KITSAP COUNTY

FINAL DRAFT
SHORELINE INVENTORY AND CHARACTERIZATION

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1 INTRODUCTION

Kitsap County's Shoreline Master Program (SMP) Update requires a shoreline inventory and characterization be provided as a foundation for the SMP update process (*WAC 173-26-201(3)(c)and(d))*. The Inventory includes existing data, information and descriptions of watershed and shoreline attributes that pertain to the shoreline jurisdiction of Kitsap County, the existing shoreline conditions are described along with development patterns. The Characterization is the description of the ecosystem wide and shoreline processes, shoreline functions and opportunities for restoration, public access and shoreline use. The characterization of Kitsap County's shoreline ecological functions is largely based on the Nearshore Assessments (Borde, et al, 2009 and Judd, 2009) and the Puget Sound Ecosystem Characterization (Stanley, et al, 2010) in accordance with WAC 173-26-201(3)(d)(i)(B).

This Inventory and Characterization is fundamentally a compilation of information from existing documents and studies, and includes the information provided in maps for the shoreline areas as defined in RCW 90.58.030. This Report includes Kitsap County marine waters, rivers and streams over 20 cubic feet per second (cfs) mean annual flow, lakes over 20 acres in area, associated wetlands and shorelands adjacent to these water bodies, which, at a minimum is 200 feet upland from the waterbody (as defined in RCW 90.58.30).

The Inventory and Characterizationreport accomplishes the following:

- Provides supporting information for environmental designations
- Establishes the baseline for "no net loss" of ecological conditions and informs the policies, regulations and mitigation standards
- Identifies opportunities for protection, improving public access, supporting water-dependent uses and informs the policies, regulations and mitigation standards.
- Identifies piecemeal development causing harm to shorelines for the cumulative impacts analysis.
- Identifies degraded areas and opportunities for restoration to be incorporated into the Restoration Plan.

1.1 SUMMARY OF REPORT CONTENTS AND REFERENCES

1.1.1 Background

The Background, Section 2, provides information on the county-wide general geopgraphy, climate, geology, population, economics and ecowystem wide processes.

1.1.2 Characterization Areas

Characterization Area Summaries, Section 3, is divided into six sub-chapters, called *Characterization Areas* (Refer to Map C.1 in Appendix C.):

- North Puget Sound (Foulweather Bluff to Brownsville)

- Central Puget Sound (Brownsville to Puget Sound Naval Shipyard)
- South Puget Sound (Puget Sound Naval Shipyard to Pierce County, including Blake Island and Burley Lagoon)
- North Hood Canal (Foulweather Bluff to Anderson Hill)
- Central Hood Canal (Anderson Hill to Mason County)
- South Hood Canal (no marine shoreline- Union, Mission, Tahuya and Dewatto areas)

These areas were divided based primarily on watershed divisions and drift cells in order to provide a more ecological approach to discussing the county, rather than using political boundaries.

Each characterization area sub-chapter includes both marine shoreline summary tables (by drift cell) and freshwater shoreline summary tables (by water body). The summary tables provide management option recommendations by reference for both the marine and freshwater shoreline. Although references used in the Inventory and characterization may use differing definitions for *preservation, conservation restoration or creation*; the definition used in the SMP policy and regulatory updates adheres to the definition of *restoration* found in WAC 173-26-220 (37(). The use of differing definitions does not detract from the value of the information and decision-making tools provided by the marine and freshwater watershed assessment models.

1.1.2.1 Marine Shoreline Summaries (by drift cell)

USE OF THE NEARSHORE ASSESSMENTS IN THE MARINE SHORELINE SUMMARIES

The Marine Shoreline Summary tables are organized by marine drift cells and heavily utilize the Kitsap Nearshore Habitat Assessements (Borde, et al, 2009 and Judd, 2009). The Nearshore Assessments used a GIS-based model to assess the condition of Kitsap County's marine shorelines. The assessment is based on the principle that anthropogenic alteration of shorelines impact nearshore ecological functions and habitats. A glossary for terminology definitions has been provided in Section 1.2, Glossary and Abbreviations. The assessment approach is illustrated in *Figure 1*.

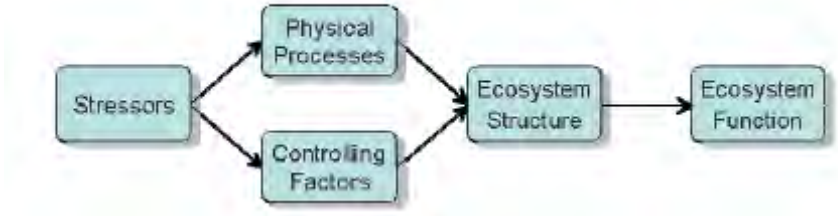


Figure 1 Diagram of nearshore assessment and prioritization approach (Borde, et al, 2009)

The model states that “habitat structure, habitat process, and ecosystem function are driven by the physical processes and controlling factors (*see Figure 2*). Controlling factors are environmental conditions that control local habitat structure and composition, including where habitat is and how much is present. Alterations to these controlling factors can have effects that propagate to the functional level of ecosystems. On this basis, the nearhsore assessment evaluates stressors to the controlling factors and physical processes as a proxy for ecosystem degradation”. *(See Table 1).* Stressors were identified in the Kitsap County Nearshore Inventory (2007, 2008) and additional data sets. The Assesment includes the 200 feet upland from the Oridinary High Water Mark and 1000 feet seaward from the Ordinary High Water Mark.

Controlling Factors	Physical Processes	Ecosystem Structure	Ecosystem Processes	Ecosystem Functions
• Wave Energy • Light • Water Quality • Depth/Slope • Substrate • Physical Disturbance • Hydrology	• Sediment Supply and Transport • Wave Erosion • Tidal Erosion • Wave Deposition • Fluvial Deposition	• Density • Biomass • Length/Size • Diversity • Landscape Position • Patch Shape • Patch Size	• Production • Sediment Flux • Nutrient Flux • Carbon Flux • Landscape Connectivity or Fragmentation	• Prey Production • Reproduction • Refuge • Carbon Sequestration • Biodiversity Maintenance • Disturbance Regulation • Migration Corridors

Figure 2: List of major Controlling Factors, Physical Processes, Habitat Structures, Habitat Processes, and Ecological Funcitons from conceptual model of Puget Sound nearshore ecosystems (Borde, et al, 2009).

The Nearshore Assessment divides the shoreline into Drift Cells (landscape scale) and Nearshore Assessment Units- NAU (site scale, based on geomorphic divisions for the shoreline produced by the Washington Department of Natural Resources’ ShoreZone Units). Weighted scores were given to each NAU based on the amount of disturbance (stress) at each site. When combined,an overall Drift Cell Distubance Score resulted. Scores were depicted on the map asLow-Green;Moderate-Yellow;and High-Red.

- Components included in the Marine Shoreline Summary tables from the Nearshore Assessment include:
- Drift Cell identification number
- Drift Cell Disturbance Score
- Length
- Geomorphic Type
- % Armored
- Historic Marsh/Channel Loss
- NAU identification number
- Dominant Process for each NAU

- The moderate to high impacting stressors on the Dominant Processs (a blank in the table indicates that the existing stressors in the NAU either have a low to no impact on the DP or CF)
- Controlling Factors (CF) for each NAU
- The moderate to high impacting stressors on the Controlling Factor

The Marine Shoreline Summary tables also include a Prioritization Recommendation, also derived from the Nearshore Assessments. This prioritization recommendation is based on the disturbance- based GIS assessment model where the site and the landscape score ratio defines an appropriate management strategy and the best potential areas for protection, restoration, enhancement or creation.The added "Tier II" analysis (Refer to Figure 3) can be used to evaluate potential and existing Kitsap County conservation and restoration type projects. *The management strategies identified in the nearshore assessment should not be considered to be a final recommendation for the area.* Each NAU is given one or more site-level potential management options, based on the combined level of site and landscape disturbance. See Figure 4 below. The assessment is a screening tool and provides a framwework for guiding future action and for an evaluation of an options' effectiveness.

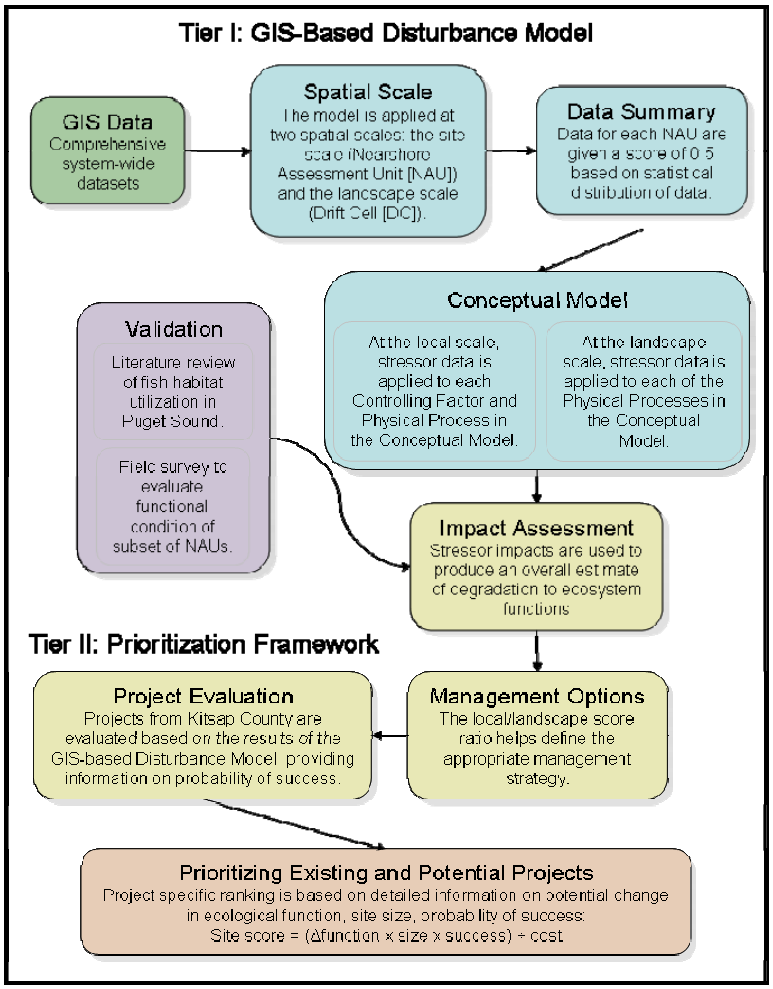


Figure 3. Simplified conceptual model from Nearshore Assessment

High Site Disturbance	Restore Enhance	Restore Enhance	Enhance Create
Moderate Site Disturbance	Conserve Restore	Conserve Restore Enhance	Enhance Create
Low Site Disturbance	Protect Conserve Restore	Protect Conserve Restore	Enhance
	Low Drift Cell Disturbance	Mod. Drift Cell Disturbance	High Drift Cell Disturbance

Figure 4. Matrix of management options most likely to succeed in a NAU based on the degree of disturbance of the drift cell and the site (NAU). (Borde, et al, 2009 and Judd, 2009).

The definitions of these management options within the Nearshore Assessment have been color coded on the map and defined below. The definitions used in Battelle's Nearshore Assessments are more specific than the definition of Restoration to be used for policy making within the SMP Update. WAC 173-26-020(27) defines "Restoration" *as the reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions.*

Protect: to exclude disturbances / stressors

Conserve: to maintain the current level of biodiversity

Restore: to restore structure and functions of the sites to historical conditions

Enhance: to improve the structure and functions of a site or landscape beyond current conditions

Create: to develop habitat or function that did not formally exist at a site or landscape

USE OF OTHER SOURCES IN THE MARINE SHORELINE SUMMARIES

Other sources used to complete the Marine Shoreline Summary tables are identified in *Figure 5* below.

Marine Shoreline SummaryTable Sources Chapter 3 Inventory and Characterization	
Subject in Table	**Reference**
Drift Cell Disturbance Score Length of Drift Cell Geomorphic Type Historic Marsh/Channel Loss Dominant Processes and Controlling Factors Stressors Prioritization Recommendations	*East Kitsap County Nearshore Habitat Assessment and Restoration Prioritization Framework and West Kitsap Addendum (Borde, et al. 2009)(Judd, 2009)*
Overhanging Vegetation	*Kitsap County Nearshore Inventory (Kitsap County DCD 2007 and 2008, Unpublished)*
Fluvial Influences	*Puget Sound Watershed Characterization Project (Stanley, et al., 2010)*
Terrestrial Vegetation	*PNPTC Riparian Assessment (Todd, 2010); Noxious Weeds (2005)*
Marine Vegetation	*Washington Dept. of Ecology Coastal Atlas*
Public Access	*Kitsap County Parcel Data, including Right-of-Ways Road-Ends, Parks, Ports; Draft Washington Marine Shoreline Public Access Project (DOE, 2010)*
Population Estimates and % Vacant Parcels	*See Appendix D*
Priority Species and Habitat	*Priority Species and Habitats (WDFW, 2009); (includes the Wildlife Survey and Data Management Database); Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment(WDFW/TNC, 2004)*
Shoreform Change	*PSNERP Comprehensive Change Analysis of Puget Sound (Anchor, 2009)*
Critical Areas (Critical Aquifer Recharge Areas, Geologically Hazardous Areas, Frequently Flooded Areas and Critical Drainage Areas, Stream Type, Wetlands)	*Kitsap County Critical Areas Ordinance (Title 19) and Associated Maps*
Land Use	*Kitsap County Comprehensive Plan Designated Land Use (2006); Port District Map (KC GIS, 2010); Water Districts (KC GIS/KPUD, 2010); 303(d)/305(b) Maps (KC GIS/DOE, 2010); DOE Regulated Clean-up Sites (DOE, 2010); Shellfish Growing Areas Annual Reports (DOH, 2010)*
Known Historical and Cultural Resources	*Washington State Department of Archaeology and Historic Preservation (DAHP, 2009)*

Figure 5. Sources for the Marine Shoreline Summary Tables

1.1.2.2 Freshwater Shoreline Summaries (by water body)

The Freshwater Shoreline Summaries follow the Marine Shoreline Summaries in each Characterization sub-chapter. The freshwater tables summarize the information available for the portions of streams over 20 cfs mean annual flow, lakes over 20 acres in area, associated wetlands and their adjacent shorelands at least 200 feet from the water body.

The Freshwater Shoreline Summary tables for each water body are organized by:

- Physical Environment characteristics (Green Table)
- Water Flow Processes (Watershed and site scales)
- Water Quality
- Riparian Habitat
- Biological Resources (Yellow Table)
- Salmonids
- Species (Priority and/or federal, state or local listed species)
- Noxious Weeds (sites as have been located; potential is much greater)
- Other Designations (Area of Ecological Significance, Refugia category)
- Land Use and the Built Environment (Red Table)
- Comprehensive Plan Land Use Designations
- Watershed Land Cover (by PSNERP watershed)
- Publicly Owned Lands
- Critical Areas (as regulated by KCC Title 19)
- Modifications and Utilities within the Shoreline jurisdiction (includes barrier culverts, intersecting roads, level of development, major structures, State Regulated Clean-up Sites)
- Recommendations (Blue Table)
- Water Flow Management Category (From the Physical Environment, Water Flow Processes- Green Table)
- Limiting Factors Analysis recommendations

USE OF THE PUGET SOUND WATERSHED CHARACTERIZATION PROJECT IN THE FRESHWATER SHORELINE SUMMARIES

The Puget Sound Watershed Characterization Project from the Washington Department of Ecology (Stanley, et al, 2010) is a contributing information reference for Kitsap County's freshwater characterization and for potential area recommendations. Other potential recommendations were provided in the Limiting Factors Analyses (Haring, 2000 and Kuttel, 2003).

The *Puget Sound Watershed Characterization* uses methods for characterizing watershed processes based on predicting how water moves within a watershed according to the landscape setting (Preston and Bedford 1988, Bedford 1996, Winter 1988). The document describes the types of "controls" or important areas on the landscape that govern the movement of water and associated processes. The Characterization further describes how activities impair each process, and identifies a set of indicators for these activities. A *watershed management matrix,* Figure 6, summarizes the information from the assessment. The matrix is a graphical representation used to identify analysis units most suited for protection, restoration, and other land use activities for a watershed process. The matrix results from two factors: 1) the importance of the analysis unit in maintaining watershed processes, 2) and the degree to which the processes in the analysis unit have been impaired by human activities.

