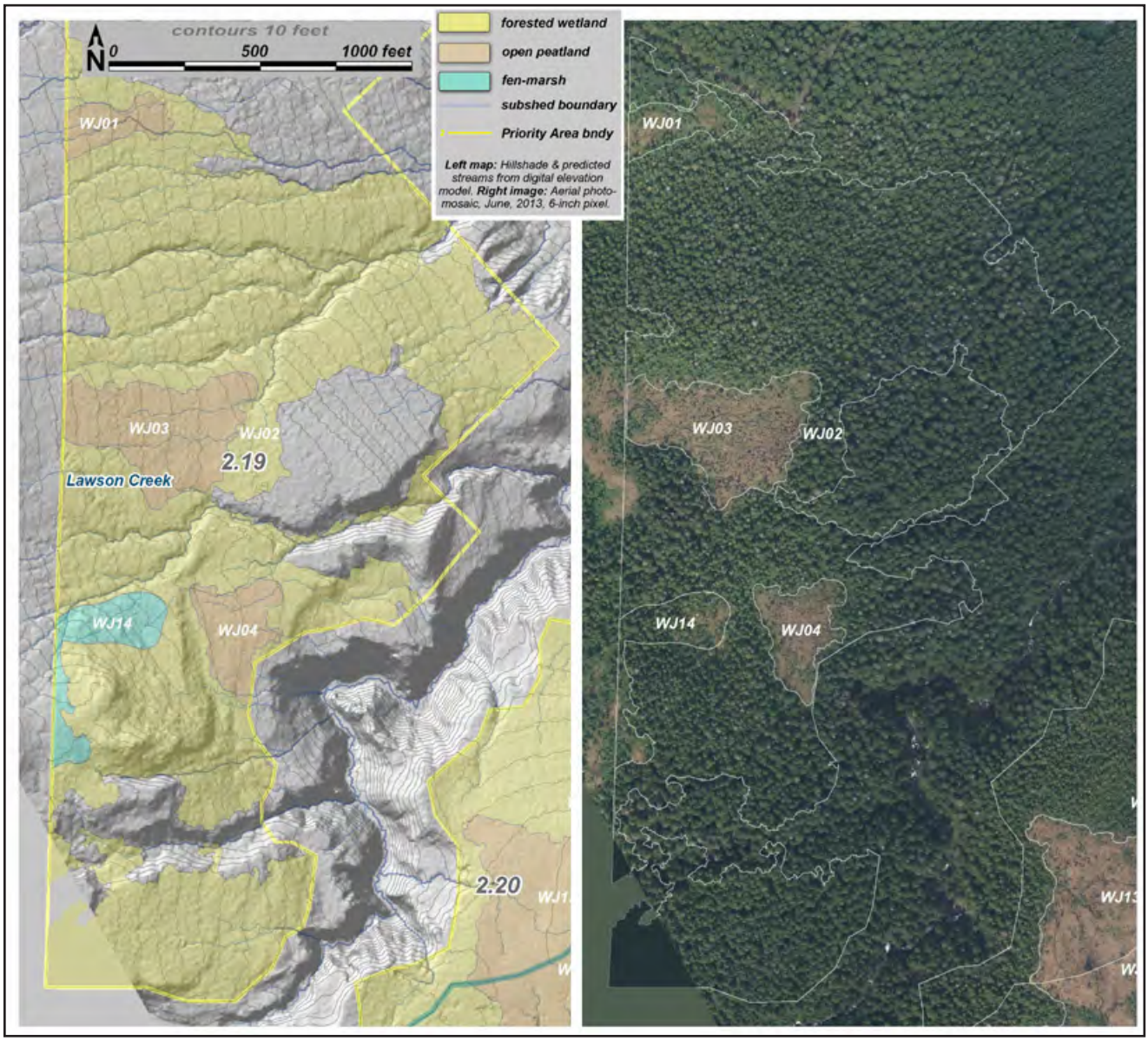
09WJ units

CBJ's West Juneau (WJ) map page contains 5 Priority Areas totaling 276 acres, all on City land, and all surveyed by our team in the first weeks of the 2014 field season. On this map are 3 'subsheds,' shown here with blue lines.

We completed 15 Assessment Areas on the WJ page, totaling 184 acres, or 67% of the combined PAs. As on the North Douglas page (87% of PAs in mapped wetlands) this high percentage is due to impermeable fines deposited on gently sloping topography during periods of raised sea level in the early Holocene.

WJ01 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 1D511000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.35	Higher	9.09	Higher
Native Plant Habitat	6.05	Higher	9.95	Higher
Carbon Sequestration	7.39	Higher	N.A.	N.A.
Pollinator Habitat	6.72	Moderate	9.97	Higher
Waterbird Feeding Habitat	3.75	Moderate	7.27	Higher
Waterbird Nesting Habitat	4.73	Moderate	9.70	Moderate
Water Storage	4.03	Moderate	1.11	Lower
Water Cooling	4.02	Moderate	0.63	Lower
Water Warming	3.70	Moderate	1.21	Lower
Organic Nutrient Export	7.08	Moderate	N.A.	N.A.
Invertebrate Habitat	2.63	Lower	10.00	Higher
Amphibian Habitat	0.51	Lower	10.00	Higher
Stream Flow Support	1.93	Lower	1.75	Moderate
Nitrate Removal	1.55	Lower	3.54	Moderate
Phosphorus Retention	2.55	Lower	2.55	Lower
Sediment Retention & Stabilization	2.18	Lower	0.37	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.39	Higher
Wetland Ecological Condition	N.A.	N.A.	8.22	Higher
Wetland Risk	N.A.	N.A.	6.01	Moderate
Public Use & Recognition	N.A.	N.A.	2.95	Moderate
Wetland Stressors	N.A.	N.A.	4.84	Lower



Unit maps for WJ01 02 03 04 14

WJ02 • **type:** forested peatland • **acres:** 46.8 • **boundary criteria**: w-u, type, pa • **pin**: 1D511000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.21	Higher	10.00	Higher
Pollinator Habitat	7.75	Higher	10.00	Higher
Native Plant Habitat	6.54	Higher	10.00	Higher
Invertebrate Habitat	6.12	Higher	10.00	Higher
Phosphorus Retention	3.99	Higher	3.99	Higher
Organic Nutrient Export	8.52	Higher	N.A.	N.A.
Water Warming	4.20	Moderate	6.31	Higher
Nitrate Removal	2.04	Moderate	6.57	Higher
Water Cooling	4.60	Moderate	3.51	Moderate
Stream Flow Support	4.54	Moderate	2.45	Moderate
Waterbird Nesting Habitat	4.12	Moderate	0.00	Lower
Water Storage	3.77	Moderate	1.11	Lower
Carbon Sequestration	5.42	Moderate	N.A.	N.A.
Amphibian Habitat	2.52	Lower	10.00	Higher
Sediment Retention & Stabilization	1.52	Lower	3.81	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.96	Higher
Wetland Sensitivity	N.A.	N.A.	5.05	Moderate
Wetland Risk	N.A.	N.A.	3.41	Lower
Wetland Stressors	N.A.	N.A.	2.91	Lower
Public Use & Recognition	N.A.	N.A.	1.33	Lower

WJ03 • **type:** open peatland • **acres:** 3.7 • **boundary criteria**: type, pa • **pin**: 1D511000010 • no known or probable anadromous fish

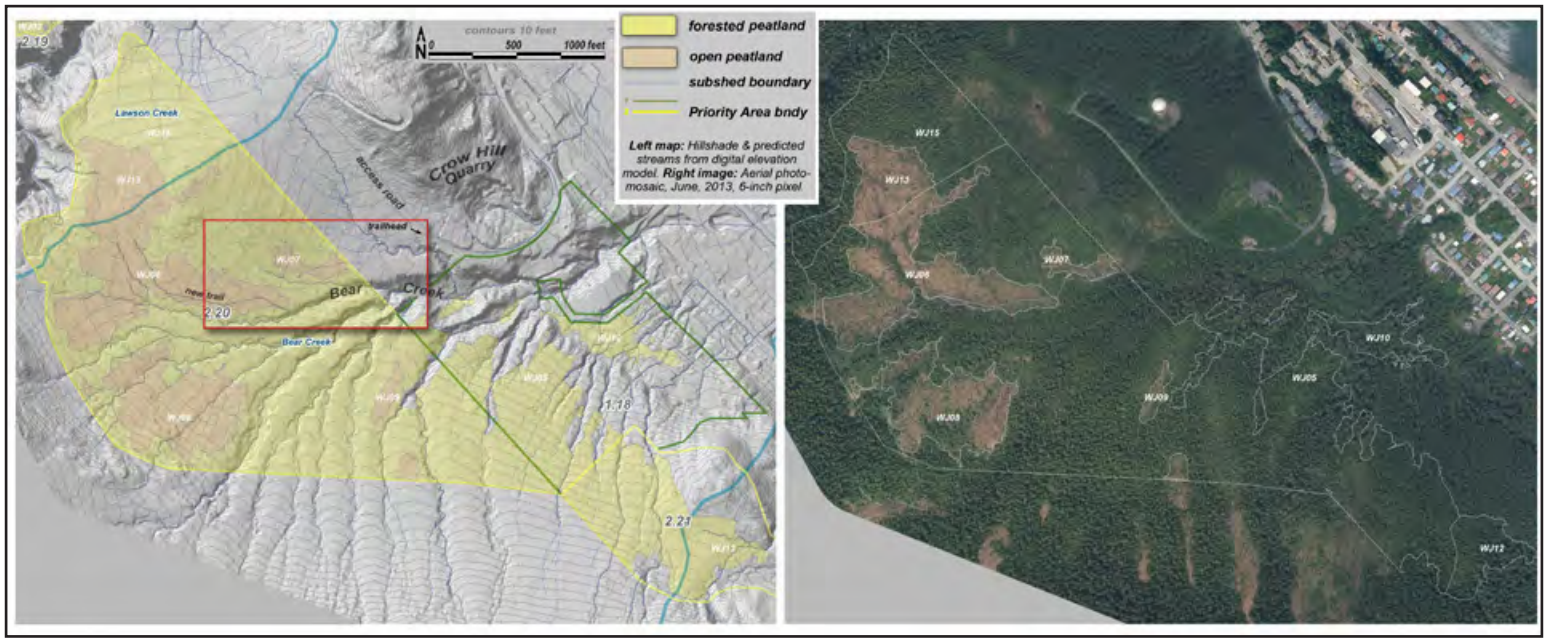
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.57	Higher	9.09	Higher
Invertebrate Habitat	6.30	Higher	10.00	Higher
Waterbird Nesting Habitat	7.38	Higher	9.70	Moderate
Water Warming	6.68	Higher	3.68	Moderate
Carbon Sequestration	7.24	Higher	N.A.	N.A.
Pollinator Habitat	5.78	Moderate	9.97	Higher
Waterbird Feeding Habitat	5.06	Moderate	7.27	Higher
Native Plant Habitat	4.64	Moderate	9.95	Higher
Nitrate Removal	2.17	Moderate	6.57	Higher
Phosphorus Retention	3.24	Moderate	3.24	Moderate
Sediment Retention & Stabilization	2.41	Moderate	3.81	Moderate
Water Storage	4.11	Moderate	1.11	Lower
Water Cooling	3.29	Moderate	0.70	Lower
Organic Nutrient Export	7.24	Moderate	N.A.	N.A.
Amphibian Habitat	1.21	Lower	10.00	Higher
Stream Flow Support	1.93	Lower	2.49	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.03	Higher
Public Use & Recognition	N.A.	N.A.	2.73	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Wetland Risk	N.A.	N.A.	3.51	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower

WJ04 • **type:** open peatland • **acres:** 1.5 • **boundary criteria**: type, pa • **pin**: 1D511000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.23	Higher	9.09	Higher
Invertebrate Habitat	5.87	Higher	10.00	Higher
Water Warming	7.31	Higher	3.66	Moderate
Waterbird Nesting Habitat	7.24	Higher	9.70	Moderate
Carbon Sequestration	6.63	Higher	N.A.	N.A.
Pollinator Habitat	5.26	Moderate	9.97	Higher
Waterbird Feeding Habitat	4.99	Moderate	7.27	Higher
Native Plant Habitat	4.76	Moderate	9.95	Higher
Phosphorus Retention	3.18	Moderate	3.18	Moderate
Water Storage	4.11	Moderate	1.11	Lower
Water Cooling	2.81	Moderate	0.70	Lower
Organic Nutrient Export	7.19	Moderate	N.A.	N.A.
Nitrate Removal	1.48	Lower	6.57	Higher
Amphibian Habitat	0.91	Lower	10.00	Higher
Sediment Retention & Stabilization	2.03	Lower	3.81	Moderate
Stream Flow Support	1.93	Lower	2.40	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	6.92	Higher
Public Use & Recognition	N.A.	N.A.	2.73	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower
Wetland Risk	N.A.	N.A.	3.46	Lower
Wetland Stressors	N.A.	N.A.	2.99	Lower

WJ05 • **type:** forested peatland • **acres:** 80.8 • **boundary criteria**: w-u, type, pa, subsh • **pin**: 2D0401000030, 2D0512000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	8.40	Higher	6.30	Higher
Water Cooling	8.43	Higher	3.16	Moderate
Stream Flow Support	7.73	Higher	1.88	Moderate
Nitrate Removal	3.83	Higher	3.28	Moderate
Carbon Sequestration	6.63	Higher	N.A.	N.A.
Pollinator Habitat	5.55	Moderate	10.00	Higher
Songbird, Raptor, & Mammal Habitat	5.50	Moderate	10.00	Higher
Native Plant Habitat	3.61	Moderate	10.00	Higher
Invertebrate Habitat	3.26	Moderate	10.00	Higher
Phosphorus Retention	2.60	Moderate	2.60	Moderate
Sediment Retention & Stabilization	2.70	Moderate	0.14	Lower
Organic Nutrient Export	6.53	Moderate	N.A.	N.A.
Amphibian Habitat	2.49	Lower	10.00	Higher
Water Storage	0.94	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	9.37	Higher
Public Use & Recognition	N.A.	N.A.	8.66	Higher
Wetland Risk	N.A.	N.A.	5.34	Moderate
Wetland Sensitivity	N.A.	N.A.	4.95	Moderate
Wetland Stressors	N.A.	N.A.	3.73	Lower



Unit maps for WJ05 06 07 08 09 10

WJ06 • **type:** open peatland • **acres:** 11.5 • **boundary criteria**: type, subsh • **pin**: 2D0512000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.55	Higher	9.09	Higher
Water Warming	5.50	Higher	6.10	Higher
Phosphorus Retention	4.55	Higher	4.55	Higher
Stream Flow Support	8.74	Higher	1.70	Moderate
Organic Nutrient Export	7.71	Higher	N.A.	N.A.
Carbon Sequestration	7.20	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.97	Moderate	7.27	Higher
Native Plant Habitat	3.78	Moderate	9.95	Higher
Nitrate Removal	2.71	Moderate	6.57	Higher
Water Cooling	5.14	Moderate	3.51	Moderate
Waterbird Nesting Habitat	4.39	Moderate	9.70	Moderate
Sediment Retention & Stabilization	3.02	Moderate	3.86	Moderate
Water Storage	4.39	Moderate	1.11	Lower
Pollinator Habitat	3.58	Lower	9.97	Higher
Invertebrate Habitat	2.37	Lower	10.00	Higher
Amphibian Habitat	0.94	Lower	10.00	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	8.57	Higher
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.20	Moderate
Wetland Stressors	N.A.	N.A.	3.34	Lower
Wetland Risk	N.A.	N.A.	3.07	Lower

WJ07 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 2D0512000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	5.03	Higher	5.03	Higher
Songbird, Raptor, & Mammal Habitat	8.52	Higher	4.09	Moderate
Carbon Sequestration	7.69	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.52	Moderate	7.27	Higher
Waterbird Nesting Habitat	4.30	Moderate	9.70	Moderate
Water Cooling	5.08	Moderate	1.26	Lower
Water Storage	3.98	Moderate	1.11	Lower
Invertebrate Habitat	3.67	Moderate	1.57	Lower
Native Plant Habitat	3.51	Moderate	0.43	Lower
Water Warming	3.36	Moderate	2.44	Lower
Nitrate Removal	2.31	Moderate	3.03	Lower
Organic Nutrient Export	7.56	Moderate	N.A.	N.A.
Stream Flow Support	2.90	Lower	1.96	Moderate
Pollinator Habitat	2.76	Lower	3.26	Moderate
Amphibian Habitat	0.97	Lower	6.17	Moderate
Sediment Retention & Stabilization	1.52	Lower	0.20	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	8.75	Higher
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Stressors	N.A.	N.A.	3.63	Lower
Wetland Ecological Condition	N.A.	N.A.	3.10	Lower
Wetland Risk	N.A.	N.A.	2.45	Lower

WJ08 • **type:** open peatland • **acres:** 8.2 • **boundary criteria**: type • **pin**: 2D0512000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.57	Higher	9.09	Higher
Water Warming	5.50	Higher	6.10	Higher
Stream Flow Support	8.74	Higher	1.61	Moderate
Carbon Sequestration	7.31	Higher	N.A.	N.A.
Native Plant Habitat	4.94	Moderate	9.95	Higher
Pollinator Habitat	4.90	Moderate	9.97	Higher
Waterbird Feeding Habitat	4.15	Moderate	7.27	Higher
Nitrate Removal	2.07	Moderate	6.57	Higher
Water Cooling	5.14	Moderate	3.51	Moderate
Waterbird Nesting Habitat	4.91	Moderate	9.70	Moderate
Phosphorus Retention	3.20	Moderate	3.20	Moderate
Sediment Retention & Stabilization	2.80	Moderate	3.86	Moderate
Water Storage	4.22	Moderate	1.11	Lower
Organic Nutrient Export	7.62	Moderate	N.A.	N.A.
Invertebrate Habitat	1.92	Lower	10.00	Higher
Amphibian Habitat	0.94	Lower	10.00	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	8.57	Higher
Wetland Ecological Condition	N.A.	N.A.	5.25	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Stressors	N.A.	N.A.	3.57	Lower
Wetland Risk	N.A.	N.A.	3.34	Lower

WJ09 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type, pa • **pin**: 2D0512000010 • no known or probable anadromous fish

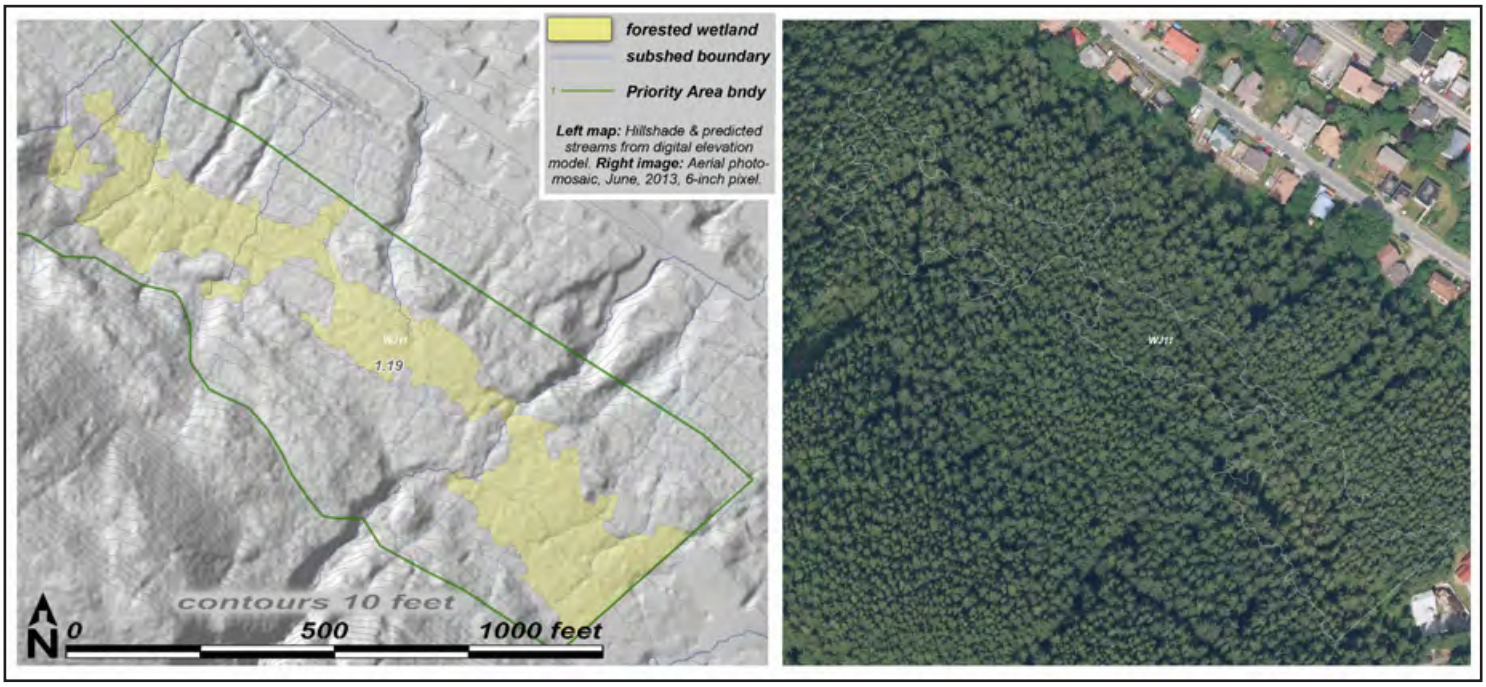
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Sediment Retention & Stabilization	5.09	Higher	0.28	Lower
Carbon Sequestration	8.37	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.64	Moderate	9.09	Higher
Native Plant Habitat	3.12	Moderate	9.95	Higher
Waterbird Feeding Habitat	4.32	Moderate	5.27	Moderate
Phosphorus Retention	2.77	Moderate	2.77	Moderate
Water Cooling	4.60	Moderate	0.00	Lower
Invertebrate Habitat	2.09	Lower	10.00	Higher
Pollinator Habitat	1.16	Lower	9.97	Higher
Amphibian Habitat	0.86	Lower	10.00	Higher
Nitrate Removal	1.09	Lower	3.54	Moderate
Water Storage	2.02	Lower	1.67	Lower
Stream Flow Support	1.01	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.53	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	8.38	Higher
Wetland Ecological Condition	N.A.	N.A.	6.31	Higher
Wetland Risk	N.A.	N.A.	3.36	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	3.14	Lower

WJ10 • **type:** for. peatland • **acres:** 2.5 • **boundary criteria**: w-u, pa • **pin**: 2D040C050030 2D0401000020 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.25	Higher	6.26	Higher
Water Cooling	7.05	Higher	3.51	Moderate
Stream Flow Support	7.03	Higher	1.77	Moderate
Organic Nutrient Export	9.24	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.92	Moderate	10.00	Higher
Native Plant Habitat	5.01	Moderate	9.05	Higher
Nitrate Removal	2.79	Moderate	6.82	Higher
Carbon Sequestration	5.18	Moderate	N.A.	N.A.
Pollinator Habitat	3.58	Lower	9.33	Higher
Invertebrate Habitat	2.71	Lower	10.00	Higher
Water Storage	2.62	Lower	10.00	Higher
Amphibian Habitat	2.16	Lower	8.33	Higher
Sediment Retention & Stabilization	0.74	Lower	4.25	Moderate
Phosphorus Retention	2.00	Lower	2.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	7.16	Higher
Wetland Risk	N.A.	N.A.	7.10	Higher
Wetland Stressors	N.A.	N.A.	6.32	Moderate
Public Use & Recognition	N.A.	N.A.	3.64	Moderate
Wetland Sensitivity	N.A.	N.A.	2.90	Lower

WJ11 • **type:** forested peatland • **acres:** 4.4 • **boundary criteria**: w-u, pa • **pin**: 2D0401000020 2D0401000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.23	Higher	10.00	Higher
Water Warming	5.46	Higher	7.10	Higher
Water Cooling	7.22	Higher	3.51	Moderate
Stream Flow Support	6.02	Higher	2.18	Moderate
Native Plant Habitat	6.00	Higher	0.48	Lower
Organic Nutrient Export	9.41	Higher	N.A.	N.A.
Nitrate Removal	2.33	Moderate	6.82	Higher
Invertebrate Habitat	4.75	Moderate	0.67	Lower
Amphibian Habitat	2.89	Moderate	3.52	Lower
Carbon Sequestration	4.14	Moderate	N.A.	N.A.
Pollinator Habitat	4.11	Lower	3.29	Moderate
Sediment Retention & Stabilization	1.74	Lower	3.87	Moderate
Water Storage	2.64	Lower	0.56	Lower
Phosphorus Retention	0.95	Lower	0.95	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.79	Moderate
Wetland Sensitivity	N.A.	N.A.	5.22	Moderate
Wetland Risk	N.A.	N.A.	5.06	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.85	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate



Unit map for WJ11

WJ12 • **type:** for. peatland • **acres:** 3.4 • **boundary criteria**: w-u, pa, subsh • **pin**: 2D0401000030, 2D0512000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.77	Higher	1.77	Moderate
Water Cooling	6.26	Higher	3.95	Moderate
Songbird, Raptor, & Mammal Habitat	7.52	Higher	2.22	Lower
Organic Nutrient Export	9.41	Higher	N.A.	N.A.
Pollinator Habitat	6.01	Moderate	3.29	Moderate
Water Warming	4.12	Moderate	3.67	Moderate
Phosphorus Retention	2.95	Moderate	2.95	Moderate
Sediment Retention & Stabilization	2.42	Moderate	3.86	Moderate
Native Plant Habitat	4.33	Moderate	0.63	Lower
Water Storage	3.51	Moderate	1.11	Lower
Carbon Sequestration	5.71	Moderate	N.A.	N.A.
Nitrate Removal	1.74	Lower	9.60	Higher
Invertebrate Habitat	2.73	Lower	0.45	Lower
Amphibian Habitat	1.87	Lower	2.93	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.48	Moderate
Wetland Risk	N.A.	N.A.	5.24	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.60	Lower
Public Use & Recognition	N.A.	N.A.	1.75	Lower

WJ13 • **type:** open peatland • **acres:** 4.0 • **boundary criteria**: type, subsh • **pin**: 2D0512000010 • no known or probable anadromous fish

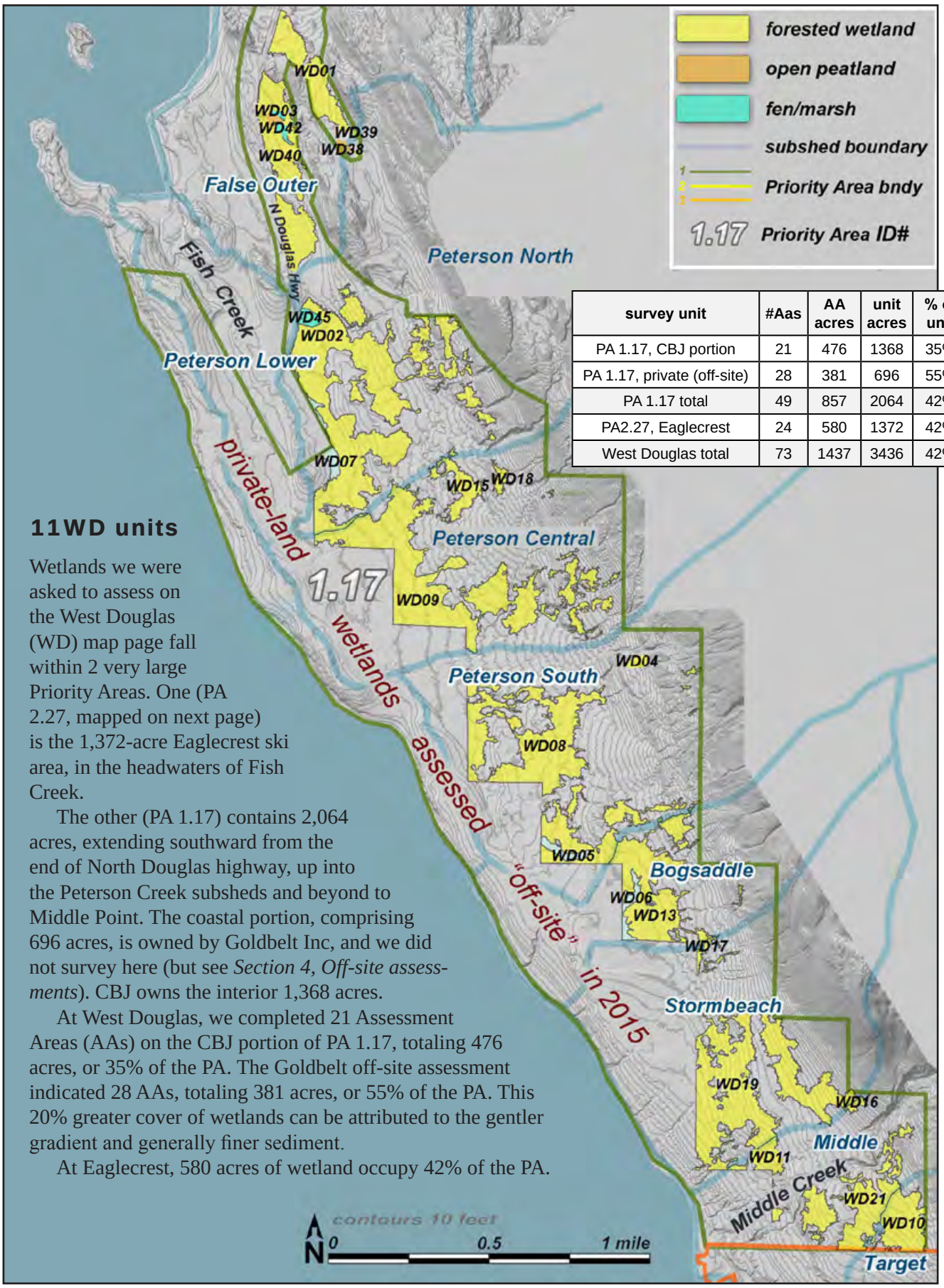
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	4.14	Moderate	4.09	Moderate
Waterbird Feeding Habitat	3.14	Moderate	5.27	Moderate
Water Cooling	4.60	Moderate	1.26	Lower
Carbon Sequestration	4.99	Moderate	N.A.	N.A.
Nitrate Removal	1.11	Lower	6.31	Higher
Stream Flow Support	3.03	Lower	1.78	Moderate
Invertebrate Habitat	2.78	Lower	0.19	Lower
Phosphorus Retention	2.13	Lower	2.13	Lower
Sediment Retention & Stabilization	1.99	Lower	0.14	Lower
Native Plant Habitat	1.70	Lower	0.43	Lower
Water Storage	1.39	Lower	1.11	Lower
Amphibian Habitat	0.69	Lower	2.26	Lower
Pollinator Habitat	0.58	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.72	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	5.93	Moderate
Wetland Risk	N.A.	N.A.	4.78	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	2.88	Lower
Public Use & Recognition	N.A.	N.A.	1.75	Lower

WJ14 • **type:** fen/marsh • **acres:** 1.6 • **boundary criteria**: type, pa • **pin**: 1D0511000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.32	Higher	6.61	Higher
Stream Flow Support	9.75	Higher	2.76	Moderate
Songbird, Raptor, & Mammal Habitat	9.37	Higher	4.09	Moderate
Pollinator Habitat	8.27	Higher	3.26	Moderate
Water Cooling	7.47	Higher	3.16	Moderate
Native Plant Habitat	6.16	Higher	1.99	Moderate
Invertebrate Habitat	7.66	Higher	1.67	Lower
Organic Nutrient Export	8.55	Higher	N.A.	N.A.
Amphibian Habitat	4.91	Moderate	7.55	Higher
Waterbird Feeding Habitat	4.50	Moderate	0.00	Lower
Water Storage	3.50	Moderate	0.56	Lower
Carbon Sequestration	4.60	Moderate	N.A.	N.A.
Nitrate Removal	1.75	Lower	4.04	Moderate
Phosphorus Retention	2.35	Lower	2.35	Lower
Sediment Retention & Stabilization	1.60	Lower	0.60	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	7.58	Higher
Wetland Stressors	N.A.	N.A.	6.63	Moderate
Wetland Risk	N.A.	N.A.	6.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.32	Moderate
Public Use & Recognition	N.A.	N.A.	2.08	Lower

WJ15 • **type:** for. peatland • **acres:** 12.8 • **boundary criteria**: type, pa, subsh • **pin**: 2D0401000030, 2D0512000010 • no known or probable anadromous

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.88	Higher	N.A.	N.A.
Pollinator Habitat	4.67	Moderate	3.29	Moderate
Songbird, Raptor, & Mammal Habitat	5.32	Moderate	2.22	Lower
Invertebrate Habitat	4.79	Moderate	0.12	Lower
Water Cooling	4.60	Moderate	1.26	Lower
Sediment Retention & Stabilization	2.89	Moderate	0.14	Lower
Organic Nutrient Export	6.60	Moderate	N.A.	N.A.
Nitrate Removal	0.96	Lower	6.31	Higher
Stream Flow Support	2.52	Lower	2.19	Moderate
Native Plant Habitat	2.54	Lower	0.48	Lower
Phosphorus Retention	2.49	Lower	2.49	Lower
Amphibian Habitat	2.14	Lower	1.10	Lower
Water Storage	1.45	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.77	Moderate
Wetland Risk	N.A.	N.A.	4.18	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.93	Lower
Wetland Ecological Condition	N.A.	N.A.	1.90	Lower



survey unit	#Aas	AA acres	unit acres	% of unit
PA 1.17, CBJ portion	21	476	1368	35%
PA 1.17, private (off-site)	28	381	696	55%
PA 1.17 total	49	857	2064	42%
PA2.27, Eaglecrest	24	580	1372	42%
West Douglas total	73	1437	3436	42%

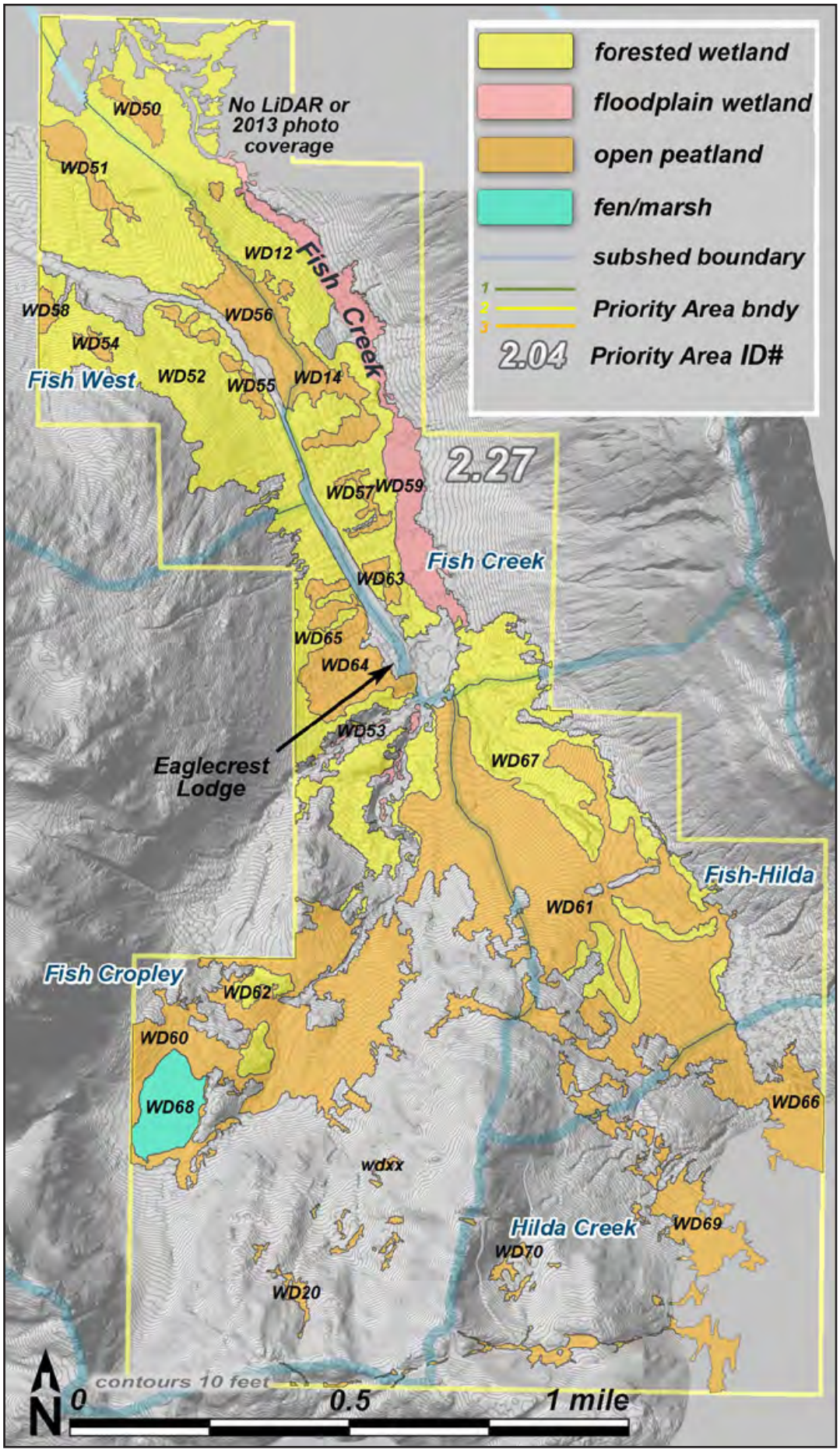
11WD units

Wetlands we were asked to assess on the West Douglas (WD) map page fall within 2 very large Priority Areas. One (PA 2.27, mapped on next page) is the 1,372-acre Eaglecrest ski area, in the headwaters of Fish Creek.

The other (PA 1.17) contains 2,064 acres, extending southward from the end of North Douglas highway, up into the Peterson Creek subsheds and beyond to Middle Point. The coastal portion, comprising 696 acres, is owned by Goldbelt Inc, and we did not survey here (but see *Section 4, Off-site assessments*). CBJ owns the interior 1,368 acres.

At West Douglas, we completed 21 Assessment Areas (AAs) on the CBJ portion of PA 1.17, totaling 476 acres, or 35% of the PA. The Goldbelt off-site assessment indicated 28 AAs, totaling 381 acres, or 55% of the PA. This 20% greater cover of wetlands can be attributed to the gentler gradient and generally finer sediment.

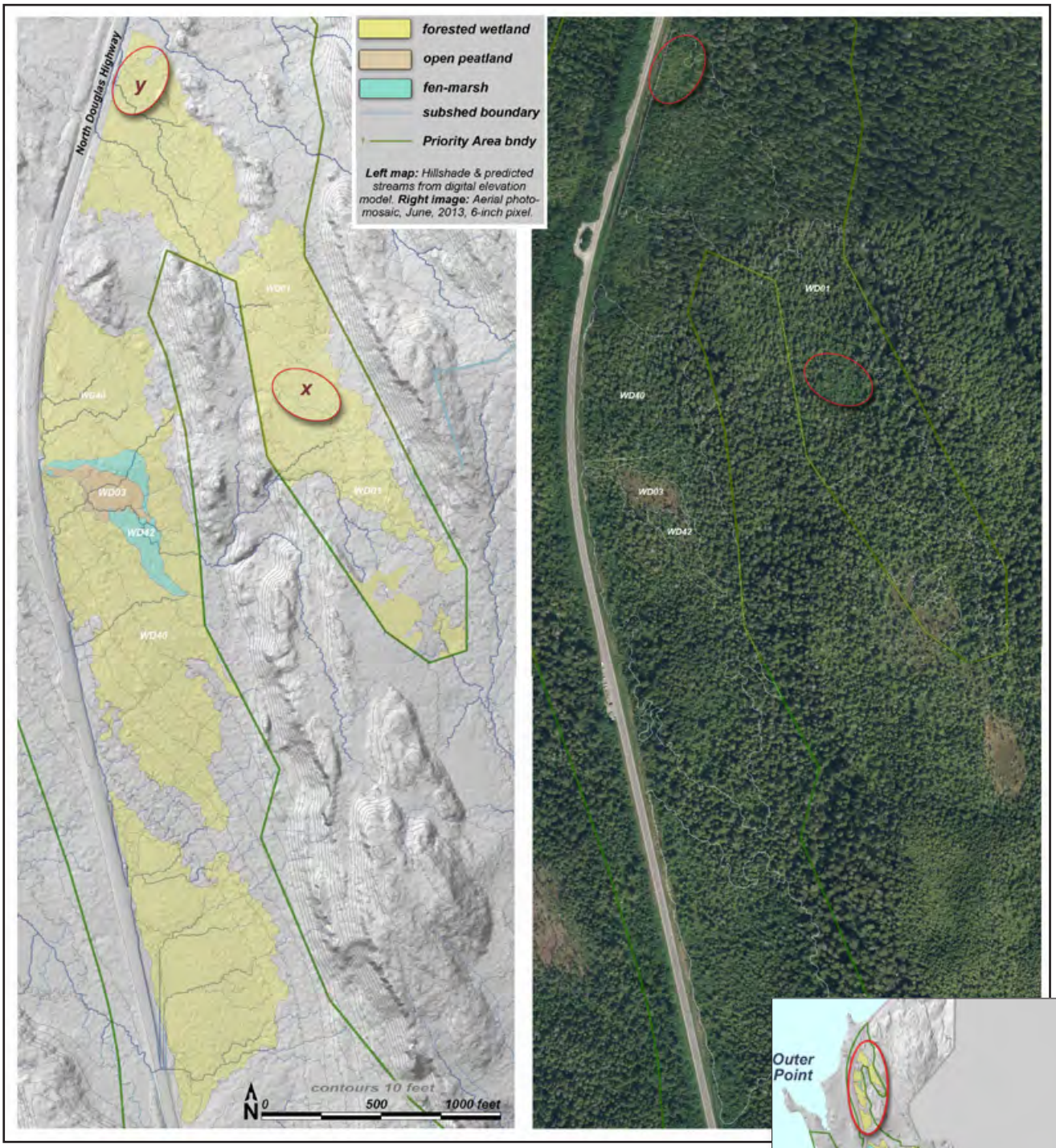
At Eaglecrest, 580 acres of wetland occupy 42% of the PA.

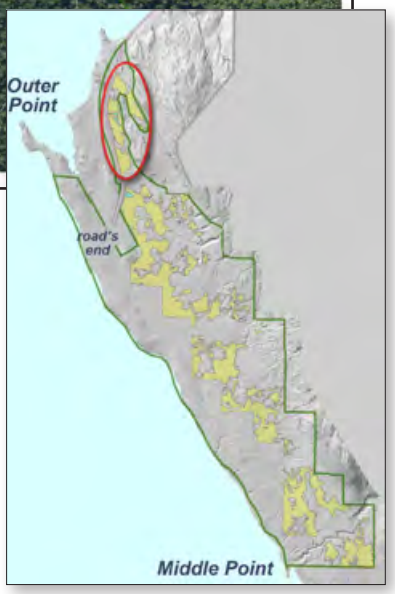


This is a somewhat misleading statistic, however. Virtually all of the low-gradient valley bottom is wetland, right up to the steeply inflecting valley walls. Even some of the mellower ski runs are wetland, as exposed muck and downslope erosion reveal in the summer season.

WD01 • **type:** forested peatland • **acres:** 17.7 • **boundary criteria**: w-u, pa • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Phosphorus Retention	4.02	Higher	4.02	Higher
Pollinator Habitat	8.20	Higher	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	8.05	Higher	3.33	Moderate
Nitrate Removal	3.28	Higher	4.75	Moderate
Native Plant Habitat	6.61	Higher	1.45	Lower
Water Cooling	5.98	Higher	1.40	Lower
Carbon Sequestration	6.56	Higher	N.A.	N.A.
Invertebrate Habitat	4.95	Moderate	1.31	Lower
Water Storage	4.31	Moderate	1.11	Lower
Waterbird Nesting Habitat	4.11	Moderate	0.00	Lower
Amphibian Habitat	3.80	Moderate	3.37	Lower
Water Warming	3.15	Moderate	1.44	Lower
Organic Nutrient Export	7.54	Moderate	N.A.	N.A.
Stream Flow Support	2.27	Lower	2.22	Moderate
Sediment Retention & Stabilization	2.08	Lower	2.80	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Stressors	N.A.	N.A.	6.39	Moderate
Wetland Risk	N.A.	N.A.	4.96	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.19	Lower

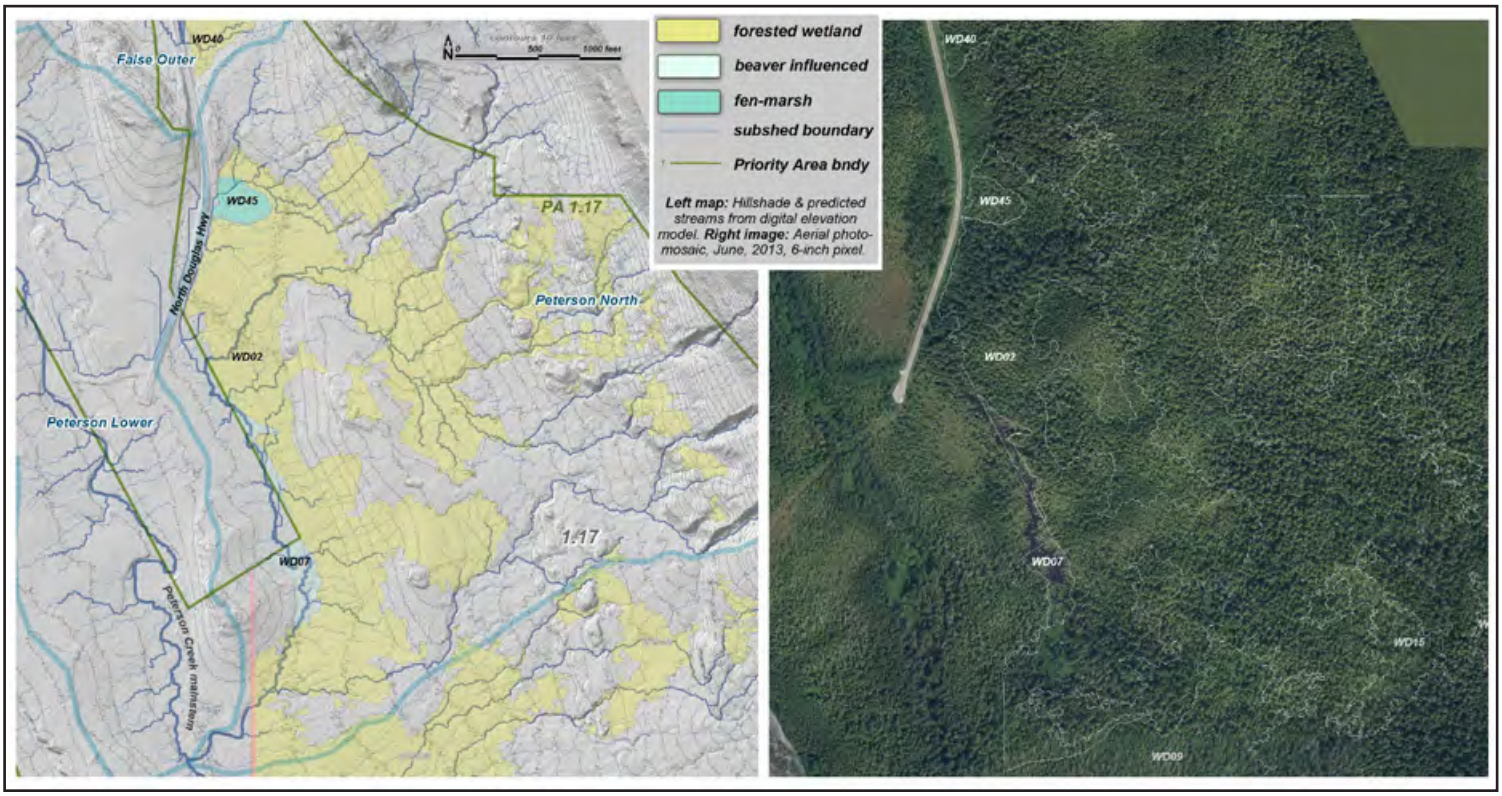




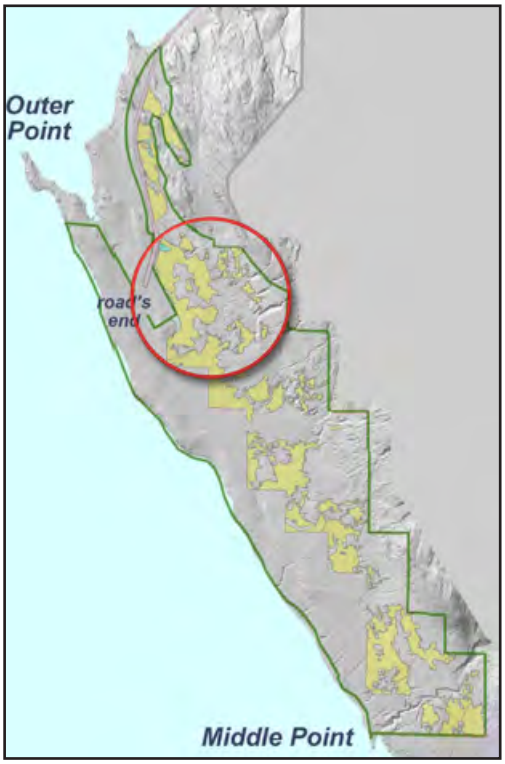
Unit maps for WD01 03 40 42

WD02 • **type:** for. peatland • **acres:** 96.7 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	5.75	Higher	7.26	Higher
Phosphorus Retention	4.39	Higher	4.39	Higher
Anadromous Fish Habitat	9.68	Higher	3.08	Moderate
Songbird, Raptor, & Mammal Habitat	8.38	Higher	3.33	Moderate
Resident Fish Habitat	8.36	Higher	3.27	Moderate
Pollinator Habitat	8.00	Higher	3.26	Moderate
Native Plant Habitat	7.05	Higher	3.67	Moderate
Invertebrate Habitat	6.29	Higher	4.39	Moderate
Waterbird Nesting Habitat	6.27	Higher	0.00	Lower
Organic Nutrient Export	8.54	Higher	N.A.	N.A.
Carbon Sequestration	6.09	Higher	N.A.	N.A.
Water Storage	4.70	Moderate	10.00	Higher
Stream Flow Support	4.54	Moderate	8.72	Higher
Water Warming	3.87	Moderate	6.00	Higher
Nitrate Removal	2.14	Moderate	6.82	Higher
Sediment Retention & Stabilization	3.07	Moderate	3.93	Moderate
Amphibian Habitat	3.05	Moderate	3.65	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	4.40	Moderate
Wetland Stressors	N.A.	N.A.	3.46	Lower
Wetland Risk	N.A.	N.A.	2.85	Lower
Wetland Sensitivity	N.A.	N.A.	2.20	Lower
Public Use & Recognition	N.A.	N.A.	1.98	Lower



Unit maps for WD02 07 45

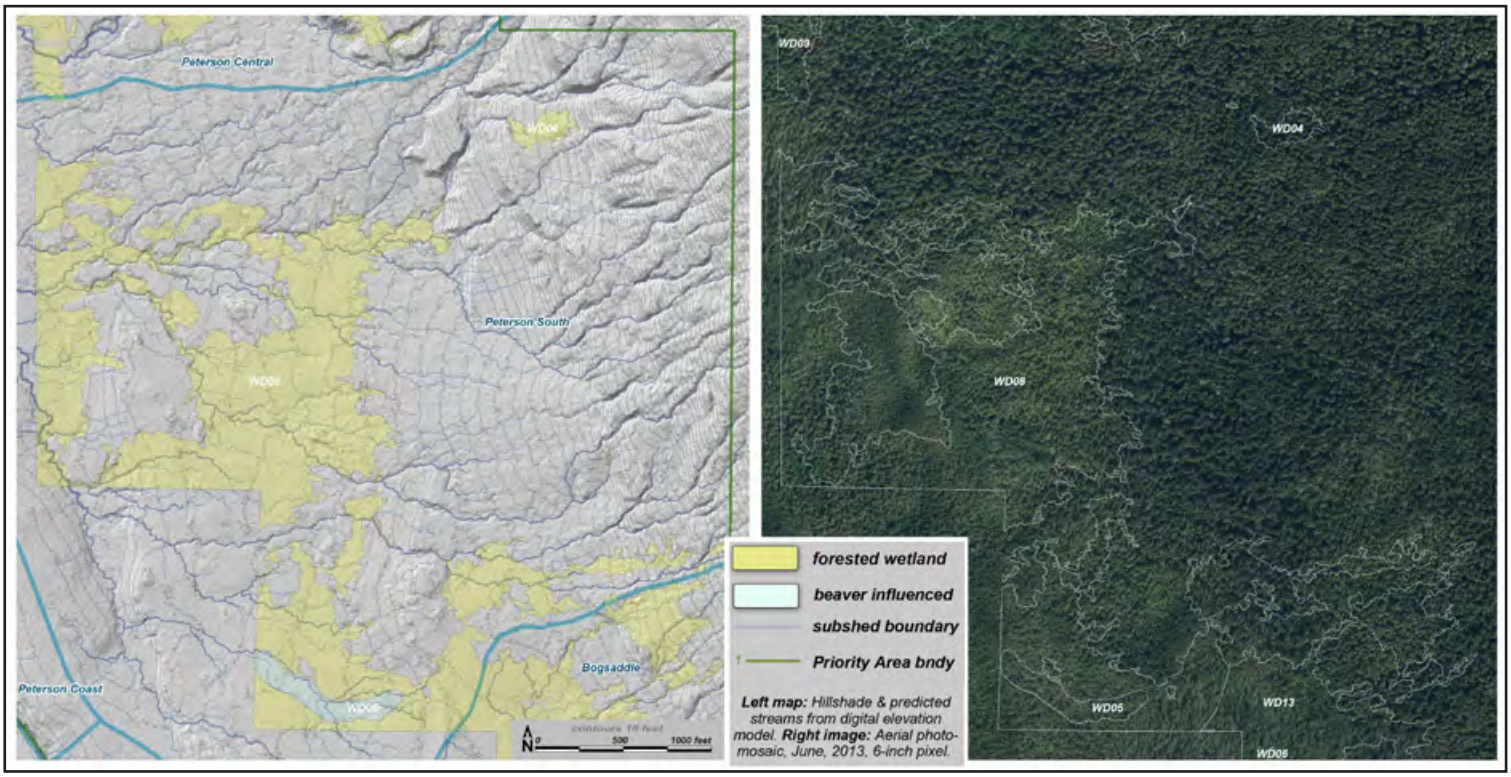


WD03 • **type:** open peatland • **acres:** 1.0 • **boundary criteria**: type • **pin**: 3D1301000010 • no known or probable anadromous fish

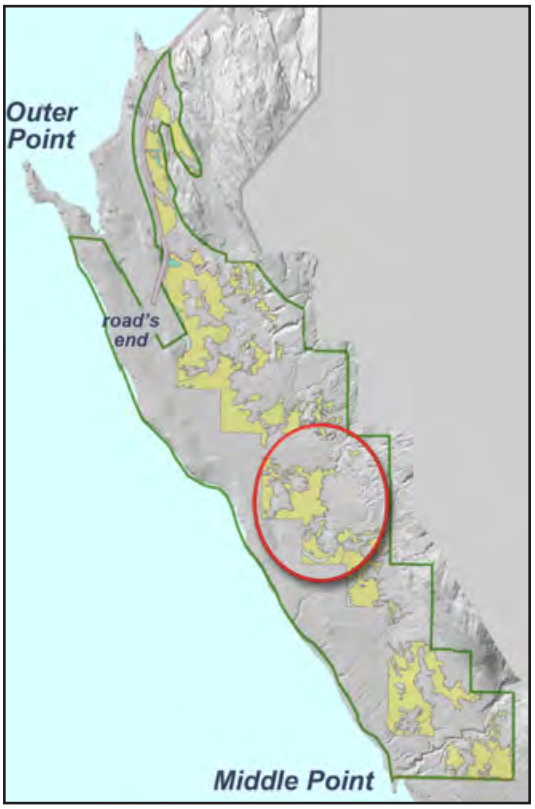
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.92	Higher	4.93	Moderate
Pollinator Habitat	7.05	Higher	3.26	Moderate
Native Plant Habitat	6.25	Higher	1.08	Lower
Water Storage	5.38	Higher	1.11	Lower
Carbon Sequestration	6.93	Higher	N.A.	N.A.
Waterbird Feeding Habitat	5.03	Moderate	6.94	Higher
Waterbird Nesting Habitat	4.45	Moderate	9.70	Moderate
Water Warming	4.33	Moderate	4.36	Moderate
Phosphorus Retention	3.83	Moderate	3.83	Moderate
Sediment Retention & Stabilization	2.90	Moderate	2.75	Moderate
Nitrate Removal	2.12	Moderate	4.49	Moderate
Water Cooling	3.54	Moderate	1.40	Lower
Invertebrate Habitat	3.36	Moderate	1.80	Lower
Organic Nutrient Export	6.04	Moderate	N.A.	N.A.
Amphibian Habitat	1.93	Lower	6.70	Higher
Stream Flow Support	2.90	Lower	1.90	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.81	Higher
Wetland Stressors	N.A.	N.A.	6.70	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.60	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Public Use & Recognition	N.A.	N.A.	1.69	Lower

WD04 • **type:** forested peatland • **acres:** 1.2 • **boundary criteria**: type • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	5.94	Higher	2.13	Moderate
Songbird, Raptor, & Mammal Habitat	7.74	Higher	2.22	Lower
Native Plant Habitat	5.83	Higher	0.54	Lower
Organic Nutrient Export	8.01	Higher	N.A.	N.A.
Stream Flow Support	3.51	Moderate	4.88	Higher
Pollinator Habitat	5.38	Moderate	3.15	Moderate
Water Warming	4.62	Moderate	4.54	Moderate
Sediment Retention & Stabilization	2.39	Moderate	3.81	Moderate
Nitrate Removal	2.29	Moderate	4.75	Moderate
Resident Fish Habitat	6.05	Moderate	1.15	Lower
Water Storage	4.32	Moderate	1.11	Lower
Anadromous Fish Habitat	4.18	Moderate	1.25	Lower
Amphibian Habitat	3.92	Moderate	3.11	Lower
Phosphorus Retention	1.90	Lower	1.90	Lower
Invertebrate Habitat	0.70	Lower	2.29	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.53	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.91	Moderate
Wetland Stressors	N.A.	N.A.	2.98	Lower
Wetland Risk	N.A.	N.A.	2.12	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower



Unit maps for WD04 05 08

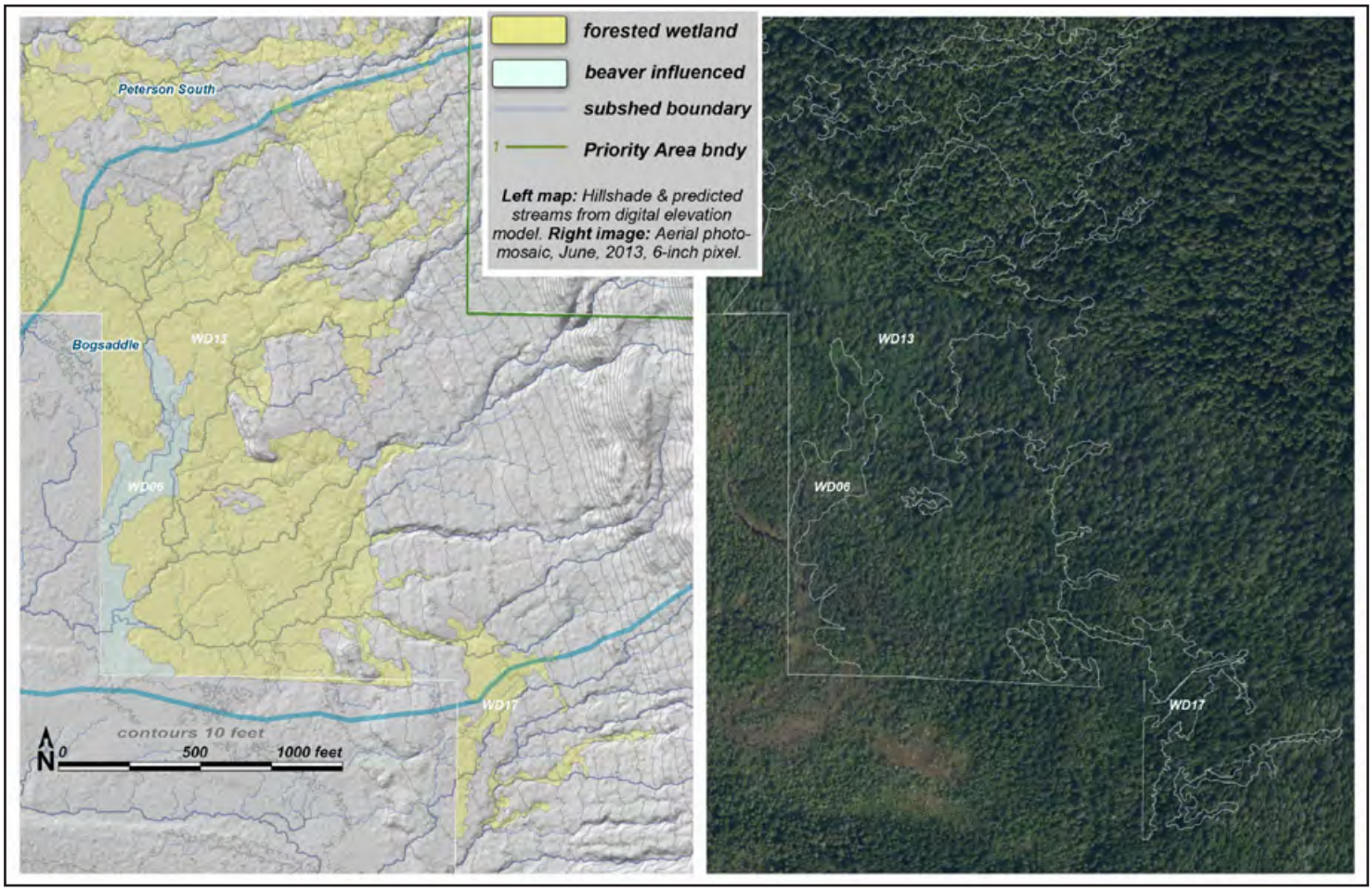


WD05 • **type:** beaver influenced • **acres:** 2.6 • **boundary criteria**: type • **pin**: 3D1301000010 • known or probable anadromous fish

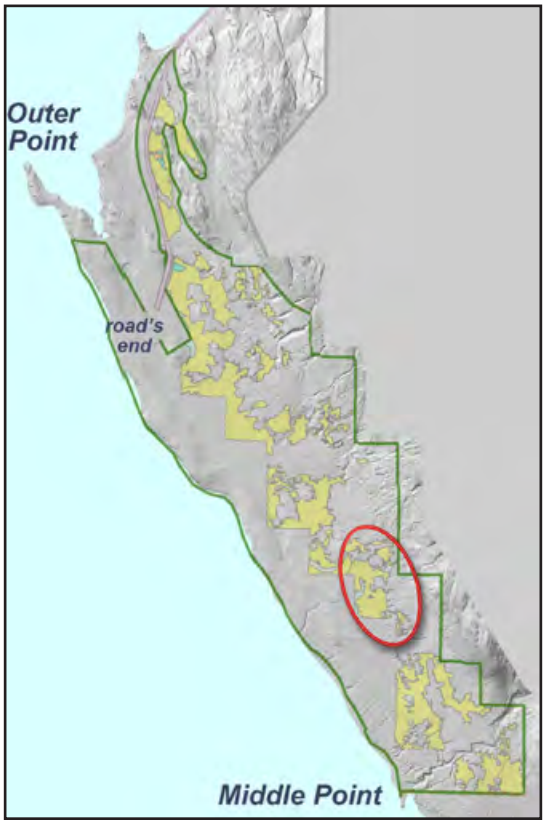
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	8.72	Higher	6.76	Higher
Resident Fish Habitat	8.57	Higher	6.17	Higher
Stream Flow Support	6.05	Higher	8.87	Higher
Water Warming	5.59	Higher	7.10	Higher
Phosphorus Retention	4.41	Higher	4.41	Higher
Anadromous Fish Habitat	9.55	Higher	5.34	Moderate
Waterbird Feeding Habitat	7.83	Higher	4.23	Moderate
Waterbird Nesting Habitat	7.46	Higher	9.50	Moderate
Invertebrate Habitat	6.90	Higher	5.79	Moderate
Pollinator Habitat	6.85	Higher	3.19	Moderate
Native Plant Habitat	8.32	Higher	0.33	Lower
Organic Nutrient Export	8.50	Higher	N.A.	N.A.
Water Cooling	4.44	Moderate	7.64	Higher
Nitrate Removal	2.18	Moderate	6.06	Higher
Songbird, Raptor, & Mammal Habitat	5.70	Moderate	4.04	Moderate
Sediment Retention & Stabilization	1.61	Lower	2.07	Moderate
Water Storage	1.83	Lower	1.11	Lower
Carbon Sequestration	2.73	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.17	Moderate
Wetland Stressors	N.A.	N.A.	2.98	Lower
Wetland Risk	N.A.	N.A.	2.23	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower

WD06 • **type:** beaver influenced • **acres:** 3.4 • **boundary criteria**: type, pa • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	8.70	Higher	6.95	Higher
Resident Fish Habitat	8.48	Higher	6.09	Higher
Stream Flow Support	6.05	Higher	8.95	Higher
Water Cooling	5.40	Higher	7.75	Higher
Phosphorus Retention	4.34	Higher	4.34	Higher
Anadromous Fish Habitat	9.80	Higher	5.28	Moderate
Waterbird Feeding Habitat	7.74	Higher	4.23	Moderate
Waterbird Nesting Habitat	7.44	Higher	9.50	Moderate
Invertebrate Habitat	7.03	Higher	5.85	Moderate
Pollinator Habitat	6.85	Higher	3.19	Moderate
Native Plant Habitat	10.00	Higher	0.33	Lower
Organic Nutrient Export	8.07	Higher	N.A.	N.A.
Water Warming	4.33	Moderate	7.10	Higher
Nitrate Removal	2.74	Moderate	6.06	Higher
Songbird, Raptor, & Mammal Habitat	6.01	Moderate	4.04	Moderate
Sediment Retention & Stabilization	3.60	Moderate	2.16	Moderate
Water Storage	4.20	Moderate	1.11	Lower
Carbon Sequestration	3.26	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.77	Moderate
Wetland Stressors	N.A.	N.A.	2.98	Lower
Wetland Ecological Condition	N.A.	N.A.	2.35	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower
Wetland Risk	N.A.	N.A.	1.42	Lower



Unit maps for WD06 13 17



WD07 • **type:** beaver influenced • **acres:** 3.5 • **boundary criteria**: type, pa • **pin**: 3D1301000010 • known or probable anadromous fish

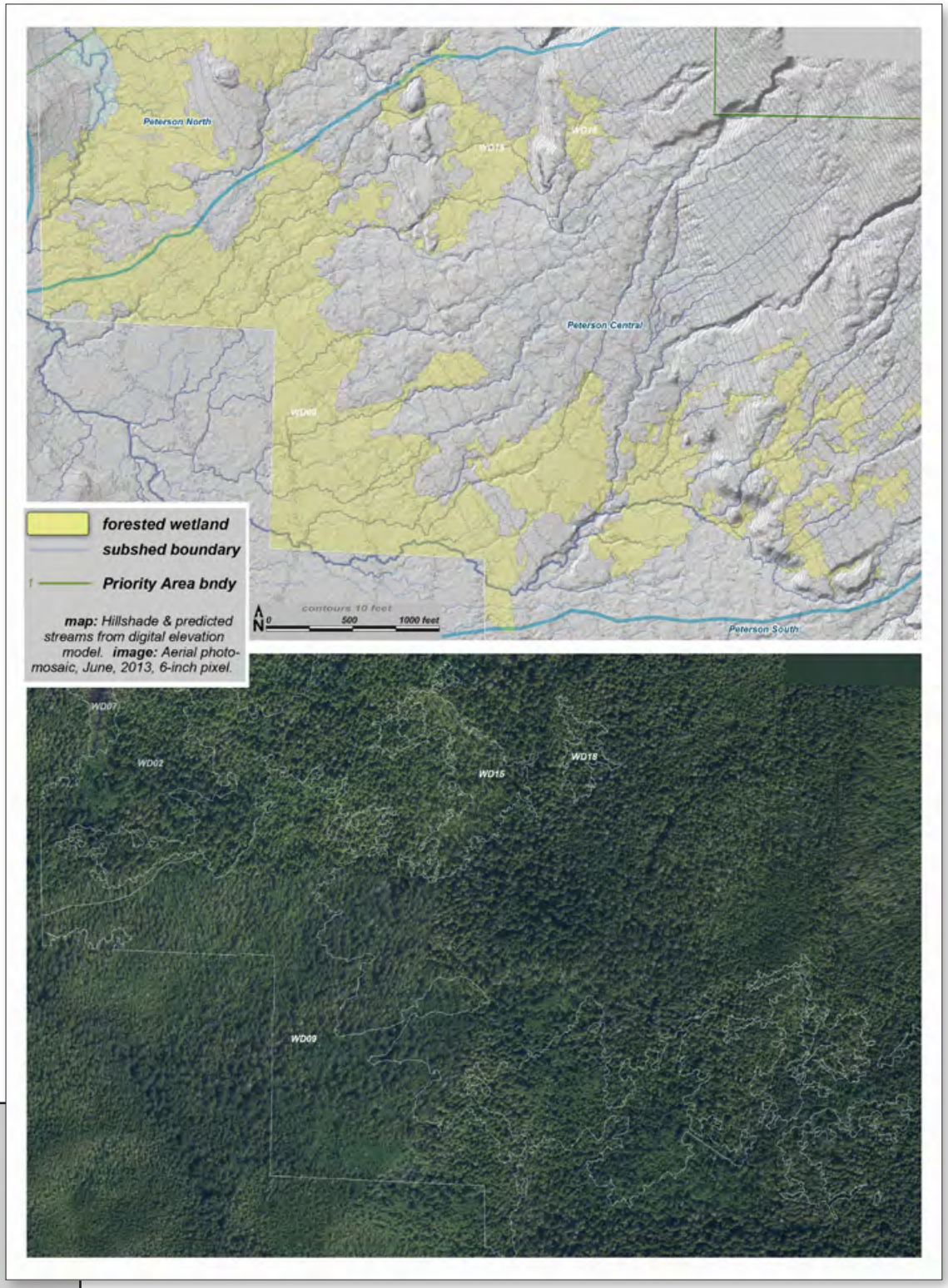
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	9.31	Higher	6.58	Higher
Waterbird Nesting Habitat	8.52	Higher	10.00	Higher
Invertebrate Habitat	8.49	Higher	10.00	Higher
Native Plant Habitat	8.14	Higher	8.19	Higher
Pollinator Habitat	7.74	Higher	8.72	Higher
Stream Flow Support	7.31	Higher	9.45	Higher
Water Warming	6.30	Higher	7.52	Higher
Amphibian Habitat	6.10	Higher	8.33	Higher
Water Storage	5.51	Higher	10.00	Higher
Phosphorus Retention	5.37	Higher	5.37	Higher
Nitrate Removal	4.63	Higher	6.57	Higher
Anadromous Fish Habitat	9.59	Higher	5.70	Moderate
Waterbird Feeding Habitat	8.35	Higher	5.00	Moderate
Sediment Retention & Stabilization	5.02	Higher	2.82	Moderate
Songbird, Raptor, & Mammal Habitat	5.99	Moderate	9.00	Higher
Water Cooling	3.77	Moderate	7.65	Higher
Organic Nutrient Export	6.61	Moderate	N.A.	N.A.
Carbon Sequestration	4.90	Moderate	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	5.23	Moderate
Wetland Sensitivity	N.A.	N.A.	4.44	Lower
Wetland Stressors	N.A.	N.A.	1.71	Lower
Wetland Risk	N.A.	N.A.	1.36	Lower
Public Use & Recognition	N.A.	N.A.	0.68	Lower

WD08 • **type:** forested peatland • **acres:** 71.5 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	5.49	Higher	7.55	Higher
Nitrate Removal	4.23	Higher	6.31	Higher
Pollinator Habitat	7.30	Higher	3.15	Moderate
Anadromous Fish Habitat	9.34	Higher	1.25	Lower
Resident Fish Habitat	7.56	Higher	1.15	Lower
Amphibian Habitat	5.67	Higher	1.44	Lower
Organic Nutrient Export	9.02	Higher	N.A.	N.A.
Stream Flow Support	3.78	Moderate	7.99	Higher
Water Warming	3.28	Moderate	7.46	Higher
Invertebrate Habitat	4.59	Moderate	3.86	Moderate
Phosphorus Retention	3.70	Moderate	3.70	Moderate
Sediment Retention & Stabilization	3.47	Moderate	2.70	Moderate
Songbird, Raptor, & Mammal Habitat	5.73	Moderate	2.22	Lower
Waterbird Nesting Habitat	4.69	Moderate	0.00	Lower
Native Plant Habitat	4.45	Moderate	0.29	Lower
Water Storage	3.98	Moderate	1.11	Lower
Carbon Sequestration	5.43	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Ecological Condition	N.A.	N.A.	4.33	Moderate
Wetland Stressors	N.A.	N.A.	2.90	Lower
Wetland Risk	N.A.	N.A.	2.23	Lower
Public Use & Recognition	N.A.	N.A.	0.51	Lower

WD09 • **type:** forested peatland • **acres:** 79.6 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

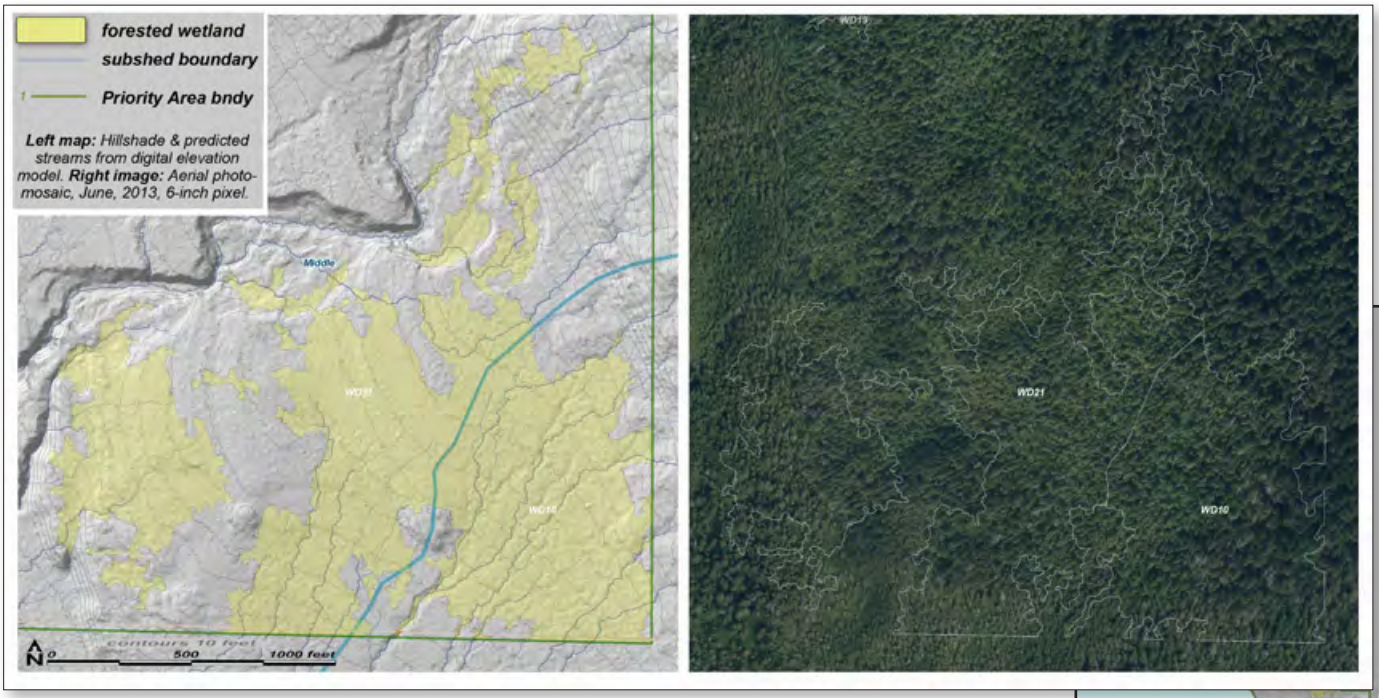
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.22	Higher	3.26	Moderate
Native Plant Habitat	5.35	Higher	0.43	Lower
Carbon Sequestration	8.03	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	6.10	Moderate	3.33	Moderate
Resident Fish Habitat	5.76	Moderate	2.69	Moderate
Nitrate Removal	2.41	Moderate	3.54	Moderate
Water Cooling	4.60	Moderate	0.53	Lower
Sediment Retention & Stabilization	3.99	Moderate	0.23	Lower
Invertebrate Habitat	3.46	Moderate	1.07	Lower
Organic Nutrient Export	6.83	Moderate	N.A.	N.A.
Water Storage	1.02	Lower	10.00	Higher
Stream Flow Support	1.34	Lower	3.86	Moderate
Phosphorus Retention	1.79	Lower	1.79	Lower
Amphibian Habitat	1.70	Lower	1.75	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Wetland Stressors	N.A.	N.A.	2.91	Lower
Wetland Ecological Condition	N.A.	N.A.	2.26	Lower
Public Use & Recognition	N.A.	N.A.	1.32	Lower
Wetland Risk	N.A.	N.A.	1.31	Lower