Each analysis unit is ranked, relative to the other analysis units, for its potential for restoration, preservation, and development suitability. Policy and resource managers can use this information to assess the potential impact of future development patterns on watershed processes. The results of the analysis can also be used to establish the environmental condition of an analysis unit relative to other analysis units. This approach is most effective when used in the comprehensive planning process applied at the county, subarea, or watershed scale, allowing communities to effectively plan for future development. This approach can identify the potential adverse changes in watershed processes resulting from different patterns and types of land use activities.

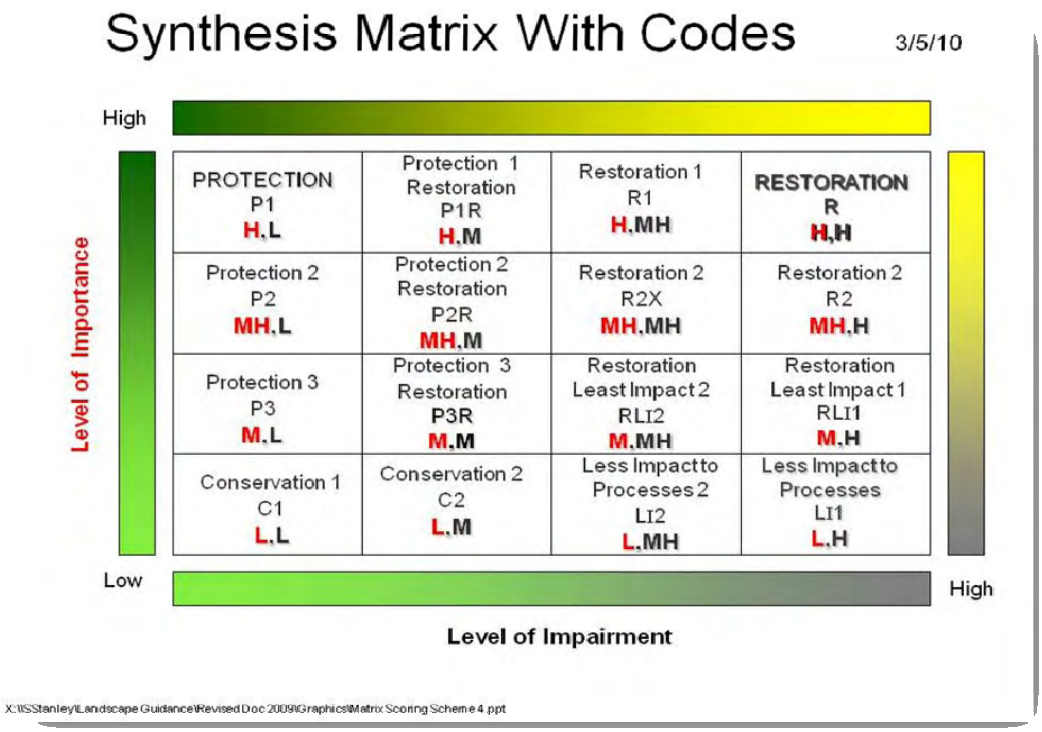


Figure 6: Matrix for synthesizing the results of the importance and impairment models into management categories (Stanley et al., 2010)

The Puget Sound Watershed Characterization used a differing set of recommendations than those used in the Nearshore Assessment (Borde et al 2009 and Judd, 200) The recommendations include management options for Protection, Restoration, Conservation and Less Impact to Processes. The definition of restoration in WAC 173-26-020(27) is the definition that will be used for policy making within the SMP update.The definitions of the recommendations used in the Puget Sound Ecosystem Characterization (Stanley et al, 2010) for the freshwater jurisdictions are as follows:

Recommendation Options Definitions from the Puget Sound Watershed Characterization (Stanley et al, 2010).

PROTECTION:
Protection areas have higher levels of importance for watershed processes and limited impairment (color-coded dark green in maps and tables). Protection of functioning processes should be a high priority. Extra care should be taken to establish land use patterns (i.e. land use types, activities, standards and regulations) that protect and maintain watershed processes. Protection 2 (color-coded light green) areas may have a lower level of importance but may play an important role in sustaining down-gradient aquatic resources.

RESTORATION:
Restoration areas still have a high level of importance for watershed processes, but also have a higher level of impairment (color-coded yellow in maps and tables). Restoration of watershed processes should be considered a high priority unless all watershed processes and aquatic functions are permanently impaired by urban development. Restoration in "Restoration 1" areas will have the most significant benefit, relative to other rated sub-units, in restoring watershed processes and aiding in sustaining down-gradient aquatic resources. These restoration activities can involve restoring the natural of the site, but can also include activities that restore the capacity of an important area to support the process. Again, care should be taken in establishing land use patterns that protect and maintain areas for important watershed processes.

CONSERVATION:
Conservation areas have a lower level of relative importance in supporting watershed processes, but also have a low level of impairment (color-coded lime green in maps and tables). As such, these areas have an intact suite of processes and functions that support existing aquatic ecosystems and would require considerable time to restore elsewhere on the landscape. Management strategies in these areas may rely more heavily on wildlife assessments and the need to protect critical habitats. Higher intensity land use activities may be appropriate in these areas relative to protection areas, but care should be taken to establish land use patterns (i.e. land use types, development policies) that protect and maintain watershed processes

LESS IMPACT TO PROCESSES:
Areas of "less impact to processes" have lower levels of importance for watershed processes and higher levels of impairment (color-coded gray in maps and tables). These areas can be considered as more suitable for urban land use activities. Planning measures employing protection of critical aquatic resources and appropriately sited development should be considered. However, offsite mitigation in other areas suitable for restoration should be evaluated as a higher priority.

USE OF OTHER SOURCES IN THE FRESHWATER SHORELINE SUMMARIES

Freshwater Shoreline SummaryTable Sources Chapter 3 Inventory and Characterization	
Subject in Table	Reference
Physical Environment	
Water Flow Processes (Watershed)	*Puget Sound Watershed Characterization Project (Stanley, et al., 2010)*
Water Flow Processes (Site)	*Habitat Limiting Factors Analysis (Haring, 2000)(Kuttel, 2003); Lake Water Quality Monitoring (DOE, 2009); WA Dept. of Ecology*
Water Qualilty	*303(d)/305(b) Maps (KC GIS/DOE, 2010); DOE Regulated Clean-up Sites (DOE, 2010); 2009 Water Quality Monitoring Report (KCHD, 2009); Benthic Macroinvertebrate Monitoring (KC Stream Team1998-2006); Lake Water Quality Monitoring (DOE, 2009); Kitsap Salmonid Refugia Study (May, 2003)*
Riparian Habitat	*Habitat Limiting Factors Analysis (Haring, 2000)(Kuttel, 2003); Kitsap County Comp.Plan (2006); Kitsap Salmonid Refugia Study (May, 2003); Kitsap County GIS (imagery, LiDAR, etc.)*
Biological Resources	
Salmonids (Known Present)	*Washington Lakes and Rivers Information System (WLRIS); Habitat Limiting Factors Analysis (Haring, 2000)(Kuttel, 2003); Kitsap Salmonid Refugia Study (May, 2003); Salmonscape (WDFW)*
Other Regulated Species (Known Present)	*Priority Species and Habitats (WDFW, 2009); (includes the Wildlife Survey and Data Management Database)*
Noxious/Invasive Species (Known Present)	*Noxious Weeds (2005); Lake Water Quality Monitoring (DOE, 2009)*
Other Designations (Non-Regulatory)	*Kitsap Salmonid Refugia Study (May, 2003); Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment(WDFW/TNC, 2004)*
Land Use (Built Environment)	
Land Use	*Kitsap County Comprehensive Plan Designated Land Use (2006*
Land Cover	*Dept. of Commerce et al. Land Cover 2006 (KC GIS); PSNERP Watersheds*
Publicly Owned Lands	*Kitsap County Parcel Data, including Right-of-Ways Road-Ends, Parks, Ports; Draft Washington Marine Shoreline Public Access*

Freshwater Shoreline SummaryTable Sources Chapter 3 Inventory and Characterization	
Subject in Table	Reference
	Project (DOE, 2010)
Critical Areas	*Kitsap County Critical Areas Ordinance (Title 19) and Associated Maps*
Modifications and Utilities	*Regulated Clean-up Sites (DOE, 2010); Port District Map (KC GIS, 2010); Water Districts (KC GIS/KPUD, 2010); Habitat Limiting Factors Analysis (Haring, 2000)(Kuttel, 2003); Kitsap County GIS (imagery, LiDAR, etc.)*
Population Estimates and % Vacant Parcels	*See Appendix D*
Recommendations	
	Puget Sound Watershed Characterization Project (Stanley, et al., 2010); Habitat Limiting Factors Analysis (Haring, 2000)(Kuttel, 2003)

Figure 5. Sources for the Freshwater Shoreline Summary Tables

1.1.3 1. Recommendations and Management Options

Chapter 4 provides tables, once again for both marine and freshwater shorelines, which describe options for managing areas of shoreline based on its recommendations from the previous Chapter (instead of re-listing them for each summary table). The Management Options for marine shoreline were taken from *Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide* (Enviro Vision, 2007). They were placed in the Recommedation category that best fit. The Management Options for freshwater shoreline were taken from *Land Use Planning for Salmon, Steelhead and Trout* (Knight, 2009) and Limiting Factors Analysis (Kuttel, 2003). Most of these management options apply to the watershed scale, however some options which apply to a more regional scale such as public education and outreach and incentives should also be considered for each Recommendation. These recommendations, like all other information in the Inventory and Characterizationtwill be utilized for informing policy and identifying possible creative solutions.

1.1.4 Public Access and Shoreline Use Analysis

Chapter 5 evaluates the current and possible shoreline public access and looks at the projected needs based on future population estimates (Maps C.23, C.27 and C. 37). Public Access includes physical and view access to the shoreline, including those at parks, ports, road-ends, rights-of-way and utility corridors.

The Shoreline Use Analysis tables help determine potential shoreline use conflicts by looking at discepencies between:

- Current existing Environmental Designations

- Drift Cell / Watershed Scores
- Comprehensive Plan Designation / Zoning
- % Potential parcel buildout
- Port Districts, Marina, Sub Area and LAMIRDS

1.1.5 Characterization Data Gaps

The Characterization Data Gaps, Section 6, identifies areas of study or additional information that may not be available at the time the Inventory and Characterization is compliled and, that may enhance and inform policy-making for future shoreline updates and for permitting decisions.

1.1.6 Appendices

Appendix A : *References and Data Sources*- provides the references and data Sources by category (general, marine, fresh water, future potential references and GIS references)

Appendix B: *Summary Matrices of Port , Public Access and Park Plans*

Appendix C: *Maps*- displays information by location relating to the marine and freshwater summary tables as well as other information used thoughout this report; introduction to maps section provides sources and background information to the data used.

Appendix D: *Future Growth Trends for SMP Jurisdiction- sources and methods used to determine the percent vacant and underutilized parcels by drift cell and freshwater SMP jurisdiction.*

1.2 GLOSSARY and ABBREVIATIONS

305(b) - a *statewide* assessment of the status of all the state's waters; Clean Water Act Section 305(b) requires each state to prepare a water quality assessment report every two years. These include: temperature, dissolved oxygen, pH, ammonia, fecal coliform, and metals (arsenic,
cadmium, copper, lead, mercury, nickel, and zinc) and Wildlife Habitat Use Assessment.

303(d) - The 303(d) list reports on 305(b) category 5 waters, the impaired waters of the state. Waters placed on Category 5 require the preparation of a plan to improve water quality by limiting pollutant loads (TMDL).

Area of Ecological Significance- This designation is based from the Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment produced by The Nature Conservancy and the WDFW. It provides information on the status/conservation of the biological diversity of the ecoregion, including mapped Areas of Ecological Significance. http://www.waconservation.org/ecoWillamette.shtml

B-IBI – Benthic Index of Biologic Integrity (macroinvertebrate scores)

CARA- Critical Aquifer Recharge Area: an area exhibiting hydrogeologic conditions that facilitate aquifer recharge and/or transmitting contaminants to an underlying aquifer.
Category 1- those areas where the potential is high for certain land-use activities to adversely affect groundwater
Category 2- those areas that provide recharge effects on aquifers that are currently or potentially will become potable water supplies and are vulnerable to contamination.

CFS- cubic feet per second

Controlling Factors- as refers to the Nearshore Assessment;

Critical Areas- include the following categories and ecosystems: Wetlands, Fish and Wildlife Habitat Conservation Areas, Geologically Hazardous Areas, Frequently Flooded Areas, Aquifer Recharge Areas

Critical Drainage Area- These features meet at least one of the following criteria:
Determined to be a natural closed depression, Field investigations identify poor drainage qualities, Determined to have a high potential for drainage and water quality problems, and/or sensitive to the effects of construction or development

DO- Dissolved Oxygen

DOE- Washington Department of Ecology

Dominant Process- as refers to the Nearshore Assessment;

Drift Cell- Segments of shoreline which are defined by sediment transport processes (such as long-shore drift), the basis for establishing and maintaining habitat structure and function

Drift Cell Disturbance Score- refers to the score given in the Kitsap Nearshore Assessment for relative disturbance level within the drift cell. 1 was given a “Low” disturbance rank, 2 a “Medium” rank and 3 a “High” rank, corresponding to Green, Yellow and Red on the maps, respectively. These disturbance scores are based on the weighted scores of the “stressors” on the dominant physical processes and controlling factors for each Nearshore Assessment Unit.

Eutrophic- High levels of nutrients; characterized by poor visibility in the water column, with many aquatic plants and fish. Algae blooms can be a problem in these lakes.

FC or FCB- Fecal Coliform Bacteria

Fluvial Deposition- as relates to the Nearshore Assessments as a Physical Process; acts to shape the geomorphology of the shoreline through deposition of sediments provided by a stream or river.

Fluvial Influences- those watersheds (PSNERP) that empty within the drift cell being described (numbers are associated with metadata for maps)

Frequently Flooded Area- all Kitsap County lands, shorelands and waters that are within the one-hundred-year floodplain as designated by FEMA on Flood Insurance Rate and Boundary Maps

Geologic Hazard- The GEOHAZARDS feature class is a union of the DNR & Natural Resource Conservation Service's (SCS) 1980 Soil Survey for Kitsap County and the soil STABILITY classification from the 1979 "Quaternary Geology and Stratigraphy of Kitsap County" thesis work by Jerald Deeter. (CAO 19.400.410)

Historic Marsh/Channel- numbers were derived by Battelle for each NAU and were added for a drift cell total, in square feet and linear feet, respectively.

KCHD- Kitsap County Health District

KPUD- Kitsap Public Utility District (PUD #1 of Kitsap)

LAMIRD- Limited Area of Intense Rural Development

Land Use- Land Use Designations, as defined in the Kitsap County Comprehensive Plan (not Zoning map)

LWD- Large Woody Debris (also known as Large Woody Material)

SMA- Shoreline Management Act

SMP- Shoreline Master Program Update

Marine Vegetation- Dept. of Ecology's Washington Coastal Atlas data for patchy, continuous or beds of eel grass, kelp and/or salt march

Mean Annual Flow- streams with more than 20 cubic feet per second *mean annual flow* are within the shoreline jurisdiction; average of the annual mean flows over a period of many years; not the same as annual mean flow with is the average daily flow over a one-year period.

Mesotrophic- Moderate amounts of nutrients; characterized by mostly clear water, with some aquatic plants and fish.

Modifications and Utilities- include any known culverts hindering natural riparian functions (i.e. salmon passage, the transport of Large Woody Debris/Material and flows), roads intersecting with the jurisdictional area, development (including single family residences) within the jurisdictional area, other structures (dikes, fish ladders, dams, etc.), State Regulated Clean-Up Sites and any other modifications reported as unique to the watershed in question.

Mosquito Fleet Trail- Sytem of over 40 historical ports that connected the people and economy of Kitsap County; County, cities and other agencies have been working to preserve and enrich this history through a point-of-interest trail, highlighting environment, history and culture of each area.

Noxious Weed- By definition of RCW 17.10.010, a noxious weed is a plant that, once established, is highly destructive, competitive or difficult to control using cultural or chemical practices. In more specific terms, a noxious weed is a plant that was introduced to Washington State, is difficult to control and damaging to our economy and natural resources. They often spread via waterways and an infestation at the watershed-scale could indicate infestations throughout. Those plants and locations listed in this report are only those observed or reported to the Kitsap County Noxious Weed Control Program. It should be recognized that the absence of any noxious weeds in a Summary table does not indicate an absence in real-life.

Oligotrophic- Very low nutrients; characterized by very clear water, with very few aquatic plants and fish.

Other Designations- refers to those categorized designations that are not attached to any current regulatory mechanism like Critical Areas

Overhaning Structure- as in the Kitsap Nearshore Inventory data, collected in the summers of 2007 and 2008: any house, shed or deck which all or partially hangs over the Ordinary High Water Mark (OHWM). This data set did NOT

include those structures such as piers or docks, which incorporated any pilings (these were recorded under the Piers/Docks section of the data set).

Overhanging vegetation- as in the Kitsap Nearshore Inventory data collected in the summers of 2007 and 2008; any vegetation that hung over the Ordinary High Water Mark (OHWM). The original data was collected with the same range values, but for each Nearshore Assessment Unit (NAU). The information presented in this report is an average of the NAU ranges within the Drift Cell.

Percent Armored- This number is derived from dividing the total feet armored within the drift cell by the total number of feet within the drift cell, as listed in the Kitsap Nearshore Assessment.

Priority Habitats and Species- WDFW list of habitat types (crucial or important areas to many species) and species (state or federally listed as threatened, endangered, candidate, or sensitive; animal aggregations that are considered vulnerable; and species of recreational, commercial or Tribal importance that are considered vulnerable).

PSNERP- Puget Sound Nearshore Ecosystem Restoration Project: a large-scale initiative to identify significant ecosystem problems, evaluate potential solutions, and restore and preserve critical nearshore habitat. Partnership includes the U.S. Army Corps of Engineers (Corps), state, local, and federal government organizations, tribes, industries, and environmental organizations; PSNERP Watershed #s refer to the identification numbers given to each known watershed/stream. These are used in this Report to quantify the number of freshwater inputs to the Drift Cell.

Public Access- All areas within 200 feet of the OHWM that are publically owned, which are current or potential public access (as defined in WAC 173-26-221(4)(a)) sites. Not listed are the hundreds of Right-of-Ways (usually for utilities) and road-ends that provide legal access to the shoreline, though parking may be minimal or non-existent.

Refugia (Salmonid) - high-quality habitat areas that provide refuge for members of the salmon family including salmon, char and trout. The *Kitsap Salmonid Refugia Report* (May et al. 2003) identifies priority areas that are important for the conservation, enhancement, and restoration of local salmon populations. Category A represents priority refugia with natural ecological integrity; Category B represents primary refugia with altered ecological conditions; Category C represents secondary refugia with altered ecological conditions; and Category D represents potential future refugia.

Shoreform Change- as in the Marine Shoreline Summary tables, uses the PSNERP Comprehensive Change Analysis for Puget Sound (Anchor, 2009) to identify and compare past and present shoreforms (ex. Bluff-backed beach converted to Artificial).

Species (regulated) - those state and federal listed species including those designated as endangered, threatened, sensitive, candidate, and monitored that have been observed. Additionally, data for other species considered a priority by Washington Department of Fish & Wildlife are also included. The species included in each table are those present in the watershed/drift cell and are not site-specific (except Bald Eagle). The rationale for this reporting method is the sensitivity of endangered species locations and that many species will utilize and migrate through a larger territory, not only a specific location. The "(1)" and "(2)" descriptor after the species indicates whether it is a Class I or Class II Wildlife Habitat Conservation Area (also listed in the Critical Areas section of the table). See Kitsap County Code (KCC) 19.300.310 (B) (3).

Stream (S) or (F) - S= Shoreline of the State, F= Fish Bearing Stream

SFR- Single Family Residence

Temp. - Temperature

Terrestrial Vegetation- Riparian Assessment completed in 2010 by the Point No Point Treaty Council.
Mature Forest category includes conifers, deciduous and mixed trees with stem sizes over 6-8 inches. The **Other Natural Vegetation** category includes young forest, scrub/shrub, marsh and natural areas. **Non-Forest** category includes lawns, roads, buildings and other unnatural cover. Two other categories, Water and Offshore, were not included in the report and therefore the numbers should never equal 100%.

Total % Forested- as relates to the Freshwater Shoreline Summary tables, derived from adding Deciduous, Coniferous and Mixed landcover data and dividing by the total watershed acres to determine the % of the watershed that is forested. (DOC et al. Land Cover, 2006)

Total % Impervious- as relates to the Freshwater Shoreline Summary tables, derived from adding Low, Medium and High Intensively Developed with Developed Open Space and dividing the total by the number of acres in the watershed to get the total % impervious. Note that the two numbers, % impervious and % forested will NOT equal 100%, as there are other land uses in effect (DOC et al. Land Cover, 2006)

Water Flow Management Category- as relates to the Watershed Characterization study (Stanley et al 2009); The recommendation for the water flow processes, from the Water Flow Synthesis score(s) in the "green" table of the Freshwater Shoreline Summary tables.

WDFW- Washington Department of Fish and Wildlife

Wetland- Wetlands are those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. They include, but are not limited to, ponds, marshes, bogs, wet meadows and swamps, which are identified by three general characteristics:

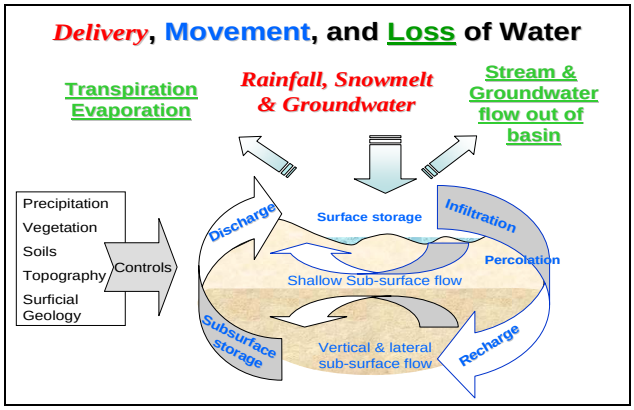
Hydric Soils – soils saturated with water

Water (hydrology)– the presence of standing water at least part of the year

Hydric Plants – water tolerant or water dependent species

Wildlife Habitat Conservation Area (Class I)- Habitats recognized by federal or state agencies for state and/or federally listed endangered, threatened and sensitive species; Areas targeted for preservation by federal, state and/or local governments that provide fish and wildlife habitat benefits; Areas that contain habitats and species of local importance (California Sea Lions, Bald Eagle, Common Loon, Pacific Pond Turtle, Peregrine Falcon, Chinook Salmon, Pink Salmon, Steelhead, Hood Canal Summer Chum)

Wildlife Habitat Conservation Area (Class II) - Habitats for state-listed candidate and monitored species documented in maps or databases that if they are altered, may reduce the likelihood that the species will maintain and reproduce over the long term. (Harbor Seal, Purple Martin, Great Blue Heron, Caspian tern, Osprey, Pacific lamprey, Pileated woodpecker, Reticulated sculpin, Western toad)



Delivery Importance: Recharge areas with higher amounts of precipitation; Rain-on-snow zones; Snow-dominated zones

Delivery Impairment: Reduction of forest cover in rain-on-snow and snow dominated zones; Watershed imperviousness

Surface Storage Importance: Saturated areas; Areas of low gradient; Floodplains

Surface Storage Impairment: Rural & urban land use; Loss of depressional wetlands; Miles of impaired stream through unconfined & moderately confined floodplains; Dikes and levees on stream reaches with floodplains; Dams

Ground Water Recharge Importance: Low permeability deposits; High permeability deposits; Deep permeable deposits

Ground Water Recharge Impairment: New construction; Land uses with impervious cover on geologic deposits of low permeability; Non-forested vegetation on geologic deposits of low permeability; Non-forested vegetation

on geologic deposits of high permeability; Land uses with impervious cover on areas of high permeability; Utility lines, Septic systems, Unlined irrigation canals

Ground Water Discharge Importance: Floodplains intersecting permeable deposits; Slope breaks intersecting area of hydric soils extending into lower gradient area; Stratigraphic pinchouts; Contact areas between geologic deposits of different permeabilities

Ground Water Discharge Impairment: Roads; Well locations and density, Drawdown patterns, Reduced Baseflow, pumping rates and volumes; Land use type (urban/rural) in floodplains and wetlands

Water Flow Synthesis Importance: Sum of Delivery, Surface Storage, Groundwater Recharge and Groundwater Discharge Importance scores

Water Flow Synthesis Impairment: Sum of Delivery, Surface Storage, Groundwater Recharge and Groundwater Discharge Impairment scores

From: Puget Sound Water Characterization Project: Description of Methods, Models and Analysis, DOE. March 2010 v.2

2 BACKGROUND

2.1 Geography

Kitsap County is centrally located in the Puget Sound region on the northern Kitsap Peninsula. The Puget Sound surrounds Kitsap County on the north and east, while the shoreline of Hood Canal stretches along the western extent. Kitsap County is bordered by Pierce and Mason Counties on the south. It is approximately 393 square miles in area (336 sq. mi. in unincorporated Kitsap County) with 216 miles of marine shoreline (excluding Bainbridge Island). (Kitsap County Comprehensive Plan, 2006).

Resource management areas within Kitsap County include: Water Resource Inventory Area (WRIA) 15, South Puget Sound Action Area, North-Central Puget Sound Action Area, Hood Canal Action Area, West Sound Watersheds Lead Entity, and the Hood Canal Lead Entity. Fisheries Enhancement groups that work in Kitsap include: South Puget Sound Salmon Enhancement Group, Hood Canal Salmon Enhancement Group, and the Mid-Sound Fisheries Enhancement Group.

In addition, Kitsap County is located within the following state agency management areas: Department of Ecology Northwest Region, Department of Fish and Wildlife Coastal Region-6, Department of Natural Resources South Puget Sound Region, and the Department of Transportation Olympic Region.

2.2 Climate

The Climate in Kitsap County reflects the moderating influence of Puget Sound and the Pacific Ocean. The area experiences short, cool, dry summers and prolonged mild, wet winters. During the winter, the average temperature is 40-50°F during the day and 30-40°F at night. During the summer, the average temperature in 70-80°F during the day and 50-60°F at night (Kitsap County Comprehensive Plan, 2006).

Annual precipitation ranges from an average of less than 30 inches on the northern end of the peninsula to 80 inches around Seabeck-Holly (Purdy, 2006). The overall mean precipitation value is 49.58 inches for the entire County (from 1991-2006 data). The prevailing winds from the south-southwest and the “rain shadow” effect created by the Olympic Mountains contribute to this geographic variation in precipitation throughout the County. Typically, 80% of the region’s precipitation falls between October and March. July is the driest month and December is the wettest. Winter storms may bring strong winds and heavy rains, which can damage trees, buildings, and utility lines and cause flooding. Temperatures rarely drop below freezing; therefore snowfall accumulation is minimal (Kitsap County Comprehensive Plan, 2006).

Recent climate change analysis for our region in *The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate* (Climate Impacts Group, 2009) (moderate range of predictions), show temperatures increasing by 2.0°F by 2020, 3.2°F by 2040 and 5.3°F by 2080. Increased temperatures will lead to higher water demand from forests and subsequent Douglas Fir population declines by 2060. Models show that Kitsap Peninsula Doug las Fir populations are at a particular risk.Precipitation shows an increase of 1.3-3.8%, with significant changes in seasonality, wetter winters and dryer summers. Precipitation events are likely to be less frequent but more intense, with an increase in winter stream flows. Low Impact Development techniques may help mitigate some of these impacts. However, the warming stream temperatures and altered stream flows will likely reduce the reproductive success for many salmon populations, particularly Summer Chum. Sea level rise (moderate projection) is expected to be up 6" by 2050 and 13" by 2100 for Puget Sound, taking into account global sea level rise, vertical land movement and atmospheric dynamics. Sea level rise may create some ambiguity in property boundaries due to a shift in where the actual high tide occurs. Changes in tide levels may also reduce shellfish harvest periods by over 30%, and while the range and magnitude of the effects of ocean acidification cannot be quantified at this time, they are thought to be substantial. Higher tides and intensity of storm events will also increase landslide frequency in Puget Sound. Flooding will likely be an increasing problem on river deltas, points, spits, barrier beaches, pocket beaches and berms with low backshore areas, making building in these areas increasingly risky.(Littell, et al., 2009)

Projected Scenarios for Sea Level Rise at 2050 and 2100 for Puget Sound		
	2050	**2100**
Very Low	3"	6"
Medium	6"	13"
Very High	22"	50"

From the Washington Climate Change Impacts Assessment, Littell, 2009

2.3 Soils, Geology and Hydrology

Erosion and deposition by glaciers (the most recent ending about 12,000 years ago) have helped to level the peninsula's landscape. The principle rock formations underlying the county include basalt and sandstone formed millions of years ago and silt, sand, clay and gravel deposits left by glacial ice and subsequent action of streams.

Broad glacial drift plains and gently rolling hills characterize much of the county. Many of the long valleys are occupied by wetlands, generally oriented north to south, parallel to the direction of the ice movement. The basalt bedrock of the Green and Gold Mountain area resisted glacial erosion. Kettle lakes and ponds are located throughout the county and were formed where large chunks of ice were stranded as the glacier receded north

Soil deposits in the county are mostly derived from glacial till or glacial outwash, although some are derived from weathered basalt, organic material or alluvial deposits. The predominant soil in the county is Alderwood gravelly sandy loam, which is moderately deep (20-40 inches), formed on glacial till, moderately well-drained with a slope up to 30%. Water moves slowly through this soil, with permeability ranging from 0.6-6 inches per hour and a perched water table at a depth of 20-36 inches from January to March. Those soils derived from glacial outwash are highly permeable, excessively well-drained soils and often devoid of wetlands or streams. (KC Comprehensive Plan, 2006).

2.3.1 Seismic and Geologic Hazards

Geologically hazardous areas are those areas that, because of their susceptibility to erosion, landslides, debris or mudflows, or other geologic events, are generally not ideal for development. The Kitsap County Critical Areas Ordinance (KCC 19.400) divides geologically hazardous areas into two main categories: Areas of High Geologic Hazard and Areas of Moderate Geologic Hazard. Most of these areas tend to be along the marine shoreline and freshwater stream banks and ravines.

Kitsap County is in a seismically active area. One major fault, the Seattle fault, begins in Kitsap County and runs east across Bainbridge Island and across Puget Sound. It affects the Central Kitsap portion of the county as well as the Port Orchard vicinity. Area slopes greater than 40%, instable slopes and areas with hydric soils are more prone to impacts (Kitsap County Comprehensive Plan, 2006).

2.3.2 Critical Aquifer Recharge Areas (CARA)

Critical aquifer recharge areas are land areas that contain hydrogeologic conditions that facilitate aquifer recharge and/or transmit contaminants to an underlying aquifer. Category one critical recharge areas are areas where the potential to adversely affect groundwater is high. Category two aquifer recharge areas are areas that provide recharge effects to current aquifers or aquifers with potential for potable water supplies, and are vulnerable to contamination. Category two aquifer recharge areas occupy the majority of the county's limits (Kitsap County Title 19, Critical Areas Ordinance, 2005).

2.3.3 Frequently Flooded Areas / Critical Drainage Area / Channel Migration Zones

Frequently Flooded Areas (FFA) are all Kitsap County lands, shorelands and waters that are within the one-hundred-year floodplain as designated by FEMA on Flood Insurance Rate and Boundary Maps dated December 18,2007 (Kitsap County Title 19, Critical Areas Ordinance, 2005, and Kitsap County Code Title 15 Flood Hazard Areas, 2003). These areas are found along most major stream and river floodplains within the county and nearshore wetland areas. For shorelines, FFAs are defined not only by the FEMA maps, they are also defined by the FEMA-designated base (100-year) flood elevations.

Critical Drainage Areas in Kitsap County are defined by at least one of the following: determined to be a natural closed depression, identified as having poor drainage qualities by field investigations, determined to have a high potential for drainage and water quality problems, and/or sensitive to the effects of construction or development (Kitsap County Title 19, Critical Areas Ordinance, 2005). These areas include Hansville, Driftwood Keys, south Port Gamble, Edgewater, Indianola , Suquamish, Island Lake, portions of Clear and Barker Creeks at SR303, PSNS, Gorst, Manchester, Bethel-Sedgwick Corridor, Mace Lake (Olalla), Carney Lake and the Union River by Bremerton National Airport.

Channel Migration Zones (CMZs) were also assessed for the Inventory and Characterization. *Channel Migration Zone means the area along a river where the channel(s) can reasonably be predicted to migrate over time as a result of naturally and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings* (WAC 173-26-026(6)). Generally, CMZs for Kitsap County streams lay within the 200' minimum jurisdiction for the floodways and as such, the shoreline jurisdiction is sufficient to address the CMZ extent. Updated information specific to CMZ areas may be available from the Washington Department of Ecology at a later date. The data sources reviewed for the CMZ s along Kitsap County Streams include SHIAPP channel gradient data, Lidar and Orthophotos. Activity in those areas would already be regulated under the SMP or Critical Areas Ordinance and/or Kitsap County Flood Title 15.