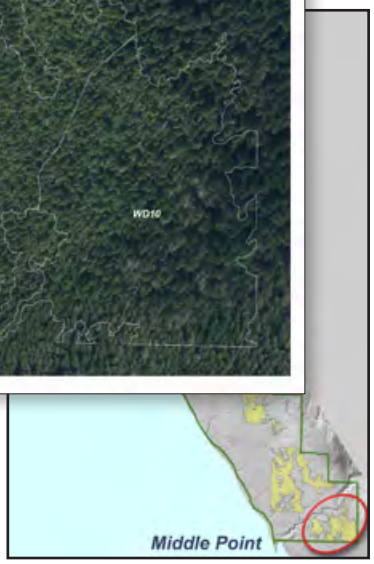
Unit maps for WD09 15 18

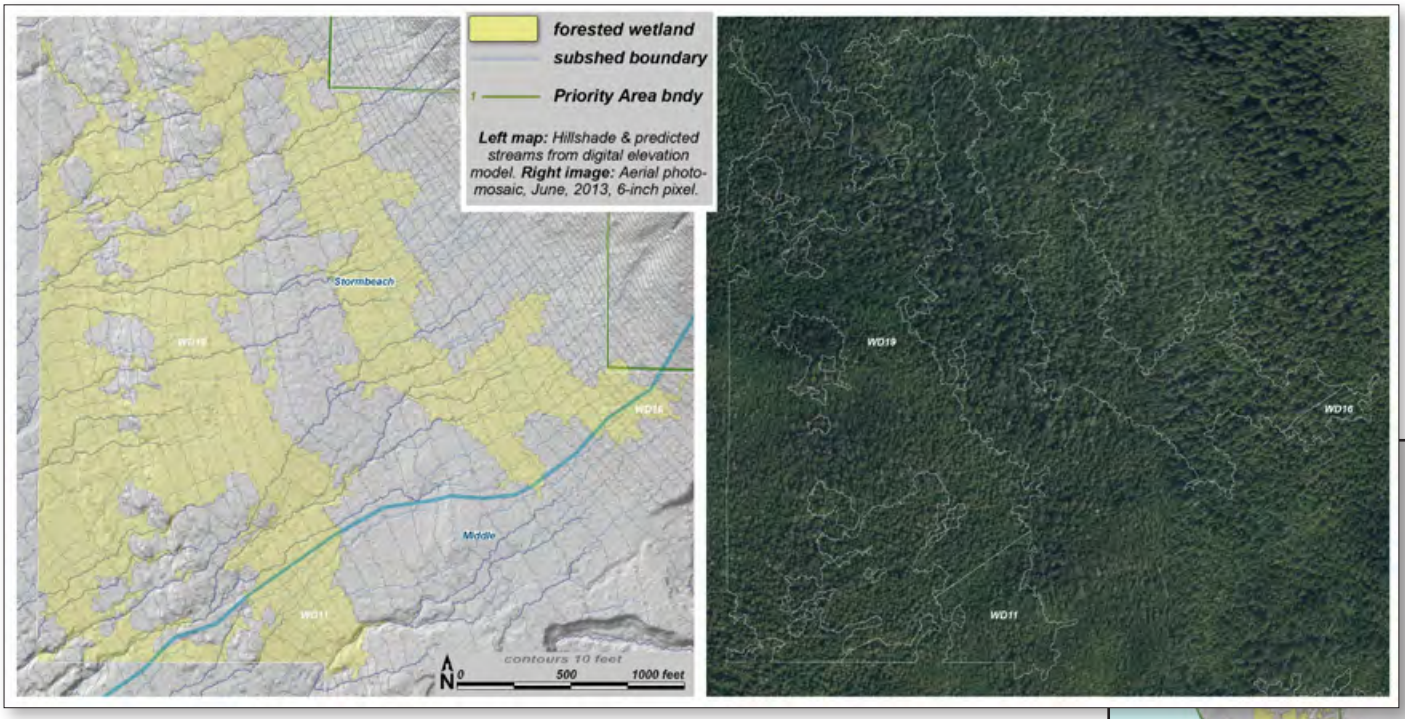
WD10 • **type:** forested peatland • **acres:** 14.9 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.48	Higher	3.15	Moderate
Stream Flow Support	7.28	Higher	3.88	Moderate
Water Cooling	5.87	Higher	3.51	Moderate
Songbird, Raptor, & Mammal Habitat	8.24	Higher	2.22	Lower
Organic Nutrient Export	8.09	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	6.57	Higher
Phosphorus Retention	2.96	Moderate	2.96	Moderate
Nitrate Removal	2.43	Moderate	4.75	Moderate
Resident Fish Habitat	6.51	Moderate	1.15	Lower
Amphibian Habitat	4.61	Moderate	3.53	Lower
Native Plant Habitat	4.58	Moderate	1.60	Lower
Waterbird Nesting Habitat	3.72	Moderate	0.00	Lower
Water Storage	3.19	Moderate	1.11	Lower
Carbon Sequestration	5.11	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.46	Lower	3.81	Moderate
Invertebrate Habitat	2.29	Lower	2.37	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Stressors	N.A.	N.A.	6.35	Moderate
Wetland Risk	N.A.	N.A.	5.71	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.95	Moderate
Public Use & Recognition	N.A.	N.A.	0.39	Lower



Unit maps for WD10 21





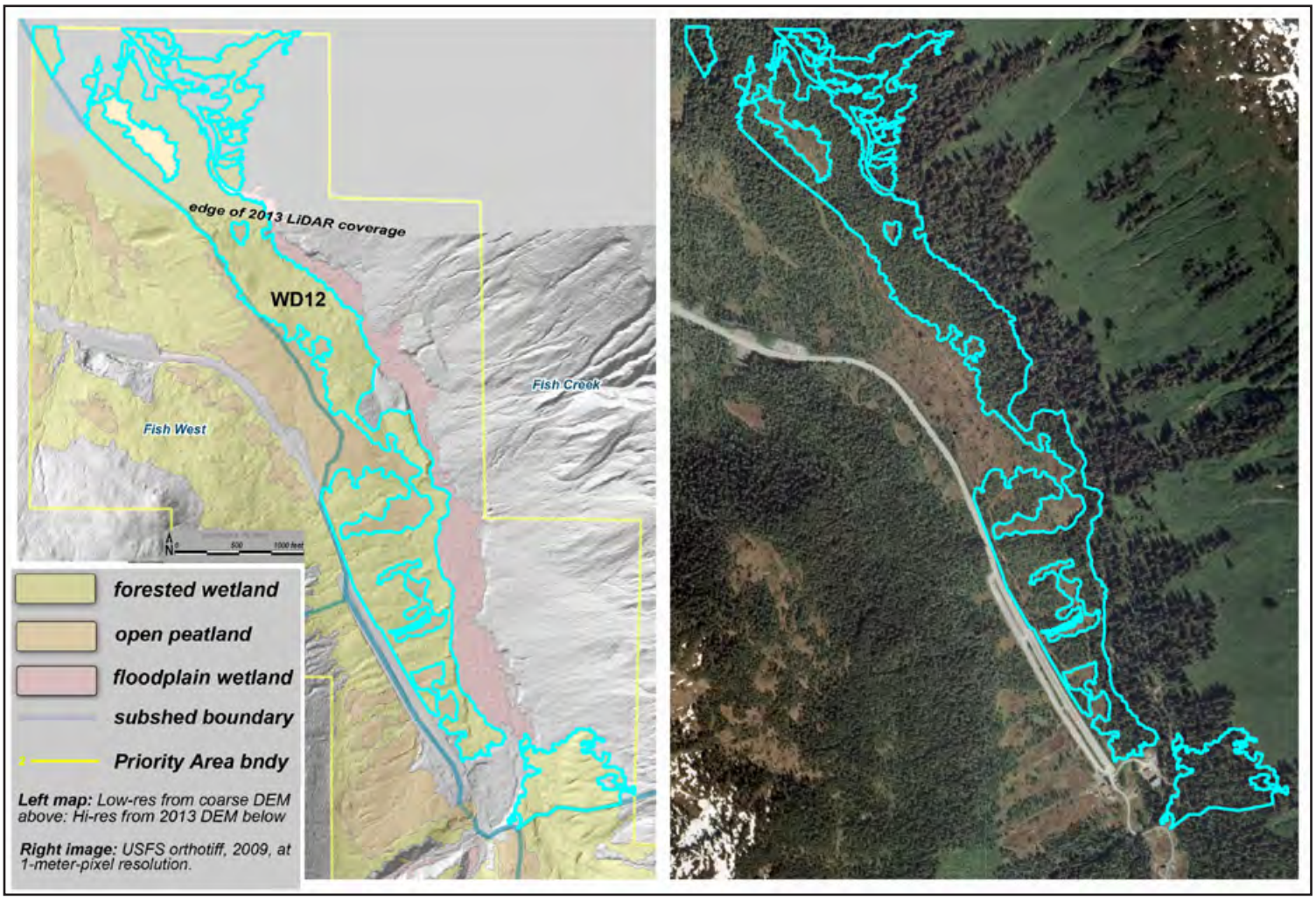
Unit maps for WD11 16 19

WD11 • **type:** forested peatland • **acres:** 5.8 • **boundary criteria**: w-u, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.21	Higher	3.15	Moderate
Songbird, Raptor, & Mammal Habitat	9.49	Higher	2.22	Lower
Native Plant Habitat	6.52	Higher	1.75	Lower
Water Cooling	5.56	Higher	1.40	Lower
Invertebrate Habitat	5.29	Higher	2.06	Lower
Organic Nutrient Export	8.74	Higher	N.A.	N.A.
Amphibian Habitat	4.55	Moderate	4.58	Moderate
Phosphorus Retention	3.34	Moderate	3.34	Moderate
Water Warming	2.52	Moderate	5.12	Moderate
Sediment Retention & Stabilization	2.38	Moderate	3.86	Moderate
Nitrate Removal	2.21	Moderate	4.75	Moderate
Resident Fish Habitat	6.60	Moderate	2.12	Lower
Water Storage	3.71	Moderate	1.11	Lower
Carbon Sequestration	5.56	Moderate	N.A.	N.A.
Stream Flow Support	2.42	Lower	4.52	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.48	Moderate
Wetland Risk	N.A.	N.A.	4.97	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Ecological Condition	N.A.	N.A.	1.97	Lower
Public Use & Recognition	N.A.	N.A.	1.11	Lower

WD12 • **type:** forested peatland • **acres:** 85.1 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.29	Higher	6.89	Higher
Pollinator Habitat	8.51	Higher	7.85	Higher
Invertebrate Habitat	6.12	Higher	10.00	Higher
Water Cooling	5.56	Higher	3.73	Moderate
Organic Nutrient Export	9.34	Higher	N.A.	N.A.
Resident Fish Habitat	6.11	Moderate	5.96	Higher
Native Plant Habitat	3.26	Moderate	6.95	Higher
Water Warming	2.52	Moderate	7.80	Higher
Stream Flow Support	5.34	Moderate	4.51	Moderate
Amphibian Habitat	3.95	Moderate	5.83	Moderate
Phosphorus Retention	3.62	Moderate	3.62	Moderate
Sediment Retention & Stabilization	2.70	Moderate	2.90	Moderate
Nitrate Removal	2.31	Moderate	4.75	Moderate
Water Storage	4.96	Moderate	1.11	Lower
Waterbird Nesting Habitat	3.99	Moderate	0.00	Lower
Carbon Sequestration	5.84	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.72	Higher
Wetland Stressors	N.A.	N.A.	7.24	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.11	Moderate
Public Use & Recognition	N.A.	N.A.	1.63	Lower



Unit map for WD12

WD13 • **type:** forested peatland • **acres:** 36.0 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Organic Nutrient Export	8.19	Higher	N.A.	N.A.
Stream Flow Support	4.79	Moderate	6.50	Higher
Water Cooling	4.21	Moderate	6.18	Higher
Water Warming	2.44	Moderate	6.52	Higher
Pollinator Habitat	6.53	Moderate	3.15	Moderate
Nitrate Removal	2.62	Moderate	4.80	Moderate
Resident Fish Habitat	7.16	Moderate	0.58	Lower
Anadromous Fish Habitat	6.18	Moderate	0.63	Lower
Native Plant Habitat	4.85	Moderate	0.29	Lower
Amphibian Habitat	4.16	Moderate	0.00	Lower
Waterbird Nesting Habitat	4.13	Moderate	0.00	Lower
Water Storage	3.89	Moderate	1.11	Lower
Invertebrate Habitat	3.41	Moderate	2.13	Lower
Carbon Sequestration	4.82	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.52	Lower	2.70	Moderate
Phosphorus Retention	2.53	Lower	2.53	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	5.15	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Stressors	N.A.	N.A.	2.85	Lower
Wetland Risk	N.A.	N.A.	2.53	Lower
Public Use & Recognition	N.A.	N.A.	0.26	Lower

WD14 • **type:** open peatland • **acres:** 10.8 • **boundary criteria**: type, subsh • **pin**: 3D1021000010
• known or probable anadromous fish

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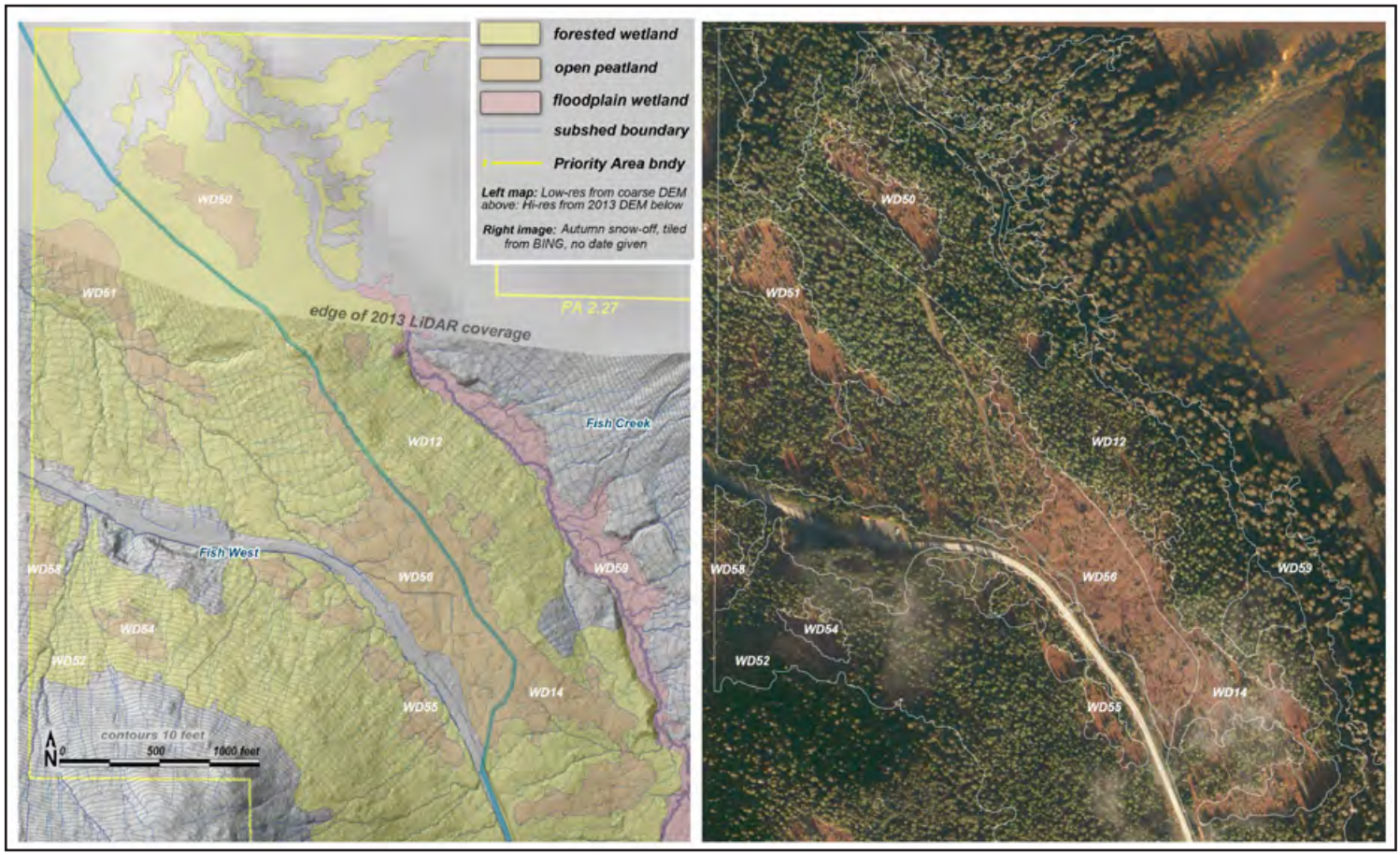
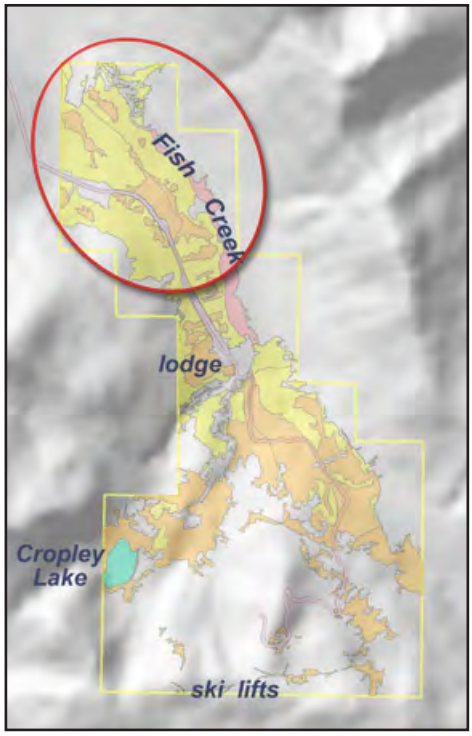
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.85	Higher	8.04	Higher
Organic Nutrient Export	8.67	Higher	N.A.	N.A.
Carbon Sequestration	7.06	Higher	N.A.	N.A.
Pollinator Habitat	6.35	Moderate	8.56	Higher
Native Plant Habitat	4.49	Moderate	7.95	Higher
Water Cooling	5.08	Moderate	2.19	Moderate
Anadromous Fish Habitat	5.06	Moderate	4.08	Moderate
Resident Fish Habitat	5.05	Moderate	4.42	Moderate
Water Warming	3.36	Moderate	4.48	Moderate
Water Storage	4.13	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.07	Moderate	0.00	Lower
Stream Flow Support	2.90	Lower	5.09	Higher
Invertebrate Habitat	1.87	Lower	10.00	Higher
Amphibian Habitat	1.82	Lower	6.67	Higher
Nitrate Removal	1.55	Lower	4.75	Moderate
Sediment Retention & Stabilization	1.52	Lower	3.86	Moderate
Phosphorus Retention	2.11	Lower	2.11	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	8.14	Higher
Wetland Ecological Condition	N.A.	N.A.	7.30	Higher
Wetland Stressors	N.A.	N.A.	7.24	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.81	Lower



Unit maps for WD14 50 51 52 54 55 56 58



WD15 • **type:** for. peatland • **acres:** 8.5 • **boundary criteria**: w-u, subsh • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	6.45	Higher	7.00	Higher
Water Warming	5.46	Higher	5.95	Higher
Nitrate Removal	3.57	Higher	7.45	Higher
Anadromous Fish Habitat	9.09	Higher	1.75	Lower
Resident Fish Habitat	7.52	Higher	1.73	Lower
Organic Nutrient Export	8.68	Higher	N.A.	N.A.
Stream Flow Support	5.71	Moderate	7.59	Higher
Water Storage	2.95	Moderate	10.00	Higher
Pollinator Habitat	5.88	Moderate	3.26	Moderate
Songbird, Raptor, & Mammal Habitat	5.33	Moderate	3.33	Moderate
Sediment Retention & Stabilization	2.34	Moderate	4.04	Moderate
Native Plant Habitat	3.39	Moderate	0.43	Lower
Carbon Sequestration	4.00	Moderate	N.A.	N.A.
Invertebrate Habitat	3.11	Lower	2.77	Lower
Amphibian Habitat	2.71	Lower	1.67	Lower
Phosphorus Retention	2.16	Lower	2.16	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Ecological Condition	N.A.	N.A.	3.30	Moderate
Wetland Stressors	N.A.	N.A.	2.74	Lower
Wetland Sensitivity	N.A.	N.A.	2.29	Lower
Wetland Risk	N.A.	N.A.	1.59	Lower
Public Use & Recognition	N.A.	N.A.	0.95	Lower

WD16 • **type:** for. peatland • **acres:** 1.1 • **boundary criteria**: w-u, subsh • **pin**: 3D1301000010 • known or probable anadromous fish

error -change fish score in table

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Cooling	7.89	Higher	2.18	Moderate
Pollinator Habitat	7.46	Higher	3.15	Moderate
Songbird, Raptor, & Mammal Habitat	8.34	Higher	2.22	Lower
Native Plant Habitat	7.62	Higher	1.36	Lower
Amphibian Habitat	5.40	Higher	3.61	Lower
Organic Nutrient Export	8.64	Higher	N.A.	N.A.
Stream Flow Support	3.39	Moderate	6.33	Higher
Water Warming	4.62	Moderate	3.88	Moderate
Nitrate Removal	2.62	Moderate	4.75	Moderate
Resident Fish Habitat	6.65	Moderate	1.15	Lower
Anadromous Fish Habitat	5.51	Moderate	1.25	Lower
Invertebrate Habitat	4.58	Moderate	2.85	Lower
Water Storage	3.43	Moderate	1.11	Lower
Carbon Sequestration	4.95	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.73	Lower	3.86	Moderate
Phosphorus Retention	2.00	Lower	2.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.43	Moderate
Wetland Risk	N.A.	N.A.	5.98	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.40	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.79	Lower

WD17 • **type:** for. peatland • **acres:** 2.1 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.77	Higher	4.06	Moderate
Water Cooling	5.87	Higher	3.07	Moderate
Native Plant Habitat	5.28	Higher	0.29	Lower
Organic Nutrient Export	8.11	Higher	N.A.	N.A.
Pollinator Habitat	5.45	Moderate	3.15	Moderate
Water Warming	4.12	Moderate	5.40	Moderate
Phosphorus Retention	2.72	Moderate	2.72	Moderate
Nitrate Removal	2.53	Moderate	5.00	Moderate
Resident Fish Habitat	6.90	Moderate	1.15	Lower
Songbird, Raptor, & Mammal Habitat	6.70	Moderate	2.22	Lower
Amphibian Habitat	4.23	Moderate	2.25	Lower
Waterbird Nesting Habitat	3.69	Moderate	0.00	Lower
Water Storage	3.18	Moderate	0.56	Lower
Carbon Sequestration	4.30	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.26	Lower	2.87	Moderate
Invertebrate Habitat	2.53	Lower	2.13	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.34	Moderate
Wetland Stressors	N.A.	N.A.	2.90	Lower
Wetland Risk	N.A.	N.A.	1.79	Lower
Public Use & Recognition	N.A.	N.A.	0.39	Lower

WD18 • **type:** forested peatland • **acres:** 1.9 • **boundary criteria**: type • **pin**: 3D1301000010 • no known or probable anadromous fish

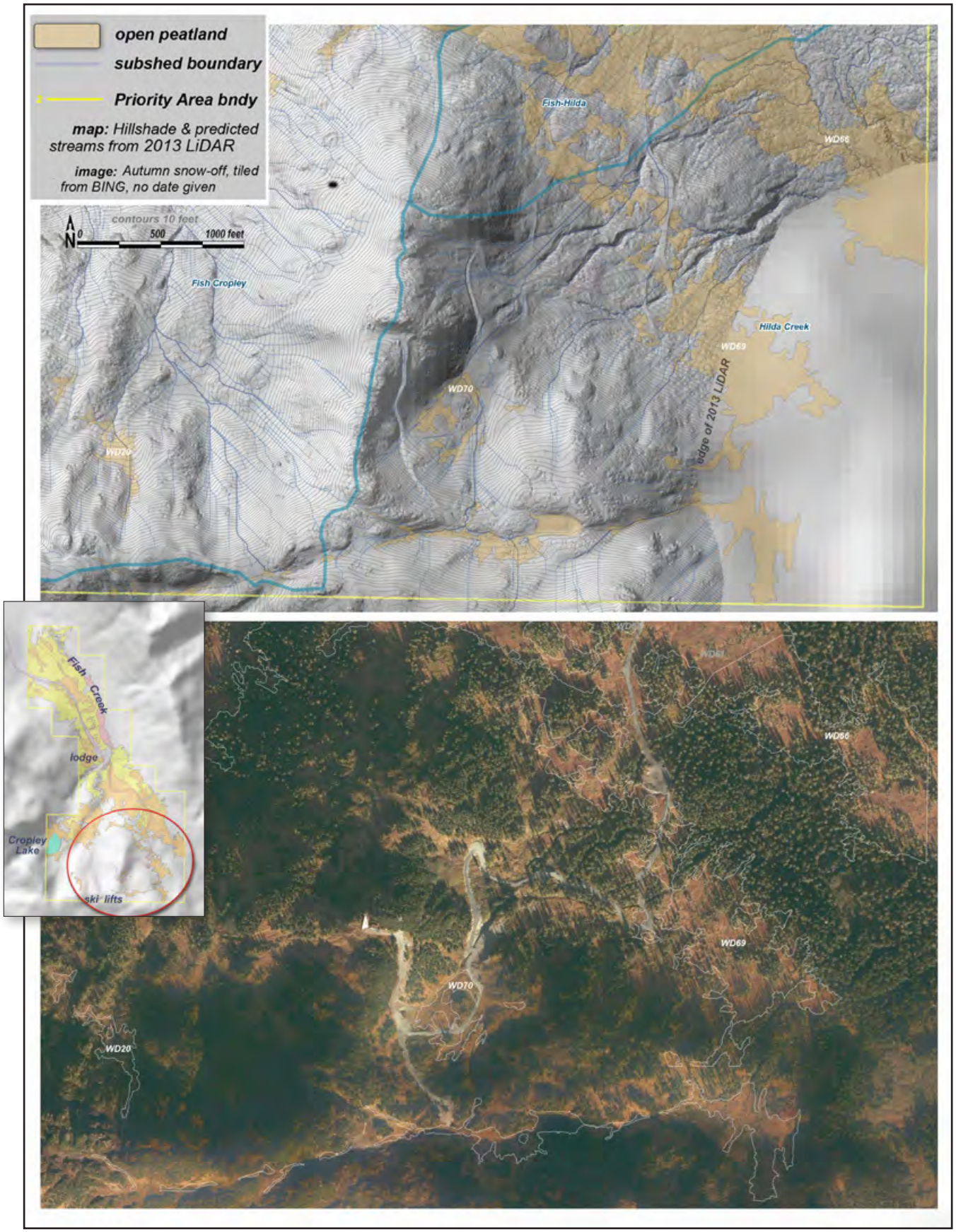
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.81	Higher	3.33	Moderate
Pollinator Habitat	7.33	Higher	3.26	Moderate
Stream Flow Support	6.72	Higher	3.88	Moderate
Water Cooling	5.56	Higher	3.07	Moderate
Organic Nutrient Export	7.85	Higher	N.A.	N.A.
Carbon Sequestration	7.02	Higher	N.A.	N.A.
Water Warming	4.62	Moderate	5.85	Higher
Water Storage	3.68	Moderate	10.00	Higher
Nitrate Removal	1.98	Moderate	5.13	Moderate
Resident Fish Habitat	6.69	Moderate	1.73	Lower
Native Plant Habitat	4.49	Moderate	1.11	Lower
Sediment Retention & Stabilization	1.26	Lower	2.77	Moderate
Phosphorus Retention	2.20	Lower	2.20	Lower
Invertebrate Habitat	1.99	Lower	1.51	Lower
Amphibian Habitat	1.87	Lower	3.18	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.86	Lower
Wetland Stressors	N.A.	N.A.	2.74	Lower
Wetland Risk	N.A.	N.A.	1.40	Lower
Public Use & Recognition	N.A.	N.A.	0.95	Lower

WD19 • **type:** forested peatland • **acres:** 68.9 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	8.49	Higher	3.15	Moderate
Water Cooling	7.47	Higher	3.07	Moderate
Stream Flow Support	6.52	Higher	4.58	Moderate
Songbird, Raptor, & Mammal Habitat	8.43	Higher	2.22	Lower
Resident Fish Habitat	7.56	Higher	1.15	Lower
Native Plant Habitat	7.45	Higher	1.67	Lower
Amphibian Habitat	5.57	Higher	3.69	Lower
Organic Nutrient Export	8.88	Higher	N.A.	N.A.
Water Warming	2.61	Moderate	6.32	Higher
Phosphorus Retention	3.16	Moderate	3.16	Moderate
Nitrate Removal	2.62	Moderate	4.75	Moderate
Sediment Retention & Stabilization	2.56	Moderate	3.86	Moderate
Waterbird Nesting Habitat	4.70	Moderate	0.00	Lower
Water Storage	4.04	Moderate	1.11	Lower
Invertebrate Habitat	4.00	Moderate	2.80	Lower
Carbon Sequestration	5.47	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.43	Moderate
Wetland Risk	N.A.	N.A.	5.60	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.52	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	1.90	Lower

WD20 • **type:** open peatland • **acres:** 1.7 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	8.40	Higher	7.13	Higher
Pollinator Habitat	8.78	Higher	3.19	Moderate
Water Cooling	8.43	Higher	1.36	Lower
Invertebrate Habitat	6.93	Higher	0.93	Lower
Organic Nutrient Export	9.02	Higher	N.A.	N.A.
Stream Flow Support	4.47	Moderate	6.43	Higher
Nitrate Removal	2.48	Moderate	7.31	Higher
Songbird, Raptor, & Mammal Habitat	6.63	Moderate	4.04	Moderate
Native Plant Habitat	5.04	Moderate	1.04	Lower
Waterbird Feeding Habitat	4.22	Moderate	0.00	Lower
Carbon Sequestration	5.18	Moderate	N.A.	N.A.
Amphibian Habitat	2.50	Lower	5.07	Moderate
Sediment Retention & Stabilization	1.52	Lower	4.44	Moderate
Water Storage	1.68	Lower	2.59	Lower
Phosphorus Retention	1.28	Lower	1.28	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	10.00	Higher
Wetland Risk	N.A.	N.A.	6.84	Higher
Wetland Stressors	N.A.	N.A.	6.85	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.31	Moderate
Public Use & Recognition	N.A.	N.A.	2.54	Moderate



Unit maps for WD20 66 69 70

WD21 • **type:** forested peatland • **acres:** 26.8 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	9.12	Higher	3.15	Moderate
Stream Flow Support	6.77	Higher	3.98	Moderate
Water Cooling	5.87	Higher	3.07	Moderate
Songbird, Raptor, & Mammal Habitat	8.07	Higher	2.22	Lower
Native Plant Habitat	5.72	Higher	1.71	Lower
Organic Nutrient Export	8.78	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	6.21	Higher
Phosphorus Retention	2.67	Moderate	2.67	Moderate
Nitrate Removal	2.05	Moderate	4.75	Moderate
Resident Fish Habitat	6.72	Moderate	1.15	Lower
Amphibian Habitat	4.66	Moderate	3.39	Lower
Carbon Sequestration	5.11	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.59	Lower	3.81	Moderate
Water Storage	2.69	Lower	1.11	Lower
Invertebrate Habitat	2.42	Lower	1.87	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	8.60	Higher
Wetland Stressors	N.A.	N.A.	6.35	Moderate
Wetland Risk	N.A.	N.A.	5.35	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.15	Lower
Public Use & Recognition	N.A.	N.A.	0.51	Lower

WD40 • **type:** forested peatland • **acres:** 29.6 • **boundary criteria**: w-u, pa, type • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.07	Higher	3.33	Moderate
Stream Flow Support	7.48	Higher	1.80	Moderate
Water Cooling	6.26	Higher	3.51	Moderate
Native Plant Habitat	5.66	Higher	1.02	Lower
Organic Nutrient Export	8.17	Higher	N.A.	N.A.
Water Warming	4.12	Moderate	7.14	Higher
Pollinator Habitat	6.61	Moderate	3.26	Moderate
Phosphorus Retention	3.50	Moderate	3.50	Moderate
Nitrate Removal	1.92	Moderate	4.75	Moderate
Water Storage	3.49	Moderate	1.11	Lower
Amphibian Habitat	3.18	Moderate	3.39	Lower
Waterbird Nesting Habitat	3.11	Moderate	0.00	Lower
Carbon Sequestration	4.64	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.13	Lower	3.81	Moderate
Invertebrate Habitat	2.89	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.77	Moderate
Wetland Risk	N.A.	N.A.	5.47	Moderate
Wetland Ecological Condition	N.A.	N.A.	2.40	Lower
Public Use & Recognition	N.A.	N.A.	2.27	Lower
Wetland Sensitivity	N.A.	N.A.	2.20	Lower

WD42 • **type:** fen/marsh • **acres:** 1.5 • **boundary criteria**: type • **pin**: 3D1301000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Amphibian Habitat	6.62	Higher	7.55	Higher
Waterbird Nesting Habitat	6.11	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	7.52	Higher	4.93	Moderate
Waterbird Feeding Habitat	6.76	Higher	4.94	Moderate
Water Warming	5.88	Higher	4.78	Moderate
Sediment Retention & Stabilization	5.00	Higher	2.70	Moderate
Nitrate Removal	3.76	Higher	4.80	Moderate
Water Storage	6.99	Higher	1.11	Lower
Native Plant Habitat	5.81	Higher	0.43	Lower
Carbon Sequestration	6.45	Higher	N.A.	N.A.
Phosphorus Retention	3.50	Moderate	3.50	Moderate
Invertebrate Habitat	4.86	Moderate	2.71	Lower
Water Cooling	3.58	Moderate	1.40	Lower
Organic Nutrient Export	7.47	Moderate	N.A.	N.A.
Pollinator Habitat	3.66	Lower	3.26	Moderate
Stream Flow Support	2.77	Lower	2.20	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.64	Moderate
Wetland Risk	N.A.	N.A.	5.84	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.56	Moderate
Public Use & Recognition	N.A.	N.A.	2.48	Moderate
Wetland Sensitivity	N.A.	N.A.	3.55	Lower

WD45 • **type:** fen/marsh • **acres:** 2.0 • **boundary criteria**: type • **pin**: 3D1301000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.48	Higher	6.14	Higher
Waterbird Nesting Habitat	6.01	Higher	10.00	Higher
Water Storage	5.38	Higher	10.00	Higher
Nitrate Removal	4.10	Higher	6.77	Higher
Phosphorus Retention	4.04	Higher	4.04	Higher
Waterbird Feeding Habitat	7.80	Higher	5.00	Moderate
Anadromous Fish Habitat	7.59	Higher	5.32	Moderate
Amphibian Habitat	5.86	Higher	6.04	Moderate
Sediment Retention & Stabilization	4.36	Higher	2.80	Moderate
Water Cooling	5.11	Moderate	2.72	Moderate
Invertebrate Habitat	5.04	Moderate	4.81	Moderate
Songbird, Raptor, & Mammal Habitat	4.86	Moderate	5.00	Moderate
Water Warming	3.70	Moderate	5.24	Moderate
Native Plant Habitat	4.61	Moderate	0.57	Lower
Organic Nutrient Export	7.41	Moderate	N.A.	N.A.
Carbon Sequestration	5.08	Moderate	N.A.	N.A.
Stream Flow Support	3.03	Lower	7.77	Higher
Pollinator Habitat	3.95	Lower	3.36	Moderate
Wetland Stressors	N.A.	N.A.	5.78	Moderate
Wetland Risk	N.A.	N.A.	5.04	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.80	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower

WD50 • **type:** open peatland • **acres:** 3.2 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.09	Higher	5.39	Moderate
Pollinator Habitat	7.21	Higher	4.25	Moderate
Invertebrate Habitat	5.64	Higher	1.88	Lower
Organic Nutrient Export	7.79	Higher	N.A.	N.A.
Carbon Sequestration	7.00	Higher	N.A.	N.A.
Waterbird Feeding Habitat	3.94	Moderate	6.23	Higher
Waterbird Nesting Habitat	4.34	Moderate	9.50	Moderate
Water Warming	3.36	Moderate	4.93	Moderate
Nitrate Removal	2.21	Moderate	4.75	Moderate
Water Storage	4.62	Moderate	1.11	Lower
Water Cooling	3.93	Moderate	1.58	Lower
Amphibian Habitat	2.41	Lower	6.94	Higher
Stream Flow Support	3.15	Lower	2.36	Moderate
Sediment Retention & Stabilization	1.72	Lower	3.86	Moderate
Native Plant Habitat	0.97	Lower	2.60	Moderate
Phosphorus Retention	2.56	Lower	2.56	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	5.58	Moderate
Wetland Risk	N.A.	N.A.	5.44	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.19	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.19	Lower

WD51 • **type:** open peatland • **acres:** 6.1 • **boundary criteria**: type, pa • **pin**: 3D1021000010 • no known or probable anadromous fish

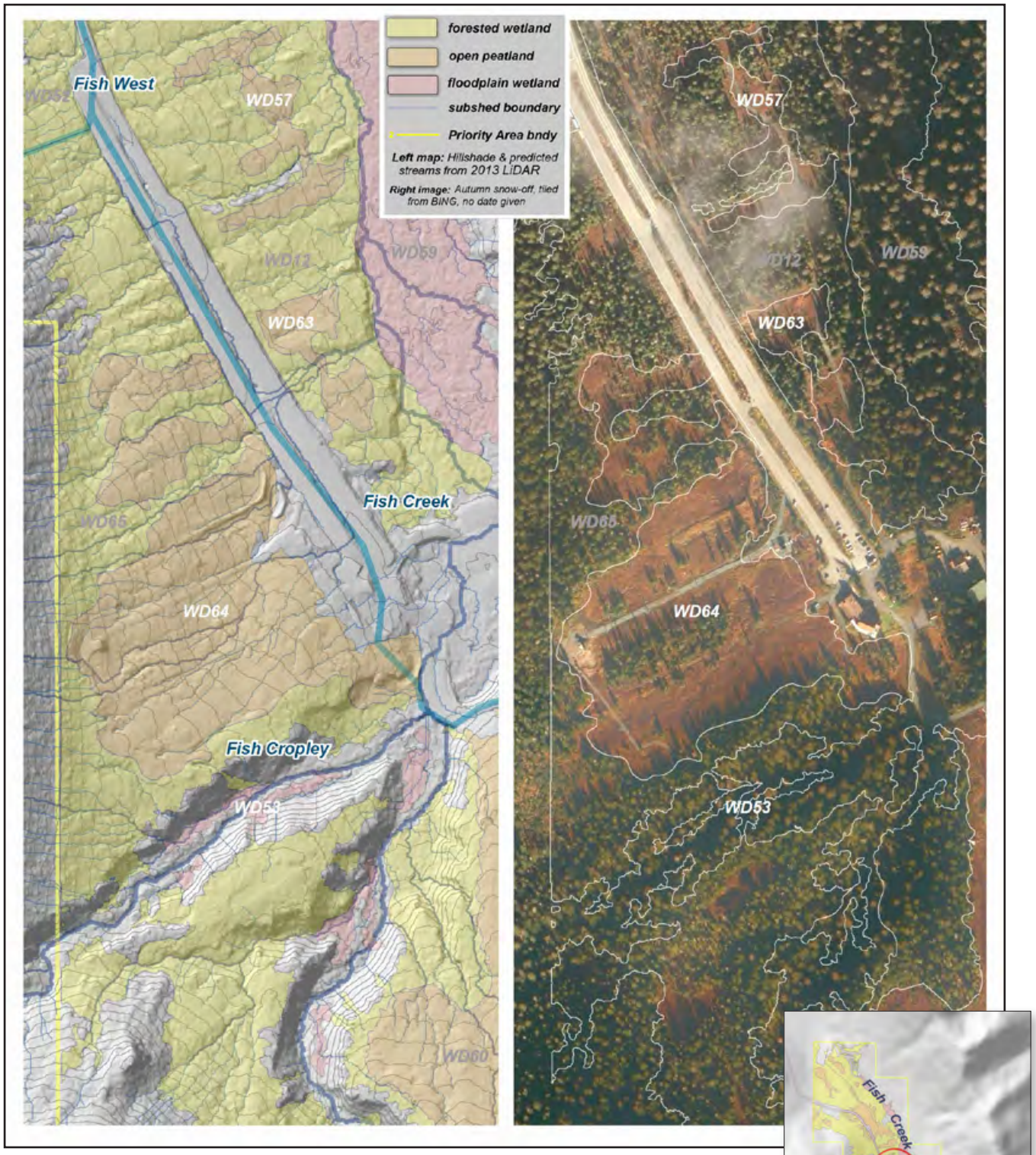
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	5.89	Higher
Songbird, Raptor, & Mammal Habitat	8.66	Higher	5.39	Moderate
Stream Flow Support	8.49	Higher	2.14	Moderate
Water Cooling	5.84	Higher	3.51	Moderate
Organic Nutrient Export	9.42	Higher	N.A.	N.A.
Carbon Sequestration	6.31	Higher	N.A.	N.A.
Nitrate Removal	2.30	Moderate	4.75	Moderate
Invertebrate Habitat	4.58	Moderate	1.13	Lower
Water Storage	3.67	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.54	Moderate	0.00	Lower
Pollinator Habitat	2.76	Lower	4.25	Moderate
Native Plant Habitat	2.50	Lower	2.67	Moderate
Amphibian Habitat	2.18	Lower	6.30	Moderate
Sediment Retention & Stabilization	1.75	Lower	3.86	Moderate
Phosphorus Retention	2.35	Lower	2.35	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.80	Moderate
Wetland Risk	N.A.	N.A.	6.00	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.53	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.66	Lower

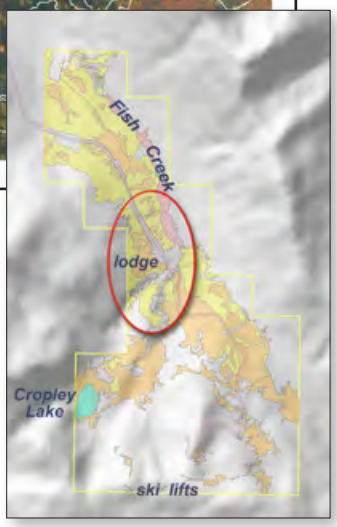
WD52 • **type:** forested peatland • **acres:** 92.5 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Pollinator Habitat	7.99	Higher	4.21	Moderate
Songbird, Raptor, & Mammal Habitat	7.98	Higher	3.33	Moderate
Organic Nutrient Export	9.34	Higher	N.A.	N.A.
Water Warming	2.94	Moderate	7.16	Higher
Stream Flow Support	4.84	Moderate	1.78	Moderate
Water Cooling	4.66	Moderate	3.95	Moderate
Native Plant Habitat	3.99	Moderate	2.52	Moderate
Phosphorus Retention	3.58	Moderate	3.58	Moderate
Amphibian Habitat	3.31	Moderate	3.31	Lower
Carbon Sequestration	5.41	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.36	Lower	4.21	Moderate
Nitrate Removal	0.92	Lower	4.75	Moderate
Invertebrate Habitat	2.78	Lower	0.68	Lower
Water Storage	2.21	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Risk	N.A.	N.A.	6.74	Higher
Wetland Stressors	N.A.	N.A.	7.48	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.59	Moderate
Public Use & Recognition	N.A.	N.A.	3.58	Moderate

WD53 • **type:** floodplain wetland • **acres:** 1.9 • **boundary criteria**: w-u, type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Nitrate Removal	4.31	Higher	7.15	Higher
Water Cooling	7.54	Higher	3.95	Moderate
Waterbird Nesting Habitat	5.99	Higher	9.40	Moderate
Native Plant Habitat	5.88	Higher	2.52	Moderate
Water Warming	4.96	Higher	3.48	Moderate
Invertebrate Habitat	7.41	Higher	1.46	Lower
Water Storage	5.41	Higher	0.56	Lower
Organic Nutrient Export	8.53	Higher	N.A.	N.A.
Pollinator Habitat	5.53	Moderate	4.21	Moderate
Waterbird Feeding Habitat	5.28	Moderate	5.21	Moderate
Stream Flow Support	5.16	Moderate	2.71	Moderate
Songbird, Raptor, & Mammal Habitat	4.49	Moderate	5.36	Moderate
Sediment Retention & Stabilization	4.09	Moderate	3.99	Moderate
Amphibian Habitat	1.69	Lower	4.01	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Phosphorus Retention	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	1.79	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.55	Higher
Public Use & Recognition	N.A.	N.A.	6.18	Higher
Wetland Stressors	N.A.	N.A.	7.12	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.02	Moderate





Unit maps for WD53 57 63 64

WD54 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Resident Fish Habitat	8.48	Higher	6.14	Higher
Waterbird Nesting Habitat	6.01	Higher	10.00	Higher
Water Storage	5.38	Higher	10.00	Higher
Nitrate Removal	4.10	Higher	6.77	Higher
Phosphorus Retention	4.04	Higher	4.04	Higher
Waterbird Feeding Habitat	7.80	Higher	5.00	Moderate
Anadromous Fish Habitat	7.59	Higher	5.32	Moderate
Amphibian Habitat	5.86	Higher	6.04	Moderate
Sediment Retention & Stabilization	4.36	Higher	2.80	Moderate
Water Cooling	5.11	Moderate	2.72	Moderate
Invertebrate Habitat	5.04	Moderate	4.81	Moderate
Songbird, Raptor, & Mammal Habitat	4.86	Moderate	5.00	Moderate
Water Warming	3.70	Moderate	5.24	Moderate
Native Plant Habitat	4.61	Moderate	0.57	Lower
Organic Nutrient Export	7.41	Moderate	N.A.	N.A.
Carbon Sequestration	5.08	Moderate	N.A.	N.A.
Stream Flow Support	3.03	Lower	7.77	Higher
Pollinator Habitat	3.95	Lower	3.36	Moderate
Wetland Stressors	N.A.	N.A.	5.78	Moderate
Wetland Risk	N.A.	N.A.	5.04	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.80	Moderate
Public Use & Recognition	N.A.	N.A.	2.51	Moderate
Wetland Sensitivity	N.A.	N.A.	2.83	Lower

WD55 • **type:** open peatland • **acres:** 3.8 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.57	Higher	5.39	Moderate
Water Warming	6.16	Higher	4.89	Moderate
Water Cooling	5.84	Higher	1.58	Lower
Organic Nutrient Export	8.45	Higher	N.A.	N.A.
Carbon Sequestration	6.53	Higher	N.A.	N.A.
Stream Flow Support	4.50	Moderate	1.96	Moderate
Phosphorus Retention	2.92	Moderate	2.92	Moderate
Nitrate Removal	2.82	Moderate	4.75	Moderate
Water Storage	3.82	Moderate	1.11	Lower
Invertebrate Habitat	3.69	Moderate	1.08	Lower
Waterbird Feeding Habitat	3.40	Moderate	0.00	Lower
Pollinator Habitat	2.76	Lower	4.25	Moderate
Amphibian Habitat	2.00	Lower	6.13	Moderate
Sediment Retention & Stabilization	1.44	Lower	3.86	Moderate
Native Plant Habitat	1.25	Lower	2.64	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	6.19	Moderate
Wetland Risk	N.A.	N.A.	5.52	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.92	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.18	Lower

WD56 • **type:** open peatland • **acres:** 12.9 • **boundary criteria**: w-u, type subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.41	Higher	5.39	Moderate
Amphibian Habitat	5.49	Higher	5.87	Moderate
Water Storage	5.07	Higher	5.00	Moderate
Carbon Sequestration	7.29	Higher	N.A.	N.A.
Waterbird Feeding Habitat	4.44	Moderate	7.23	Higher
Pollinator Habitat	4.98	Moderate	4.25	Moderate
Waterbird Nesting Habitat	4.10	Moderate	9.50	Moderate
Phosphorus Retention	3.57	Moderate	3.57	Moderate
Sediment Retention & Stabilization	2.61	Moderate	2.68	Moderate
Nitrate Removal	1.92	Moderate	4.24	Moderate
Water Warming	3.82	Moderate	2.05	Lower
Water Cooling	3.10	Moderate	1.23	Lower
Organic Nutrient Export	7.37	Moderate	N.A.	N.A.
Stream Flow Support	2.77	Lower	1.75	Moderate
Native Plant Habitat	0.00	Lower	2.60	Moderate
Invertebrate Habitat	2.61	Lower	1.98	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.49	Higher
Wetland Ecological Condition	N.A.	N.A.	6.15	Higher
Wetland Stressors	N.A.	N.A.	6.17	Moderate
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Public Use & Recognition	N.A.	N.A.	2.27	Lower

WD57 • **type:** open peatland • **acres:** 2.2 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

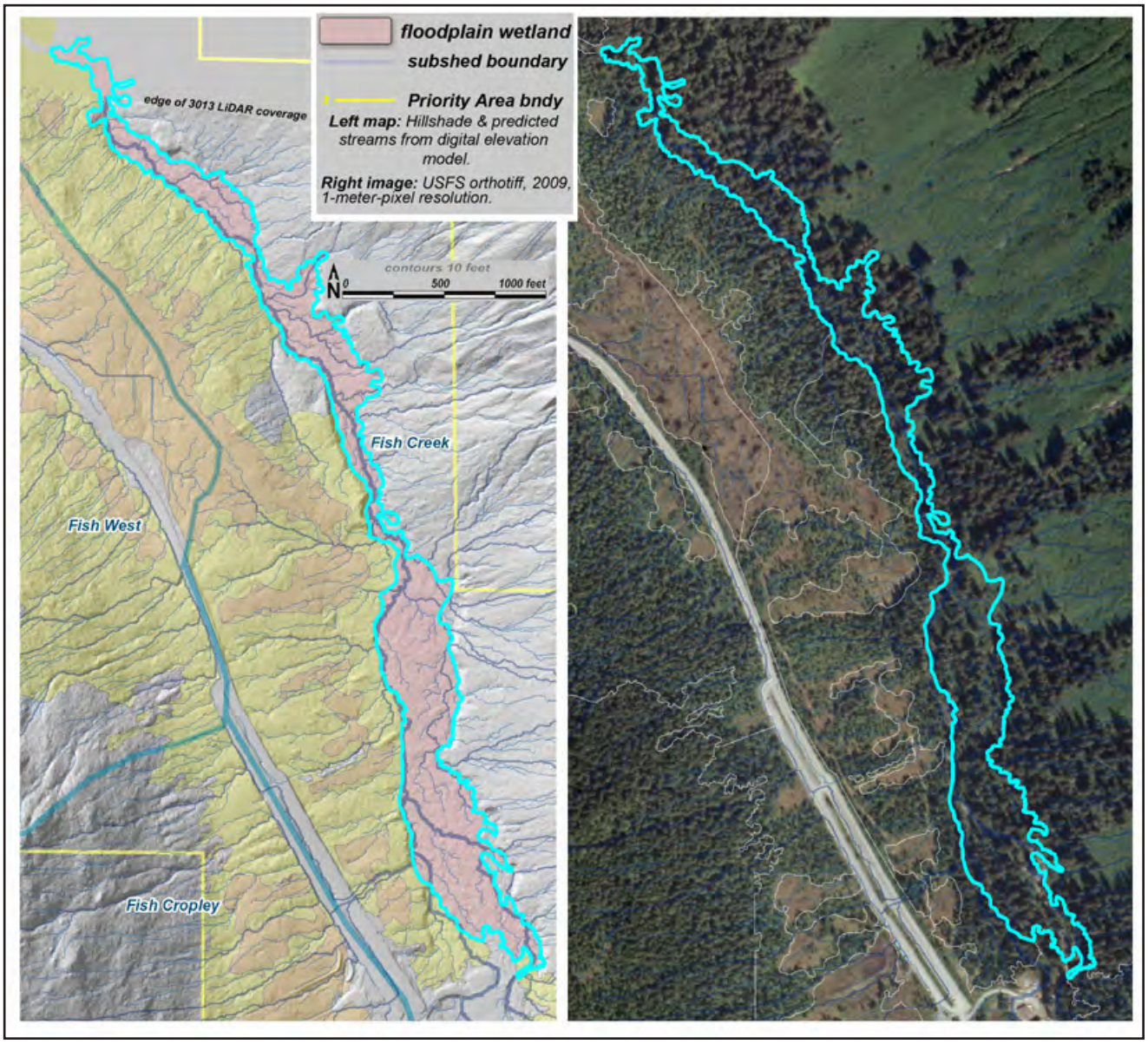
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.05	Higher	1.85	Moderate
Carbon Sequestration	8.53	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.13	Moderate	5.39	Moderate
Water Cooling	4.60	Moderate	3.16	Moderate
Waterbird Feeding Habitat	3.71	Moderate	4.23	Moderate
Phosphorus Retention	3.44	Moderate	3.44	Moderate
Nitrate Removal	2.26	Moderate	1.72	Lower
Pollinator Habitat	2.75	Lower	4.25	Moderate
Native Plant Habitat	2.56	Lower	2.60	Moderate
Invertebrate Habitat	3.13	Lower	0.57	Lower
Amphibian Habitat	2.02	Lower	3.48	Lower
Water Storage	1.46	Lower	1.11	Lower
Sediment Retention & Stabilization	1.42	Lower	0.28	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Organic Nutrient Export	5.64	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	6.05	Moderate
Wetland Risk	N.A.	N.A.	5.33	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.82	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	2.16	Lower

WD58 • **type:** open peatland • **acres:** 1.3 • **boundary criteria**: type, pa • **pin**: 3D1021000010 • no known or probable anadromous fish

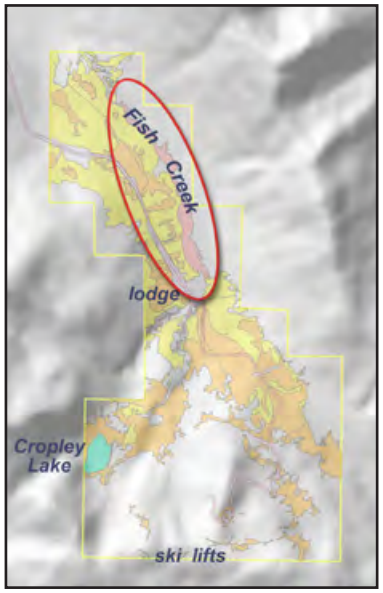
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.16	Higher	5.86	Higher
Songbird, Raptor, & Mammal Habitat	8.82	Higher	5.39	Moderate
Stream Flow Support	8.49	Higher	2.12	Moderate
Pollinator Habitat	8.20	Higher	4.25	Moderate
Water Cooling	6.99	Higher	3.51	Moderate
Native Plant Habitat	5.67	Higher	2.60	Moderate
Organic Nutrient Export	8.81	Higher	N.A.	N.A.
Invertebrate Habitat	4.45	Moderate	1.15	Lower
Waterbird Feeding Habitat	3.64	Moderate	0.00	Lower
Water Storage	3.59	Moderate	1.11	Lower
Carbon Sequestration	5.26	Moderate	N.A.	N.A.
Amphibian Habitat	2.00	Lower	6.50	Higher
Sediment Retention & Stabilization	1.52	Lower	3.91	Moderate
Nitrate Removal	1.47	Lower	5.15	Moderate
Phosphorus Retention	2.24	Lower	2.24	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	7.43	Higher
Wetland Stressors	N.A.	N.A.	7.25	Moderate
Wetland Ecological Condition	N.A.	N.A.	5.70	Moderate
Wetland Sensitivity	N.A.	N.A.	4.35	Lower
Public Use & Recognition	N.A.	N.A.	1.83	Lower

WD59 • **type:** floodplain wetland • **acres:** 24.5 • **boundary criteria**: w-u, type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	4.87	Higher	5.75	Higher
Nitrate Removal	3.32	Higher	5.76	Higher
Pollinator Habitat	8.57	Higher	4.21	Moderate
Songbird, Raptor, & Mammal Habitat	8.45	Higher	5.36	Moderate
Stream Flow Support	6.32	Higher	2.64	Moderate
Waterbird Nesting Habitat	5.89	Higher	9.40	Moderate
Water Storage	5.14	Higher	5.56	Moderate
Invertebrate Habitat	7.03	Higher	2.06	Lower
Organic Nutrient Export	9.44	Higher	N.A.	N.A.
Waterbird Feeding Habitat	5.49	Moderate	6.21	Higher
Water Cooling	4.85	Moderate	3.51	Moderate
Native Plant Habitat	4.63	Moderate	2.52	Moderate
Sediment Retention & Stabilization	3.42	Moderate	4.38	Moderate
Phosphorus Retention	2.63	Moderate	2.63	Moderate
Amphibian Habitat	1.16	Lower	7.46	Higher
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.66	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	6.46	Higher
Wetland Stressors	N.A.	N.A.	6.74	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.72	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Public Use & Recognition	N.A.	N.A.	1.14	Lower

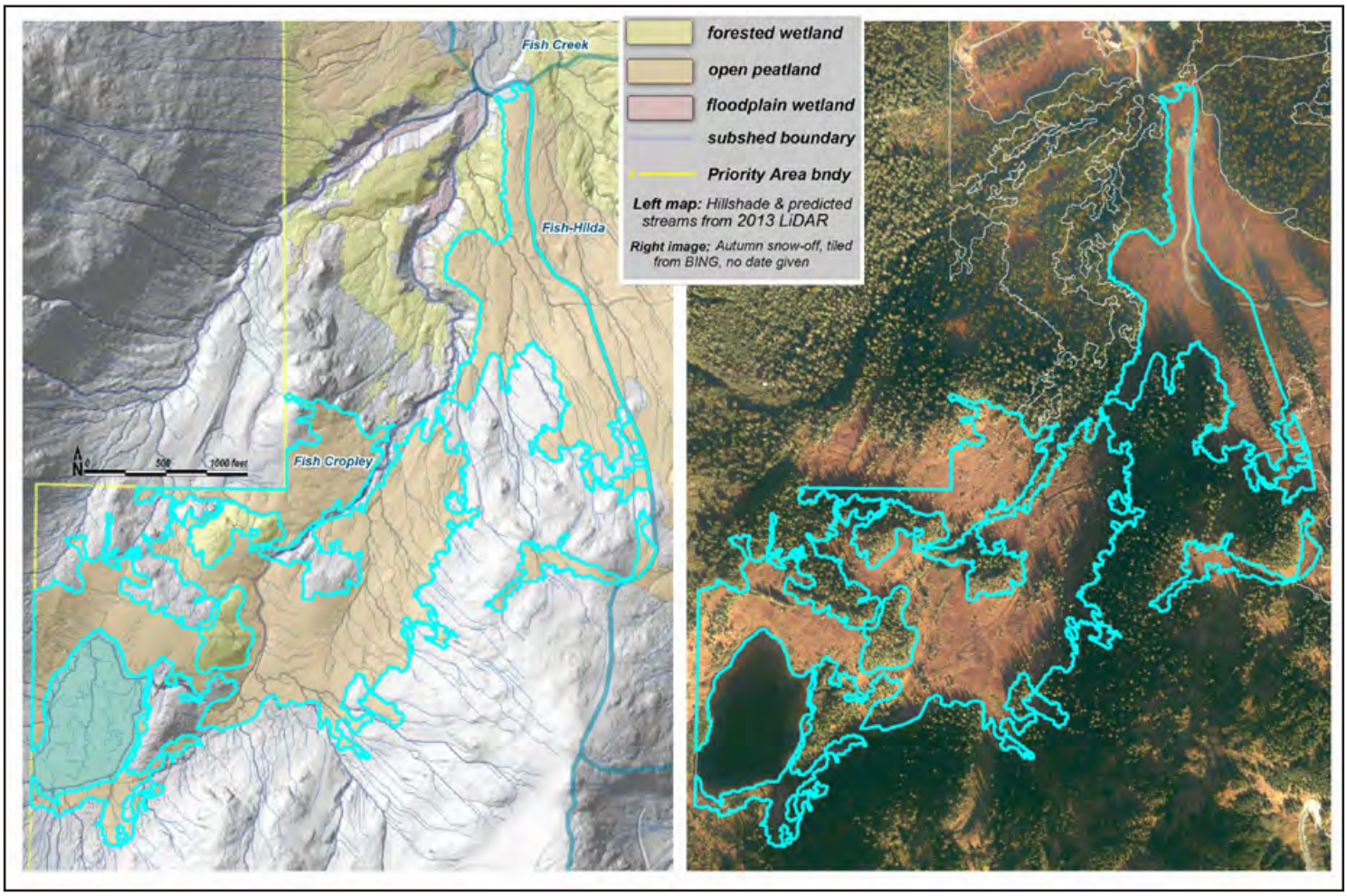


Unit map for WD59

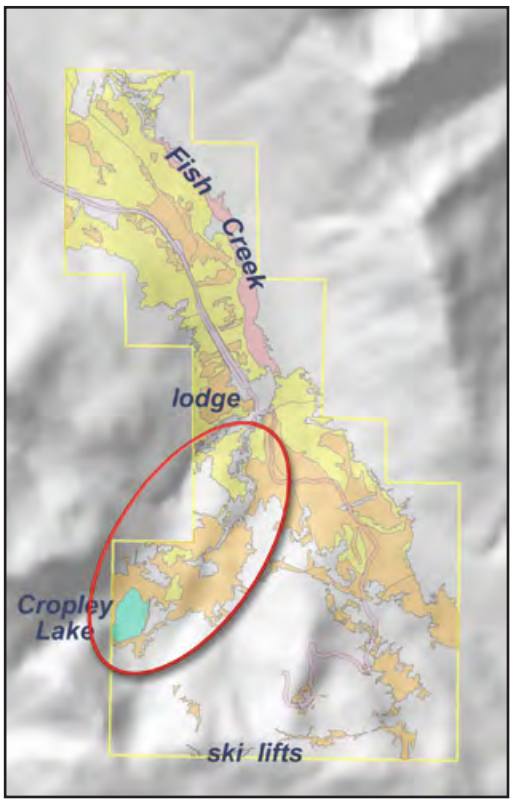


WD60 • **type:** open peatland • **acres:** 88.8 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Stream Flow Support	6.66	Higher	2.54	Moderate
Nitrate Removal	3.28	Higher	3.86	Moderate
Invertebrate Habitat	6.54	Higher	0.59	Lower
Organic Nutrient Export	7.96	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.75	Moderate	5.39	Moderate
Pollinator Habitat	5.39	Moderate	4.25	Moderate
Water Cooling	4.60	Moderate	3.68	Moderate
Phosphorus Retention	3.57	Moderate	3.57	Moderate
Sediment Retention & Stabilization	3.77	Moderate	0.63	Lower
Waterbird Feeding Habitat	3.10	Moderate	0.00	Lower
Native Plant Habitat	2.00	Lower	2.60	Moderate
Amphibian Habitat	2.04	Lower	3.58	Lower
Water Storage	0.63	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	3.81	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	7.53	Higher
Wetland Stressors	N.A.	N.A.	6.72	Moderate
Wetland Risk	N.A.	N.A.	5.90	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.49	Moderate
Public Use & Recognition	N.A.	N.A.	1.64	Lower

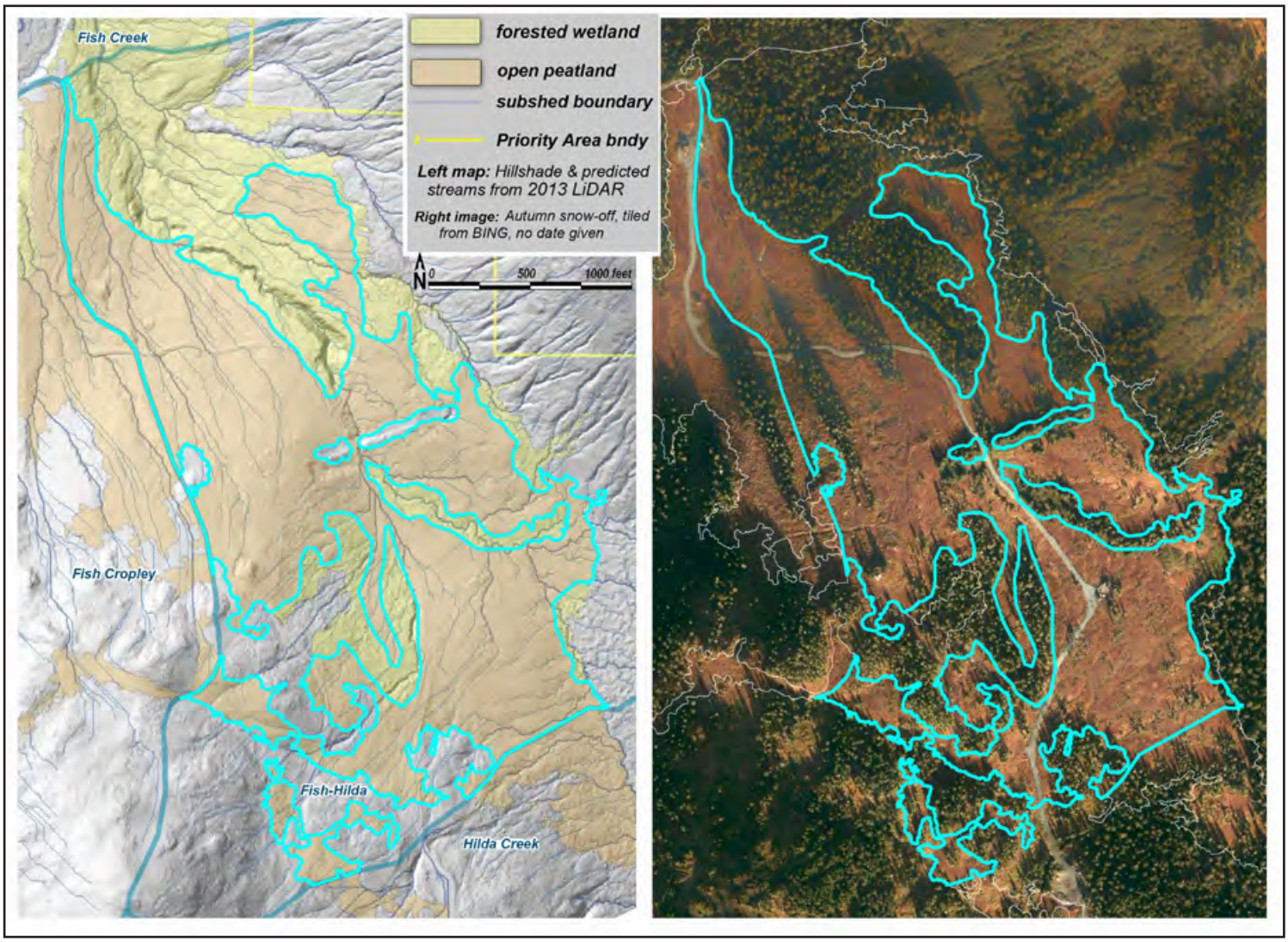


Unit map for WD60

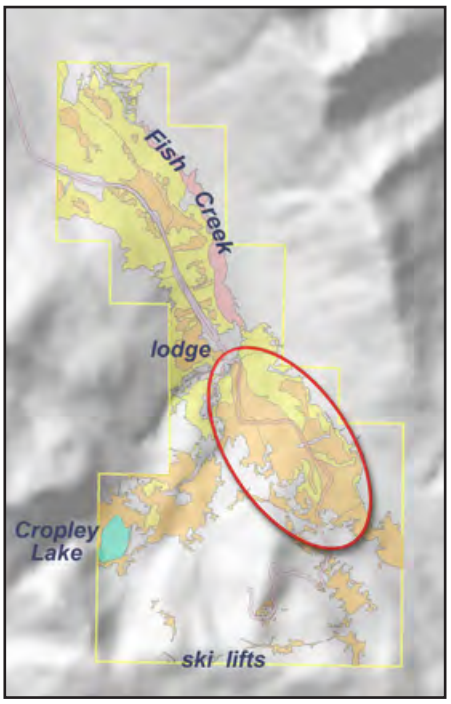


WD61 • **type:** open peatland • **acres:** 86.5 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.50	Higher	3.33	Moderate
Invertebrate Habitat	6.17	Higher	0.72	Lower
Organic Nutrient Export	8.37	Higher	N.A.	N.A.
Water Warming	2.52	Moderate	7.11	Higher
Pollinator Habitat	6.08	Moderate	4.25	Moderate
Stream Flow Support	5.34	Moderate	2.46	Moderate
Water Cooling	4.41	Moderate	3.95	Moderate
Phosphorus Retention	3.26	Moderate	3.26	Moderate
Water Storage	3.58	Moderate	1.11	Lower
Amphibian Habitat	2.92	Moderate	3.75	Lower
Sediment Retention & Stabilization	2.26	Lower	3.98	Moderate
Nitrate Removal	1.61	Lower	4.75	Moderate
Native Plant Habitat	0.09	Lower	3.30	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.62	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.45	Moderate
Wetland Stressors	N.A.	N.A.	6.35	Moderate
Wetland Risk	N.A.	N.A.	4.63	Moderate
Public Use & Recognition	N.A.	N.A.	2.16	Lower
Wetland Ecological Condition	N.A.	N.A.	1.52	Lower

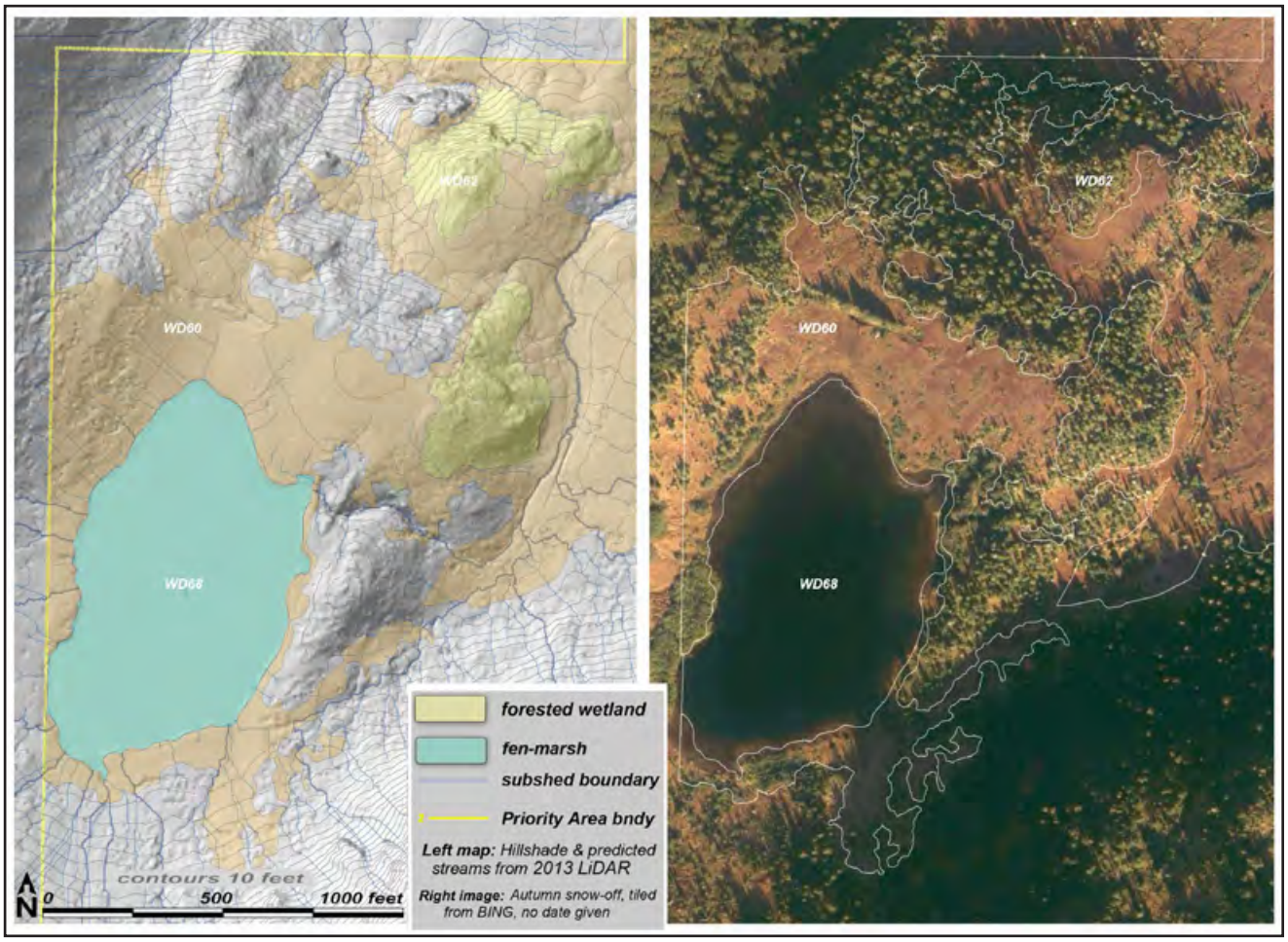


Unit map for WD61

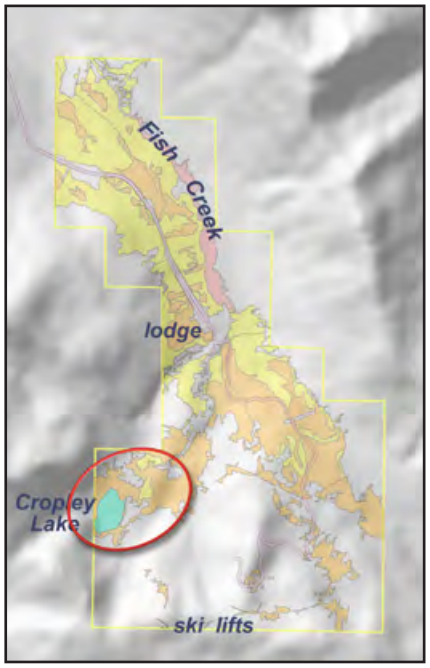


WD62 • **type:** forested peatland • **acres:** 5.4 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Invertebrate Habitat	6.57	Higher	0.34	Lower
Organic Nutrient Export	7.87	Higher	N.A.	N.A.
Carbon Sequestration	6.72	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	5.77	Moderate	3.33	Moderate
Water Cooling	4.60	Moderate	1.47	Lower
Amphibian Habitat	3.50	Moderate	1.47	Lower
Sediment Retention & Stabilization	2.80	Moderate	0.14	Lower
Pollinator Habitat	4.10	Lower	4.21	Moderate
Stream Flow Support	2.82	Lower	2.54	Moderate
Native Plant Habitat	2.67	Lower	2.52	Moderate
Nitrate Removal	1.86	Lower	1.46	Lower
Phosphorus Retention	1.53	Lower	1.53	Lower
Water Storage	0.38	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Water Warming	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Stressors	N.A.	N.A.	6.20	Moderate
Wetland Risk	N.A.	N.A.	4.47	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.53	Lower
Public Use & Recognition	N.A.	N.A.	0.80	Lower



Unit maps for WD62 68



WD63 • **type:** open peatland • **acres:** 1.6 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

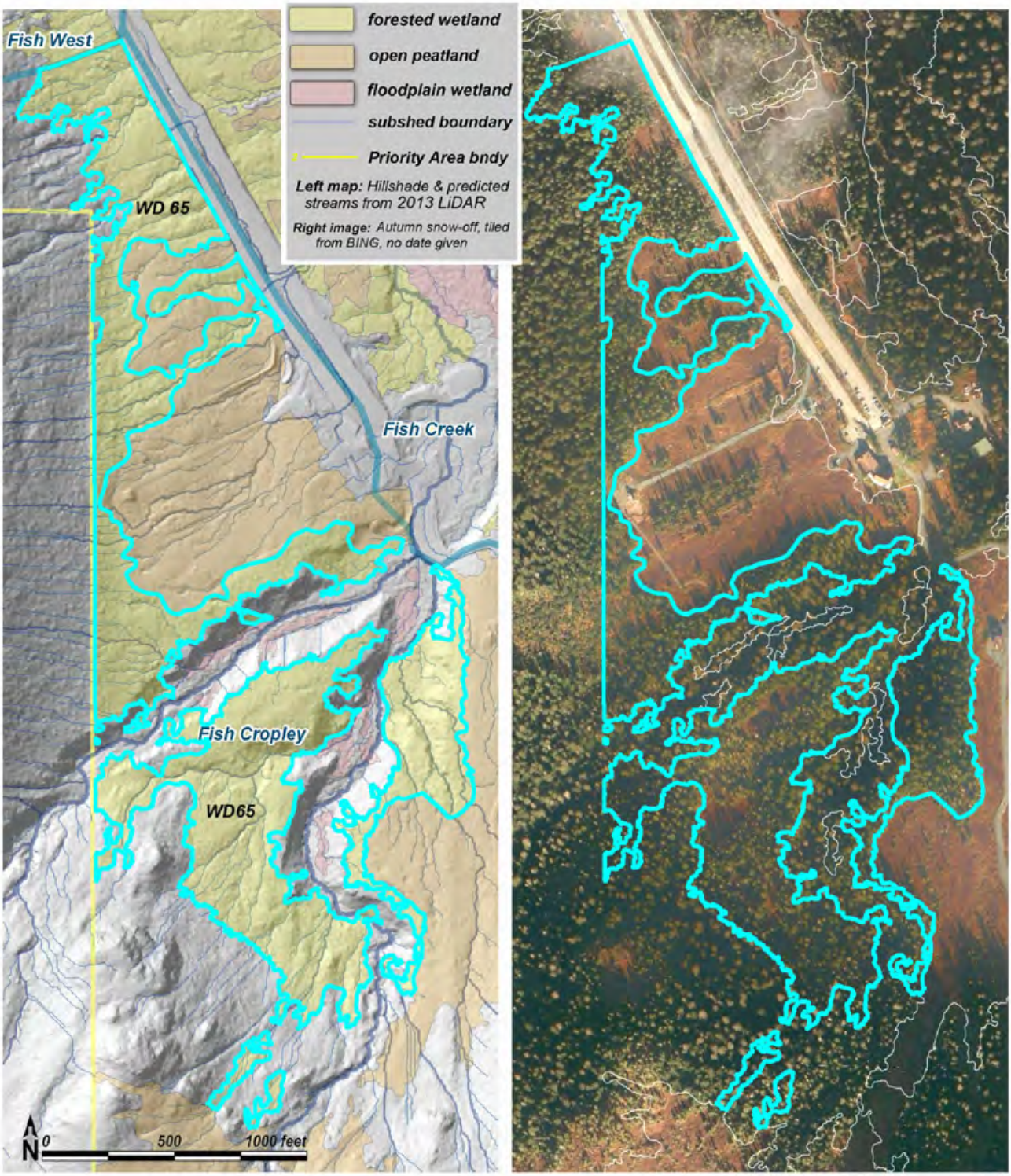
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.43	Higher	5.39	Moderate
Pollinator Habitat	6.83	Higher	4.25	Moderate
Stream Flow Support	6.30	Higher	2.06	Moderate
Organic Nutrient Export	8.42	Higher	N.A.	N.A.
Water Warming	3.36	Moderate	6.93	Higher
Water Cooling	5.08	Moderate	3.68	Moderate
Invertebrate Habitat	4.16	Moderate	1.01	Lower
Water Storage	3.91	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.39	Moderate	0.00	Lower
Native Plant Habitat	1.90	Lower	3.44	Moderate
Amphibian Habitat	1.57	Lower	6.01	Moderate
Nitrate Removal	0.65	Lower	3.18	Moderate
Phosphorus Retention	1.70	Lower	1.70	Lower
Sediment Retention & Stabilization	1.11	Lower	0.81	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.91	Lower	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	9.54	Higher
Wetland Risk	N.A.	N.A.	9.50	Higher
Wetland Ecological Condition	N.A.	N.A.	4.86	Moderate
Public Use & Recognition	N.A.	N.A.	3.36	Moderate
Wetland Sensitivity	N.A.	N.A.	3.01	Lower