2.4 General Land Use, Economics and Population

In general, Kitsap County is characterized by scattered small communities, homes on acreage, and large parcels of undeveloped land, outside of the urbanized centers and/or incorporated cities of Bremerton, Port Orchard, Silverdale, Poulsbo, Kingston, and Bainbridge Island. Land use in the unincorporated Kitsap County is dominated by rural residential and rural wooded designations (Kitsap County Comprehensive Plan, 2006). These designations represent 1:5 and 1:20 dwelling units per acre respectively. To a lesser degree rural protection, forest resource lands and park designations also comprise the County. The County contains numerous federally owned and operated facilities, including Submarine Base Bangor, Keyport Naval Undersea Warfare Center, Puget Sound Naval Shipyard, Department of Defense Supply Center, and the Manchester Fuel Depot/EPA, as well as the Suquamish and Port Gamble S'klallam Tribe Reservations.

The Kitsap County Comprehensive Plan (2006) highlights seven industries to target and/or retain for Kitsap County. They include (in order of size):

- Defense/government security systems and services (54% of all economic activity in Kitsap County is directly or indirectly related to the County's military bases)
- Marine Services and Equipment
- Back Office Operations (call and data centers)
- Recreation and Tourism (focused on both marine and lake shorelines, with travel spending increasing approx. 3.9% annually)
- Software and digital media
- Biomedical equipment and services
- Alternative and Environmental technology

The economic impacts from forestry have declined in recent decades, although the forest economy fluctuates with the market prices. Timber harvest is primarily occurring on private land; however, no harvest is currently allowed in the SMP jurisdiction without a Shoreline substantial development permit.

Aquaculture is an important industry reliant on healthy shoreline environments. 97% of gross sales from aquaculture (not wild harvest) in Kitsap County are from shellfish harvest, totaling between $3.2 and 4.8 million annually (WA State Dept. of Revenue). The State also co-manages the wild stock harvest of geoduck with the tribes. The states portion of revenue from leasing tracts is about $22 million per year (DNR, website). Kitsap County has five active tracts (830 acres) currently permitted for geoduck harvest. Beach closures to shellfish harvest due to bacteria or paralytic shellfish poisoning can impact how much harvesting may be done, both for recreation and commercial harvest or aquaculture.

Between 1980 and 2005, unincorporated Kitsap County's population increased by 60% (about 2.5% per year) to 167,920 (63% increase for total County to 240,400), making it the third densest county in Washington state. By 2025, Kitsap County's population is projected to increase by 38% from 2005 levels (or 1.44% annually) to approximately 331,571 (moderate projectections). Most new population (76%) is expected to occur within the existing UGA boundaries. Between 2000 and 2005, 72% of population growth was due to natural increase, while 28% was due to net migration.

Based on these population projections and an average household size of 2.6, 33,040 additional housing units will be needed by 2025 (between 2000-2005, 70% of new housing units were detached Single Family Residences). (Kitsap County Comprehensive Plan, 2006).

The average drift cell has between 21 and 22% of its total parcels either vacant or underutilized (21.38% for east Kitsap and 21.71% for Hood Canal) and of those parcels zoned commercial, an average of 10% remain vacant/underutilized in east Kitsap. These are, however, averages,and the parcel availability ranges from 0% to 67% (see Appendix D for more details and sources).

2.5 Historic and Cultural Sites

Kitsap County's shorelines have a rich historic and cultural history, dating back thousands of years for the First Nations, and hundreds of years for early European settlement. The Suquamish Tribe and the Washington Department of Archaeology and Historic Preservation (DAHP) has provided Kitsap County with a general description of the types of artifacts or historic uses known, per drift cell area. This may include known historic camps or villages based on charcoal, shell middens, utensils or petroglyphs. It may aslo include areas with historic debris dating back to the late 19th and early 20th centuries. Such locations are provided certain protections and privaleges under state and federal laws. Any development activity which comes across such artifacts, are required to notify the DAHP.

In addition, structures along the shoreline have been listed on local, state and/or federal historic registries. State and federally registed historic sites are included in this report, however, locations registered locally are not. Every effort should be made to locate and acknowledge such sites for individual projects on the shoreline.

2.6 Shoreline Master Program Jurisdiction

The SMP Jurisdiction is comprised of the geographic area where the Shoreline Management Act (SMA) applies. The approved SMP becomes the official delineation of the SMA Jurisdiction. Some 20 acre + lakes have been added as they were missing from the previous SMP jurisdiction list. Once final approval and adoption takes place, the maps and descriptions of this SMP Update will replace the listots of water baodies in WAC 173-18, 20 and 22.In accordance

Federal lands are generally included within the shoreline jurisdiction, unless the land is used exclusively by the federal government. The federal lands in Kitsap County have exclusive federal jurisdiction, given the statutes provided in RCW 36.34. The SMA does not include any reference to tribal lands or Indian reservations. The SMP does apply to any land within reservation boundaries owned in fee by a non-tribal member.

In Kitsap County, the SMA applies to the following (RCW 90.58.040):

A. All marine waters of Puget Sound and Hood Canal, waterward from the Oridinary High Water Mark to the County line

B. Rivers and streams with more than 20 cubic feet per second mean annual flow:

- Chico Creek (2.52 miles over 20 cfs mean annual flow)
- Gorst Creek (0.61 miles over 20 cfs mean annual flow)
- Blackjack Creek (1.30 miles over 20 cfs mean annual flow)
- Curley Creek (3.26 miles over 20 cfs mean annual flow)
- Burley Creek (0.38 miles over 20 cfs mean annual flow)
- Coulter Creek (1.61 miles over 20 cfs mean annual flow)
- Big Beef Creek (6.16 miles over 20 cfs mean annual flow)
- Union River (1.53 miles of river over 20 cfs mean annual flow)
- Tahuya River (4.29 miles of river over 20 cfs mean annual flow)

C. Lakes and reservoirs greater than 20 acres in area:

- Buck Lake (24.02 acres)_
- Island Lake (45.23 acres)
- Wildcat Lake (116.64 acres)
- Kitsap Lake (28.75 acres)
- Chico Creek Headwaters (45.22 acres; lake over 20 acres- NEW)
- Square Lake (30.08 acres- NEW)
- Long Lake (336.19 acres)
- Mace Lake (31.05 acres- NEW)
- Horseshoe Lake (45.61 acres)
- Big Lake (22 acres-NEW)
- Wicks Lake (21.16 acres- NEW)
- Sunnyslope Lake (25.82 acres; lake over 20 acres-NEW)
- Oakridge Lake (87.54 acres; lake over 20 acres-NEW)
- Carney Lake (18.99 acres)
- Wye Lake (40.81 acres)
- Fern Lake/Koeneman Lake (20.85 acres-NEW)
- Miller Lake (25.59 acres)
- Lake Wm. Symington (63.13 acres)
- Lider Lake (29.39 acres- NEW)
- Tiger Lake (5.95 acres in KC SMP Jurisdiction)
- Panther Lake (73.44 acres)
- Mission Lake (90.56 acres)

- Tahuya Lake (158.07 acres)
- Tin Mine Lake (26.56 acres)
- Dewatto Wetland (21.23 acres; lake over 20 acres- NEW)
- Morgan Marsh (105.47 acres)
- Hintzville Beaver Ponds (52.24 acres)

D. Wetlands associated with these waterbodies (associated means they are in proximity to and either hydrolically influence or are influenced by the shoreline, WAC 173-22-040).

There are multiple associated wetlands for streams and lakes. Two are associated with the marine shoreline:

- Point No Point Floodplain
- Do-Kag-Wats

E. Shorelands adjacent to these waterbodies which are:

- 200' inland from the Ordinary High Water Mark
- A floodway plus the contiguous floodplain 200' landward of the floodway
- Associated wetlands and river deltas

Local Options for Kitsap County shoreland areas are discussed below:

1) The river corridor option: The SMP identifies an opportunity to expand the SMP jurisdiction beyond the 200 ft. from the OHWM for the areas of the FEMA floodplain that lie outside of the 200ft. In Kitsap County, these areas of the floodplain that extend beyond the 200' jurisdiction weave in and out of the jurisdiction line where the overall area is relatively small; ranging from .37 acres for Chico Creek to the larger total of 10.46 acres for Big Beef creek. Kitsap County Title 19, Critical Areas Ordinance, 2005, and Kitsap County Title 15, Flood Hazard Areas, 2003 adequately oversee development proposals that occur in the FEMA floozone lying in and out of the SMP 200' jurisdiction and as such, Kitsap County staff do not recommend the inclusion of the added floodplain area in the SMP jurisdiction.

Stream*	**Number and Size Range of FEMA Floodplain Outside of the SMA Jurisdiction**
Chico Creek	5 areas .01-.25 acres Total -.37 acres
Curley Creek	4 areas .03-3.99 acres Total- 4.68 acres
Tahuya River	8 areas .08-1.74 acres Total - 5.07 acres
Big Beef	5 areas: .009-9.42 acres Total- 10.46 acres

**Kitsap County streams measured downstream of the 20 cfs point that include floodplain area extending beyond the 200 ft. Jursdiction*

2) Critical area buffers option: Local governments may extend the shoreline jurisdiction to include “land necessary for buffers for critical areas that occur within shorelines of the state. (RCW 36.70A and RCW 90.58.030(2) (f) (ii)”. This option applies to critical areas that lie partly in and partly out of the shoreline jurisdiction. Kitsap County staff recommends that the SMP jurisdiction remain at the required minimum and that the CAO buffer requirements for the outlying areas be maintained in order to consistently continue to protect the critical areas pursuant to Kitsap County Title 19.

2.7 Marine Shoreline

Kitsap County has approximately 216 miles of marine shoreline (including Blake Island and cities, except Bainbridge Island), characterized by many bays, inlets and pocket estuaries. Other coastal landforms such as spits, bluffs, lagoons, tide flats, stream and tidal deltas, and rocky outcrops are also found along Kitsap County shoreline. These shoreforms, created by physical processes, provide the canvas for specific biological characteristics and ecosystem functions.

Kitsap County's nearshore area encompasses a wide variety of conditions, ranging from relatively unmodified reaches of natural shoreline to developed parcels with private residences with associated armoring structures, as well as highly developed industrial areas.

The marine shoreline has been divided into Drift Cell units, providing a landscape scale unit. Drift cells "act as closed or nearly closed systems with respect to transport of beach sediment". These units form the basis for establishing and maintaining habitat structure, ecological processes and ecological functions. These drift cells converge (form points) or terminate into areas considered to lack longshore drift (bays), and therefore coalesce to form larger interrelated systems, just as upland watersheds may include aggregations of smaller watersheds or subbasins (Borde et al. 2009).

At the site-scale, Nearshore Assessment Units (NAUs) further divide the shoreline based upon geomorphic classification and are derived from the East and West Kitsap County Nearshore Habitat Assessment and Restoration Prioritization Framework. These include rocky beach, depositional beach, barrier beach, sediment source and transport beach, delta lagoon, tidal delta, drowned channel, and many others.

2.7.1 Physical Characteristics

The Kitsap County Nearshore Inventory,was conducted by walking the 216 miles of marine shoreline. Some of he results identifying the physical make-up of this marine shoreline by Nearshore Assessment Unit are as follows (Kitsap County Nearshore Inventory, 2007/2008):

Major Substrate of the beach (% of total NAUs with this as the dominant substrate type at the Ordinary High Water Mark; Bedrock was classified under bank type, see below):

- Mixed Coarse: 36%
- Gravel: 26%
- Cobble: 14%
- Mud: 12%
- Sand: 11%
- Clay: 1%

Shoreline Bank Type (% of total NAUs with this as the dominant bank type)

No Bank (no cut bank or immediate change in elevation between the shoreline and upland): 17%

- Low Bank (1-6' cutbank): 32%

High Bank (greater than 6'): 31%

Marsh or Lagoon: 10%

Rocky (bedrock): 3%

Slides:

- 186 locations of slide activity were inventoried, amounting to an average of 0.86 sites per mile of shoreline

2.7.2 Biological Characteristics

2.7.2.1 Fish and Wildlife

Several aquatic and marine species depend on Kitsap's shorelines for all or part of their life cycles. The following species have been designated for protection on some level by federal, state or local resource management agencies and are known or potentially occur in Kitsap County. Local Class 1 and 2 Wildlife Habitat Conservation Area refers to the KCC Title 19 Critical Area Ordinance.

Bald Eagle (Federal Species of Concern, State Listed Sensitive, Local Class 1 Wildlife Habitat Conservation Area). . In July 2007, the bald eagle was removed from protection under the federal Endangered Species Act. However, two other federal laws still provide protection for the bald eagle, the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act . These laws primarily address nest tree protection and protection from harassment. Bald Eagles are also protected on a local and state level within the State of Washington under RCW 77.12.655 and WAC 232-12-292.

Marbled Murrelet (Federal and State Listed Threatened). The estimated Puget Sound population is just under 6,000. Marbled murrelets spend most of their lives in the marine environment where they consume a diversity of prey species including small fish and invertebrates. Nesting occurs in larger, old-growth upland forest areas with a high abundance of platforms (forks, etc.). They have been known to abandone nesting sites which have become highly fragmented.

Killer Whale (Southern Resident Distinct Population Segment (DPS) (Federal and State Listed Endangered).In February 2010, ,the Southern Resident population was at 89 (98 in 1995). Threats include: declining salmon abundance, exposure to toxic pollutants and vessel noise/presence.

Humpback Whale (Federal and State Listed Endangered)

Chinook Salmon (Puget Sound Evolutionary Significant Unit (ESU) (Federal Listed Threatened and State Listed Species of Concern, Local Class 1 Wildlife Habitat Conservation Area)

Steller Sea Lion (Federal and State Listed Threatened). Forage near shore and use terrestrial habitat as haul-out sites for rest, molting and rookeries. Their prey includes herring, salmon, sand landce and bivalves.

Bull Trout (Coastal/Puget Sound ESU) (Federal Listed Threatened and State Listed Species of Concern). Marine foraging along Kitsap County Puget Sound and Hood Canal Shorelines; rely on abundance of forage fish; only anadromous population segment in the United States.

Coho Salmon (Coastal-Puget Sound/Straight of Georgia ESU) (Federal Listed Species of Concern)

Chum Salmon (Hood Canal summer-run ESU) (Federal Listed Threatened and State Listed Species of Concern, Local Class 1 Wildlife Habitat Conservation Area)

Steelhead Trout (Puget Sound DPS) (Federal Listed Threatened, Local Class 1 Wildlife Habitat Conservation Area)

California Sea Lions (Local Class 1 Wildlife Habitat Conservation Area). Males seen in Puget Sound from fall to spring.

Pink Salmon (Local Class 1 Wildlife Habitat Conservation Area)

Harbor Seal (Local Class 2 Wildlife Habitat Conservation Area)

Purple Martin (Local Class 2 Wildlife Habitat Conservation Area). Nest in natural cavities or trees along the shore, not now (due to habitat loss and competition from non-native cavity nesters) rely more heavily on human-built nests (colonies places in Brownsville, Poulsbo, Seabeck, Bainbridge, Silverdale and Driftwood Keys).

Great Blue Heron (State Monitored and Local Class 2 Wildlife Habitat Conservation Area). Non-migratory bird is a habitat bridge an indicator of environmental health. Feeds in marine eelgrass meadows and nests in nearshore forests (productivity linked to proximity between foraging and nesting areas).

Caspian tern (Local Class 2 Wildlife Habitat Conservation Area). Prefers bays and estuaries, with nests on low sand or gravel beaches. Primary prey salmonid smolts.

Osprey (State Monitored and Local Class 2 Wildlife Habitat Conservation Area). Nest and feed near marine and fresh waters which support medium-size fish with dead trees near water for nesting.

Olympia Oyster (State Monitored). Prefers brackish waters for bays and estuaries with firm substrate, constant water and few predators. Most productivity limited to areas with larval production from nearby remnant populations (Liberty and Dogfish Bays in Kitsap).

In addition, WDFW Priority Habitat and Species include Bald Eagle, Harbor Seal, Harlequin Duck, Surf Scoter, Shorebird Concentrations, Waterfowl Concentrations, Cliffs/Bluffs, Estuarine Zone, Lagoons and Wetlands.

Shellfish are another ecological and economic component of Kitsap County shorelines. The following have been surveyed and mapped when of sufficient densities to be commercially or recreationally important:: Dungeness Crab (on the WEFW Priority Habitat and Species list), Hardshell Clam, Subtidal Hardshell Clam, Geoduck, Oyster beds and Pandalid Shrimp.

Forage fish also on the WDFW Priority and Habitat Species List in the Kitsap County area include surf smelt, Pacific sand lance, northern anchovy and Pacific Herring. Forage fish are critical prey for a large variety of marine life including seabirds, wading birds, harbor seals, and marine fish, waterfowl and other animals. Their populations are also a valuable indicator of the health and productivity of our marine environment.

Two species of forage fish, surf smelt and Pacific sandlance, spawn at hight tides on the upper beach of many of Kitsap shorelines. Developing eggs attached to small gravel or sand grains remain on the upper beach for 2-6 weeks. Pacific herring deposit eggs during a coupld of months in the sinter and spring, predominantly on eeelgrass and macroalgae located is several distinct areas of Kitsap County. Spawning habitats of surf smelt, Pacific sand lance and Pacific herring are formed by a suite of specific habitat conditions (e.g. substrate, wave energy) that are vulnerable to shoeline alteration. Maintaining the habitat processes that support these spawning habitats is critical to forage fish populations. Salmon utilize both the fresh and marine waters of Kitsap County. The marine shoreline supports various life stages for chum, coho, pink, Chinook, and sockeye salmon,(as well as cutthroat and steelhead trout) as they migrate from freshwater to saltwater and then returj. Chum and pink salmon migrate to saltwater shortly after emerging from the gravel and remain is shallow protected nearshore waters for weeks to months int the spring/summer. Chinook salmon in Kitsap streams typically migrate to saltwater within a couple of months of emerging from gravel and are found in nearhore areas year-round, with peak abundance in May-June. Nearshore habitats provide small fish like juvenile salmon abundant food sources (salt marsh insects, small crustaceans, etc.) protection from predators and currents, and shelter (e.g.eelgrass). Studies indicate that not all of the juvenile Chinook found along Kitsap shorelines originate from Kitsap streams. By mid-summer, Chinook from throughout Puget Sound are found along Kitsap shores (Fresh et. 2005, Dorn and Best 2004, Dorn and Small 2008

2.7.2.2 Vegetation

Marine vegetation plays an important role in the life cycles of many species along Kitsap County's shoreline. Eelgrass, kelp, and salt marsh habitats provide food and habitat for juvenile salmonids and other organisms. In addition, vegetation along the shoreline provides food, shade and shelter for marine and terrestrial wildlife as well as providing natural erosion control / prevention.

2.7.3 Land Cover Characteristics

Based on the Kitsap County Nearshore Inventory, the following are summaries of land cover for the Marinenearshore environment:

- Overhanging Vegetation: any vegetation which was "hanging over" the Ordinary High Water Mark. Data was collected in ranges for each NAU. For example 0-25% overhanging vegetation means that the majority of the NAU had overhanging vegetation for 0-25% of its length.
- The East Kitsap shoreline experiences less overhanging vegetation at 39% compared with 57% on the West Kitsap Shoreline.
- 0-25% Overhanging vegetation was encountered in 64% of the shoreline reaches
- 25-50% Overhanging vegetation was encountered in 11%,
- 50-75% Overhanging vegetation was encountered in 9%, and
- 75-100% Overhanging vegetation was encountered in 16% of the shoreline reaches

Vegetation Type (from Todd, 2010):

- Closed Canopy Forest: 29% of the shoreline (300 ft. upland and including tidal areas)
- Other Natural Vegetation: 7% of the shoreline
- Non-Forested: 34% of the shoreline

Invasive (from the Kitsap Nearshore Inventory, 2007/2008):

- 13% of the Reaches were found to be populated with invasive species on 25% to 50% of the Reach
- 6% of the Reaches were found to be populated with invasive species on 50% to 75% of the Reach
- 2% of the Reaches were found to be populated with invasive species on 75% to 100% of the Reach

2.7.4 Land Use Characteristics

Shoreline Land use and structures are generally summarized below from data collected in the Kitsap County Nearshore Inventory (2007/2008).

Shoreline Use (% of NAUs that had all or part of each land use):

- Single family residences: 73%
- Commercial / Industrial: 12%
- Public Use/Park: 18%
- Undisturbed:18%
- Marinas: 4%

Shoreline structures found in the Kitsap Nearshore Inventory included:

- 82 miles, or 38%, of the marine shoreline is armored. These armored areas are not contiguous, and are spread out along the shoreline, often interspersed among the more pristine areas (includes bulkheads, rip-rap, gabion, etc.). The east Kitsap Peninsula is more heavily armored at 39%, vs. 25% for Hood Canal.
- 3,677 outlets (outfall pipes) or an average of 17 per mile. Actual number is higher, as 887 of these occurrences were grouped, such as those found in bulkheads. This included natural streams, beach seeps, culverts, private drainage pipes and bulkhead drainage.
- 417 Overhanging structures (average 2 per mile). Decks accounted for 60%, houses accounted for 22% and other buildings accounted for 15% of this category. A structure was considered “overhanging” if it shaded the beack at or below the OHWM, but did not include piers (counted in another category).
- 521 Piling occurrences (actual number much higher) not associated with any structure were inventoried.
- Private access points such as stairs, averaging approximately 12 per mile.
- 638 boat launches (average 3 per mile). 33% of these boat launches where observed to intercept natural sediment transport along the beach.

- 808 piers, docks and/or floats (3.7 averaged per mile).
- 1,204 buoys (5.6 buoys per mile).

2.8 Freshwater Shoreline

2.8.1 Streams and Floodplains

Freshwater streams are numerous in Kitsap County, with 975 miles currently mapped. Streams on the eastern half of the Peninsula drain into several large inlets within western Puget Sound, and streams on the western half drain into Hood Canal (Frissell, C. et al., 2001). The eastern streams are relatively smaller than those on the western side (Haring, 2000); however, these eastern streams historically supported substantial salmon runs (Williams et al. 1975).

Kitsap Streams and all associated wetlandsthat are considered Shorelines of the State and included in this Report are:

- Point No Point Floodplain (floodplain associated with the marine shoreline)
- Do-Kag-Wats (floodplain associated with the marine shoreline)
- Chico Creek (2.52 miles over 20 cfs mean annual flow)
- Gorst Creek (0.61 miles over 20 cfs mean annual flow)
- Blackjack Creek (1.30 miles over 20 cfs mean annual flow)
- Curley Creek (3.26 miles over 20 cfs mean annual flow)
- Burley Creek (0.38 miles over 20 cfs mean annual flow)
- Coulter Creek (1.61 miles over 20 cfs mean annual flow)
- Big Beef Creek (6.16 miles over 20 cfs mean annual flow)
- Union River (1.53 miles of river over 20 cfs mean annual flow)
- Tahuya River (4.29 miles of river over 20 cfs mean annual flow)

2.8.1.1 Physical Characteristics

Streams and rivers in Kitsap County largely represent lowland-type streams with moderate gradients. Many of these streams originate from lakes, ground water discharge, or swamp-like headwater wetlands that may be shared between watersheds. Likewise, some adjacent watersheds share a common regional aquifer, which contributes significantly to the summer flows of these streams. Due to the lower elevations, none of the streams are supported by snow runoff (Williams et al. 1975). Stream profile characteristics are pool-riffle in nature with water quality and aquatic insect production highly conducive to anadromous fish production (Williams et al 1975).

Riparian areas in Kitsap County consist of various forest-seral stages, ranging from deciduous forest to mixed deciduous-coniferous forest to coniferous forest. Vegetation characteristics of the riparian area (such as large woody debris recruitment, overhanging vegetation, species composition, canopy cover etc.) vary significantly within and between watersheds.

2.8.1.2 Biological Characteristics

Kitsap County has 505 stream miles mapped as Type-F (fish bearing) (Washington Department of Natural Resources, 2006). The lowland streams of Kitsap County are ideal for chum and coho salmon due to low gradient and extensive wetland headwaters. Chum salmon spawn in the lower sections of streams typically, as they connot negotiate obstacles as will as coho salmon. Since their young move directly to salwater, the low gradient streams of Kitsap provide ample spawning habitat for chum. Coho salmon are able to jump and migrate further into the watershed, sllowing the coho juveniles to distribute widely in the watershed during the year that they reside in freshwater. Chinook salmon, a federally listed, spawn in some of the larger Kitsap streams (e.g. Dogfish and Gorst Creeks) and utilize Kitsap County nearshore and estuarine areas for foraging. Hood Canal summer chum are found in a few of the Hood Canal streams on the Kitsap County side while the chum juveniles are found throughout Hood Canal shorelines. Cutthroat and steelhead are found in many Kitsap streams as both resident and anadromous life histories. Cutthroat, steelhead and coho juveniles are often found in a lakes and wetlands. Protected species (other than salmonids) commonly associated with freshwater habitat in Kitsap County include:

Bald Eagle (Federal Listed Species of Concern, State Listed Sensitve, Local Class 1 Wildlife Habitat Conservation Area)

Common Loon (State Monitored). Avoids densly populated areas. Needs lakes (over 50 acres), bays and inlets with islands and/or shallow waters. Nests area within 5 feet of the water with screening vegetation.

Pacific Pond Turtle (State Listed Endangered). Needs slow moving streams, marshes,ponds and lakes with muddy bottoms and logs/leaf little for nesting. Dissapeared from Puget lowland by 1980s, with a few remaining adults, due to disease, upland and aquatic habitat loss and predator introduction (bull frogs and bass).

Peregrine falcon (Federal Listed Species of Concern, State Listed Sensitive, Local Class 1 Wildlife Habitat Conservation Area)

Osprey (State Monitored, Local Class 2 Wildlife Habitat Conservation Area)

Pacific Lamprey (Federal Listed Species of Concern, State Monitored, Local Class 2 Wildlife Habitat Conservation Area)

Pileated Woodpecker (State Monitored). Typically roosts in large trees (dead or branches), especially Western Hemlock and Western Red Cedar.

Reticulated Sculpin

Western Toad (Federal and State Listed Species of Concern, Local Class 2 Wildlife Habitat Conservation Area)

WDFW Priority Habitat and Species: Mountain Quail, Beaver, Mink, Wood Duck, Waterfowl Concentrations and Wetlands

2.8.1.3 Land Use / Land Cover Characteristics

Streams and floodplains in Kitsap County are varied in land use. Some have access to their floodplains, while others are heavily channelized or even armored through residential and commercial areas. Associated wetlands and floodplains of some streams have been cleared and filled for development. Agricultural practices can impact water quality impacts Some streams have associated hatcheries that can impact fish access, health and flows.

2.8.2 Lakes

Lakes (see definition in section 1.2) that are greater than or equal to 20 acres in size and their associated wetlands are classified as shorelines of the state and are included in this report. There are 27 such lakes in Kitsap County. They include:

- Buck Lake (24.02 acres)_
- Island Lake (45.23 acres)
- Wildcat Lake (116.64 acres)
- Kitsap Lake (28.75 acres)
- Chico Creek Headwaters (45.22 acres; lake over 20 acres- NEW)
- Square Lake (30.08 acres- NEW)
- Long Lake (336.19 acres)
- Mace Lake (31.05 acres- NEW)
- Horseshoe Lake (45.61 acres)
- Big Lake (22 acres-NEW)
- Wicks Lake (21.16 acres- NEW)
- Sunnyslope Lake (25.82 acres; lake over 20 acres-NEW)
- Oakridge Lake (87.54 acres; lake over 20 acres-NEW)
- Carney Lake (18.99 acres)
- Wye Lake (40.81 acres)
- Fern Lake/Koeneman Lake (20.85 acres-NEW)
- Miller Lake (25.59 acres)
- Lake Wm. Symington (63.13 acres)
- Lider Lake (29.39 acres- NEW)
- Tiger Lake (5.95 acres in KC SMP Jurisdiction)
- Panther Lake (73.44 acres)
- Mission Lake (90.56 acres)
- Tahuya Lake (158.07 acres)

- Tin Mine Lake (26.56 acres)
- Dewatto Wetland (21.23 acres; lake over 20 acres- NEW)
- Morgan Marsh (105.47 acres)
- Hintzville Beaver Ponds (52.24 acres)

2.8.2.1 Geomorphology

Natural lakes in Kitsap County have been formed through melting glacial ice and formed depressional areas. A few lakes are the result of man-made dams backing up streams or rivers into what were once wetland or meandering stream areas. Lakes will fill with sediments over time in a natural process called lake succession. This process may be expedited by anthropogenic causes associated with excess nutrients and aquatic noxious weeds.

2.8.2.2 Land Use / Land Cover Characteristics

Many lakes in Kitsap County have been moderately to heavily built-out along their shorelines. Impacts from associated armoring, docks, floats and water quality issues are observed on several of these lakes. Nearly all of Kitsap County's freshwater public access occurs on lakes in the form of recreational access (i.e. swimming, fishing, boating). Some lakes (such as Fern Lake and Miller Lake) have either no surrounding development or public access.

2.8.3 Wetlands

Wetlands are those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. They include, but are not limited to, ponds, marshes, bogs, wet meadows and swamps, which are identified by three general characteristics:

- Hydric Soils – soils saturated with water
- Water (hydrology)– the presence of standing water at least part of the year
- Hydric Plants – water tolerant or water dependent species

Common types of wetlands in Kitsap County are: wet-meadow wetlands, stream/forested wetlands, and scrub/shrub wetlands (U.S. Fish and Wildlife Service National Wetlands Inventory, 1980)

The U.S. Fish and Wildlife Service National Wetlands Inventory (1980) and the Washington State Department of Natural Resources water-type maps (2006), indicate there are 16,120 acres of wetlands in Kitsap County. 1,178 of the total wetland acres are within the SMP jurisdiction. All wetlands, regardless of size, are regulated by buffers, setbacks, and clearing and land use restrictions by the Kitsap County Critical Areas Ordinance, Title 19.

3 CHARACTERIZATION AREA SUMMARIES

3.1 North Puget Sound

The North Puget Sound Characterization Area consists of just over 55 miles of marine shoreline from Foulweather Bluff to Brownsville, including all the watersheds that empty into Puget Sound between those points. Within this Characterization Area are the towns of Hansville, Kingston, Indianola/Miller Bay, Suquamish and Keyport. The City of Poulsbo is not included in this report, except where Drift Cells are shared.

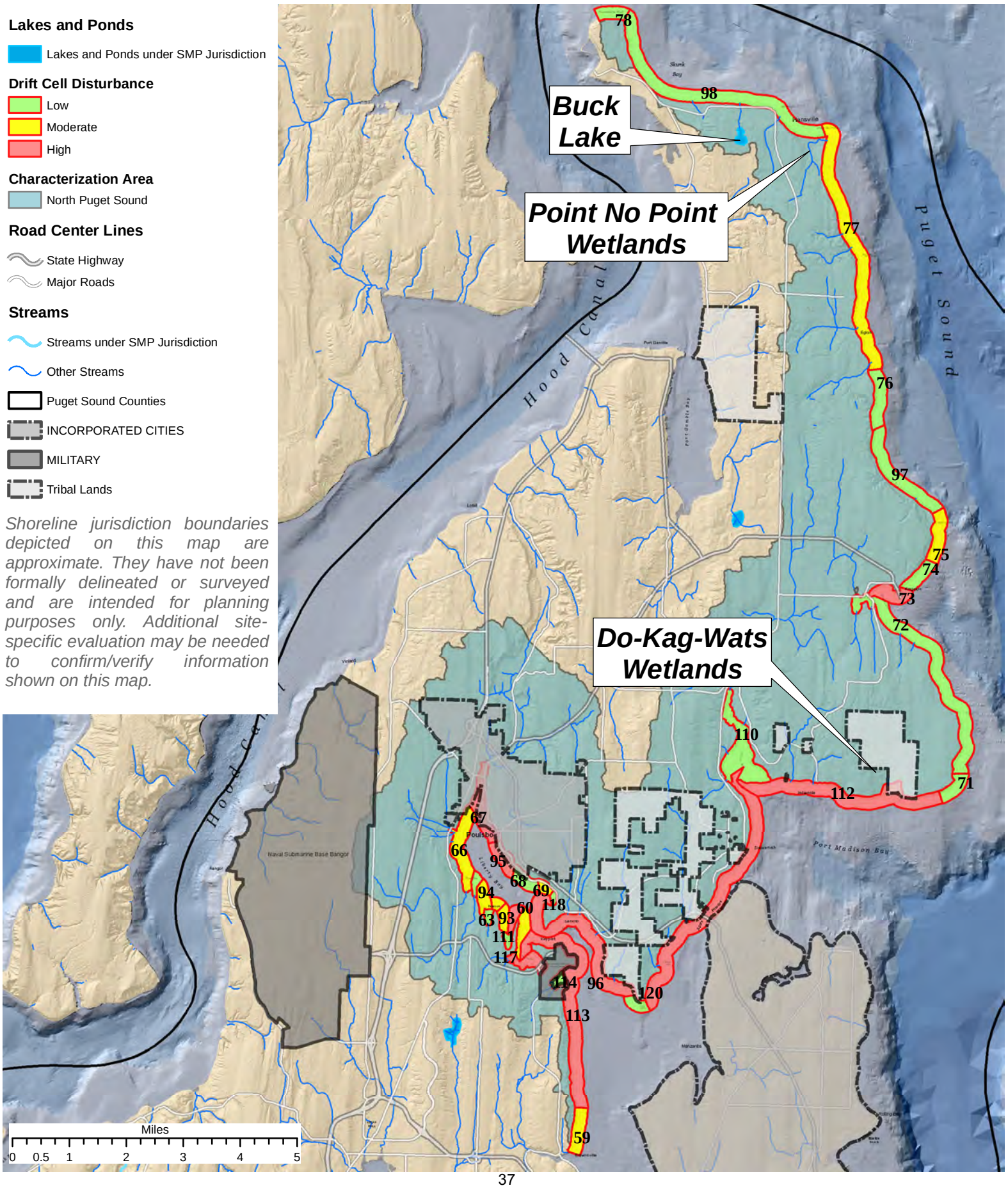
For the marine jurisdiction (200' upland, 1000' intertidal), there are **31 Drift Cells** which are comprised of 168 Nearshore Assessment Units (NAUs). There are 56 known and/or potential public access points within this Characterization Area, which include parks, ports, road ends, right-of-ways and utility corridors.