WD64 • **type:** open peatland • **acres:** 16.7 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.28	Higher	5.39	Moderate
Water Warming	6.16	Higher	4.86	Moderate
Water Cooling	5.84	Higher	1.58	Lower
Organic Nutrient Export	8.91	Higher	N.A.	N.A.
Pollinator Habitat	5.14	Moderate	4.25	Moderate
Stream Flow Support	4.39	Moderate	2.03	Moderate
Phosphorus Retention	3.70	Moderate	3.70	Moderate
Nitrate Removal	2.75	Moderate	5.15	Moderate
Invertebrate Habitat	4.01	Moderate	1.00	Lower
Water Storage	3.64	Moderate	1.11	Lower
Waterbird Feeding Habitat	3.49	Moderate	0.00	Lower
Carbon Sequestration	4.93	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.82	Lower	3.91	Moderate
Amphibian Habitat	1.61	Lower	5.95	Moderate
Native Plant Habitat	0.34	Lower	3.04	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.61	Moderate
Wetland Risk	N.A.	N.A.	6.12	Moderate
Wetland Sensitivity	N.A.	N.A.	5.38	Moderate
Public Use & Recognition	N.A.	N.A.	3.09	Moderate
Wetland Ecological Condition	N.A.	N.A.	1.89	Lower

WD65 • **type:** for. peatland • **acres:** 36.4 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.65	Higher	3.33	Moderate
Stream Flow Support	7.53	Higher	1.68	Moderate
Water Cooling	5.94	Higher	3.95	Moderate
Organic Nutrient Export	9.17	Higher	N.A.	N.A.
Nitrate Removal	2.43	Moderate	6.89	Higher
Pollinator Habitat	6.19	Moderate	4.21	Moderate
Water Warming	4.62	Moderate	3.57	Moderate
Native Plant Habitat	4.22	Moderate	2.52	Moderate
Amphibian Habitat	3.18	Moderate	3.04	Lower
Carbon Sequestration	4.44	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	0.00	Lower	3.81	Moderate
Phosphorus Retention	2.38	Lower	2.38	Lower
Invertebrate Habitat	2.26	Lower	0.61	Lower
Water Storage	0.28	Lower	1.11	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.68	Higher
Wetland Risk	N.A.	N.A.	6.58	Higher
Public Use & Recognition	N.A.	N.A.	5.32	Higher
Wetland Stressors	N.A.	N.A.	6.81	Moderate
Wetland Ecological Condition	N.A.	N.A.	4.81	Moderate



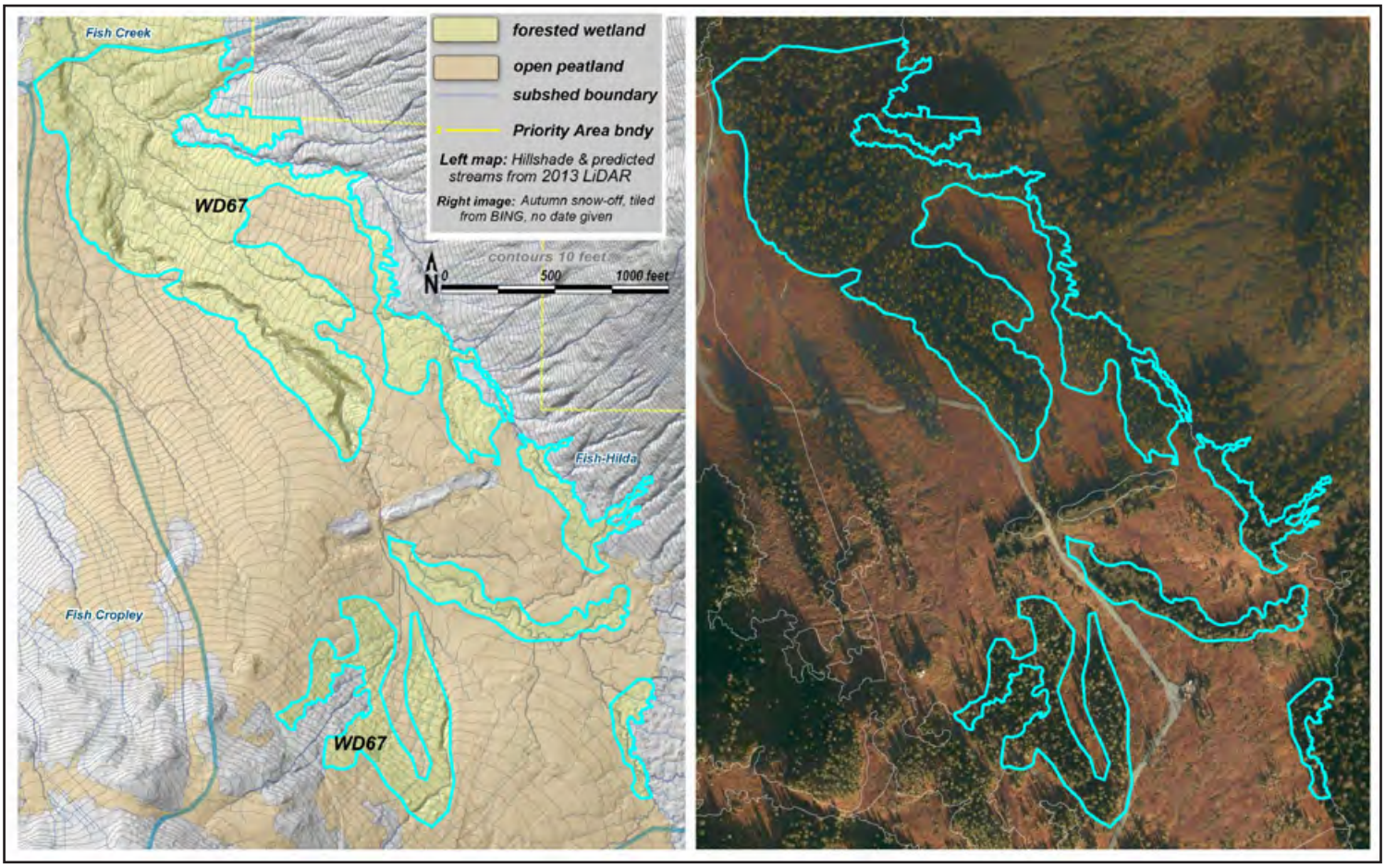
Unit map for WD65

WD66 • **type:** open peatland • **acres:** 19.8 • **boundary criteria**: w-u, pa, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

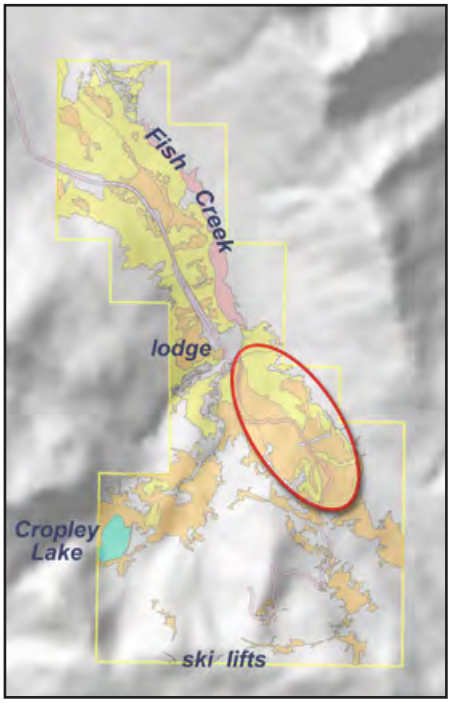
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	5.57	Higher	5.89	Higher
Stream Flow Support	8.54	Higher	2.29	Moderate
Songbird, Raptor, & Mammal Habitat	7.72	Higher	5.39	Moderate
Water Cooling	6.21	Higher	3.51	Moderate
Nitrate Removal	3.46	Higher	4.75	Moderate
Invertebrate Habitat	5.29	Higher	1.06	Lower
Organic Nutrient Export	9.69	Higher	N.A.	N.A.
Carbon Sequestration	6.09	Higher	N.A.	N.A.
Pollinator Habitat	5.12	Moderate	4.25	Moderate
Native Plant Habitat	4.44	Moderate	2.60	Moderate
Waterbird Feeding Habitat	4.11	Moderate	0.00	Lower
Water Storage	3.44	Moderate	1.11	Lower
Sediment Retention & Stabilization	2.26	Lower	3.86	Moderate
Amphibian Habitat	2.24	Lower	5.90	Moderate
Phosphorus Retention	1.21	Lower	1.21	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	9.19	Higher
Wetland Stressors	N.A.	N.A.	6.86	Moderate
Wetland Risk	N.A.	N.A.	6.05	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.51	Moderate
Public Use & Recognition	N.A.	N.A.	1.28	Lower

WD67 • **type:** for. peatland • **acres:** 41.1 • **boundary criteria**: w-u, pa, type, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.32	Higher	3.33	Moderate
Pollinator Habitat	7.79	Higher	4.21	Moderate
Stream Flow Support	7.53	Higher	2.63	Moderate
Water Cooling	6.32	Higher	3.51	Moderate
Water Warming	5.32	Higher	3.02	Moderate
Invertebrate Habitat	7.01	Higher	0.91	Lower
Organic Nutrient Export	10.00	Higher	N.A.	N.A.
Nitrate Removal	2.38	Moderate	5.51	Higher
Water Storage	3.58	Moderate	6.11	Moderate
Amphibian Habitat	3.42	Moderate	4.43	Moderate
Phosphorus Retention	3.26	Moderate	3.26	Moderate
Carbon Sequestration	5.55	Moderate	N.A.	N.A.
Native Plant Habitat	2.67	Lower	3.90	Moderate
Sediment Retention & Stabilization	2.26	Lower	4.26	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Stressors	N.A.	N.A.	7.36	Moderate
Wetland Risk	N.A.	N.A.	6.27	Moderate
Wetland Sensitivity	N.A.	N.A.	4.30	Lower
Wetland Ecological Condition	N.A.	N.A.	2.81	Lower
Public Use & Recognition	N.A.	N.A.	1.95	Lower



Unit map for WD67

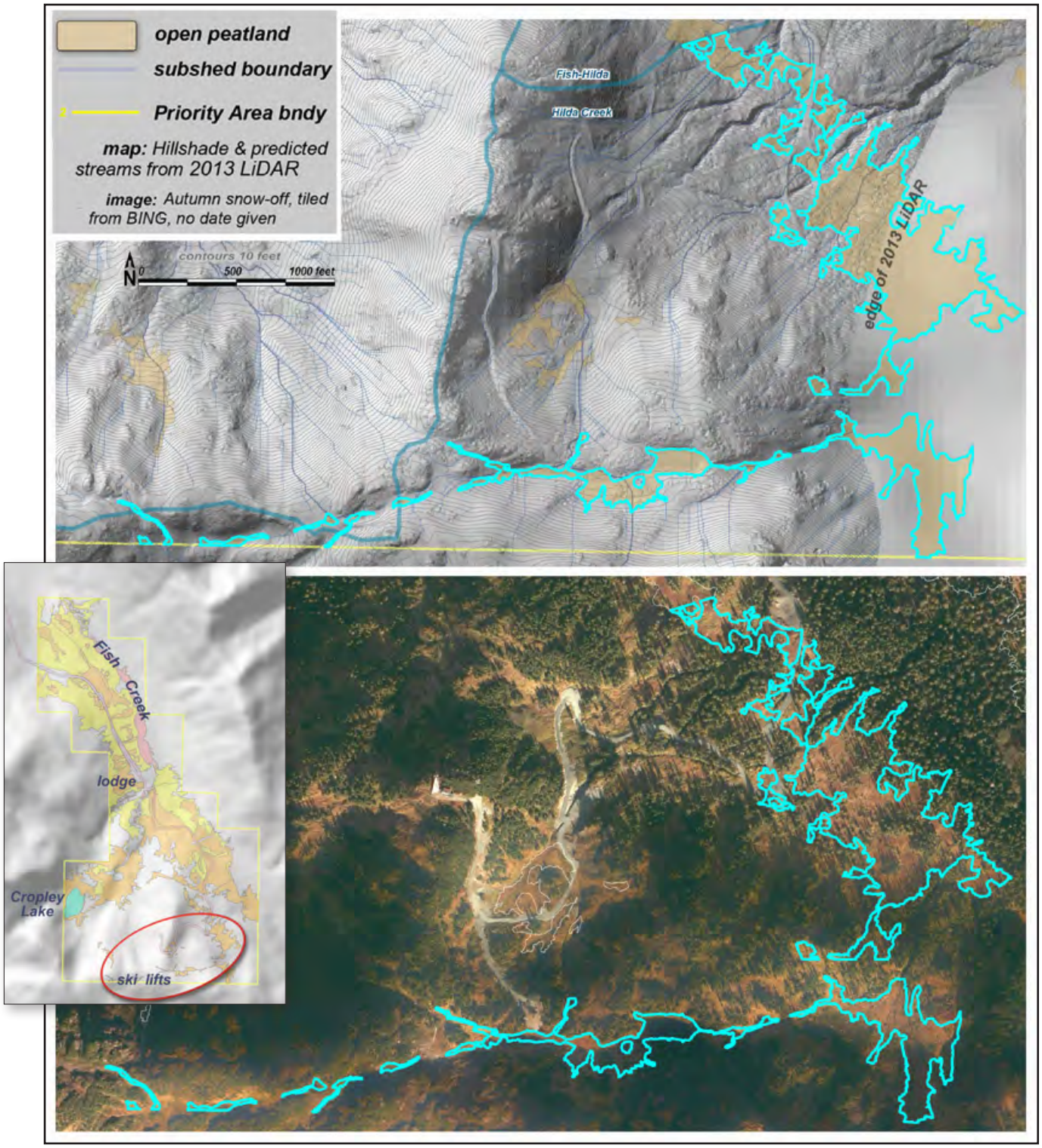


WD68 • **type:** fen/marsh • **acres:** 11.5 • **boundary criteria**: type • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	9.75	Higher	6.31	Higher
Waterbird Nesting Habitat	8.44	Higher	10.00	Higher
Waterbird Feeding Habitat	8.43	Higher	6.33	Higher
Invertebrate Habitat	5.51	Higher	10.00	Higher
Stream Flow Support	9.60	Higher	2.33	Moderate
Amphibian Habitat	5.45	Higher	5.00	Moderate
Organic Nutrient Export	7.82	Higher	N.A.	N.A.
Water Cooling	2.94	Moderate	3.51	Moderate
Nitrate Removal	2.86	Moderate	4.75	Moderate
Native Plant Habitat	2.32	Lower	6.29	Higher
Sediment Retention & Stabilization	1.75	Lower	3.74	Moderate
Phosphorus Retention	2.28	Lower	2.28	Lower
Water Storage	1.52	Lower	1.11	Lower
Pollinator Habitat	0.12	Lower	0.00	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Songbird, Raptor, & Mammal Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	0.22	Lower	N.A.	N.A.
Wetland Ecological Condition	N.A.	N.A.	3.83	Moderate
Public Use & Recognition	N.A.	N.A.	2.45	Moderate
Wetland Stressors	N.A.	N.A.	4.01	Lower
Wetland Sensitivity	N.A.	N.A.	3.23	Lower
Wetland Risk	N.A.	N.A.	3.18	Lower

WD69 • **type:** open peatland • **acres:** 23.5 • **boundary criteria**: w-u, subsh • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	6.64	Higher	6.93	Higher
Stream Flow Support	8.79	Higher	1.60	Moderate
Songbird, Raptor, & Mammal Habitat	7.61	Higher	5.39	Moderate
Native Plant Habitat	5.35	Higher	2.60	Moderate
Organic Nutrient Export	8.65	Higher	N.A.	N.A.
Pollinator Habitat	5.77	Moderate	4.25	Moderate
Water Cooling	4.34	Moderate	3.95	Moderate
Waterbird Feeding Habitat	3.57	Moderate	0.00	Lower
Carbon Sequestration	5.55	Moderate	N.A.	N.A.
Nitrate Removal	1.66	Lower	4.75	Moderate
Amphibian Habitat	1.52	Lower	5.45	Moderate
Sediment Retention & Stabilization	1.34	Lower	3.71	Moderate
Water Storage	2.61	Lower	1.11	Lower
Phosphorus Retention	2.29	Lower	2.29	Lower
Invertebrate Habitat	1.87	Lower	0.89	Lower
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Resident Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Wetland Risk	N.A.	N.A.	6.47	Higher
Wetland Stressors	N.A.	N.A.	7.45	Moderate
Wetland Sensitivity	N.A.	N.A.	5.16	Moderate
Wetland Ecological Condition	N.A.	N.A.	3.05	Lower
Public Use & Recognition	N.A.	N.A.	2.04	Lower



Unit map for WD69

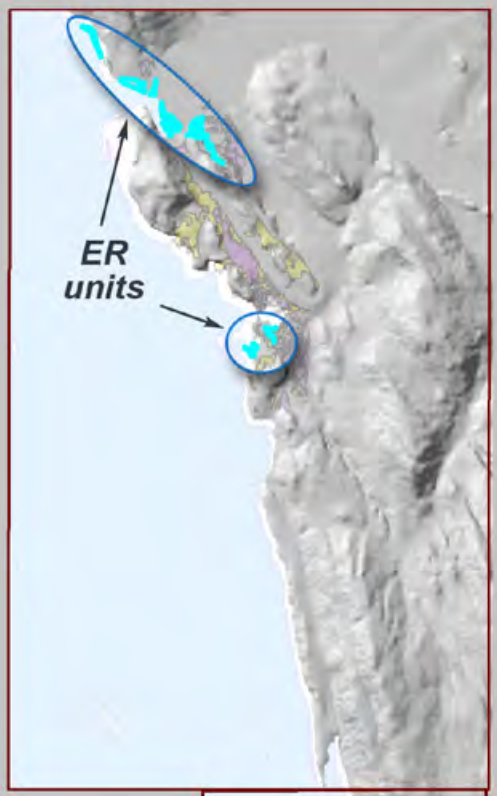
WD70 • **type:** open peatland • **acres:** 1.8 • **boundary criteria**: w-u • **pin**: 3D1021000010 • no known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Water Warming	10.00	Higher	10.00	Higher
Stream Flow Support	8.59	Higher	10.00	Higher
Anadromous Fish Habitat	7.95	Higher	4.58	Moderate
Organic Nutrient Export	9.31	Higher	N.A.	N.A.
Water Cooling	3.32	Moderate	6.85	Higher
Pollinator Habitat	6.63	Moderate	3.19	Moderate
Songbird, Raptor, & Mammal Habitat	6.25	Moderate	4.04	Moderate
Resident Fish Habitat	5.10	Moderate	5.00	Moderate
Nitrate Removal	3.00	Moderate	5.29	Moderate
Native Plant Habitat	4.76	Moderate	0.33	Lower
Waterbird Feeding Habitat	3.54	Moderate	0.00	Lower
Water Storage	3.45	Moderate	2.59	Lower
Sediment Retention & Stabilization	1.54	Lower	3.92	Moderate
Amphibian Habitat	1.06	Lower	4.29	Moderate
Invertebrate Habitat	2.19	Lower	2.65	Lower
Phosphorus Retention	0.85	Lower	0.85	Lower
Waterbird Nesting Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	2.88	Lower	N.A.	N.A.
Wetland Risk	N.A.	N.A.	9.86	Higher
Wetland Stressors	N.A.	N.A.	9.85	Higher
Wetland Sensitivity	N.A.	N.A.	8.39	Higher
Wetland Ecological Condition	N.A.	N.A.	4.97	Moderate
Public Use & Recognition	N.A.	N.A.	3.35	Moderate

3.0 SCORES BY AA: TIDAL WETLANDS

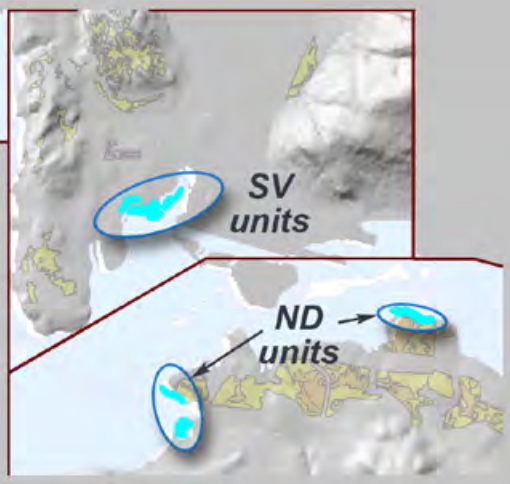
We assessed 13 tidal wetland AAs on 3 map pages: Eagle River (ER), South Valley (SV) and North Douglas (ND). They totalled 58 acres.

The following descriptions of tidal wetlands follow the same format as those for non-tidal wetlands. Similarly, in each AA's score table, *the functions or other attributes are listed from highest-to-lowest function score*. A high Value score indicates that, because of reasons such as where the AA is located, the function is likely to be valued more highly if it is performed currently or in the future.



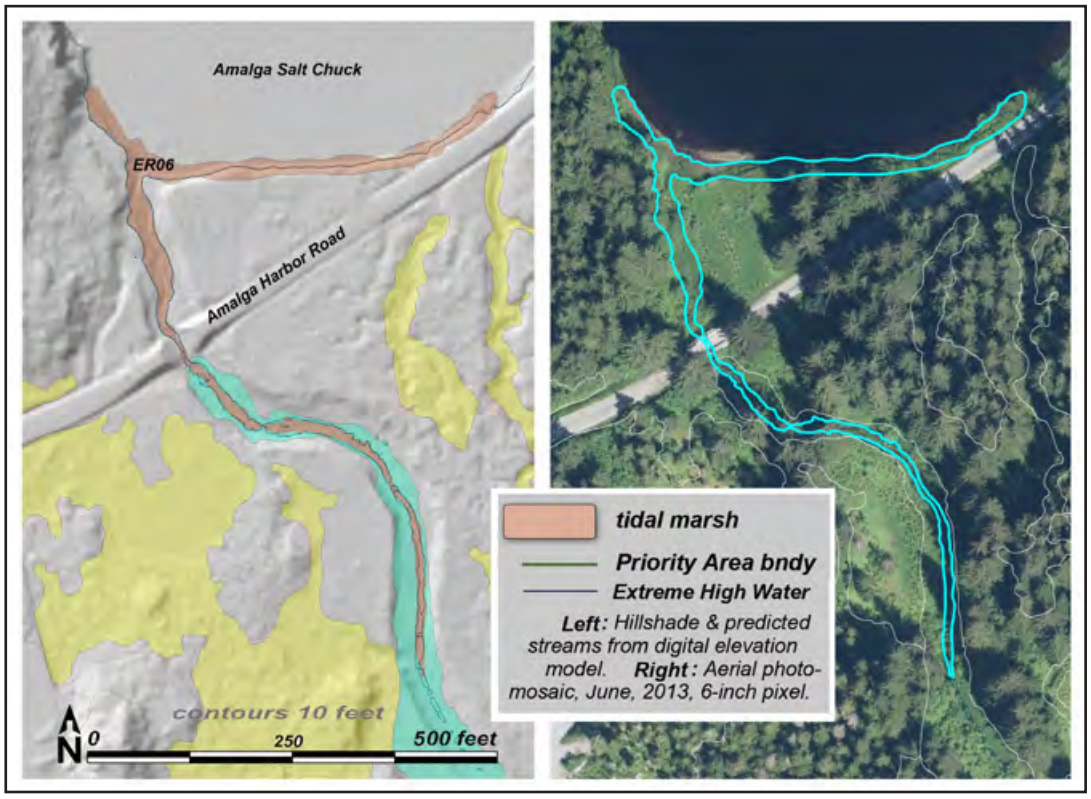
For tidal wetlands, WESPAK-SE generates scores for fewer functions (7) than it does for non-tidal wetlands (18). That does not mean that tidal wetlands are less valuable. For some functions (Phosphorus Retention, Nitrate Removal, Water Cooling, Water Warming, Resident Fish Habitat, Aquatic Invertebrate Habitat, Pollinator Habitat) it means only that scientific knowledge was considered insufficient to construct models capable of differentiating among distinct tidal wetland AAs. Some other functions—specifically Water Storage, Stream Flow Support, Amphibian Habitat, and Waterbird Nesting Habitat—are not scored by WESPAK-SE because tidal wetlands as a whole do not significantly support those functions (however, upper margins of tidal wetlands that are tidally flooded less than about once monthly may support those to some degree). Consistent with the non-tidal component of WESPAK-SE, no value scores are assigned to Carbon Sequestration or Organic Nutrient Export because their benefits are expressed globally or at a broad scale.

The scores that WESPAK-SE generates for tidal wetlands cannot fairly be compared with those from the ones it generates for non-tidal wetlands because WESPAK-SE uses different indicators and models, and scores have been normalized across many fewer AAs (13 instead of 333). Any comparisons between tidal and non-tidal wetlands must take into consideration the fact that for several functions—Waterbird Feeding Habitat, Anadromous Fish Habitat, and perhaps Carbon Sequestration and Sediment Retention—most tidal wetlands likely perform at a level that is orders of magnitude greater than performed by most non-tidal wetlands in Southeast Alaska.



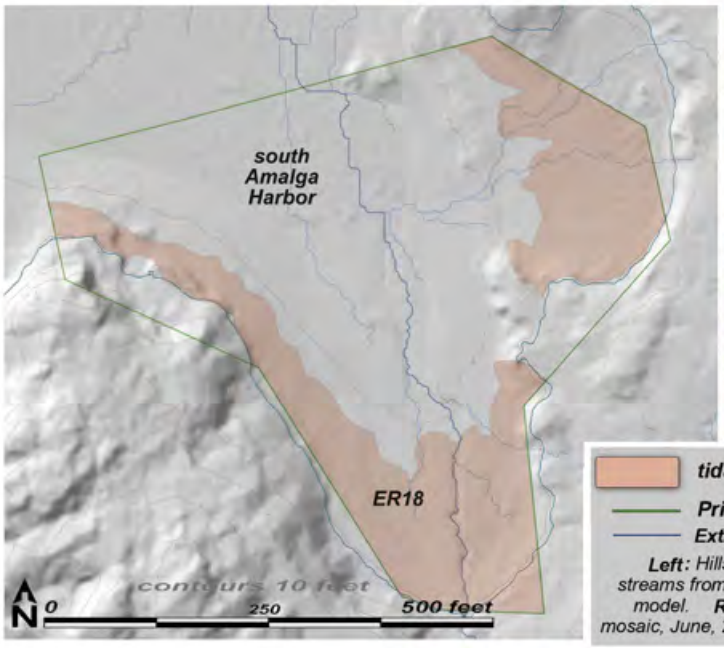
ER06 • **type:** tidal • **acres:** 0.5 • **boundary criteria**: w-u, type • **pin**: 3B4001000060 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	7.37	Higher	9.52	Higher
Native Plant Habitat	3.16	Moderate	10.00	Higher
Sediment Retention & Stabilization	4.26	Moderate	0.00	Lower
Songbird, Raptor, & Mammal Habitat	4.25	Moderate	0.00	Lower
Waterbird Feeding Habitat	5.76	Moderate	3.33	Lower
Carbon Sequestration	0.00	Lower	N.A.	N.A.
Organic Nutrient Export	2.49	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	9.10	Higher
Wetland Sensitivity	N.A.	N.A.	4.04	Moderate
Wetland Stressors	N.A.	N.A.	0.00	Lower



ER18 • **type:** tidal • **acres:** 0.7 • **boundary criteria**: w-u, pa • **pin**: 3B4001040050 • known or probable anadromous fish

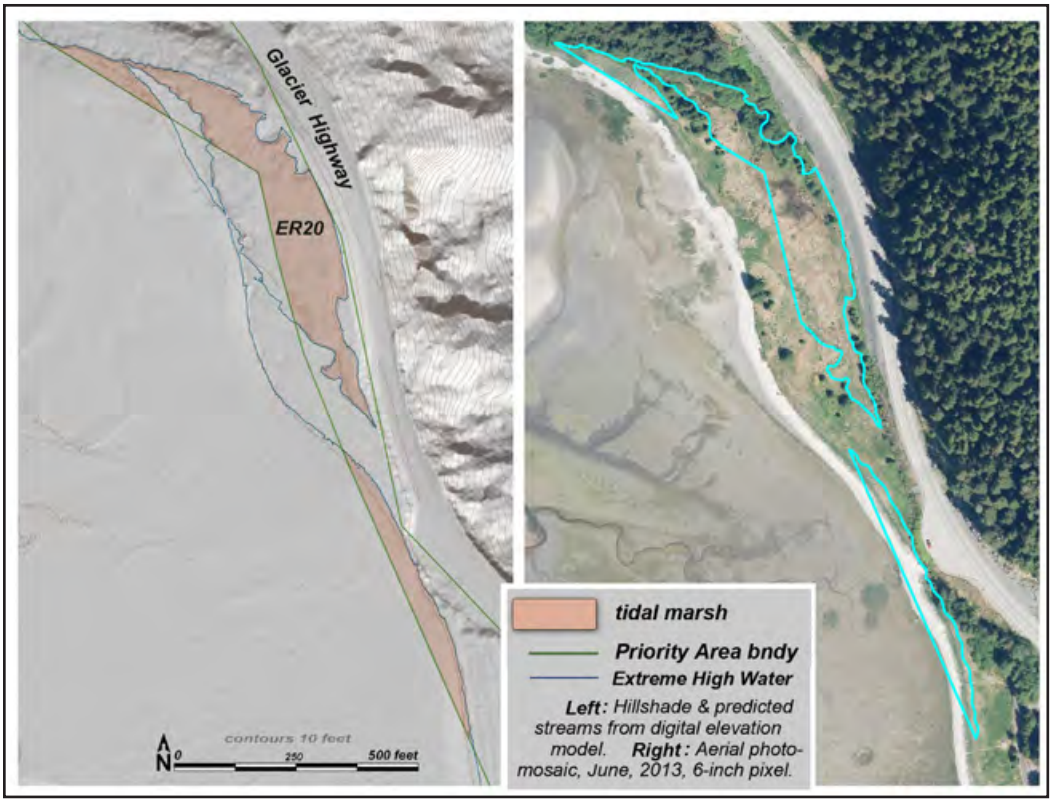
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Sediment Retention & Stabilization	10.00	Higher	10.00	Higher
Carbon Sequestration	6.00	Higher	N.A.	N.A.
Organic Nutrient Export	7.97	Higher	N.A.	N.A.
Anadromous Fish Habitat	3.75	Moderate	7.14	Moderate
Native Plant Habitat	0.62	Lower	10.00	Higher
Waterbird Feeding Habitat	1.40	Lower	6.67	Moderate
Songbird, Raptor, & Mammal Habitat	0.03	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	10.00	Higher
Wetland Sensitivity	N.A.	N.A.	3.39	Moderate



tidal marsh
Priority Area bndy
Extreme High Water
Left: *Hillshade & predicted streams from digital elevation model.* ***Right:*** *Aerial photo-mosaic, June, 2013, 6-inch pixel.*

ER20 • **type:** tidal • **acres:** 2.9 • **boundary criteria**: w-u, pa • **pin**: 3B4404000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	9.65	Higher	10.00	Higher
Native Plant Habitat	8.58	Higher	10.00	Higher
Sediment Retention & Stabilization	10.00	Higher	8.39	Higher
Songbird, Raptor, & Mammal Habitat	8.82	Higher	0.00	Lower
Carbon Sequestration	6.60	Higher	N.A.	N.A.
Organic Nutrient Export	5.31	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	1.08	Lower	2.67	Lower
Wetland Sensitivity	N.A.	N.A.	10.00	Higher
Public Use & Recognition	N.A.	N.A.	6.87	Moderate
Wetland Stressors	N.A.	N.A.	5.80	Moderate



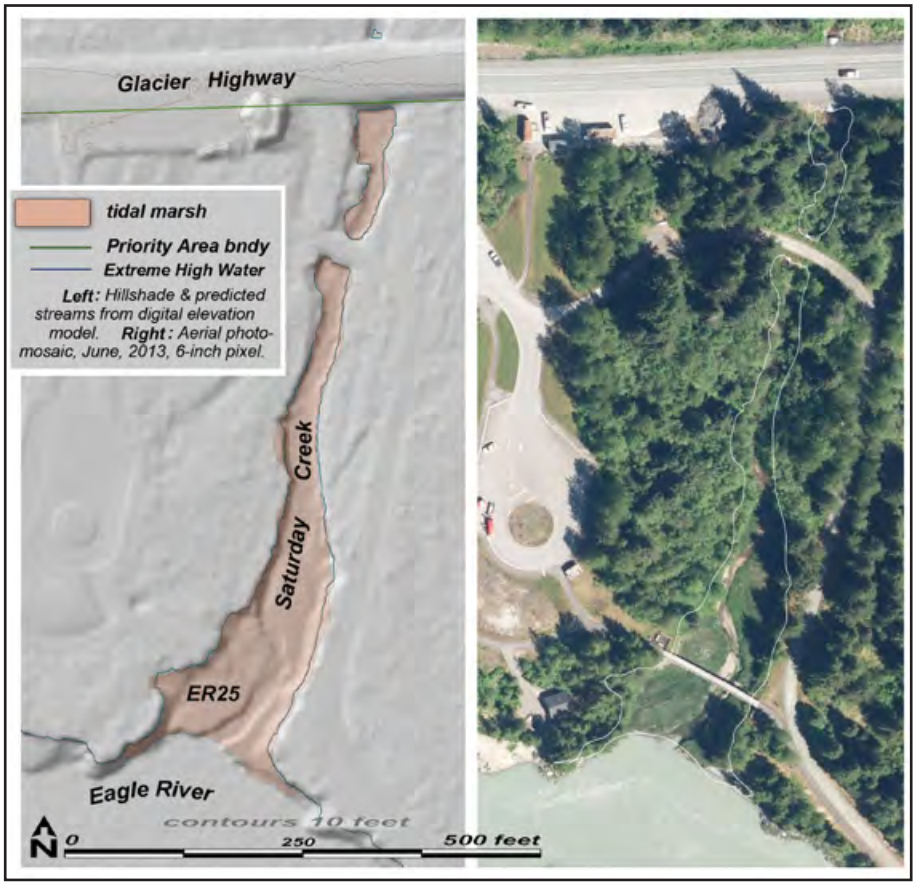
ER24 • **type:** tidal • **acres:** 8.6 • **boundary criteria**: w-u, pa • **pin**: 3B4404000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	7.87	Higher	10.00	Higher
Sediment Retention & Stabilization	10.00	Higher	6.89	Higher
Songbird, Raptor, & Mammal Habitat	8.21	Higher	0.00	Lower
Organic Nutrient Export	7.11	Higher	N.A.	N.A.
Carbon Sequestration	2.09	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	2.08	Lower	2.67	Lower
Public Use & Recognition	N.A.	N.A.	9.25	Higher
Wetland Stressors	N.A.	N.A.	8.30	Higher
Wetland Sensitivity	N.A.	N.A.	3.93	Moderate

Above: Hillshade & predicted streams from digital elevation model. **Below:** Aerial photo-mosaic, June, 2013, 6-inch pixel.