For the freshwater jurisdictions, the North Puget Sound Characterization area has **three Freshwater Shoreline Jurisdictions**:

- Buck Lake
- Point No Point (marine associated floodplain)
- Do-kag-wats (marine associated floodplain)

The maps below show the drift cells along the marine shoreline and watershed drainage units in the North Puget Sound Characterization area, respectively. The color-coding of the drift cells represents the degree of disturbance, ranging from highly disturbed in red to less-disturbed in green. The map depicting the drainage units also shows the minimum required shoreline jurisdiction in green.

Shoreline Master Program - North Puget Sound
Marine and Freshwater Shoreline Jurisdiction



Shoreline Master Program - North Puget Sound Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009

PSNERP Drainage Units

Lakes and Ponds

Lakes and Ponds under SMP Jurisdiction

Jurisdictional Lands

Lands under SMP Jurisdiction

Characterization Area

North Puget Sound

Road Center Lines

State Highway

Major Roads

Streams

Streams under SMP Jurisdiction

Other Streams

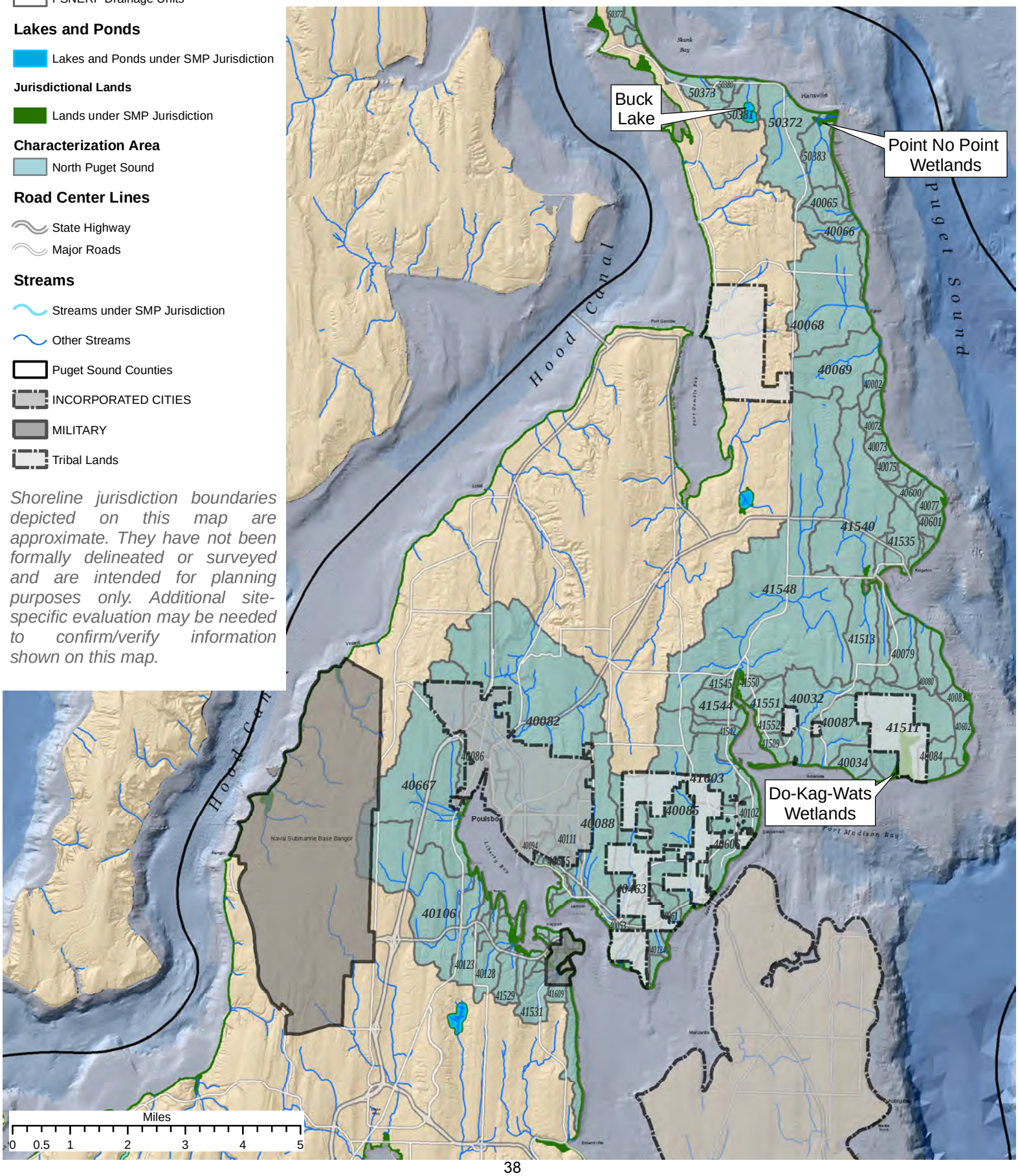
Puget Sound Counties

INCORPORATED CITIES

MILITARY

Tribal Lands

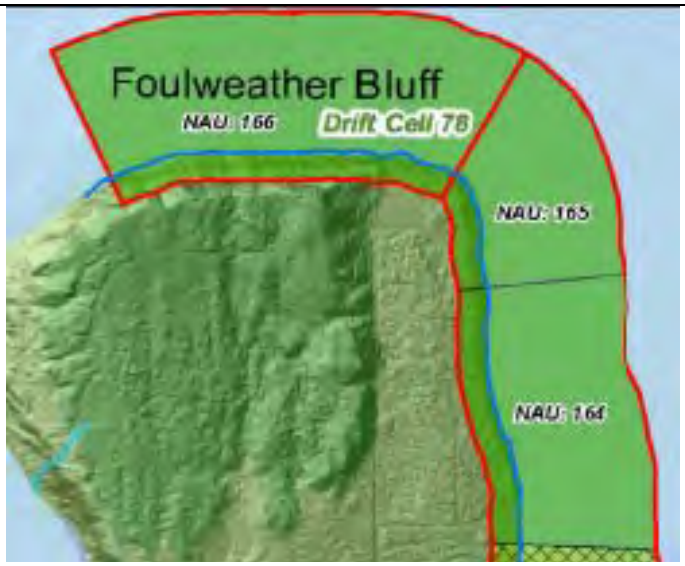
Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.



3.1.1 Marine Shoreline

North Puget Sound Drift Cell 78 (Foulweather Bluff)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.48
% Armored: 32.6
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 50375
Terrestrial Veg: Closed Canopy-58.28%, Non-forest-18.22%, Other Natural Veg-23.50%
Marine Veg: Kelp (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 15
Future Build-out Population Est: 38
% of Total Parcels in Drift Cell Vacant/Underutilized: 57%
Priority Species/Habitat: Bald Eagle; Cliffs/Bluffs; Subtidal Hardshell; Geoduck; Seal and Sea Lion Haulout
Historic Marsh (ft. sq.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Mod/High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: Landform referent to Foulweather Bluff as a mythological place.

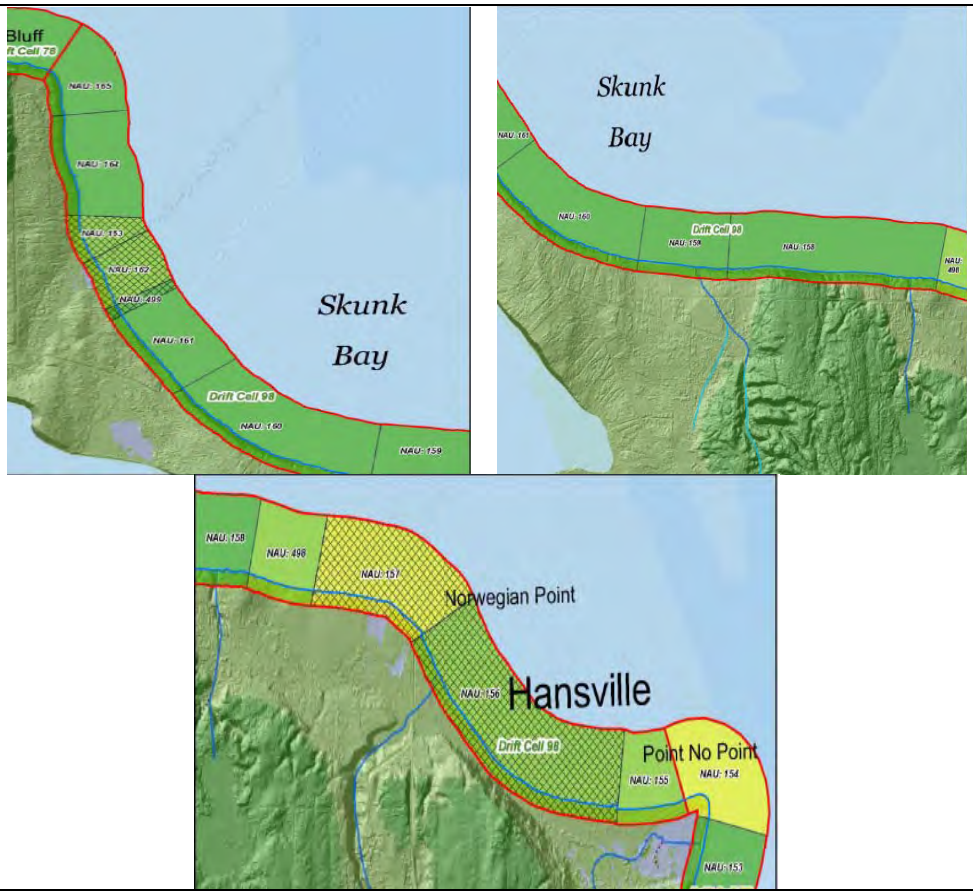


North Puget Sound Drift Cell 78 (Foulweather Bluff)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
166	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings Armoring	Protect & Conserve & Restore

North Puget Sound Drift Cell 98 (Hansville)

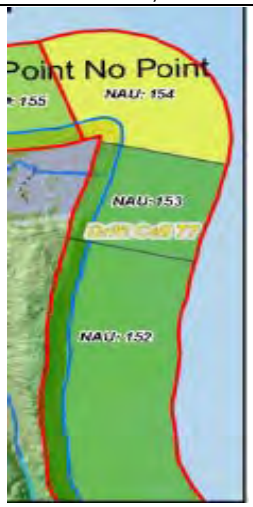
Drift Cell Disturbance Score: Low (1)
Length (miles): 4.44
% Armored: 18.1
Geomorphic Type: Open Shore (Sediment Source/Barrier Beach)
Fluvial Influences (PSNERP #s): 50375, 50377, 50374, 50378, 50379, 50373, 50380, 50382, 50381, 50372
Terrestrial Veg: Closed Canopy-29.08%, Non-forest-64.75%, Other Natural Veg-6.18%
Marine Veg: Kelp, Eelgrass
Overhanging Veg: 0-25%
Public Access: 3 Undeveloped ROWs; 1 Park; 1 Local Access boat launch
Current Population Est: 693
Future Build-out Population Est: 935
% of Total Parcels in Drift Cell Vacant/Underutilized: 22% Residential; 2% Commercial
Priority Species/Habitat: Bald Eagle; Geoduck; Hardshell Clam; Great Blue Heron
Historic Marsh (ft. sq.)/Channel Loss (ft.): 0.00 / 0.00
Shoreform Change: 0
Critical Areas: Cat. 1 CARA; Mod/High Geohazard; Frequently Flooded Areas; Wetlands
Land Use: Rural Residential, Rural Commercial, Public Facility
Known Cultural and Historic Resources: Historical Debris; Habitat referent to cranberry marsh west of Point No Point and referent to a village site and fishing marine mammal hunting site at Point No Point.



North Puget Sound Drift Cell 98 (Hansville)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
165	Sediment Source/Transport		Frequency of Disturbance		Protect & Conserve & Restore
164	Sediment Source/Transport	Boat Launches	Frequency of Disturbance		Protect & Conserve & Restore
163	Wave Deposition (Open Shore)	Armoring Pilings Groins	Wave Energy (Open Shore)	Armoring Pilings	Conserve & Restore & Restore Site Process
162	Wave Deposition (Open Shore)	Armoring	Substrate	Navigation Channel	Conserve & Restore & Restore Site Process
499	Sediment Source/Transport	Armoring	Wave Energy (Open Shore)	Armoring	Protect & Conserve & Restore & Restore Site Process
161	Sediment Source/Transport	Armoring Boat Launches	Frequency of Disturbance		Protect & Conserve & Restore
160	Sediment Source/Transport	Boat Launches Armoring	Substrate/FOD	Overhanging Structures	Protect & Conserve & Restore
159	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve & Restore
158	Sediment Source/Transport	Armoring Boat Launches	Substrate		Protect & Conserve & Restore
498	Sediment Source/Transport		Substrate		Conserve & Restore
157	Sediment Source/Transport	Armoring Boat Launches	Frequency of Disturbance	Pilings Overhanging Structures	Restore & Restore Site Process
156	Wave Deposition (Open Shore)	Pilings Groins Armoring	Substrate		Conserve & Restore & Restore Site Process
155	Wave Deposition (Open Shore)	Armoring	Substrate	Navigation Channel	Conserve & Restore

North Puget Sound Drift Cell 77 (Point No Point - Eglon)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 4.66
% Armored: 10.7
Geomorphic Type: Open Shore/Embayment
Fluvial Influences (PSNERP #s): 50372, 50383, 40064, 40065, 40011, 40066, 40067, 40068, 40069
Terrestrial Veg: Closed Canopy-64.78%, Non-forest-17.38%, Other Natural Veg-17.84%
Marine Veg: Eelgrass (continuous); Kelp (patchy)
Overhanging Veg: 50-75%
Public Access: 1 Park, 2 Undeveloped County Property, 1 Marina (Eglon), 1 Undeveloped ROW
Current Population Est: 193
Future Build-out Population Est: 337
% of Total Parcels in Drift Cell Vacant/Underutilized: 39%
Priority Species/Habitat: Bald Eagle; Surf Smelt/Sand Lance Spawning; Mountain Quail; Wetlands; Geoduck; Hardshell Clam; Dungeness Crab; Osprey; Coho
Historic Marsh (sq.ft)/Channel Loss (ft.): 0.00 / 0.00
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA; Frequently Flooded Area; Wetlands; High Geohazard
Land Use: Rural Residential; Public Facility; Rural Wooded; 305(b) Waters of Concern; Prohibited Shellfish Harvest Areas NAUs 151 and 153
Known Cultural and Historic Resources: Referent to a village site and a fishing and hunting site at Point No Point, a water referent to a creek south of Point No Point, and a landform referent to Pilot Point.; Point No Point Light Station (WA and Natl. Registry)



North Puget Sound Drift Cell 77 (Point No Point - Eglon)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
147	Sediment Source/Transport	Armoring	Wave Energy (Open)	Armoring	Protect & Conserve
148	Fluvial Dep./ Wave Dep.	Armoring	Frequency of Dist.	Armoring	Protect & Conserve
149	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve
150	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve
151	Wave Erosion	Armoring Groins	Wave Energy (Open)	Pilings Armoring	Conserve & Restore & Restore Site Processes
152	Sediment Source/Transport		Frequency of Dist.	Pilings	Protect & Conserve & Restore
153	Wave Deposition		Frequency of Dist.		Protect & Conserve & Restore
154	Wave Deposition	Armoring	Substrate	Navigation Channel	Restore
496	Fluvial/Wave Deposition		Substrate		Protect & Conserve & Restore & Restore Site Processes
497	Sediment Source/Transport	Armoring	Wave Energy	Armoring	Protect & Conserve &Restore

North Puget Sound Drift Cell 76 (South Eglon)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.14
% Armored: 3.0
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40070, 40002, 40071
Terrestrial Veg: Closed Canopy-79.13%, Non-forest-18.71%, Other Natural Veg-2.16%
Marine Veg: Eelgrass (continuous)
Overhanging Veg: 75-100%
Public Access: 1 Undeveloped ROW
Current Population Est: 63
Future Build-out Population Est: 93
% of Total Parcels in Drift Cell Vacant/Underutilized: 32%
Priority Species/Habitat: Geoduck; Bald Eagle
Historic Marsh (sq.ft)/Channel Loss (ft.): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Moderate Geohazard area; Cat. 1&2 CARA
Land Use: Rural Residential
Known Cultural and Historic Resources: A water referent to a small creek and a referent to a campsite for fishing and hunting near Eglon.