ER25 • **type:** tidal • **acres:** 1.1 • **boundary criteria**: w-u, pa • **pin**: 3B4404000010 • known or probable anadromous fish

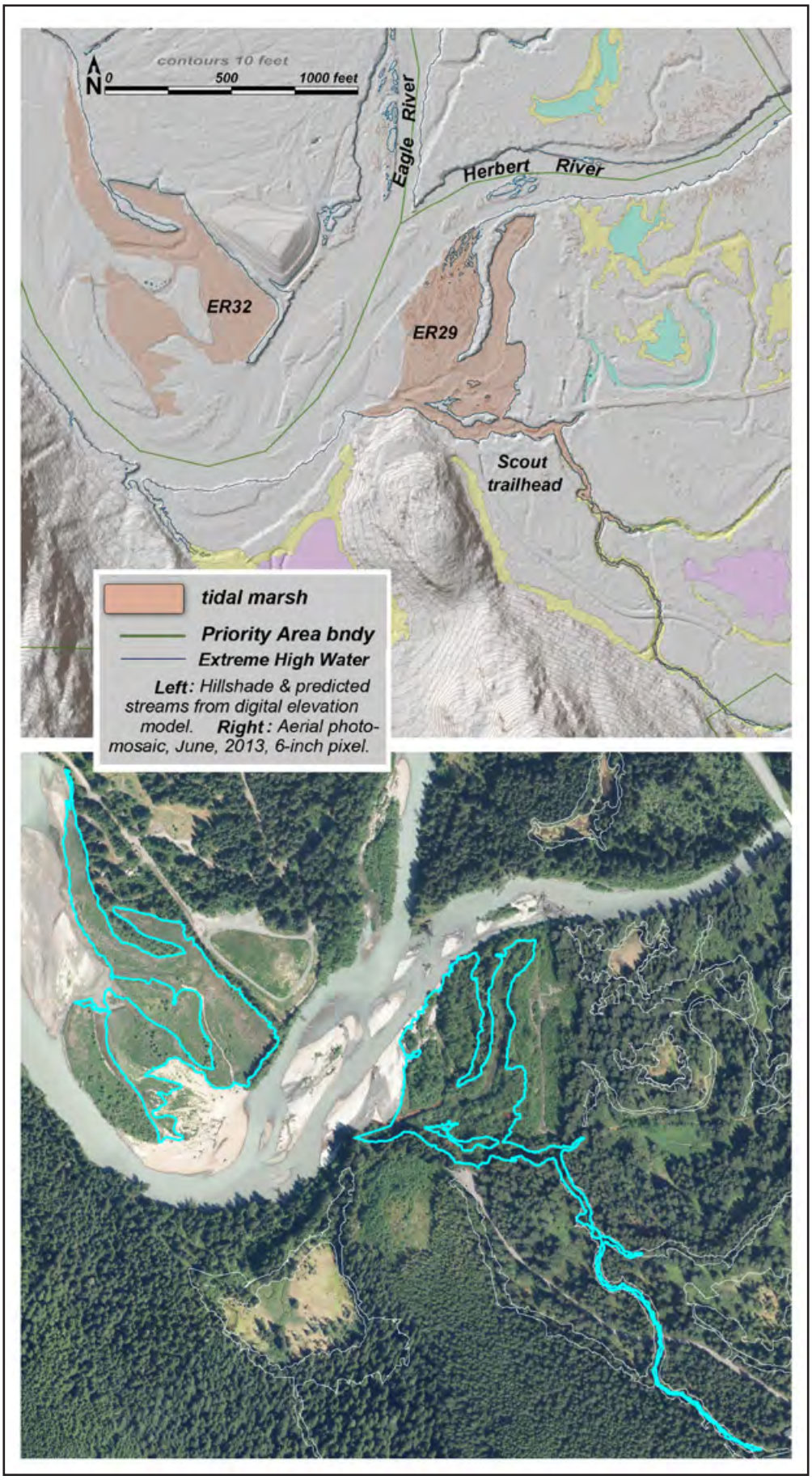
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	7.90	Higher	10.00	Higher
Native Plant Habitat	5.89	Higher	10.00	Higher
Sediment Retention & Stabilization	10.00	Higher	4.79	Moderate
Organic Nutrient Export	7.85	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	4.74	Moderate	0.00	Lower
Carbon Sequestration	2.84	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	0.00	Lower	2.67	Lower
Public Use & Recognition	N.A.	N.A.	9.25	Higher
Wetland Stressors	N.A.	N.A.	6.89	Higher
Wetland Sensitivity	N.A.	N.A.	3.60	Moderate



ER29 • **type:** tidal • **acres:** 9.6 • **boundary criteria**: w-u • **pin**: 3B4404000010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Anadromous Fish Habitat	7.52	Higher	7.62	Moderate
Sediment Retention & Stabilization	10.00	Higher	3.90	Moderate
Native Plant Habitat	10.00	Higher	0.00	Lower
Songbird, Raptor, & Mammal Habitat	10.00	Higher	0.00	Lower
Waterbird Feeding Habitat	3.51	Moderate	0.00	Lower
Carbon Sequestration	0.42	Lower	N.A.	N.A.
Organic Nutrient Export	1.99	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	5.37	Moderate
Wetland Stressors	N.A.	N.A.	4.01	Moderate
Wetland Sensitivity	N.A.	N.A.	0.00	Lower

Unit maps for ER29 & ER



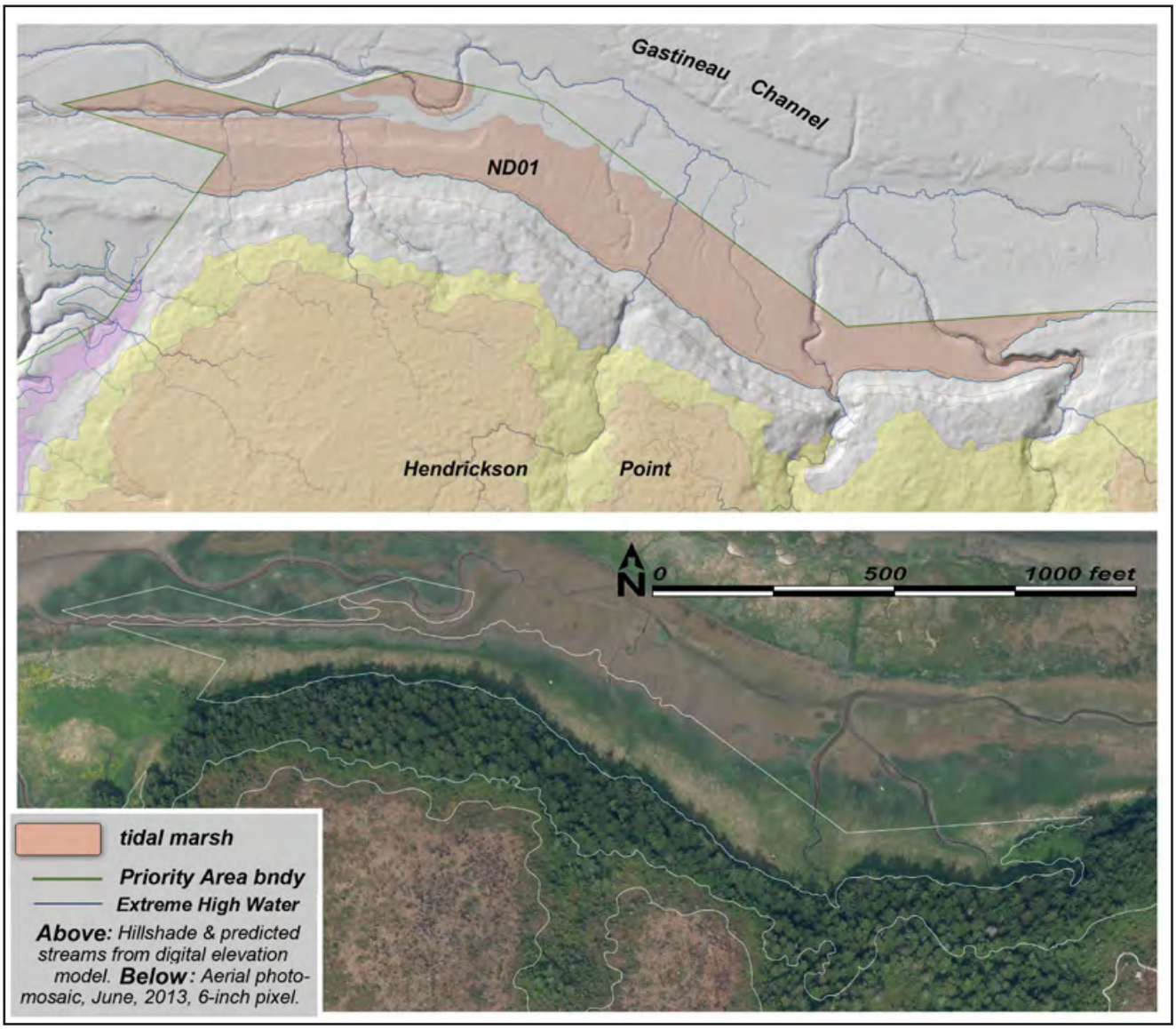
ER32 • **type:** tidal • **acres:** 9.2 • **boundary criteria**: w-u • **pin**: 3B4404000010 • known or probable anadromous fish

will correct in table

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	7.61	Higher	10.00	Higher
Sediment Retention & Stabilization	10.00	Higher	4.79	Moderate
Songbird, Raptor, & Mammal Habitat	7.58	Higher	0.00	Lower
Organic Nutrient Export	5.22	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Waterbird Feeding Habitat	0.47	Lower	2.67	Lower
Carbon Sequestration	0.70	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	8.96	Higher
Wetland Stressors	N.A.	N.A.	6.83	Higher

ND01 • **type:** tidal • **acres:** 6.6 • **boundary criteria**: w-u, pa • **pin**: 6D1001040010 • known or probable anadromous fish

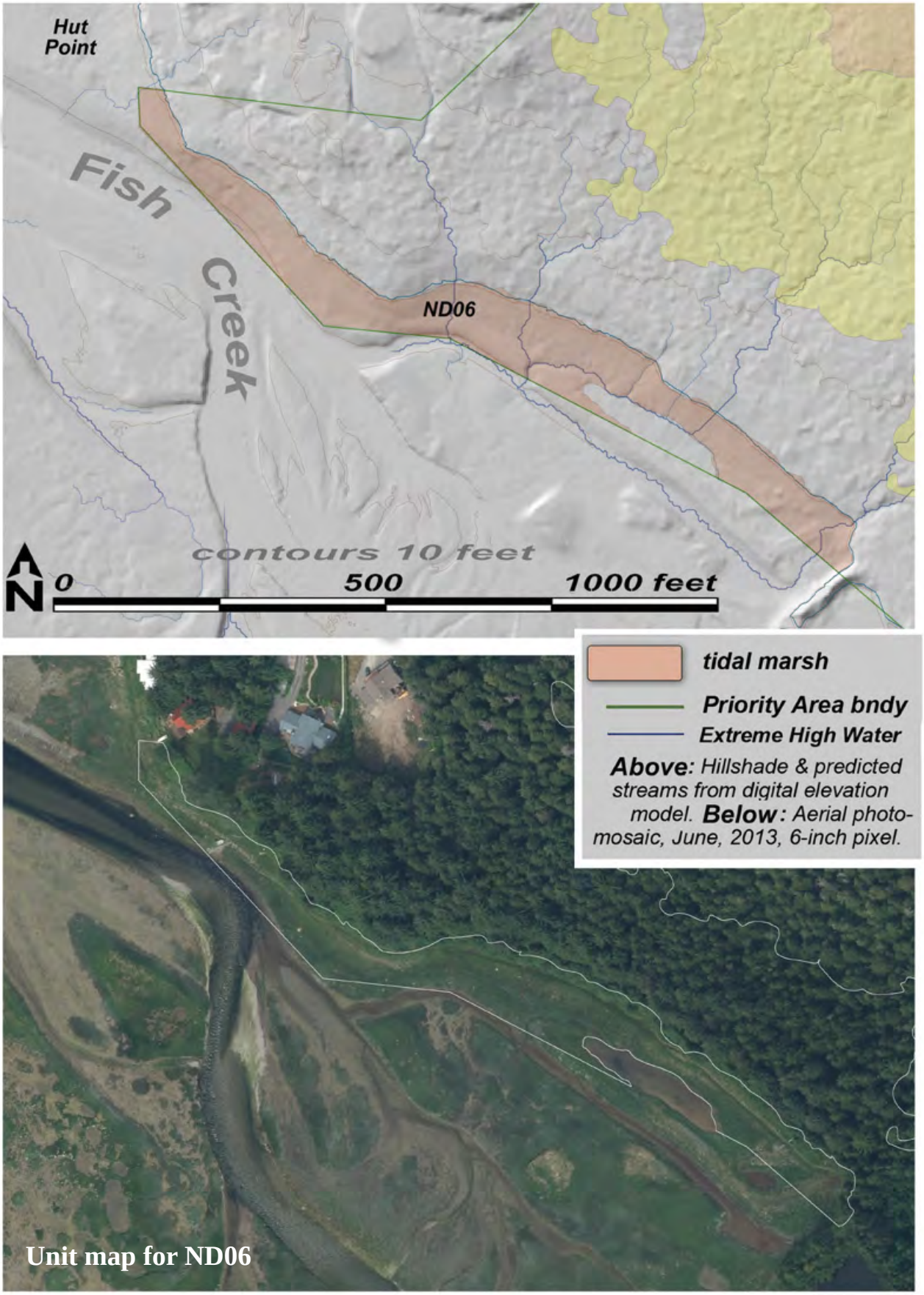
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	9.45	Higher	10.00	Higher
Anadromous Fish Habitat	6.42	Higher	7.14	Moderate
Sediment Retention & Stabilization	10.00	Higher	2.70	Moderate
Carbon Sequestration	10.00	Higher	N.A.	N.A.
Organic Nutrient Export	10.00	Higher	N.A.	N.A.
Songbird, Raptor, & Mammal Habitat	3.81	Moderate	10.00	Higher
Native Plant Habitat	3.60	Moderate	0.00	Lower
Wetland Sensitivity	N.A.	N.A.	2.48	Moderate
Public Use & Recognition	N.A.	N.A.	0.00	Lower
Wetland Stressors	N.A.	N.A.	0.35	Lower



Unit map for ND01

ND06 • **type:** tidal • **acres:** 2.2 • **boundary criteria**: w-u, pa • **pin**: 6D1201050010 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	7.55	Higher	10.00	Higher
Native Plant Habitat	7.35	Higher	0.00	Lower
Sediment Retention & Stabilization	10.00	Higher	0.00	Lower
Anadromous Fish Habitat	3.00	Moderate	9.52	Higher
Waterbird Feeding Habitat	6.40	Moderate	10.00	Higher
Carbon Sequestration	3.49	Moderate	N.A.	N.A.
Organic Nutrient Export	5.71	Moderate	N.A.	N.A.
Wetland Stressors	N.A.	N.A.	7.98	Higher
Public Use & Recognition	N.A.	N.A.	5.07	Moderate
Wetland Sensitivity	N.A.	N.A.	0.00	Lower



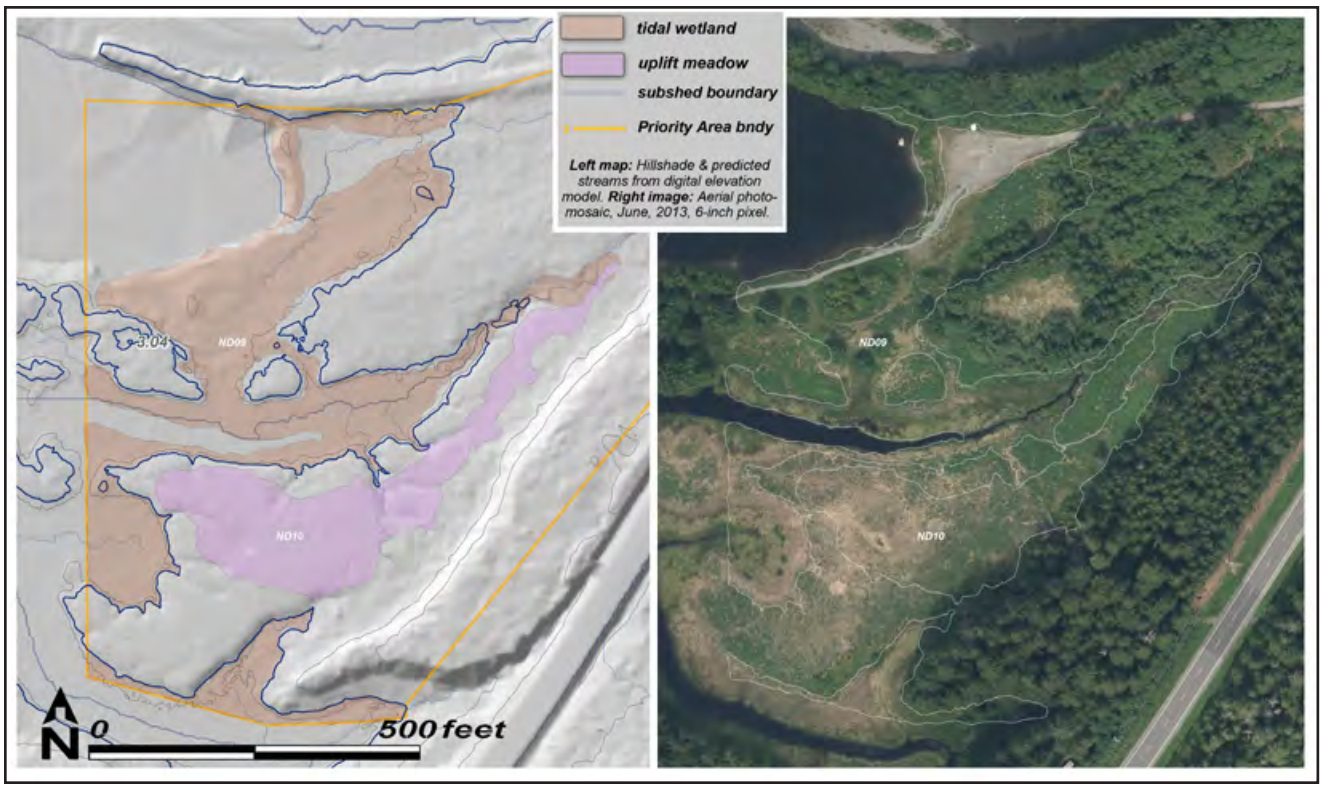
Unit map for ND06

ND09 • **type:** tidal • **acres:** 2.9 • **boundary criteria**: w-u, pa • **pin**: 6D1201070010 • known or probable anadromous fish

will correct in tabel

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	8.89	Higher	10.00	Higher
Waterbird Feeding Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	7.40	Higher	0.00	Lower
Sediment Retention & Stabilization	0.64	Lower	2.32	Moderate
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Carbon Sequestration	0.23	Lower	N.A.	N.A.
Organic Nutrient Export	0.84	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	6.12	Moderate
Wetland Sensitivity	N.A.	N.A.	4.31	Moderate
Wetland Stressors	N.A.	N.A.	4.73	Moderate

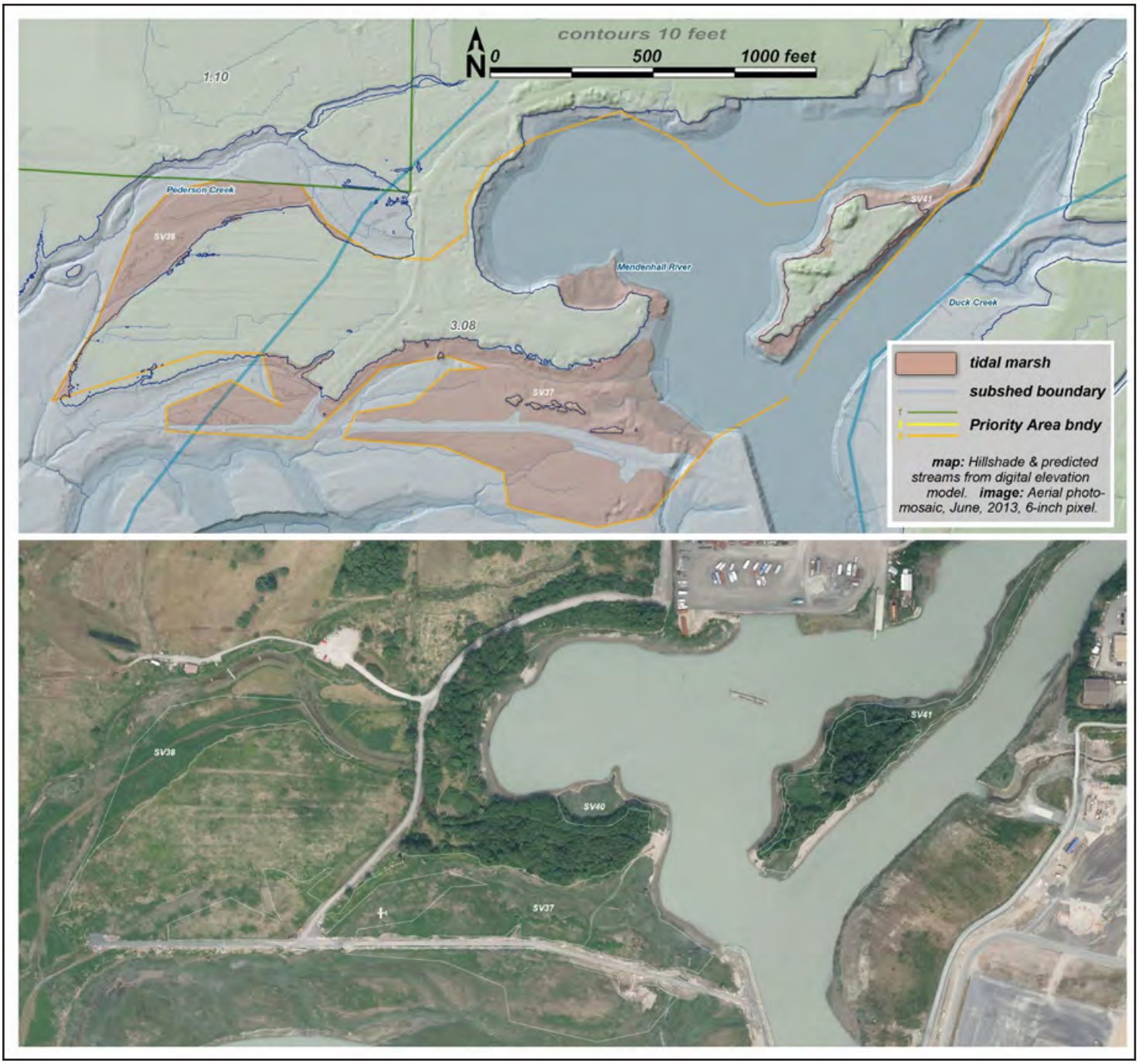
Unit map for ND09



SV37 • **type:** tidal • **acres:** 8.83 • **boundary criteria**: w-u, pa • **pin**: 4B1701160040 • known or probable anadromous fish

will be corrected in table

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	8.33	Higher	10.00	Higher
Native Plant Habitat	3.27	Moderate	10.00	Higher
Songbird, Raptor, & Mammal Habitat	5.89	Moderate	10.00	Higher
Sediment Retention & Stabilization	3.96	Moderate	0.60	Lower
Carbon Sequestration	2.09	Moderate	N.A.	N.A.
Organic Nutrient Export	4.29	Moderate	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	6.72	Moderate
Wetland Sensitivity	N.A.	N.A.	3.11	Moderate
Wetland Stressors	N.A.	N.A.	5.74	Moderate



Unit maps for SV37 38 41

SV38 • **type:** tidal • **acres:** 2.33 • **boundary criteria**: w-u, pa • **pin**: 4B1701160040 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Native Plant Habitat	6.74	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	8.24	Higher	10.00	Higher
Anadromous Fish Habitat	4.00	Moderate	7.14	Moderate
Carbon Sequestration	1.63	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	1.40	Lower	10.00	Higher
Sediment Retention & Stabilization	0.00	Lower	0.00	Lower
Organic Nutrient Export	0.00	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	5.46	Higher
Public Use & Recognition	N.A.	N.A.	7.61	Moderate
Wetland Stressors	N.A.	N.A.	5.57	Moderate

SV41 • **type:** tidal • **acres:** 1.4 • **boundary criteria**: w-u, pa • **pin**: 4B1701160040 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Waterbird Feeding Habitat	5.88	Moderate	10.00	Higher
Anadromous Fish Habitat	4.34	Moderate	7.14	Moderate
Organic Nutrient Export	4.52	Moderate	N.A.	N.A.
Native Plant Habitat	0.00	Lower	10.00	Higher
Songbird, Raptor, & Mammal Habitat	0.96	Lower	10.00	Higher
Sediment Retention & Stabilization	1.49	Lower	1.80	Lower
Carbon Sequestration	1.30	Lower	N.A.	N.A.
Wetland Sensitivity	N.A.	N.A.	6.00	Higher
Public Use & Recognition	N.A.	N.A.	4.93	Moderate
Wetland Stressors	N.A.	N.A.	5.33	Moderate

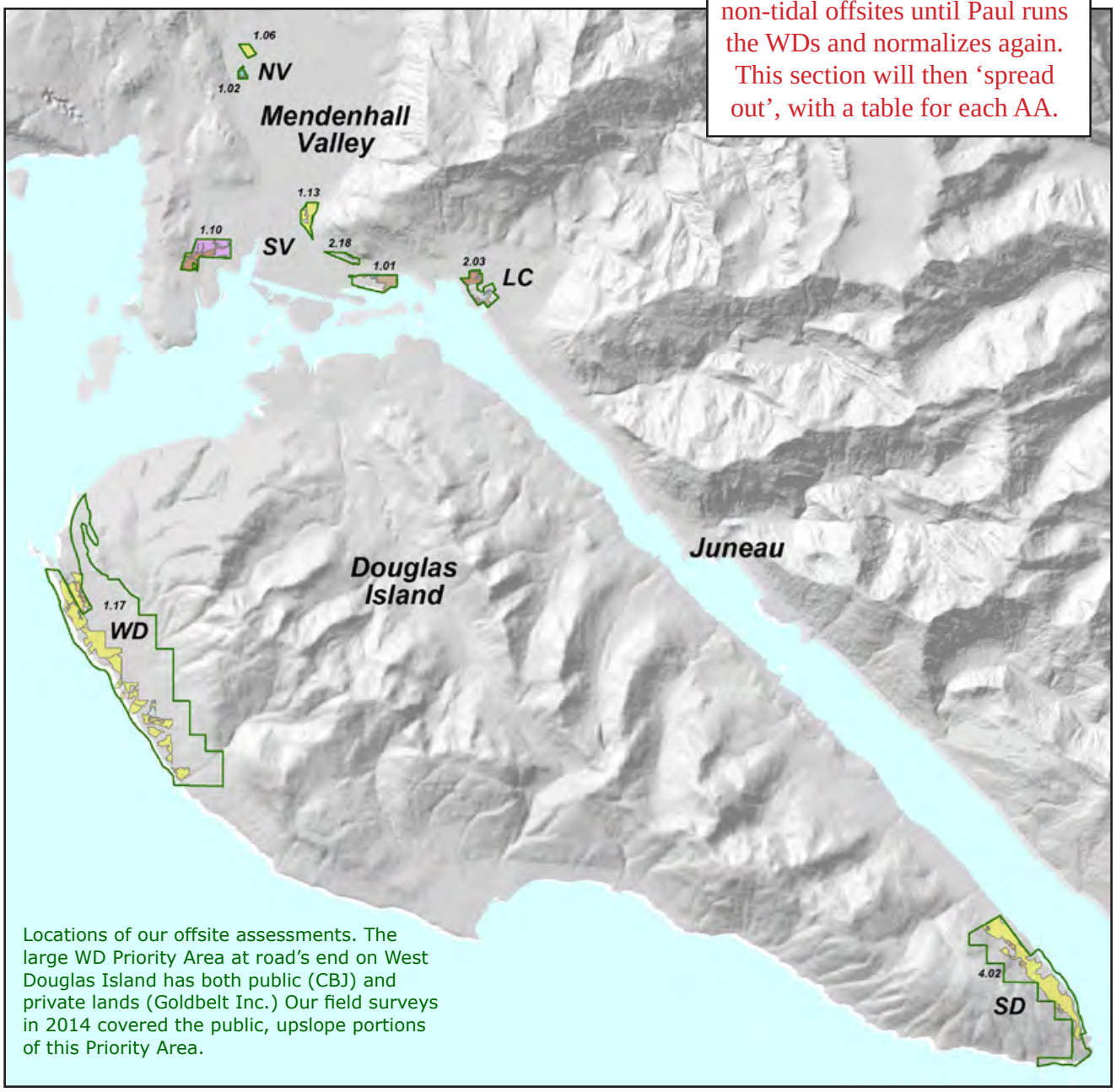
4.0 SCORES BY AA: OFF-SITE MAPPING

In 2015, after conclusion of JWMPU field work, we assessed 48 wetland units 'site-unseen' through GIS. Methods are described in Volume 1, Section 2.3.4. Most of these Assessment Areas (AAs) are on private lands, with the exception of CBJ land on the south-eastern tip of Douglas Island.

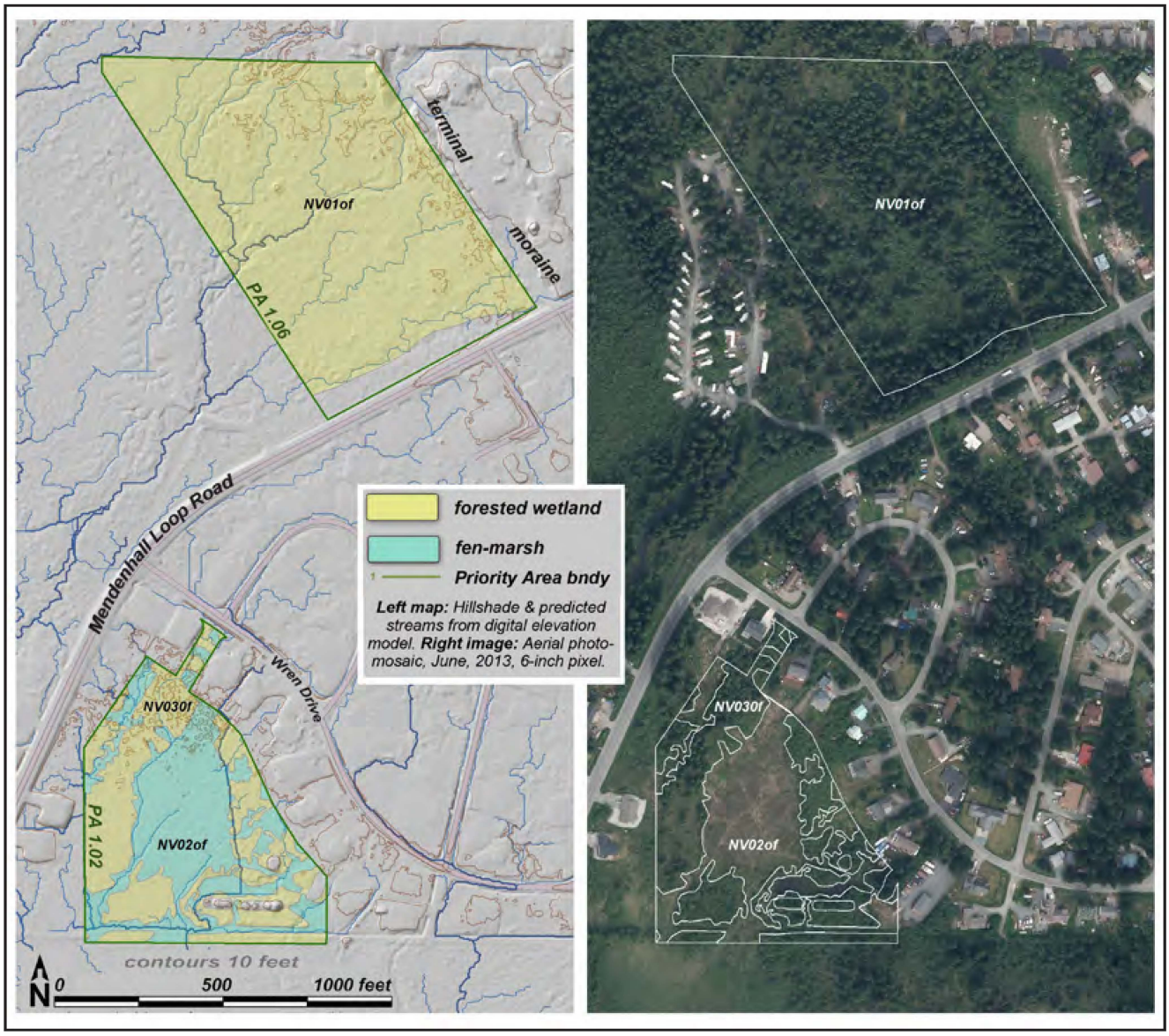
The overview map below shows that the off-site Priority Areas are clustered in Mendenhall and Lemon Creek Valleys, along with 2 outlying larger PAs on the distal ends of Douglas Island. Completing the seaward, private portions of the West Douglas (WD) Priority Area 1.17—where we had already spent several weeks exploring public lands—allowed us to paint a fuller picture of the extent of wetlands in this unit.

In the previous Sections 2 and 3, results for non-tidal and tidal wetlands are segregated. Here, we intermingle them, in part because the unit maps often span both wetland types.

To reviewers:
Scores aren't finished for the non-tidal offsites until Paul runs the WDs and normalizes again. This section will then 'spread out', with a table for each AA.



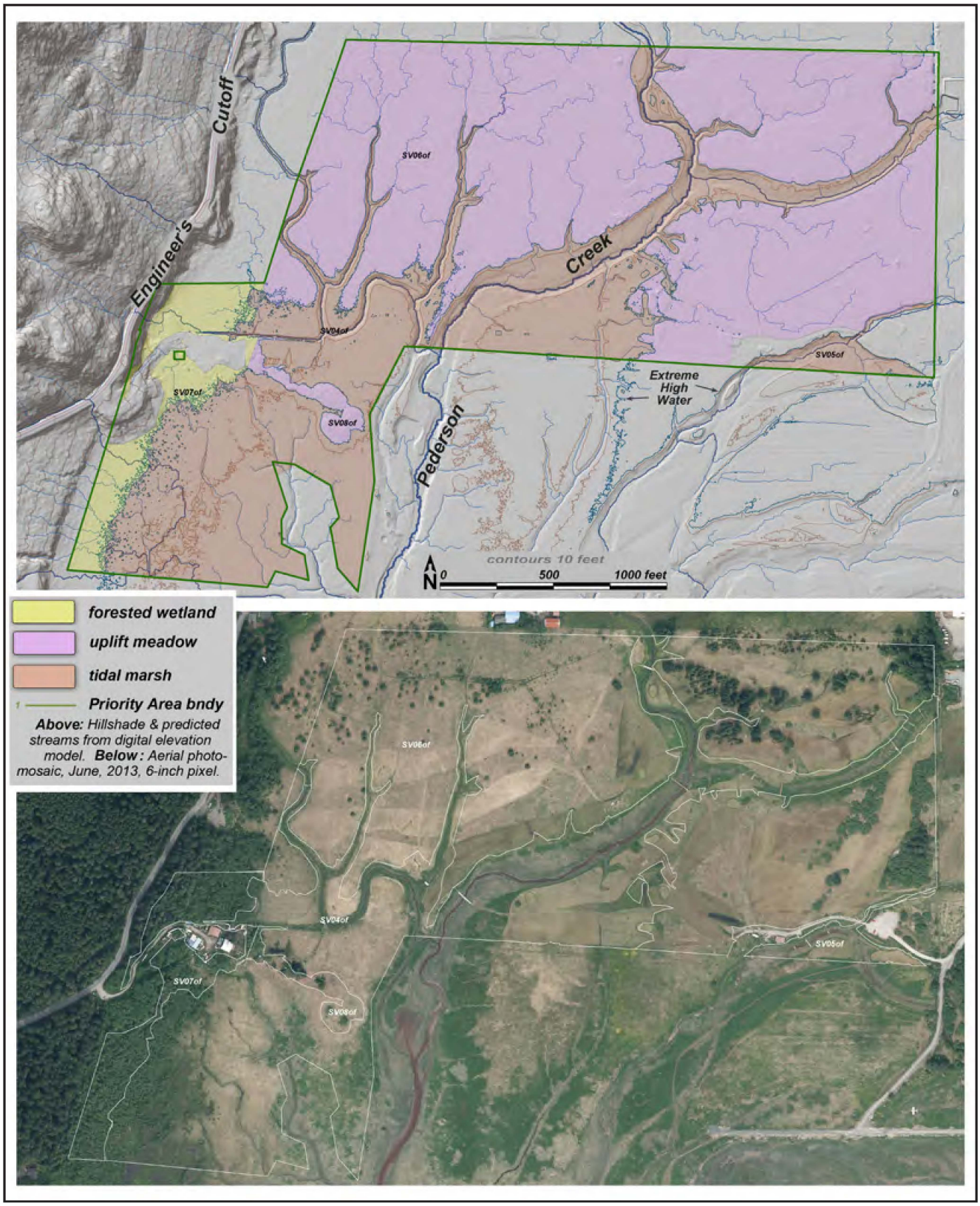
Locations of our offsite assessments. The large WD Priority Area at road's end on West Douglas Island has both public (CBJ) and private lands (Goldbelt Inc.) Our field surveys in 2014 covered the public, upslope portions of this Priority Area.


terminal
moraine
NV01of
PA 1.06
Mendenhall Loop Road
Wren Drive
NV030f
NV02of
PA 1.02
forested wetland
fen-marsh
Priority Area bndy
Left map: Hillshade & predicted streams from digital elevation model. Right image: Aerial photo-mosaic, June, 2013, 6-inch pixel.
contours 10 feet
N
0
500
1000 feet
NV01of
NV030f
NV02of

NV01of • **type:** forested peatland • **acres:** 16.74 • **boundary criteria**: w-u, pa • **pin**: 4B2901020020 • known or probable anadromous fish

NV02of • **type:** fen/marsh • **acres:** 5.23 • **boundary criteria**: w-u, type, pa • **pin**: 4B2601200040 • known or probable anadromous fish

NV03of • **type:** forested peatland • **acres:** 5.04 • **boundary criteria**: w-u, type, pa • **pin**: 4B2601200040 • known or probable anadromous fish


Engineer's Cutoff
Pederson Creek
SV06of
SV04of
SV07of
SV08of
SV05of
Extreme High Water
contours 10 feet
N
0
500
1000 feet
forested wetland
uplift meadow
tidal marsh
Priority Area bndy
Above: Hillshade & predicted streams from digital elevation model. Below: Aerial photo-mosaic, June, 2013, 6-inch pixel.

SV04of • **type:** tidal wetland • **acres:** 42.42 • **boundary criteria**: w-u, type pa • **pin**: 4B1701170011 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	10.00	Higher	10.00	Higher
Waterbird Feeding Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	9.09	Higher	10.00	Higher
Anadromous Fish Habitat	7.33	Higher	10.00	Higher
Carbon Sequestration	4.37	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	3.87	Moderate	0.75	Lower
Organic Nutrient Export	1.96	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	5.35	Moderate
Wetland Sensitivity	N.A.	N.A.	4.81	Higher

SV05of • **type:** tidal wetland • **acres:** 1.86 • **boundary criteria**: w-u, type pa • **pin**: 4B1701170011 • known or probable anadromous fish

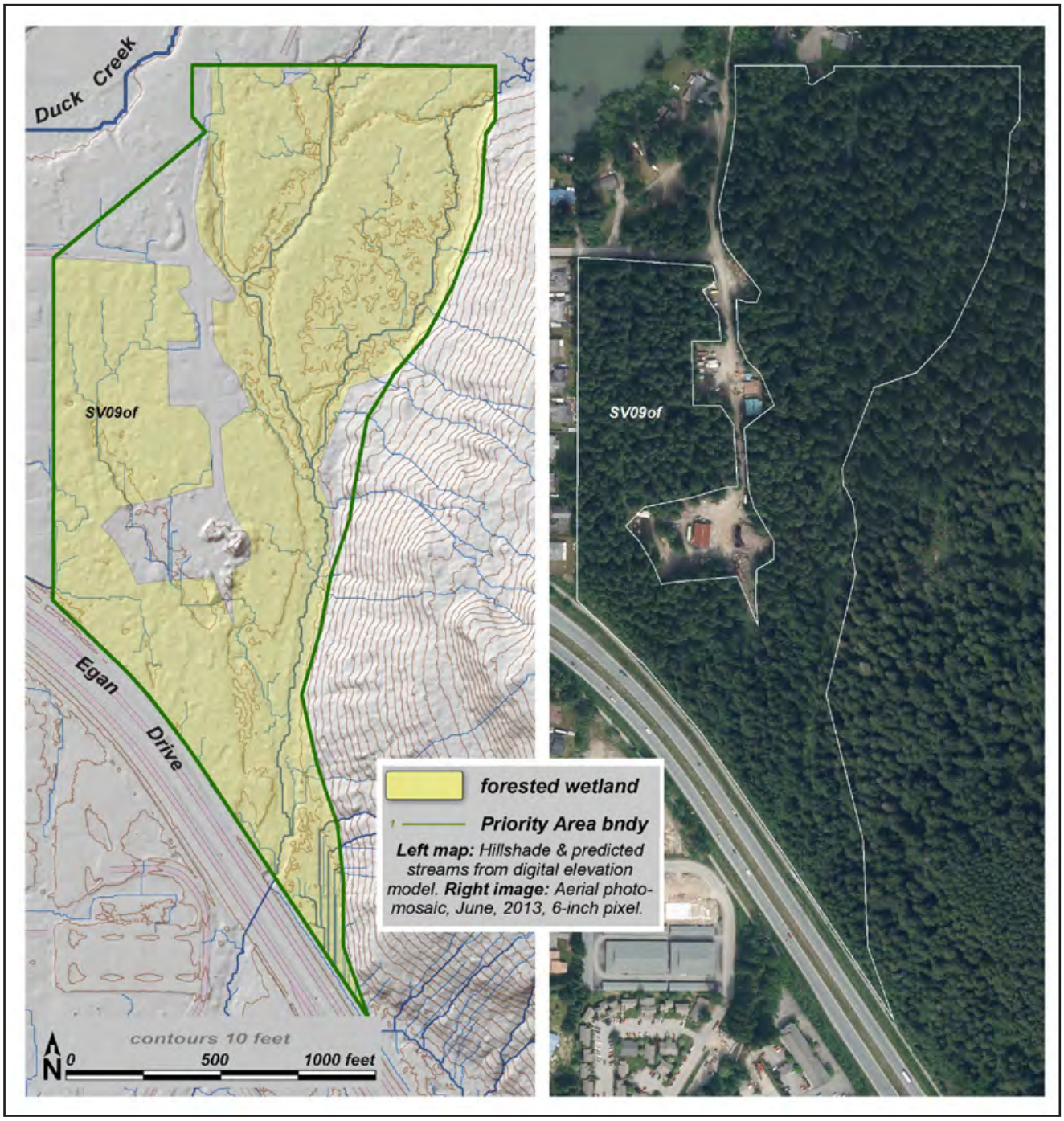
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	10.00	Higher	10.00	Higher
Waterbird Feeding Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	9.09	Higher	10.00	Higher
Anadromous Fish Habitat	7.33	Higher	10.00	Higher
Carbon Sequestration	4.37	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	3.87	Moderate	0.75	Lower
Organic Nutrient Export	1.96	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	5.35	Moderate
Wetland Sensitivity	N.A.	N.A.	4.81	Higher

tidal offsite scores are normalized 'against each other.' Tables above are therefore final—not awaiting the WD scores as with the non-tidal units.

SV06of • **type:** uplift meadow • **acres:** 64.55 • **boundary criteria**: w-u, type pa • **pin**: 4B1701170011 • known or probable anadromous fish

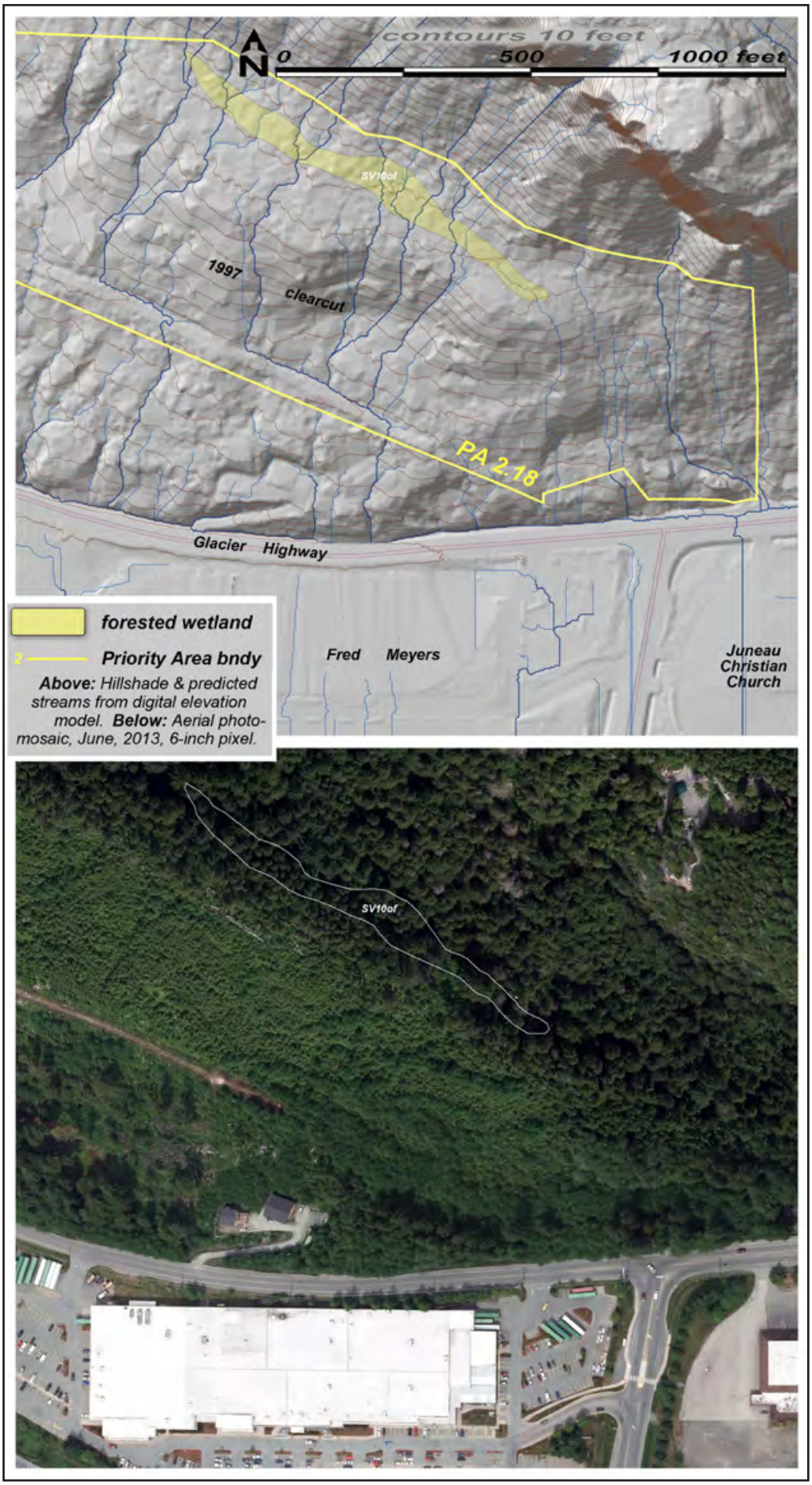
SV07of • **type:** forested peatland • **acres:** 6.08 • **boundary criteria**: w-u, type pa • **pin**: 4B1701160020 • known or probable anadromous fish

SV08of • **type:** uplift meadow • **acres:** 1.29 • **boundary criteria**: w-u, type pa • **pin**: 4B1701160020 • known or probable anadromous fish



SV09of • **type:** forested peatland • **acres:** 38.37 • **boundary criteria**: w-u, pa • **pin**: 5B1501120010 • known or probable anadromous fish

SV09of • **type:** forested peatland **acres:** 0.98 • **boundary criteria**: w-u • **pin**: 5B1501000010 • no known or probable anadromous fish



SV01of • **type:** uplift meadow • **acres:** 3.77 • **boundary criteria**: w-u, pa • **pin**: 5B1401020070 • known or probable anadromous fish

SV02of • **type:** tidal wetland • **acres:** 30.93 • **boundary criteria**: w-u, pa • **pin**: 5B1401020070 • known or probable anadromous fish

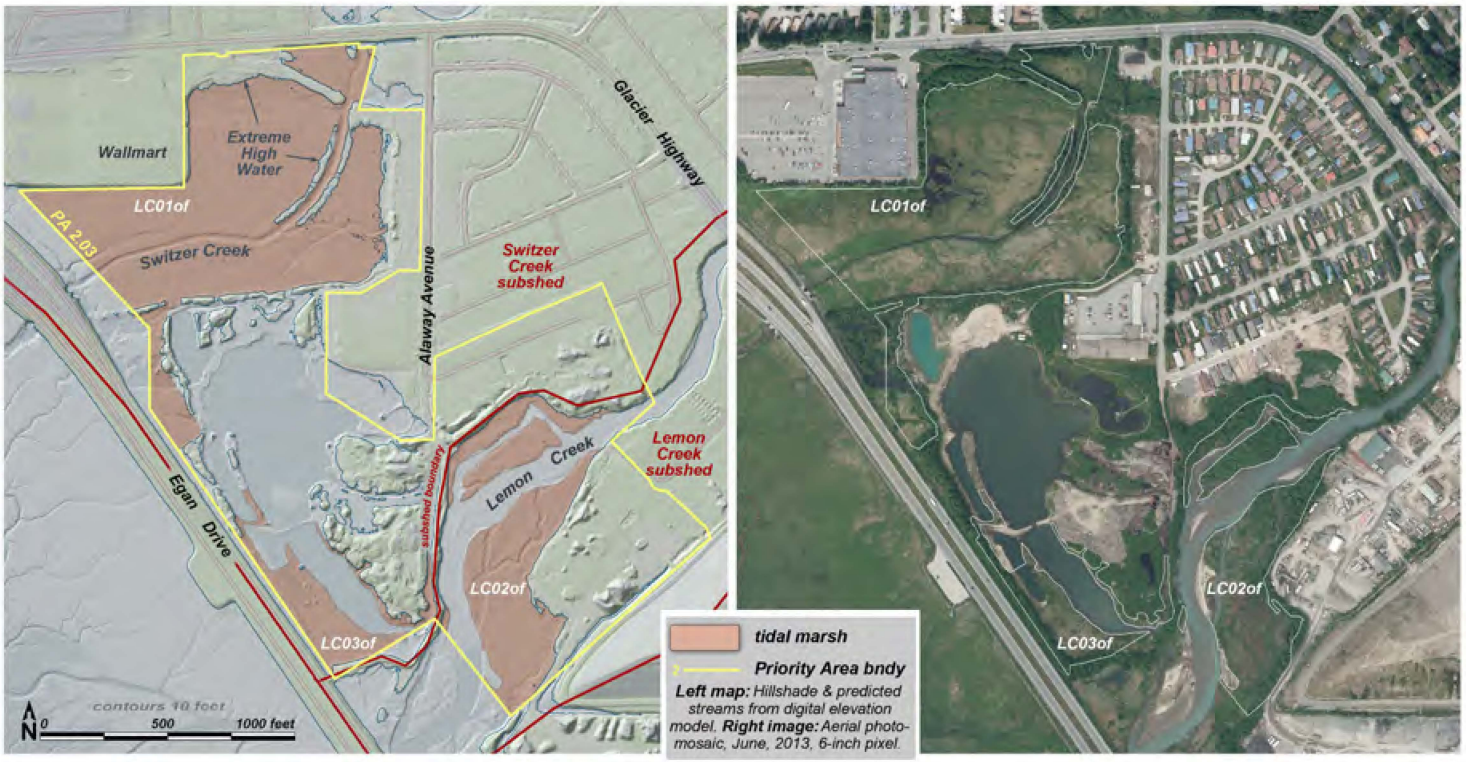
will correct in table

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	10.00	Higher	10.00	Higher
Waterbird Feeding Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	9.65	Higher	4.12	Higher
Sediment Retention & Stabilization	4.38	Moderate	5.69	Higher
Carbon Sequestration	4.37	Moderate	N.A.	N.A.
Organic Nutrient Export	2.40	Lower	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	7.56	Higher
Wetland Sensitivity	N.A.	N.A.	3.93	Moderate

SV03of • **type:** tidal wetland • **acres:** 1.1 • **boundary criteria**: w-u, pa • **pin**: 5B1401020070 • known or probable anadromous fish

will correct in table

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	10.00	Higher	10.00	Higher
Native Plant Habitat	9.93	Higher	4.12	Higher
Waterbird Feeding Habitat	7.67	Higher	10.00	Higher
Carbon Sequestration	3.91	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	1.62	Lower	5.69	Higher
Organic Nutrient Export	0.13	Lower	N.A.	N.A.
Anadromous Fish Habitat	0.00	Lower	0.00	Lower
Public Use & Recognition	N.A.	N.A.	9.40	Higher
Wetland Stressors	N.A.	N.A.	6.79	Higher
Wetland Sensitivity	N.A.	N.A.	4.48	Higher


Wallmart
Extreme High Water
LC01of
PA 2.03
Switzer Creek
Alaway Avenue
Glacier Highway
Switzer Creek subshed
Lemon Creek subshed
Lemon Creek
subshed boundary
Egan Drive
LC02of
LC03of
contours 10 feet
0
500
1000 feet
N
tidal marsh
Priority Area bndy
Left map: Hillshade & predicted streams from digital elevation model. Right image: Aerial photo-mosaic, June, 2013, 6-inch pixel.
LC01of
LC02of
LC03of

LC01of • **type:** tidal wetland • **acres:** 23.81 • **boundary criteria**: w-u, pa • **pin**: 5B1301070035 37 • known or probable anadromous fish

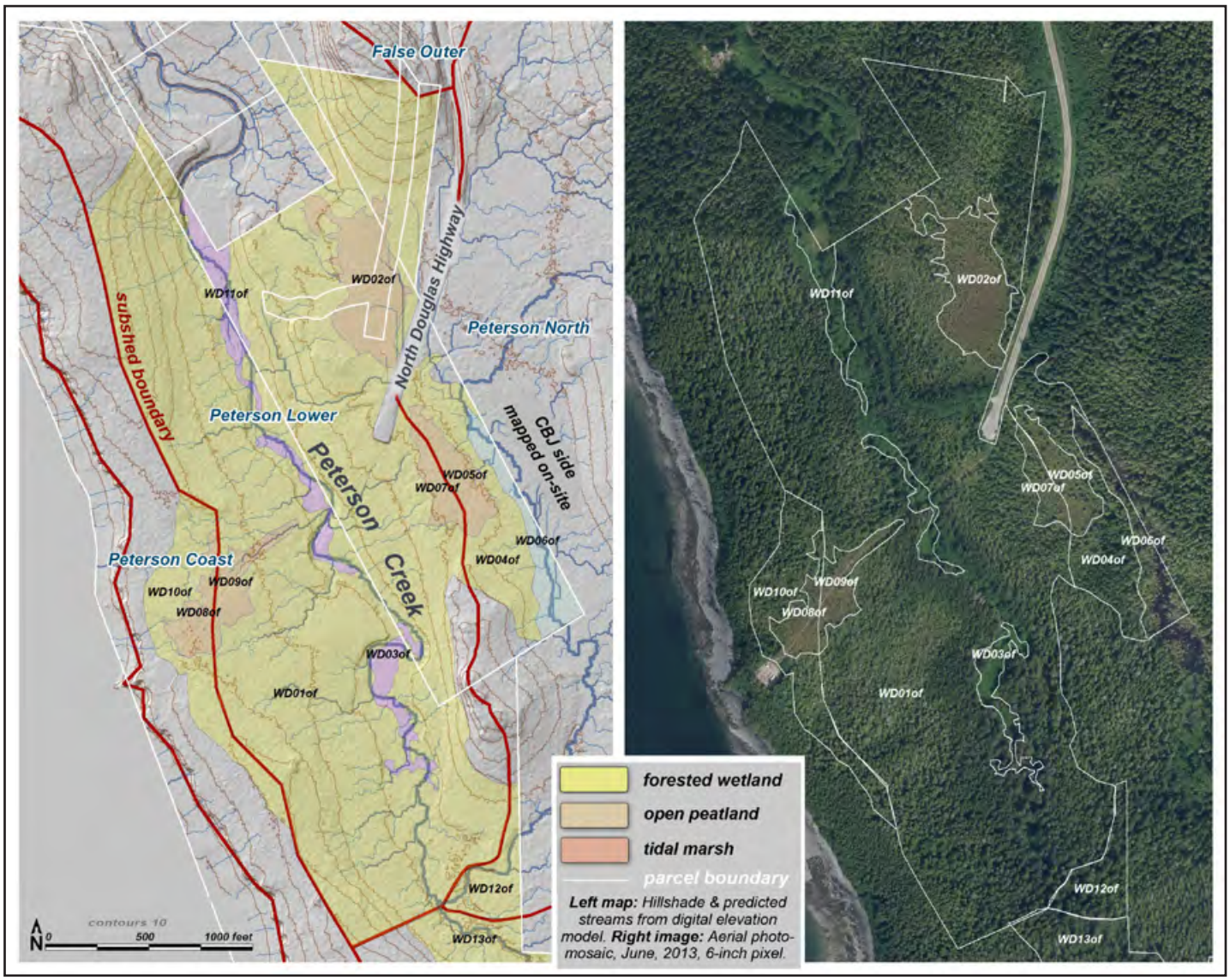
Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.28	Higher	10.00	Higher
Native Plant Habitat	8.66	Higher	10.00	Higher
Carbon Sequestration	4.14	Moderate	N.A.	N.A.
Waterbird Feeding Habitat	4.07	Moderate	10.00	Higher
Anadromous Fish Habitat	3.57	Moderate	10.00	Higher
Sediment Retention & Stabilization	1.70	Lower	2.55	Moderate
Organic Nutrient Export	1.23	Lower	N.A.	N.A.
Public Use & Recognition	N.A.	N.A.	10.00	Higher
Wetland Stressors	N.A.	N.A.	6.27	Higher
Wetland Sensitivity	N.A.	N.A.	6.06	Higher

LC02of • **type:** tidal wetland • **acres:** 8.76 • **boundary criteria**: w-u, pa, subsh • **pin**: 5B1201060181 5B1301190000 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Carbon Sequestration	7.75	Higher	N.A.	N.A.
Native Plant Habitat	7.03	Higher	10.00	Higher
Songbird, Raptor, & Mammal Habitat	7.01	Higher	10.00	Higher
Waterbird Feeding Habitat	5.03	Moderate	10.00	Higher
Anadromous Fish Habitat	4.85	Moderate	10.00	Higher
Organic Nutrient Export	4.46	Moderate	N.A.	N.A.
Sediment Retention & Stabilization	2.89	Lower	7.83	Higher
Wetland Stressors	N.A.	N.A.	8.53	Higher
Public Use & Recognition	N.A.	N.A.	6.27	Higher
Wetland Sensitivity	N.A.	N.A.	5.75	Higher

LC03of • **type:** tidal wetland • **acres:** 3.4 • **boundary criteria**: w-u, pa, subsh • **pin**: 5B1301070036 • known or probable anadromous fish

Function or Other Attribute	Function Score	Function Rating	Value Score	Value Rating
Songbird, Raptor, & Mammal Habitat	9.79	Higher	10.00	Higher
Native Plant Habitat	8.67	Higher	10.00	Higher
Carbon Sequestration	7.77	Higher	N.A.	N.A.
Anadromous Fish Habitat	5.18	Moderate	10.00	Higher
Organic Nutrient Export	3.75	Lower	N.A.	N.A.
Waterbird Feeding Habitat	1.87	Lower	10.00	Higher
Sediment Retention & Stabilization	0.30	Lower	6.14	Higher
Wetland Sensitivity	N.A.	N.A.	9.39	Higher
Wetland Stressors	N.A.	N.A.	8.22	Higher
Public Use & Recognition	N.A.	N.A.	0.90	Lower



*In the **boundary criteria** field for WD units below, "*par*" indicates the unit was split not along the priority area line ("*pa*"), but rather along the Goldbelt Inc./CBJ parcel boundary. Although we did report unit acreages to some private land owners strictly within their own properties, splitting was never a criterion for our on-site assessments; surveyed units spanned ownerships.

But in the case of these back-Douglas private lands, seaward of CBJ ownership, we performed the Goldbelt "assessments" sight-unseen, after all the on-site assessments were finished. Scores are assigned separately for the off-site units, even though many are contiguous with CBJ units of like type.

WD01of • **type:** for. peatl. • **acres:** 100.3 • **boundary criteria**: w-u, type, par,* subsh • **pin**: 3D1401000010 • known or probable anadromous fish

WD02of • **type:** open peatland • **acres:** 5.24 • **boundary criteria**: w-u, type, par • **pin**: 3D1401000010 • no known or probable anadromous fish

WD03of • **type:** uplift meadow • **acres:** 1.67 • **boundary criteria**: type • **pin**: 3D1401000020 • known or probable anadromous fish

WD04of • **type:** for. peatl. • **acres:** 6.12 • **boundary criteria**: w-u, type, par, subsh • **pin**: 3D1401000010 • known or probable anadromous fish

WD05of • **type:** open peatland • **acres:** 2.06 • **boundary criteria**: type, subsh • **pin**: 3D1401000010 • no known or probable anadromous fish

WD06of • **type:** forested peatland • **acres:** 2.91 • **boundary criteria**: type, par • **pin**: 3D1401000010 • known or probable anadromous fish

WD07of • **type:** open peatland • **acres:** 1.21 • **boundary criteria**: type, subsh • **pin**: 3D1401000010 • no known or probable anadromous fish

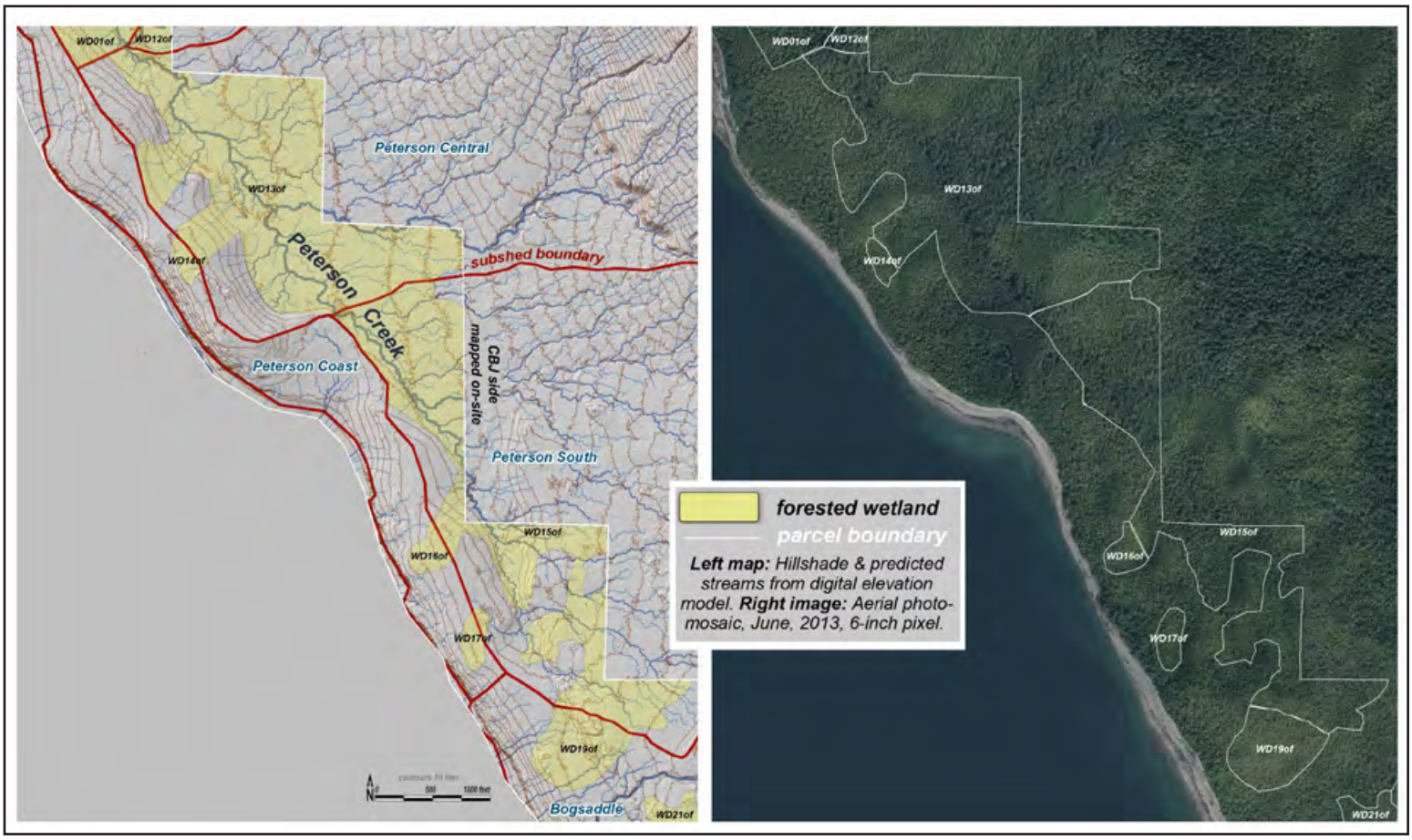
WD08of • **type:** open peatland • **acres:** 1.61 • **boundary criteria**: type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD09of • **type:** open peatland • **acres:** 1.81 • **boundary criteria**: type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD10of • **type:** for. peatl. • **acres:** 6.12 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD11of • **type:** uplift meadow • **acres:** 3.1 • **boundary criteria**: type • **pin**: 3D1401000020 • known or probable anadromous fish

WD12of • **type:** forested peatland • **acres:** 2.79 • **boundary criteria**: w-u, par • **pin**: 3D1401000020 • known or probable anadromous fish



WD13of • **type:** for. peatl. • **acres:** 78.71 • **boundary criteria**: w-u, par,* subsh • **pin**: 3D1401000020 • known or probable anadromous fish

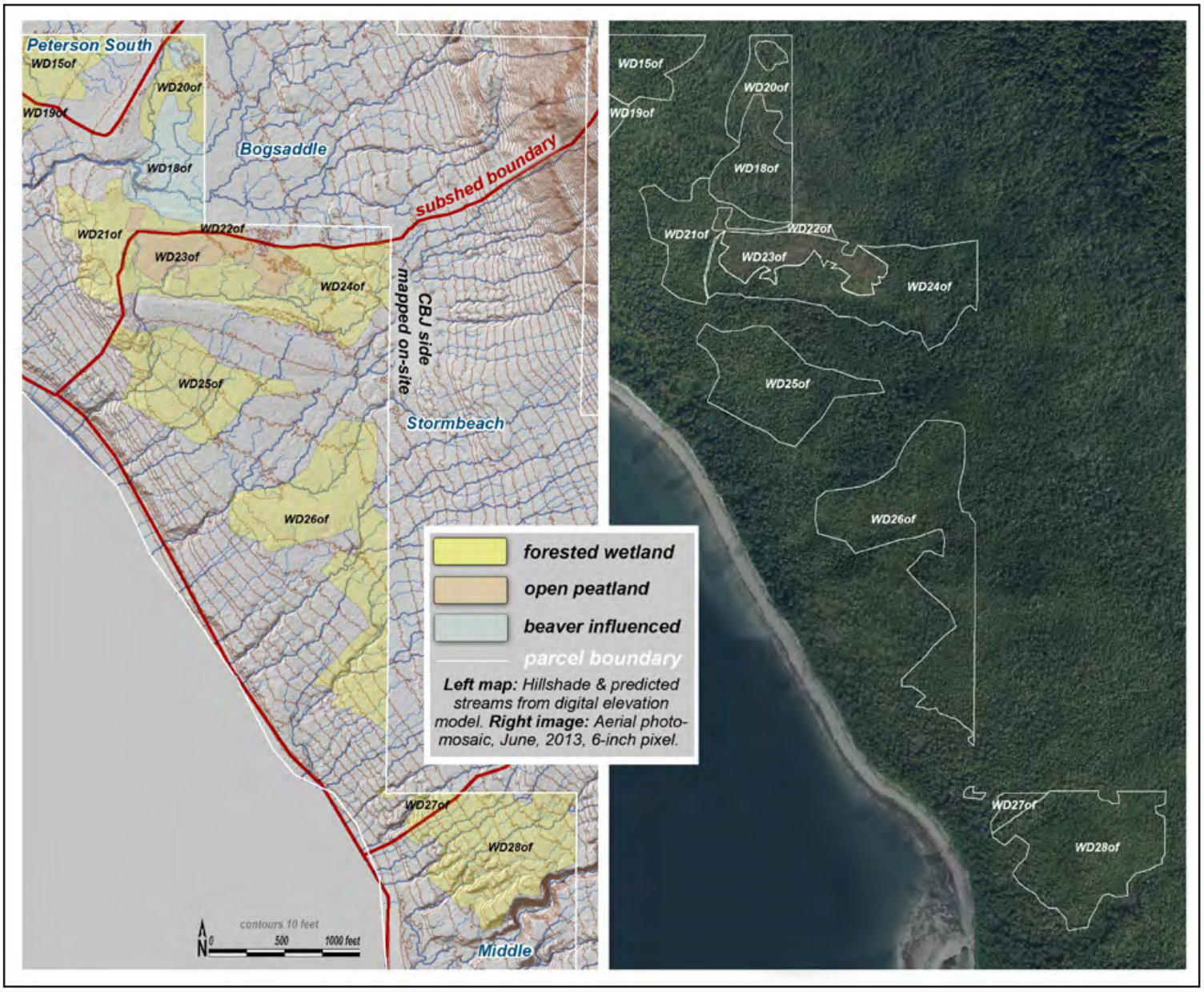
WD14of • **type:** for. peatl. • **acres:** 1.49 • **boundary criteria**: w-u, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD15of • **type**: for. peatl. • **acres**: 55.63 • **boundary criteria:** w-u, par, subsh • **pin**: 3D1401000020 • known or probable anadromous fish

WD16of • **type:** for. peatl. • **acres:** 2.54 • **boundary criteria**: w-u, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD17of • **type:** for. peatl. • **acres:** 2.44 • **boundary criteria**: w-u • **pin**: 3D1401000020 • no known or probable anadromous fish

WD19of • **type:** for. peatl. • **acres:** 10.43 • **boundary criteria**: w-u, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish



WD18of • **type:** beaver influenced • **acres:** 8.09 • **boundary criteria**: w-u, type, par • **pin**: 3D1401000020 • known or probable anadromous fish

WD20of • **type:** for. peatl. • **acres:** 4.2 • **boundary criteria**: w-u, type, par • **pin**: 3D1401000020 • no known or probable anadromous fish

WD21of • **type:** for. peatl. • **acres:** 7.42 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD22of • **type:** open peatl. • **acres:** 1.09 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD23of • **type:** open peatl. • **acres:** 6.26 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

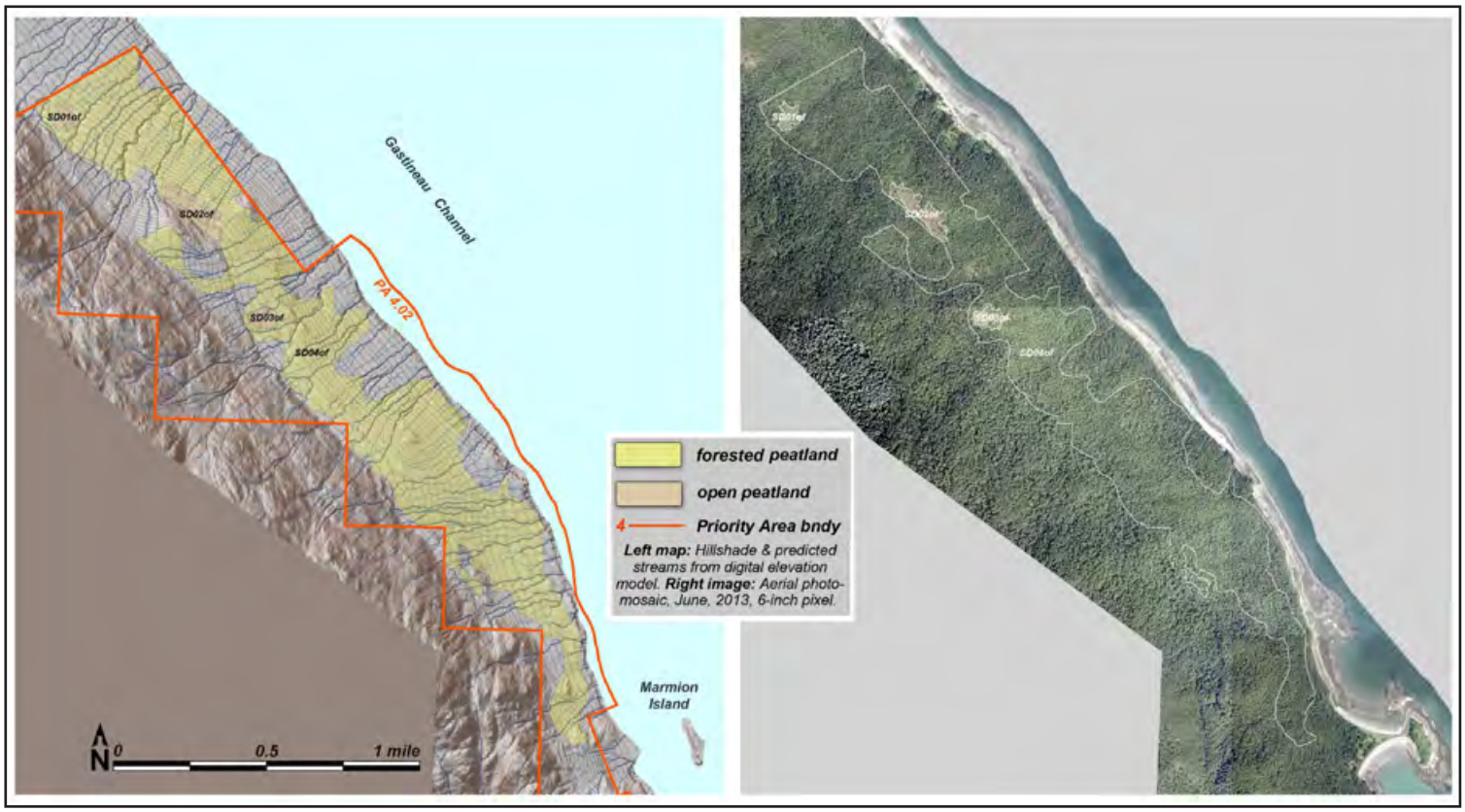
WD24of • **type:** for. peatl. • **acres:** 15.44 • **boundary criteria**: w-u, type, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD25of • **type:** for. peatl. • **acres:** 12.37 • **boundary criteria**: w-u, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD26of • **type:** for. peatl. • **acres:** 22.53 • **boundary criteria**: w-u • **pin**: 3D1401000020 • no known or probable anadromous fish

WD27of • **type:** for. peatl. • **acres:** 1.29 • **boundary criteria**: w-u, par, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish

WD28of • **type:** for. peatl. • **acres:** 16.62 • **boundary criteria**: w-u, par, subsh • **pin**: 3D1401000020 • no known or probable anadromous fish



SD01of • **type:** open peatl. • **acres:** 1.56 • **boundary criteria**: type • **pin**: 3D0101000030 • no known or probable anadromous fish

SD02of • **type:** open peatl. • **acres:** 4.52 • **boundary criteria**: type • **pin**: 3D0101000030 • no known or probable anadromous fish

SD03of • **type:** open peatl. • **acres:** 2.19 • **boundary criteria**: type • **pin**: 3D0101000030 • no known or probable anadromous fish

SD04of • **type:** for. peatl. • **acres:** 243.21 • **boundary criteria**: w-u, type, pa • **pin**: 3D0101000030 • no known or probable anadromous fish

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CBJ - LAW DEPT.

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
FIRST JUDICIAL DISTRICT AT JUNEAU

ANTHONY ZENK, RUTH BAUMGARTNER, ELIZABETH MIYASATO, and G. OLE OLSON, ,	)	
Appellants,	)	
v.	)	
CITY AND BOROUGH OF JUNEAU, DAVID LENDRUM, and DAVID WILSON,	)	
Appellees.		Case No.1JU-14-957 CI

DECISION ON APPEAL

I. INTRODUCTION

David Lendrum owns a lot at 11029 Mendenhall Loop Road, in the area commonly known as the Back Loop area of Juneau.[1] The parcel is zoned D-3, which is a residential zone primarily accommodating single family and duplex residences at a density of three units per acre.[2] In addition to residential uses, a variety of light commercial uses are permitted if a conditional use permit is obtained from the Planning Commission.[3] Uses permitted with a conditional use permit include commercial greenhouses with retail sales.[4]

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[1] The property is actually owned by David Lendrum and Margaret Tharp, who do business as Landscape Alaska. Because only Lendrum is technically a party to this appeal, they will be referred to collectively as "Lendrum" in this decision.
[2] CBJ Code 49.25.210.
[3] CBJ Code 49.25.300.
[4] *Id.* Other permitted uses with a conditional use permit include day care homes, rooming or boarding houses, bed and breakfasts, recreational vehicle parks, offices of not more than 1,000 square feet, schools, colleges or universities, churches or synagogues, commercial recreational facilities, assisted living homes, veterinary clinics, day animal facilities, wild animal rehabilitation facilities, agricultural facilities including stabling of farm animals, mining or sand and gravel operations, and cemeteries or funeral homes. *Id.*

In 2013, Lendrum applied for a conditional use permit to develop a commercial greenhouse with retail sales on his property and on an adjoining lot which he hoped to lease from the City & Borough of Juneau. Several neighboring property owners opposed the permit application.[5] The neighbors raised a variety of objections to issuance of the permit, but their primary objection was that development of a commercial greenhouse with retail sales would be inconsistent with the residential character of the neighborhood, which would create a variety of harmful impacts to the neighbors.

At a February 11, 2014 public hearing, the City & Borough of Juneau granted the conditional use permit. The neighboring property owners appealed the decision granting the permit to the City & Borough Assembly, which issued a decision affirming the decision of the Planning Commission on September 30, 2014. The neighbors now bring this appeal.

Having reviewed the parties' briefs and the record below, I now affirm the City's decision granting the conditional use permit for the reasons set forth in more detail below.

II. STANDARD OF REVIEW

AS 29.40.060 provides that the superior court hears appeals from decisions on land use issues "solely on the record established by the [municipal body]." Judicial review of zoning board decisions is narrow, and a presumption of validity is accorded those decisions.[6] The appellate court will uphold a zoning board's decision as long as it is, "in the light of the whole

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[5] The neighboring property owners who challenged the permit below include the appellants and others who did not join in this appeal. For ease of reference, the parties challenging the issuance of the permit will be referred to collectively as the "neighbors," even though they do not all own property directly adjoining Lendrum's property.

[6] *South Anchorage Concerned Coalition, Inc. v. Coffey*, 862 P.2d 168, 172 (Alaska 1993).

record, . . . supported by substantial evidence."[7] In a case that involves a zoning board's interpretation of zoning ordinances and planning documents, the reviewing court will give such interpretations "considerable deference."[8] On the other hand, when an appeal presents a question of law that does not involve the zoning board's expertise, a reviewing court will exercise its independent judgment, "adopt[ing] the rule of law that is most persuasive in light of precedent, reason, and policy."[9]

III. DISCUSSION

A. Introduction:

One of the challenges in this case is that appellants make a large number of arguments, which makes it difficult to review the decision below in an organized fashion. The court will attempt to consider each of their arguments in the order they were presented.

B. Violation of Ordinances or Regulations:

The appellants begin their arguments by contending that the Planning Commission violated a number of CBJ ordinances or regulations. These will be considered in turn.

1. *Perimeter landscaping*

The City's Community Development regulations require development to include perimeter landscaping along all boundaries of a proposed development project.[10] Appellants argue that Lendrum's development plan fails to include sufficient perimeter landscaping to meet this requirement.

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[7] *Id.* at 173; *Native Village of Eklutna v. Board of Adjustment for Municipality of Anchorage*, 995 P.2d 641, 643 (Alaska 2000).
[8] *Id.* at 173, fn. 12.
[9] *Gillis v. Aleutians East Borough*, 258 P.3d 118, 120 (Alaska 2011).
[10] 04 CBJAC 060.020(b)(1).

Lendrum's development plan, however, includes perimeter landscaping.[11] Lendrum testified before the Planning Commission that he would plant native vegetation "skirting" to make "an obscuring vegetation buffer" between his property and neighboring properties. While appellants now contend that this buffer is inadequate, it is not the place of this court to reweigh the evidence before the Planning Commission, or to decide whether to credit Lendrum's testimony about his intent to comply with buffering requirements. The inclusion of perimeter landscaping in the development plan, and Lendrum's testimony, consists of substantial evidence supporting the Commission's decision on this point.

2. *Driveway slope*:

Appellants next argue that the Planning Commission disregarded the slope requirements contained in CBJ Code section 19.12.080.2, which limits the slope of cut surfaces to a 50% slope unless the permittee furnishes a soils engineering or an engineering geology report. Appellants contend that the slopes on either side of the driveway exceed this limit.

The City argues that this requirement only applies when a grading permit is required, and the Commission specifically conditioned its approval on Lendrum obtaining a grading permit prior to any site preparation or construction activity.[12]

It is unclear from the record below what slopes currently exist on the sides of the driveway. Documents submitted to the Planning Commission by neighbors objecting to the

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[11] Exc. 76-81.
[12] Exc. 51, item 3.

permit described them as "steep drop offs"[13] or, in testimony, as "significant drop-offs on either side that are going to need some work."[14] But the actual percentage slope is unclear.

The Planning Commission, however, required Lendrum, as a condition of the permit, to improve and maintain the shared driveway to 24 feet in width prior to issuance of a Certificate of Occupancy. And prior to performing any site preparation or construction activity, Lendrum was required to obtain a grading permit.[15]

Appellants apparently assume that CBJ will grant a grading permit which will permit Lendrum to widen the driveway in a way that maintains a slope in excess of 50%.[16] I am not willing to make such an assumption. The City is required to follow its ordinances, and those ordinances require that a grading permit require the applicant to comply with the slope requirements set out in the Code. The Planning Commission did not give Lendrum permission to disregard those requirements.