North Puget Sound Drift Cell 76 (South Eglon)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
146	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve & Restore
145	Sediment Source/Transport		Water Quality		Protect & Conserve & Restore

North Puget Sound Drift Cell 97 (Sandy Beach Lane)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.96
% Armored: 20.6
Geomorphic Type: Open Shore (Sediment Source/Barrier Beach)
Fluvial Influences (PSNERP #s): 40072, 40073, 40075, 40074, 40076, 40600, 40077
Terrestrial Veg: Closed Canopy-66.97%, Non-forest-22.32%, Other Natural Veg-10.71%
Marine Veg: Eelgrass (continuous)
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 103
Future Build-out Population Est: 203
% of Total Parcels in Drift Cell Vacant/Underutilized: 45%
Priority Species/Habitat: Geoduck; Bald Eagle; Surf Smelt/Sand Lance Spawning; Wetlands
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.17
Shoreform Change: 0
Critical Areas: Cat.1 CARA; Frequently Flooded area; High Geohazard area
Land Use: Rural Residential
Known Cultural and Historic Resources: A referent to a multiseason campsite at Apple Cove point for fishing and hunting.

North Puget Sound Drift Cell 97 (Sandy Beach Lane)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
144	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve & Restore
143	Sediment Source/Transport	Armoring	Substrate		Conserve & Restore
142	Wave Deposition	Armoring	Substrate		Protect & Conserve & Restore

North Puget Sound Drift Cell 75 (Applecove Point)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.9
% Armored: 98.4
Geomorphic Type: Open Shore (Barrier/Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40077, 40601
Terrestrial Veg: Closed Canopy-34.16%, Non-forest-43.63%, Other Natural Veg-22.21%
Marine Veg: Eelgrass, Kelp
Overhanging Veg: 25-50%
Public Access: 1 Undeveloped ROW
Current Population Est: 93
Future Build-out Population Est: 100
% of Total Parcels in Drift Cell Vacant/Underutilized: 9%
Priority Species/Habitat: Geoduck; Dungeness Crab; Wetland; Bald Eagle
Historic Marsh (sq.ft)/Channel Loss (ft.): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Cat. 1&2 CARA; Frequently Flooded Area; High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: A referent to a multiseason campsite at Apple Cove point for fishing and hunting.

North Puget Sound Drift Cell 75 (Applecove Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
141	Wave Deposition	Pilings Armoring	Substrate		Protect & Conserve & Restore
140	Wave Deposition	Armoring	Water Quality		Protect & Conserve &Restore
139	Sediment Source/Transport	Armoring	Wave Energy (Open)	Armoring	Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 74 (South Applecove Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.68
% Armored: 39.1
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40078, 40023
Terrestrial Veg: Closed Canopy-22%, Non-forest-32%, Other Natural Veg-15%
Marine Veg: Eelgrass, Kelp (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Marina (Port of Kingston), 2 ROWs
Current Population Est: 65
Future Build-out Population Est: 113
% of Total Parcels in Drift Cell Vacant/Underutilized: 49% Residential, 16% Commercial
Priority Species/Habitat: Geoduck; Dungeness Crab; Bald Eagle; Mountain Quail
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Cat.2 CARA; High Geohazard
Land Use: Rural Residential, Urban Low-Density Residential, Urban Medium/High-Density Residential, Urban Low-Intensity Commercial Mixed Use
Known Cultural and Historic Resources: None/Unknown

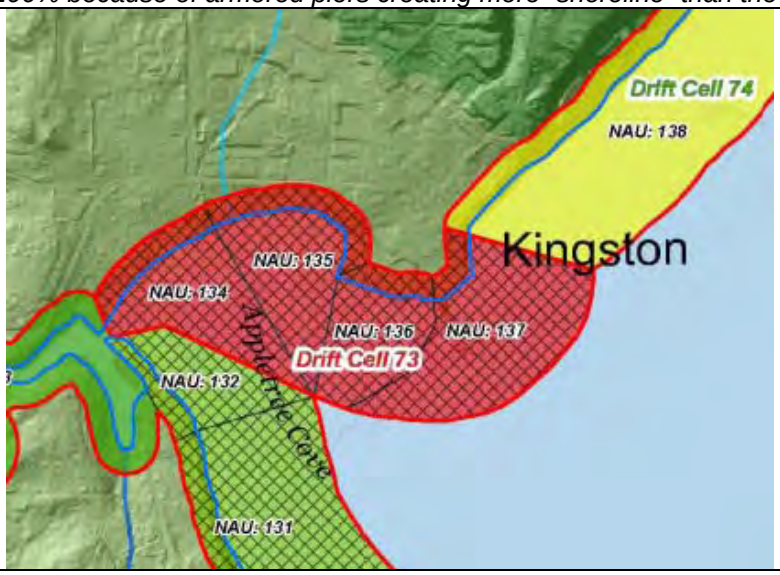
North Puget Sound Drift Cell 74 (South Applecove Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
138	Sediment Source/Transport	Armoring	Substrate	Navigation Channel	Restore

North Puget Sound Drift Cell 73 (Kingston)

Drift Cell Disturbance Score: High (3)
Length (miles): 0.82
% Armored: 111% **
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 40023, 41535, 41537
Terrestrial Veg: Closed Canopy-11.42%, Non-forest-88.58%, Other Natural Veg-0%; Noxious-Knotweed
Marine Veg: Kelp (patchy), Eelgrass (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Marina (Port of Kingston and Ferry Terminal)
Current Population Est: 80
Future Build-out Population Est: 120
% of Total Parcels in Drift Cell Vacant/Underutilized: 18% Residential, 2% Commercial
Priority Species/Habitat: Bald Eagle; Dungeness Crab; Mountain Quail; Glaucous Winged Gull; Seabird Breeding Colony
Historic Marsh (sq.ft.)/Channel Loss (ft.): 103,709 / 29
Shoreform Change: -5545 (Bluff-backed Beach)
Critical Areas: Cat. 1 and 2 CARA; Frequently Flooded Area
Land Use: Urban Low-Intensity Commercial/Mixed Use; Urban Low-Density Residential; Public Facility; Port of Kingston; Leaking Underground Storage Tank; KPUD-North Peninsula; 305(b) Waters of Concern
Known Cultural and Historic Resources: Referent to a camp site at Kingston; Mosquito Fleet Trail site; Kingston Hotel (WA Register)

***Greater than 100% because of armored piers creating more "shoreline" than the natural feature*



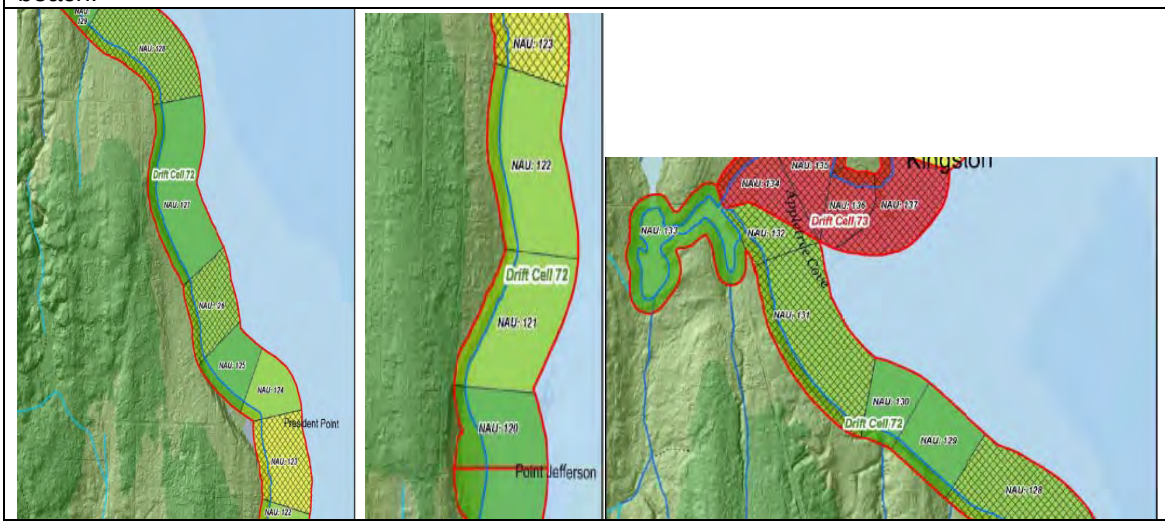
North Puget Sound Drift Cell 73 (Kingston)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
137	Urban Modified	*	Wave Energy	Heavily Modified Area Navigation Channel	Enhance & Create & Restore Site Processes
136	Urban Modified	*	Slope	Heavily	Enhance & Create

North Puget Sound Drift Cell 73 (Kingston)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
				Modified Area Marinas	& Restore Site Processes
135	Fluvial Deposition	Armoring Pilings Marinas Groins	Frequency of Disturbance	Pilings Marinas Overhang. Structures Heavily Modified Area	Enhance & Create & Restore Site Processes
134	Fluvial Deposition	Armoring Pilings	Substrate		Enhance & Create & Restore Site Processes

North Puget Sound Drift Cell 72 (Carpenter- Jefferson Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 5.53
% Armored: 39.4
Geomorphic Type: Open Shore / Embayment (Sediment Source/Barrier Beach/Delta/Drowned Channel Lagoon)
Fluvial Influences (PSNERP #s): 41513, 41540, 41604, 40021, 40079, 40080, 40083, 40602
Terrestrial Veg: Closed Canopy-34.84%, Non-forest-46.43%, Other Natural Veg-18.73%
Marine Veg: Eelgrass, Kelp (patchy), Salt Marsh
Overhanging Veg: 25-50%
Public Access: 1 Park; 1 Undeveloped County Parcel; 3 Undeveloped beach access ROWs; 4 Undeveloped view access ROWs
Current Population Est: 533
Future Build-out Population Est: 818
% of Total Parcels in Drift Cell Vacant/Underutilized: 19%
Priority Species/Habitat: Geoduck; Bald Eagle; Hardshell Clam; Subtidal Hardshell Clam; Dungeness Crab; Coho; Chum; Surf Smelt/Sand Lance Spawn; Glaucous Winged Gull; Wetlands
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.00 / 0.00
Shoreform Change: 0
Critical Areas: Cat. 1&2 CARA; Mod/High Geohazard; Frequently Flooded Areas; Wetlands
Land Use: Urban Low-Density Residential, Public Facility, Rural Residential
Known Cultural and Historic Resources: Artifacts; Historic Debris; Referent to campsites at Kingston and a point south of Kingston and a trail from Old Man House on the bluff above the beach.



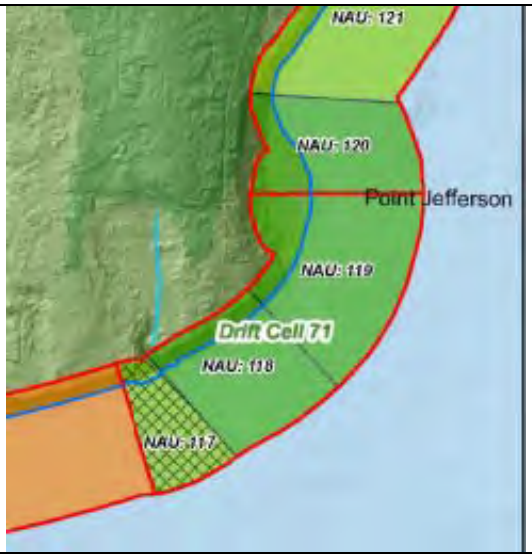
North Puget Sound Drift Cell 72 (Carpenter- President Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
133	Tidal Erosion/Wave Dep.	Armoring	Frequency of Disturbance		Protect & Conserve & Restore *(Carpenter Estuary Enhancement)*
132	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings Overhang. Structure	Conserve & Restore & Restore Site Processes
131	Sediment Source/Transport	Pilings Armoring	Frequency of Disturbance	Pilings Overhang.	Conserve & Restore & Restore

North Puget Sound Drift Cell 72 (Carpenter- President Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Boat Launches		Structure	Site Processes
130	Fluvial Deposition	Armoring	Substrate		Protect & Conserve & Restore
129	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings Armoring	Protect & Conserve & Restore
128	Sediment Source/Transport	Pilings Armoring Boat Launches	Wave Energy	Pilings Armoring	Conserve & Restore & Restore Site Processes
127	Sediment Source/Transport	Pilings Armoring	Frequency of Disturbance	Pilings	Protect & Conserve & Restore
126	Sediment Source/Transport	Pilings Groins Armoring	Substrate		Conserve & Restore & Restore Site Processes
125	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings	
124	Wave Deposition	Pilings Armoring	Substrate	Navigation Channel	Protect & Conserve & Restore
123	Wave Deposition	Pilings Armoring	Substrate	Navigation Channel	Restore & Restore Site Processes
122	Wave Deposition	Pilings Armoring	Substrate	Navigation Channel	Conserve & Restore
121	Sediment Source/Transport	Armoring	Substrate/Freq. of Dist.		Conserve & Restore
120	Wave Deposition		Water Quality		Protect & Conserve & Restore

North Puget Sound Drift Cell 71 (Point Jefferson)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.66
% Armored: 15.4
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40602, 40090
Terrestrial Veg: Closed Canopy-16.13%, Non-forest-46.15%, Other Natural Veg-37.72%
Marine Veg: Eelgrass (patchy), Kelp (patchy)
Overhanging Veg: 0-25%
Public Access: 2 Undeveloped view access
Current Population Est: 43
Future Build-out Population Est: 58
% of Total Parcels in Drift Cell Vacant/Underutilized: 25%
Priority Species/Habitat: Geoduck; Bald Eagle
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0 / 0
Shoreform Change: 0
Critical Areas: Cat.2 CARA, Mod/High Geohazard, Frequently Flooded Areas, Wetlands
Land Use: Rural Residential
Known Cultural and Historic Resources: Referents to campsites at President Point, the promontory south of President Point, and Jefferson Head. An archaeological shell midden site is recorded south of Kingston.