3. *Land ownership*

Appellants next argue that the Planning Commission violated CBJ Code section 49.15.120(a), which permits permit applications only from persons who have legal authority to take action in accordance with the permit. Appellants point out that Lendrum only owns Bonnie Subdivision Lot 2, and not Lot 3. The permit, however, references both lots. It was Lendrum's hope that he would be permitted to lease Lot 3 from the City, which owns it. But

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[13] Exc. 44.
[14] PC Tr. 61.
[15] Exc. 51-52.
[16] Technically, appellants have likely cited the wrong code section. 19.12.080 relates to cut surfaces. 19.12.090 relates to fills. If the driveway has a steep drop-off on either side, this is likely a fill and not a cut. But the slope requirement is the same in either case, 50%. 19.12.090.2 contains additional requirements for preparation of the ground when the slope of a fill exceeds 20%.

the decision whether to lease Lot 3 to Lendrum lies with the City Assembly, not with the Planning Commission.

The City points out the conundrum as to Lot 3. It would make little sense for the City to lease Lot 3 to Lendrum, or for Lendrum to lease it from the City, if he was denied a conditional use permit to use the lot. It thus made logical sense for the Planning Commission to first resolve the land use issue, before Lendrum and the Assembly could decide whether to proceed with a lease.

It is clear that Lendrum has the legal authority to develop Lot 2, because he owns that lot. As to Lot 3, it is clear that the Planning Commission did not contemplate that Lendrum would develop the lot without having legal authority to do so. The conditional use permit as to Lot 3 was specifically conditioned upon approval of the lease.[17] Thus it is clear that the permit did not authorize Lendrum to do anything he did not have legal authority to do.

As such, I see no violation of CBJ 49.15.120(a).[18]

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[17] Exc. 52, item 8.

[18] I reject the claim that inclusion of Lot 3 in this permit constituted "phase permitting." I understand "phase permitting" to refer to permitting a project in stages, which is prohibited if it results in disregard of the cumulative impacts of a project. *Kachemak Bay Conservation Society v. State, Dept. of Nat. Resources*, 6 P.3d 270, 278 (Alaska2000); *Thane Neighborhood Ass'n. v. City & Borough of Juneau*, 922 P.2d 901, 908 (Alaska 1996). Including Lot 3 in this permit is the opposite of phase permitting. Nor do I find a due process violation for lack of notice, because the hearing notice included Lot 3. If there was a question about whether Lot 3 remained under discussion, all anyone had to do was ask. I further reject the claim that the Planning Commission was biased because the City had a financial interest in leasing Lot 3 to Lendrum. There is no suggestion that either any City official or member of the Planning Commission had a financial interest in the leasing of Lot 3. The Planning Commission is regularly called upon to make decisions that may have a fiscal impact – positive or negative – upon the City. There is no authority for the proposition that the Planning Commission may not make decisions in such situations. If that fact made it impossible for the Planning Commission to sit, it is unclear who would make zoning or permitting decisions in such situations.

4. *Incomplete Application*

CBJ Code 49.15.130 requires a permit application to be "complete." Under §130(b), an application is complete "when it contains all of the information necessary to determine if the development will comply with all of the requirements of the permit applied for." Appellants contend that the application was incomplete because it did not have "many of the required details." It is unclear what details appellants are referring to. The application was accompanied by a development plan, and considerable additional information was submitted during the application process and at the Planning Commission hearing.

The only specific complaint appellants make is that the application was missing the "DOT&PF Driveway and Approach Road Permit." It appears, though, that Lendrum obtained a DOT Driveway and Approach Road Permit during the application process.[19] The Planning Commission specifically required Lendrum, as a condition of the permit, to comply with the requirements of that permit. Appellants point to no legal requirement that a DOT permit be obtained before an applicant applies for a conditional use permit. I thus find no violation of CBJ 49.15.130.

5. *Local Access Street Requirements*

Appellants argue that the Planning Commission violated CBJ Code 49.35.240(a)(3)(B), which sets forth a number of specific requirements when a developer chooses to construct a "local access street." This argument is based on the assumption that the shared driveway is a "street." If appellants' argument is correct, then every property owner who installs a driveway would be required to make the driveway at least 26 feet wide, at least 22 feet of which shall be

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[19] PC Tr. 13; R. 76.

paved, and install street lights, storm drainage, and at least one paved sidewalk. The absurdity of this argument is self-evident. A driveway is not a street.

6. *Compatibility of use*

Appellants argue that the Planning Commission violated CBJ Code 49.25.210, which establishes residential zoning districts to "provide a healthy, safe and pleasant environment for residential living protected from incompatible and disruptive activities." In a related argument, appellants argue that the issuance of the permit violates CBJ Code 49.15.330, which provides that a conditional use permit should be issued if the proposed use is "appropriate according to the table of permissible uses." Appellant notes that although the table of permissible uses, CBJ Code 49.25.300, includes commercial greenhouses with retail sales as a conditional use in the D-3 zone, the ordinance provides that a particular conditional use "may or may not be allowed at a particular location, depending on a determination of its compatibility with surrounding or proposed land uses."[20]

Compatibility of the proposed use with the neighborhood is really the central issue in this case. Appellants argue that a commercial greenhouse with retail sales is fundamentally incompatible with the character of a residential neighborhood. The evidence before the Planning Commission was conflicting on this point.

The applicant, Mr. Lendrum, testified that there was a retail nursery business a short distance away in the same neighborhood in the 1960's and 1970's. He testified that his business is "a pretty quiet and small business." He testified about the various mitigation efforts

[20] CBJ 49.25.300(b)(3).

he would make to minimize impact on the neighborhood. And he expressed his view that his business would add value to the neighborhood.

Several other individuals testified in support of the permit. One could summarize that testimony as giving the opinion that their business is well managed, quiet, that it has been in a residential area before, and that it was compatible with the residential character of the neighborhood.[21]

Appellants and others testified against the proposal. They testified passionately and, undoubtedly, sincerely about their concerns about the impacts of Landscape Alaska on their neighborhood.[22]

After considering this testimony, the Planning Commission voted 5-1 to approve the permit, and imposed a number of conditions to mitigate impacts of the development.

In affirming the Planning Commission's decision, the Assembly stated as follows:

> "The appeal code requires the Assembly to uphold the decision being appealed unless 'the appellant establishes that the decision is not supported by substantial evidence in light of the whole recod, as supplemented at the hearing.' (CBJ 01.50.070). 'Substantial evidence' is defined as 'such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.' (CBJ 01.50.010). The Alaska Supreme Court has held that with respect to decisions made within its 'sphere of expertise,' a Planning Commission's decisions are 'entitled to considerable deference.'[23] According to the Supreme Court, in

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[21] *See,* testimony of Paula Terrell (PC Tr. 44-46), Jeff Barnard (PC Tr. 46), Jean Mischel (PC Tr. 47-48), Elfreda Nord (PC Tr. 48-49), Travis Arndt (PC Tr. 49-51), Ginger Johnson (PC Tr. 52), Renda Heimbigner (PC Tr. 53-5), Dave Hannah (PC Tr. 56-58), Carol Coyle (PC Tr. 58-59) and Mary Lou Gervais (PC Tr. 90-91).

[22] *See,* testimony of Ruth Baumgartner (PC Tr. 60-64), Anthony Zenk (PC Tr. 64-72), G. Ole Olsen (PC Tr. 72-79), Elizabeth Miyasato (PC Tr. 79-82), Kathy Weltzin (PC Tr. 82-84), Vickie Johnson (PC Tr. 84-85), David Wilson (PC Tr. 85-90),

[23] *Lazy Mountain Land Club v. Matanuska-Susitna Borough Bd. Of Adjustment &U Appeals,* 904 P.2d 373, 386 (Alaska 1995).

reviewing a Commission's zoning decisions, a 'presumption of validity' must be applied.[24]

"The Appellants have not met their burden in this case. The Appellants clearly disagree with many of the factual findings relied upon by the Commission. But the fact that the Commission did not find the concerns raised by the Appellants sufficient to warrant denying the permit is not a legally sufficient basis upon which we could reverse the Commission's decision. The Assembly may not substitute its judgment for that of the Commission.

"As the use proposed by Mr. Lendrum was an appropriate use according to the Table of Permissible Uses, the Commission was required to adopt the director's determination as articulated in the February 3, 2014 staff report unless the Commission found by a preponderance of the evidence that the determination was in error. (CBJ 49.15.330(e)(2)). The Commission did not make such a finding.

"Once a decision is adopted, the Commission may impose permit conditions in accordance with CBJ 49.15.330(g) if it finds doing so is warranted under CBJ 49.15.330(f).

"The Appellants argue that the Commission should have nevertheless denied the permit under CBJ 39.15.330(f) or alternatively, that the conditions imposed were insufficient. Appellants argue that the Planning Commission's decision should be reversed for failing to adequately address either the negative impacts of the proposed business on their neighborhood or their concerns. The record as a whole clearly indicates, however, that the Commission considered – either at the February 11, 2014 hearing or as presented in the Staff report – buffers, traffic and road access, storm water runoff, neighborhood harmony and security, the impact of the proposed business on the neighborhood's property values and relevant policies articulated in the City and Borough of Juneau Comprehensive Plan. As a result of the evidence presented, the Commission found CBJ 49.15.330(f) warranted setting conditions in accordance with CBJ 49.15.330(g). The fact that the Commission reached a different conclusion after hearing the evidence than the Appellants might have liked is not enough to overcome the presumption of validity we must afford Planning Commission decisions."[25]

People of good will can have different opinions on the question of whether Landscape Alaska is compatible with the character of this neighborhood. Under our democratic system,

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[24] *South Anchorage Concerned Citizens, Inc. v. Coffey*, 862 P.2d 168, 173 (Alaska 1993).
[25] Exc. 559-60.

however, the opinion that carries the day is the one held by the people's elected representatives on the City and Borough Assembly and that of the men and women they appoint to the Planning Commission. It is not the role of this court to substitute its judgment for that of the Planning Commission or the Assembly.

The decision of the Assembly upholding the permit is legally correct. The decision of the Planning Commission granting the permit, and imposing conditions, is supported by substantial evidence in light of the record as a whole.

C. Due Process:

Appellants contend that their due process rights were violated because the Planning Commission limited testimony to three minutes per person and rebuttal was not allowed. They did not request additional time, nor do they make an offer of proof as to what additional testimony they would have offered if given more time. No limits were placed on the ability to submit written materials, and appellants do not explain why they could not have submitted any additional evidence they wished to offer in writing.

As to rebuttal, they do not state what specific evidence they wished to rebut, nor do they explain what additional evidence they would have offered in rebuttal if given the chance. If there is specific evidence they wished to offer but they were prevented from presenting, they have the option to move to supplement the record on appeal or to request a trial *de novo.*[26]

I find no due process violation.

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[26] In fact appellants do request a trial *de novo*. However, the only issue they point to in support of this claim is that a Planning Commissioner referred to his personal work schedule in support of his motion to extend business operating hours before 10:00 a.m. As discussed below, I do not find that this claim warrants a trial *de novo*.

D. Privacy:

Appellants claim that the issuance of the conditional use permit violated their constitutional right to privacy. In their view, the additional traffic resulting from the proposed development, particularly on the shared driveway, would violate their privacy.

Certainly the privacy of neighbors is an appropriate issue for the Planning Commission to consider in deciding whether to issue a conditional use permit. The Planning Commission did consider this issue, and decided that the proposed development would not unduly infringe upon the neighbors right to quiet enjoyment of their homes. This decision, as discussed above, was supported by substantial evidence considering the record as a whole.

Appellants cite no authority for the proposition that the constitutional right to privacy requires a different standard than this. I thus reject appellants' privacy claims.

E. Nuisance:

Appellants claim that the impacts upon them resulting from the proposed development constitute a "nuisance" under AS 09.45.255. There is no authority for the proposition that the existence of the tort of nuisance changes the law to be applied by a zoning body, or by a court reviewing the decision of a zoning body. The Planning Commission was required to consider impacts on the neighbors, and it did so. The fact that it reached a different conclusion than appellants would like it to does not mean that the law of nuisance was violated.

F. Financial Interest:

Appellants argue that the City and Borough of Juneau has a "significant financial interest" in the approval of this conditional use permit, because denial of the permit would prevent the City from leasing Lot 3 to Lendrum.

This permit is not unique in the possibility that it may have a fiscal impact for the City. Appellants have not, however, met their burden of showing that the decisions of the Planning Commission were the product of improper motives.[27]

G. Trial *de novo* – Misuse of Official Position:

Appellants claim that Planning Commissioner Miller misused his official position, because of a statement he made about the issue of Landscape Alaska's hours of operation. City staff recommended that hours of operation be 9:00 am to 6:00 pm, Wednesdays through Sundays. After the peak growing season, hours of operation would be 10:00 am to 6:00 pm, and closed October through March.

Commissioner Miller made the following statement:

> I'm a small business owner myself; and when I get a chance to have a day off, and if I want to do some landscaping in early May, you know, it's going to be on whatever day of the week I get to take off. And I don't want to have to wait until 10:00 in the morning to go buy a shrub so that I can get it done and move on with my life.
>
> So, you know, 10:00 in the morning is just – I just don't get that time for starting any kind of business, I guess. But – so I think an 8:00 to 6:00, Tuesday through Saturday, and maybe a later start on Sunday would be okay with me.
>
> I'd just like to see what other commissioners think. And I'm ready to make a motion.[28]

The permit, as approved by the Commission, included the hours of operation proposed by Commissioner Miller.

Planning commissions in Alaska are citizen boards, made up of public spirited volunteers who are not paid for their time.[29] It seems clear that the Legislature, by providing

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[27] *See, South Anchorage Concerned Citizens, Inc. v. Coffey,* 862 P.2d 168, 174 (Alaska 1993).
[28] PC Tr. 113-114.

for planning commissions, intended for zoning and land use issues to be decided not by planning officials – city bureaucrats – but rather by residents of a community who would bring their life experiences and common sense to these important decisions. Planning commissioners should come from all walks of life – professionals, working people, business owners, or retired people. They bring those experiences and roles to their position, and it is appropriate for them to do so.

Some people, when they buy shrubs, might prefer to do so after work. Others might prefer to do so before work. Commissioner Miller is apparently an early riser, and apparently likes to buy his shrubbery before work. Based on that preference, he expressed the opinion, based on his own experiences and preferences, that a person ought to be able to buy a shrub before 10:00 in the morning. The suggestion that, by doing so, he was misusing his official position is baseless, and I reject it.

I do not find that a *de novo* hearing in this court on the issue of shrub-purchase-preferences, or on any other issue, is necessary.

H. Spot Zoning:

I reject the claim that issuance of this conditional use permit constituted "spot zoning." Use of this property as a commercial greenhouse is on the table of permitted uses for the D-3 zone. Retail sales are permitted for such a greenhouse as a conditional use. Granting of this permit, therefore, does not represent any change in zoning – it merely permits a use already within the contemplated range of uses for property in this zone.

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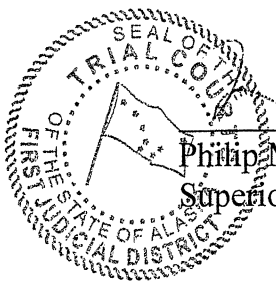
[29] *See,* AS 29.40.020.

IV. CONCLUSION

The decision of the Planning Commission issuing a conditional use permit to David Lendrum was supported by substantial evidence based on the record as a whole, and was not based on errors of law. As such, that decision is AFFIRMED.

Entered at Juneau, Alaska this 2 day of October, 2015.



Philip M. Pallenberg
Superior Court Judge

CERTIFICATION
Copies Distributed
Date 10-05-15
To Anthony Zenk mail
David Lendrum - mail
Robert Palmer - mail
Dan Bruce - Stan
By Torrie

ASSEMBLY STANDING COMMITTEE MINUTES
LANDS AND RESOURCES COMMITTEE
THE CITY AND BOROUGH OF JUNEAU, ALASKA
MINUTES

September 28th, 2015 5:00 PM.
Assembly Chambers

I. ROLL CALL

Jesse Kiehl called the meeting to order at 5:01pm.
Members Present: Chair Jesse Kiehl and Assembly members Mary Becker, Jerry Nankervis, and Kate Troll
Other Assembly Members Present: Karen Crane; Loren Jones; Debbie White
Liaisons Present: Bill Peters; Gerry Landry; Christopher Mertl
Liaisons Absent: Mike Peterson
Staff Present: Greg Chaney, Lands Manager; Dan Bleidorn, Deputy Lands Manager; Beth McEwen, Deputy Clerk; Teri Camery, Senior Planner; Beth McKibben, Planning Manager

II. APPROVAL OF AGENDA

There were no agenda changes.

III. APPROVAL OF MINUTES

A. August 24, 2015

The minutes of the August 24th, 2015 Lands Committee meeting were approved as amended.

IV. PUBLIC PARTICIPATION

There was no public participation on non-agenda items.

V. AGENDA TOPICS

A. Wetlands Management Plan Update

Mr. Chaney: A quick introduction. This is Teri Camery. She is going to be presenting a project that started about five years ago so it's been a long time coming. We've been using a lot of data from this for other purposes already, but the actual Wetland Management Plan part is finally ready for preliminary roll out.
Ms. Camery: Hi my name is Teri Camery, and I'm a senior planner at the Community Development Department. I want to start off by thanking you

for your time in looking at this and taking the time meeting with us this evening. I know you have a lot on your plate, and this is a lot to read, and you had almost no time to read it, so our intent this evening is to make it easy for you. I will give a brief overview of the project and then pass it off to our consultants who can tell you more of the details, and then move into the implementation section. Our intent is to bring this project back to you at your October meeting, and then you can provide comments to us at that time, particularly on the implementation chapter. By your October meeting, we hope that we will have comments to share with you from the Planning Commission and the Wetlands Review Board, and that should help to improve the understanding of the overall project. In 2009 we did a CBJ evaluation that favored an updated Wetland Management Plan instead of a mitigation bank. There's a little bit more information about that in your memo. So following that, we obtained a large federal grant in 2012-- a $1.6 million federal grant--that contains a number of different elements including LIDAR, imagery, and stream maps, as well as the Wetlands Management Plan update. In 2013, we issued a request for proposals for the work, and in 2014 we began the wetland assessment fieldwork with Bosworth Botanical Consultants who are here to present to you tonight. The goal of the project is to develop a long range planning document to assist public land managers and interested private land holders with practical management of their properties. With that, the plan provides consistent scientific methods of identifying and evaluating wetlands so property owners can make good development decisions. The key thing is that this information is provided in advance, and it gives information on which wetland areas are higher value, low value, and most appropriate for mitigation versus more appropriate for development. As Greg said, CBJ Lands has already been using this information in planning for two city subdivisions. Talking with Dan earlier today, we estimate the project has already saved the City roughly $20 to $30,000 dollars just on those two subdivisions alone. I want to give an overview on how we chose the assessment areas for the project. We identified large, vacant parcels along the road system that were likely target areas for development over the next 20 years. We sat down with our cartographer and our database, and we looked at the acreages, we looked at what was undeveloped, we looked along the road system and developed our priority areas from there, and that became the basis of where we directed the consultants to do the assessment work. With the focus on large, undeveloped parcels, most of the land ended up being city property. We identified approximately 20 private parcels that fit that category and we offered free wetland

assessments to those private property owners. We contacted them by mail, through phone, and through email. We received permission from 5 property owners to do those assessments so that work is included in the plan as well, but it is primarily city property. The consultant gave presentations to the Wetlands Review Board and the Habitat Mapping Working Group last week. The project goes to the Planning Commission on October 13th. CBJ comments are due to the consultants by November 15th, so we are requesting comments from all these entities by the end of October and again that gives us time to come back to the Assembly and Lands Committee a second time with more information for you, including a recommendation from staff on an appropriate implementation route to take. We just received the document ourselves so CDD has not yet made a recommendation on what path to take. One last quick fact that you'll find interesting: In the original Juneau Wetland Plan, 54% of the study area was wetlands. We are pleased to report that in the current project area, we are at only 44%. I will now pass it on to our consultants.
Mr. Adamus: I'm a member of the faculty at Oregon State University, and I'm a consultant on this project with Bosworth Botanical Consulting. I've been involved in Juneau wetlands since 1985 and off and on over the years since then. My specialty is using science to identify which wetlands may be the most important. I've been a consultant to the governments in Oregon, Washington, and province of Alberta, and in every case I'm trying to bring science to help answer the question about which wetlands might be most and least important. So the members of the team- Koren Bosworth, myself, Francis Naglich, and Teri Camery as the organizer. I did the original study design but most of the field work was implemented by Koren and many subcontractors. The purposes in a nutshell are in the selected areas- the priority areas- that were chosen by your planning department to map areas that aren't wetlands. We are just going out to find what is and is not wetlands. By giving certainty to areas that aren't wetlands, it helps people understand where construction could proceed without a permit, or with minimal requirements from the federal government. Where wetlands areas are found, our purpose was to determine which are the least or most important. We also determined areas that might require less compensation when people are dealing with federal agencies. As many of you know, there are perception problems about wetlands. Believe it or not, most of these areas are wetlands [Mr. Adamus pointed to pictures] but most people wouldn't know. How do we know these areas are wetlands? It takes specialized skills, and there are very specific protocols that the Corps of Engineers and other federal

agencies have had in place for over 30 years. Those protocols are based on the soil type, soil saturation, and vegetation. Those tell us where the line is between wetlands that are legally regulated and areas that aren't wetlands. Some key facts to keep in mind: construction in wetlands is not forbidden absolutely. The way the law was set up over 40 years ago was that you need a federal permit in some cases, but not all. Also federal procedures for determining what is and is not a wetland have existed for over 30 years. This is not some new game on the block that's been invented by the agencies. Most of us on the Bosworth team have been practicing this for that long. And the fact that a city like Juneau has few growth options does not guarantee leniency from federal agencies. A lot of cities are in the situation of not much buildable land and too many wetlands, but that's just a fact of life. The permitting agency-the Corps of Engineers- does encourage regional and watershed scale to wetlands planning and that's exactly what your CDD- through this grant- has implemented. We feel that we're really at the cutting edge of where things are getting done in terms of the federal agencies with wetlands planning. Some of the benefits of this study are providing accurate wetlands maps and science based ratings to these wetlands as a public service, which can reduce time delays and costs to developers, increase certainty in the permitting process, promote fair and more consistent planning decisions, and we think it will minimize environmental damages from wetlands loss. We're already seeing some benefits from this study. There were two main components for this study: one, the wetland boundary determinations where we used federal procedures, and the other is a wetland functional assessment to see which wetlands are important and what are they important for. The City and its various committees recommended the standardized assessment tool that I had created called WESPAK-SE, and I developed this well before the study began CBJ monies and grant monies through Southeast Alaska Land Trust. It was tested and peer reviewed, and felt we had a good method to understand the functions of these wetlands individually. Dealing with the first piece- boundary determinations- the two things we used there are the aerial photography and LIDAR to get at the topography. We began with those and then did ground level surveys walking through the brush and using GPS to map the areas. We now have a very solid idea of where the wetland boundaries are, giving much more certainty to areas in the future. [Throughout the presentation, Paul utilized map examples to show the capabilities of aerial imagery, such as how high the vegetation is in certain areas or how large the wetlands boundary is based on the map and then based on ground

surveys.] The City asked us to divide the wetlands into multiple assessment areas. It's not helpful to have one rating for wetlands. It's more practical to break the wetlands into pieces and label the importance of each piece. The minimum assessment area size was one acre. We ended up mapping 94 separate wetlands, but when we divided them into their different parts, we ended up with 345 assessment areas. We define the assessment areas with the imagery, whereas the wetland boundaries are what we did on the ground. The two things we used to break up the assessment areas are wetland type- there are seven types of wetlands in southeast Alaska that are recognized by the tool I developed. These types relate to the functions the wetlands perform. We mapped these different types into priority areas, which was helpful in defining the assessment areas. The other thing we use are watershed boundaries. We did some computer modeling with LIDAR to define where the watershed boundaries are, based on where the stream boundaries are. [Paul points to a map to show how the watershed divided one wetlands piece into two based on water flow.] What do we use to determine what is an important wetlands? We use our wetlands functions. These are things that wetlands do naturally, which is associated with each function as a value such as water storage. Some wetlands can store water. Who cares? The value question gets at the 'so what' question. If you have a wetland that stores water, if downstream from that wetland there are some culverts and bridges that get washed out from a flood, that wetland, if it is storing water, will become more valuable. You will see throughout our report, for each wetland, a series of function scores and a series of value scores. A wetland can have a high level of function but low value if there is low human or ecological benefit for having that wetland there. Conversely, a wetland can have low function or high value, so we have again for each one of these factors, everything from anadromous fish, to amphibians, pollinator habitat, and water storage, and so on. We have a score, and with that score, a rating. Using some acceptable statistical techniques, I have converted the scores to 'high', 'moderate', or 'low' for every case. I could just have created four categories –A, B, C, D- but some of the agencies are going with the three levels. In volume two of the report, we have two to three pages on each wetland with their scores. These scores were generated by computer models I put together on a spreadsheet based on my experience as a wetlands scientist and from the technical literature and peer review comments from some of your local wetland scientists here in Juneau. Another way we have presented the scores in volume one was that we took one function and ranked all the wetlands. We sorted the data again in

two ways: one by function where the sites are ranked and the other, for a given site, with ‘what is the site best at’ and ‘what is it worst for’. You can see that for different functions, some wetlands are better than others. [Paul discusses a wetland map and shows how one is good for carbon sequestration and the other is good for phosphorous.] Different wetlands are good for different things that have been incorporated into our assessment tool. Although these scores are from zero to ten, they have different distributions. [Paul discusses his presentation and shows that two-thirds of the 345 wetlands have no anadromous fish]. This gets to the big question: If you have these eighteen functions of a wetland, how do you combine these into one score for the wetland? We were asked not to do this. The CBJ could have had us assign an overall score, but that wasn’t a part of our contract. It’s kind of good thing because I don’t think it’s the purview of the scientists exclusively to decide which functions are more important than others in terms of when you combine the scores. One could just take an average of all those scores and say whatever the average is that represents the wetland, but there could be members of the public that feel that anadromous fish and salmon are more important than aquatic invertebrates and amphibians, and we have ratings for both. And they might want to see a weighted average, and there is a whole bunch of ways that you can combine these options mathematically. I list some of these options in your report, and I would call attention to your implementation section in volume one. We would very much welcome your comments on that- whether you think three rating categories is good or the old system of four categories, how to combine the function and value score, how to roll up these scores into one score per wetland, or one rating per wetland. Ultimately, the Corps of Engineers is the one that decides on wetland permits, but if we wait until the Corps of Engineers tells us how to roll up the scores, we may be waiting a long time. The second option would be for you, as the Lands Committee, to make some recommendations, or even just plow ahead and do it. Roll up the scores, tell us how to roll them up, and we can go ahead and do it that way, with no guarantee that the Corps will accept it. A third option is right now, SEAL Trust is part of the responsibility within the fee program for wetlands in southeast Alaska. They are coming up with a process for rolling up the scores of weighing different functions and so on, and whatever they propose to the federal agencies, you might take a ‘wait and see’ attitude and see if the federal agencies shoot down their idea or accept their idea and go with that. You have some options. I’ll leave it at that and turn it over to our next speaker.

Mr. Naglich: Thank you, Paul. Assembly members, I'm Francis Naglich, owner and president of Ecological Land Services located in Longview, Washington. We have a couple branch offices in western Washington but, have worked here in southeast Alaska for about four years doing wetland delineations, some permitting, and working on a couple mitigation banks as well, trying to provide mitigation on the mitigation side of the equation. We worked on this team as well and had a couple folks from our company up here doing assessments in the field, doing the field work, and helping with the delineations or at least the mapping of wetlands. Paul covered really well the science part of it, and I get the fun part of implementing that science for the use of planning purposes and how the City moves forward with developing its own land, and guiding private land owners on how to develop their own land in the future. I do want to emphasize that this implementation chapter is a work in progress. We have been taking comments from every group we've met with, and we're going to take comments from you guys as well as your concerns, and probably modify that as we need to before we have the final document. To give you a little backdrop on implementation and my history- within most of my company, and we have about 25 professionals working and managing and delineating and permitting wetlands, I'd say 85% of all our clients are developers that are hiring us to get a job done. My company comes with that kind of experience working in the permit world. It's a challenge to get permits through the government, but there are good ways to do it and a lot of what you've done here is a good first step for that. A little backdrop to implementing- remember that the Corps of Engineers wants you to avoid impacts first. If you can't avoid impacts to wetlands, minimize. If you can't minimize, mitigate. There is always that sequence going on. By mapping these wetlands and classifying them by function, you're actually doing that. You're trying to avoid the high quality ones for the functions they provide to society and the environment, and you're going to try and focus your development on the lower functioning wetlands where you can replace and mitigate those impacts. A federal rule came out in 2008 by the Corps of Engineers and EPA, so we've been living under that for 7 years, and the federal rule recognized that the onsite mitigation that developers were doing was failing. They were postage stamp mitigation sites that just didn't make sense. They weren't functioning for the environment, so through the federal rule, they have emphasized the role of mitigation banks and fee programs, and they have also targeted, in hierarchy, restoration being first, enhancement of wetlands, and preservation of wetlands from development as another option. In Alaska, a lot of

preservation happens but it's a difficult argument sometimes because a lot of land is already government land to begin with. Preserving more land is a hard thing for us to wrap our minds around and the federal rule only allows preservation in some situations, and we do believe in the work we do in mitigation banking that there are restoration opportunities out there that could make mitigation a commodity that developers are interested in buying to further their projects along. There is a hierarchy established under federal rule for the type of mitigation you do and the vehicle of that mitigation. Mitigation banks are first, and the fee programs second. Permitting responsible mitigation, where the developer does their own mitigation, is going away. It's harder and harder for clients to want to do that, and most clients don't want to do mitigation. The federal rule also wants you to use a regional approach. The goal here is to also provide certainty to developers, the City, regulators, mitigation bankers, and fee providers for the ground rules so if you can do a commodity exchange between development and a mitigation provider, what's the commodity that makes sense- acres, function, things of that nature? Ultimately it helps your city determine where it should be growing and developing in the future. We looked at three potential approaches to implementing this. One of them is kind of light- using all this information for planning purposes only. Second would be going back and doing a Corps permit which would be a regional permit for your city, and you've had one of those in your past and you could do it again. And the third would be more aggressive and actually you as a city implement your own management codes and policies governing wetlands. I lived in Washington state where every city, every county has its own regulations on wetlands, which means that every developer has to go through two or three permitting processes to get to a project, which is good for us consultants but not the clients. Option one is using all this information to be kept at planning level purposes so people know what's on their land or CBJ land, and the Wetlands Review Board which is part of your city government would comment on those permits but not take an active role in decisions but give recommendations. This wouldn't make it any easier for the committee process since the Corps would be the ones giving the permit, although they would have a lot better information. Second option would be revisiting what you had at one time which was a general permit. The way that works is the City applies for coverage under the Corps for activities in certain types of wetlands- maybe there are residential commercial projects in low functioning wetlands or maybe it's a regional area- and you look at all the areas you want to develop and you say 'we want permits in advance for

these types of activities' and the Corps would potentially issue that and allow you basically to move through an expedited process as you move forward to develop those lands. It would be an advance agreement from the Corps. I've worked on one in Washington State that works really well for port districts for industrial development, but they have them in Florida, Illinois, and the Corps even has general permits in Alaska for placer mining and other types of activities. Like I said, you had one here in the past. It does require renewal every five years, but it might be a great way to integrate all this information into a tool that's useful for well thought out development. Third option is more aggressive, which would be that the Assembly would direct staff to develop their own policies on all or certain types of wetlands. From a developers perspective, what this means is 'I have to get a permit from the CBJ and from the Corps'. You can see some obvious political ramifications for that, however it may give you predictability in the processes, and most of the developers I work with, it's not usually cost being the issue, it's the unpredictability. It's not knowing whether they're going to get a permit or not. Most of my clients are happy to pay mitigation- 'just give me the answer, and if it's not going to work, tell me "no" and tell me "no" early so I don't waste my money'. This is the most challenging aspect from the developers' standpoint for developing in and around wetlands. Paul and I are here to take questions.
Mr. Nankervis: Earlier on in the presentation, there was a comment made- 'watershed scale approach'. I have absolutely no idea what that means.
Mr. Adamus: So typically watersheds are where rain falls into a basin and drains down one river, or one stream, or another, so the watershed approach is looking at watersheds like the Yukon watershed. The Corps of Engineers in that federal rule wanted all the mitigation proposals to look at a watershed approach during mitigation. For example, if you're impacting a wetland in a watershed in Juneau, it's probably not appropriate to run down to Ketchikan and say 'Well I've done mitigation in Ketchikan so that covers the Juneau wetland'. That's kind of the gist behind it. Watersheds can be very challenging in southeast Alaska because there are a lot of watersheds and they all drain into the Sound. That gets more challenging but the Corps and the agencies have divided these watersheds up into HUCS, which are Hydraulic Unit Codes, and they have drawn these watershed lines. I don't think this survey was specific to any one watershed. It was more CBJ looking at where lands where most likely to be developed in the future due to road networks, elevation, and topography.

Mr. Nankervis: I get the watershed approach but I don't get the scale approach. What you're saying is limit the scale of your approach to a watershed, not look at two watersheds? Is that what you're saying? Because I understand what you're saying, look at how it affects a watershed because different watersheds are going to be affected differently but watershed 'scale', the 'scale' word kind of through me there.
Mr. Adamus: We're looking at wetlands not as just little isolated units but we're looking at a whole series of wetlands that may connect, and looking at the performance of those, so the geographic scale is large as opposed to most wetland planning up until now, which scales each wetland one by one by one.
Ms. Becker: In the general permit, you said we used to have this and it needed to be renewed every 5 years. Does that mean we did not renew it, should we have- is this something we should have for wetlands?
Mr. Naglich: Maybe Greg can help answer that. He was around till the end of that, but it sounded like a lot of the lower functioning wetlands that CBJ were involved with managing under that original permit were either impacted and gone away, they were developed, or there wasn't as much need for it.
Mr. Chaney: Teri can clarify this, but I believe our overall permit ran its course and we did successfully permit fill in most of the lower value wetlands, which is what we had authority over. High value wetlands were still under the Corps purview. It was a successful program but it expired, and we need this study or something like it to start up again if we want to do that.
Ms. Becker: To start up having a general permit?
Mr. Chaney: Yes. We needed the base information to do that because we filled almost everything we got a general permit for, and I'm a big fan of the old permit, but it's over.
Chair Kiehl: Further questions?
Mr. Nankervis: Early on, I believe it was staff that commented on volume two and volume three. We were only provided volume one. Volume two has all the maps, I'm not sure what three has but we only have one. In the memo, it says 'try to confine your review to volume one'. I would guess that's to keep us from getting lost in the weeds, so to speak. Could you speak to that?
Ms. Camery: Absolutely. We were afraid you might not show up if we gave you volume two, because volume two is 453 pages.
Chair Kiehl: 459.
Ms. Camery: 459 [laughs]. Jesse's looked at it. You are welcome to comment on volume one or volume two. We thought it best for your sanity to focus you on volume one, particularly the implementation chapter.

Volume two essentially contains all the charts, and photos, and maps associated with all three-hundred and forty-five wetland assessments. There is no volume three so I apologize if there's a miscommunication there.
Chair Kiehl: Mr. Mertl and then Ms. Troll.
Mr. Mertl: I guess I have a question in terms of options two and three. I think its fine the City and Borough can manage its own lands how it sees best fitting but what I'm concerned about is implications to developers on private land. I'm kind of interested in if we're not going with the postage stamp or looking more at watersheds- I can explain that to you later- trying to find that balance between science, what you want to do, get away from the postage stamp type of delineations in permitting, but as we move forward implementing this, getting a clear understanding on what are the implications for developers on private land, how do we try to minimize and make it a streamlined effort for them. Its currently not, I can tell you that much. I do delineations and permitting myself and it's very frustrating, and I just don't want that extra layer. Hopefully going through this process, finding a way to streamline and perhaps make it easier for developers?
Mr. Chaney: If I'll just jump in, one thing I know for sure from the development perspective is that having this information clarifies what you have up front and helps you plan ahead rather than have this show up later, which is really awful.
Mr. Naglich: I think you would totally want to include all private lands and CBJ lands in a general permit, and you'd probably want to have some of the key landholders at the table and ask what would work best for them, or a regional permit for what would work for them. Remember when they're at the table and they're hearing from the court just like you guys are, they're going to know what they can do and what they think is reasonable and what they can provide for mitigation- maybe there's land they could set aside permanently for protection, and we've done that on some of the regional general permits we've done, and that's kind of what you're required to do, but at least it gives you a tradeoff that you have some land to work with, land that's developable. I agree- there's no point in doing a general permit unless it gives some certainty to folks that they can move through a process. It doesn't give you a blanket approval but it sets the sideboards for if you meet these certain criteria, and you've delineated your wetlands, and you figured what your impact is, and you're within that area that was carved out, then yes, you'll get a permit and your mitigation will be "X" but I agree, it has to be predictable.

Ms. Troll: I was getting interested in the whole idea of trying to determine wetland values, and seeing how the objective of this is to integrate into a permit system better, whether it's the general permit, I would think that one layer you'd want to put on this is, which of these wetlands trigger another additional permit. For example, we know that if there's anadromous fish, we're going to have a Title XVI permit, if there's an eagles nest there it's a Fish and Game issue, and certain wetlands are going to be important for flood purposes and there's permitting related to that, so I'm wondering if you're going to take that kind of look at these various wetlands when trying to come up with the high value and low value.
Mr. Adamus: I like that suggestion and I think the best way would be to add a section of text- a narrative- that explains that, or those eighteen functions do relate to one law or another. Some cases indirectly- for example water cooling in the stream, that relates to the anadromous fish responsibilities of the agencies but it also relates to water quality, Section 401 of the Clean Water Act, temperature in streams, things like phosphorous and nitrate removal, that relates to Clean Water Act responsibilities, so I can see a need of more discussion for that.
Ms. Troll: Yes, there's an education value to the developers that they know that 'this particular piece of wetland also has layered on four or five additional permit processes, maybe I'll look elsewhere'.
Mr. Adamus: Yeah the Corps of Engineers says only that the proponent should look at the functions and values of the wetland. They don't ever say which values or functions. And there isn't anything that says that that list of functions has to be limited to the legal mandates of other agencies. We have tried to confine it mostly to that, but there are other things like pollinator habitat. There's no law that regulates that, but it's a key part of the ecosystem and the functioning of the landscape.
Chair Kiehl: I note the clock. Mr. Chaney, let me turn to you or to Ms. Camery and ask, you went through initially, you're going to get comments from the Review Board, the Planning Commission- what is it you will need and at what time frame from the Lands Committee and Assembly?
Mr. Chaney: From the Lands Committee, we're going to be coming back at the next Lands Committee meeting and at that point will be able to report on what the Wetlands Review Board's comments were and the Planning Commission's comments were and hopefully have a staff recommendation for you to consider. At that point you can decide if you need more time, if you like the recommendations presented, and you can

have time to talk about it in the meantime, since you'll have a month, roughly. The next meeting is at the end of October.
Ms. Camery: This is just the preliminary draft. We were going to send comments to the consultant by mid-November. They will come back with another draft for mid-February and then we'll have the same round of meetings with Assembly, Lands, Planning Commission, and Wetlands Review Board. The grant expires in June, and we'll see how far we get through the process before that grant ends, and whatever we have left at that point we'll work on in our department or go out and find more money. I appreciate your time this evening.
Chair Kiehl: Thank you for this extensive body of work. With that, the charity of the clock is going to keep us from the comments portion of this agenda. We are adjourned.

VI. STAFF REPORTS

There are no staff reports.

VII. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS

There were no liaison reports.

VII. ADJOURNMENT

The meeting was adjourned at 5:59 pm.