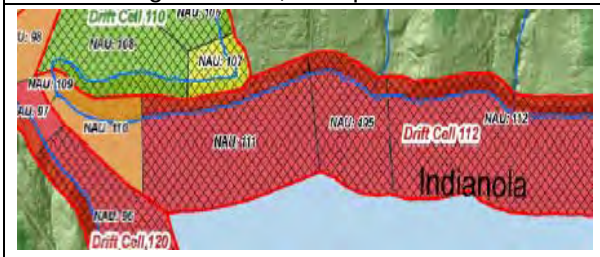


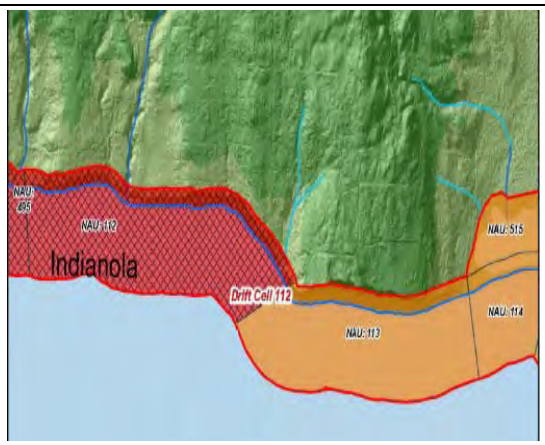
North Puget Sound Drift Cell 71 (Point Jefferson)

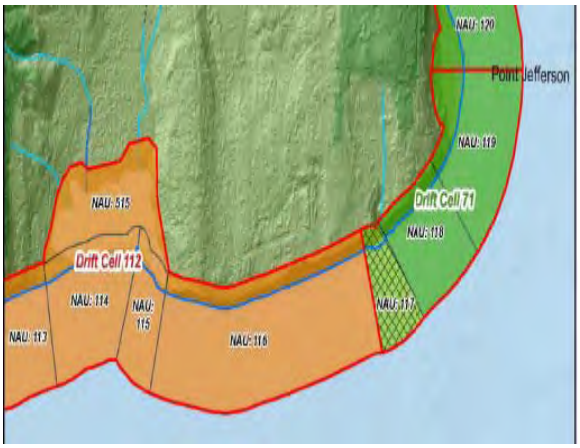
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
119	Sediment Source/Transport	Armoring	Light	Overhanging Structures Piers/Docks/Floats	Protect & Conserve & Restore
118	Sediment Source/Transport	Armoring Boat Launch	Wave Energy	Armoring	Protect & Conserve & Restore
117	Sediment Source/Transport	Pilings Armoring	Light	Piers/Docks/Floats	Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 112 (Indianola)

Drift Cell Disturbance Score: High (3)
Length (miles): 4.13
% Armored: 26.7
Geomorphic Type: Open Shore / Embayment (Barrier/Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40084, 41511, 40659, 40034, 40087, 40032, 41554
Terrestrial Veg: Closed Canopy-19.77%, Non-forest-37.77%, Other Natural Veg-42.47%
Marine Veg: Eelgrass (patchy), Kelp (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Park, 1 Port dock (Indianola), 3 Undeveloped beach access
Current Population Est: 435
Future Build-out Population Est: 485
% of Total Parcels in Drift Cell Vacant/Underutilized: 10%
Priority Species/Habitat: Chum; Coho; Bald Eagle; Surf Smelt/Sand Lance Spawning; Pacific Herring Spawning; Geoduck; Hardshell Clam; Dungeness Crab
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.00 / 0.00
Shoreform Change: 0
Critical Areas: Cat. 2 CARA; Mod./High Geohazard; Critical Drainage Area; Wetlands
Land Use: Rural Residential, Tribal; 305(b) Waters of Concern; 303(d)
Known Cultural and Historic Resources: Artifacts; Historical Debris; Referents to camp sites at Jefferson Head and Indianola and a place name and clamming and fishing activity referent for the beach along Indianola; Mosquito Fleet Trail dock- Indianola dock







North Puget Sound Drift Cell 112 (Indianola)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
116	Sediment Source/Transport		Water Quality		Enhance
115	Wave Deposition		Water Quality		Enhance
515	Wave/Tidal Erosion / Fluvial	N/A	N/A	N/A	Enhance

North Puget Sound Drift Cell 112 (Indianola)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Deposition				
114	Wave Deposition		Frequency of Disturbance		Enhance
113	Sediment Source/Transport	Armoring	Wave Energy	Armoring	Enhance
112	Sediment Source/Transport	Pilings Groins Armoring Marinas	Frequency of Disturbance	Pilings Overhang. Structures Marinas	Enhance & Create & Restore Site Processes
495	Fluvial/Wave Deposition	Groins Armoring	Water Quality	Water Quality	Enhance & Create & Restore Site Processes
111	Wave Deposition	Armoring	Frequency of Disturbance		Enhance & Create & Restore Site Processes
110	Wave Deposition	Armoring	Substrate		Enhance
109	Wave Deposition	Armoring	Water Quality		Enhance

North Puget Sound Drift Cell 110 (Miller Bay)

Drift Cell Disturbance Score: Low (1)
Length (miles): 4.96
% Armored: 36.5
Geomorphic Type: Embayment (Drowned Channel Lagoon)
Fluvial Influences (PSNERP #s): 41603 (Cowling); 41542; 41545; 41548 (Grovers); 41551; 41552; 41509
Terrestrial Veg: Closed Canopy-36.40%, Non-forest-57.32%, Other Natural Veg-6.27%
Overhanging Veg: 25-50%
Marine Veg: Eelgrass (patchy), Kelp (Patchy), Salt Marsh (patchy)
Public Access: 1 Undeveloped beach access
Current Population Est: 448
Future Build-out Population Est: 563
% of Total Parcels in Drift Cell Vacant/Underutilized: 21%
Priority Species/Habitat: Chinook, Chum, Coho, Steelhead, Bald Eagle, Surf Smelt/Sand Lance Spawning, Pacific Herring Spawning, Hardshell Clam, Great Blue Heron, Purple Martin, Osprey, Lagoons
Historic Marsh (sq.ft.) (/Channel Loss (ft.): 0.0 / 2764
Shoreform Change: -760 (Barrier Estuary)
Critical Areas: Cat. 2 CARA; Mod. Geohazard; Frequently Flooded Areas; Critical Drainage Areas, Wetlands
Land Use: Rural Residential; Rural Protection; Public Facility; 305(b) and 303(d)
Known Cultural and Historic Resources: Artifacts; Place name and landform referents to Miller Bay, sand spits, and shorelines and activity referents to campsites, fishing, and clamming. Two archaeological shell midden sites are recorded in the drift cell.

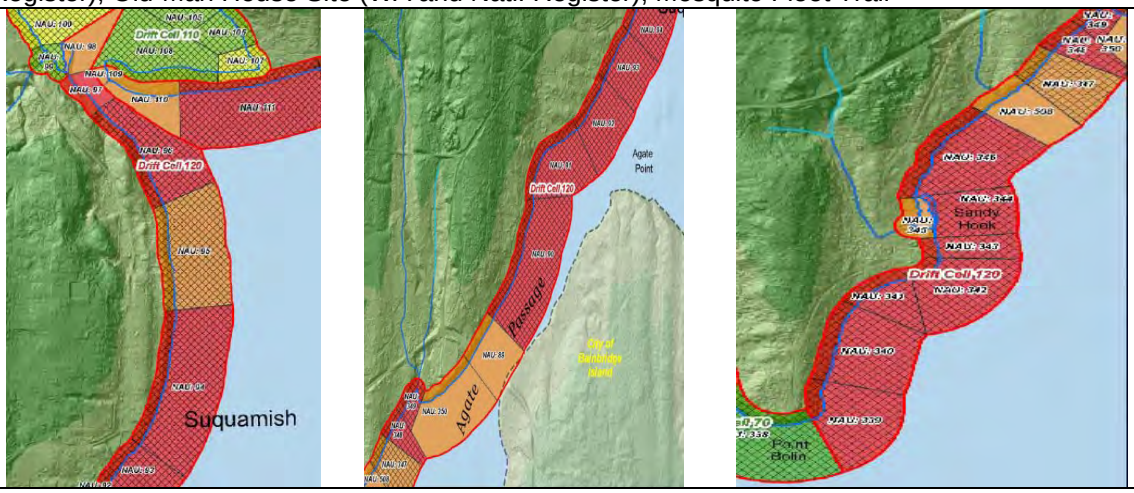
North Puget Sound Drift Cell 110 (Miller Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
108	Tidal Erosion / Wave Dep.	Pilings Armoring Floats	Wave Energy		Conserve & Restore & Restore Site Processes
107	Tidal Erosion / Wave Dep.	Pilings Armoring Floats	Frequency of Disturbance	Pilings Floats & Docks	Restore & Restore Site Processes
106	Tidal Erosion /	Pilings	Frequency of	Pilings	Conserve &

North Puget Sound Drift Cell 110 (Miller Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Wave Dep.	Armoring Floats	Disturbance	Floats & Docks	Restore & Restore Site Processes
105	Tidal Erosion / Wave Dep.	Pilings Armoring Floats	Light	Floats & Docks Overhang. Structures	Conserve & Restore & Restore Site Processes
104	Tidal Erosion / Wave Dep.	Pilings Armoring Floats	Light	Floats & Docks Overhang. Structures	Conserve & Restore & Restore Site Processes
103	Tidal Erosion / Wave Dep.	Pilings Armoring Groins Floats	Light	Floats & Docks Overhang. Structures	Restore & Restore Site Processes
102	Tidal Erosion / Wave Dep.	Pilings Armoring Floats	Light	Floats & Docks Overhang. Structures	Conserve & Restore
101	Tidal Erosion / Wave Dep.	Pilings Armoring Groins Floats	Light/Substrate	Floats & Docks Overhang. Structures	Restore & Restore Site Processes
100	Tidal Erosion / Wave Dep.	Pilings Armoring Marinas Groins Floats	Light	Floats & Docks Marinas Overhang. Structures	Restore & Restore Site Processes
99	Tidal Erosion / Wave Dep.	Pilings Armoring	Light	Floats & Docks Overhang. Structures	Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 120 (Suquamish)

Drift Cell Disturbance Score: High (3)
Length (miles): 5.62
% Armored: 58.6
Geomorphic Type: Open Shore /Embayment (Sediment Source Beach/ Barrier Beach/Beach Seep/Depositional Beach/Tidal Delta Lagoon/Drowned Channel/Delta)
Fluvial Influences (PSNERP #s): 41541, 40102, 40606, 40085, 40061, 40124, 40057
Terrestrial Veg: Closed Canopy-29.60%, Non-forest-61.67%, Other Natural Veg-8.74%
Marine Veg: Eelgrass (patchy), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: 1 boat ramp; 6 Undeveloped beach access
Current Population Est: 580
Future Build-out Population Est: 725
% of Total Parcels in Drift Cell Vacant/Underutilized: 21%
Priority Species/Habitat: Area of Ecological Significance; Chum; Coho; Bald Eagle; Surf Smelt/Sand Lance Spawning; Pacific Herring Spawning; Surf Scoter; Hardshell Clam; Geoduck; Dungeness Crab; Subtidal Hardshell Clam; Great Blue Heron; Osprey; Estuarine Zone **Historic Marsh (sq.ft.)/Channel Loss (ft.):** 0.00 / 0.00
Shoreform Change: 0
Critical Areas: Cat.1 CARA; Mod/High Geohazard; Critical Drainage Area; Wetlands
Land Use: Rural Residential, LAMIRD, Tribal; 305(b) Waters of Concern
Known Cultural and Historic Resources: Artifacts; Historical Debris; Activity referents to campsites on the shoreline, and activity referents to fishing, clamming, and hunting. Four archaeological shell midden sites are recorded in the drift cell; Agate Pass Bridge (WA and Natl. Register), Old-Man House Site (WA and Natl. Register); Mosquito Fleet Trail



North Puget Sound Drift Cell 120 (Suquamish)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
98	Wave Deposition		Water Quality		Enhance
97	Sediment Source/Transport	Pilings Armoring	Frequency of Disturbance	Pilings Overhang. Structure	Enhance & Create
96	Fluvial Dep./ Wave Erosion	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
95	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings Armoring	Enhance & Restore Site Processes
94	Sediment	Pilings	Substrate		Enhance & Create &

North Puget Sound Drift Cell 120 (Suquamish)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Source/Transport	Armoring Boat Launches			Restore Site Processes
93	Sediment Source/Transport	Pilings Armoring Boat Launches	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes
92	Wave Deposition	Pilings Armoring	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
91	Fluvial Dep./Wave Erosion	Pilings Armoring	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
90	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
89	Sediment Source/Transport	Armoring	Wave Energy	Armoring	Enhance
350	Sediment Source/Transport	Armoring	Water Quality		Enhance
349	Wave & Fluvial Dep./Tidal Erosion	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
348	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
347	Sediment Source/Transport	Groins Armoring	Wave Energy	Armoring	Enhance & Restore Site Processes
508	Fluvial Deposition	Armoring	Light	Overhang.Structures Docks & Floats	Enhance
346	Sediment Source/Transport	Pilings Armoring	Frequency of Disturbance	Pilings Overhang. Structure	Enhance & Create & Restore Site Processes
345	Tidal Erosion/Wave Deposition	Armoring Floats	Substrate		Enhance
344	Wave Deposition	Pilings Armoring	Wave Energy	Pilings	Enhance & Create & Restore Site Processes
343	Sediment Source/Transport	Armoring	Wave Energy	Armoring	Enhance & Create & Restore Site Processes
342	Wave Deposition	Pilings Groins Armoring	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
341	Sediment Source/Transport	Groins Armoring	Wave Energy	Armoring	Enhance & Create & Restore Site

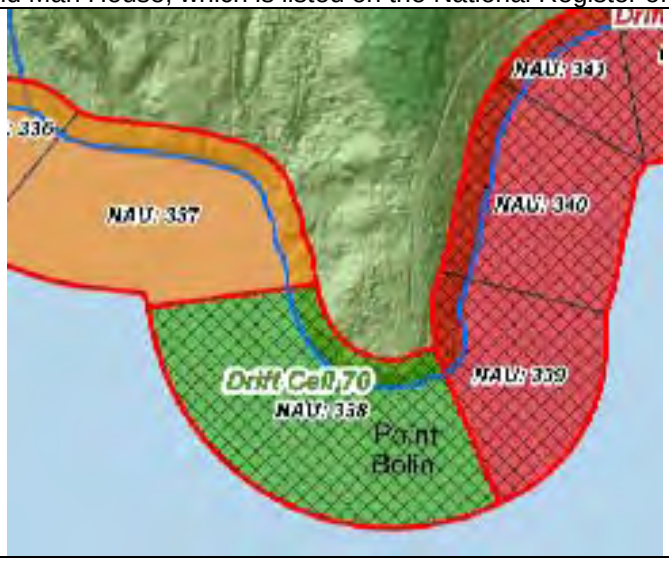
North Puget Sound Drift Cell 120 (Suquamish)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Boat Launches			Processes
340	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Substrate/Wave Energy	Armoring	Enhance & Create & Restore Site Processes
339	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes

North Puget Sound Drift Cell 70 (Point Bolin)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.29
% Armored: 24.4
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40129, 40099
Terrestrial Veg: Closed Canopy-56.99%, Non-forest-21.19%, Other Natural Veg-21.83%
Marine Veg: Kelp (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 10
Future Build-out Population Est: 18
% of Total Parcels in Drift Cell Vacant/Underutilized: 43%

Priority Species/Habitat: Area of Ecological Significance; Surf Smelt/Sand Lance Spawning; Pacific Herring Spawning; Surf Scoter; Subtidal Hardshell Clam

Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Mod. Geohazard
Land Use: Rural Residential, Tribal
Known Cultural and Historic Resources: Artifacts; Activity referents to Old Man House village, Sandy Hook Village, and campsites on the shoreline, and activity referents to fishing, clamming, and hunting. The drift cell has seven archaeological shell middens and two petroglyph rocks. One of the sites is Old Man House, which is listed on the National Register of Historic Places.

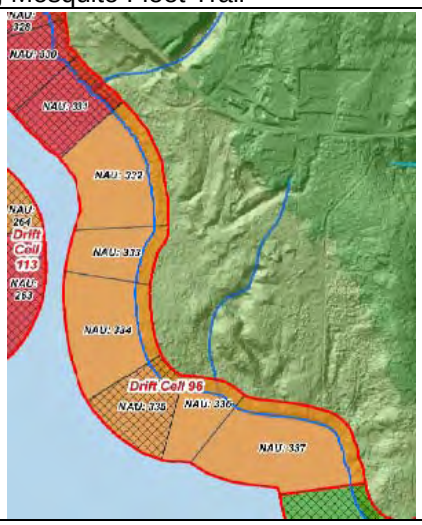


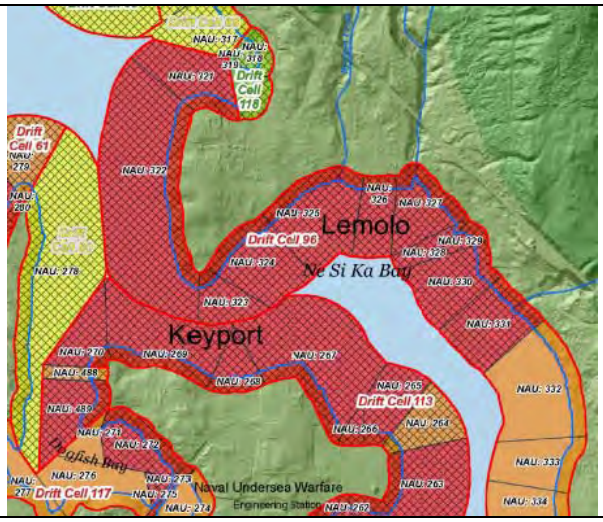
North Puget Sound Drift Cell 70 (Point Bolin)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
338	Sediment Source/Transport	Pilings Armoring	Wave Energy (Open)	Pilings Armoring	Protect & Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 96 (Lemolo)

Drift Cell Disturbance Score: High (3)
Length (miles): 3.52
% Armored: 72.8
Geomorphic Type: Open/Embayment; (Sediment Source Beach/Barrier Beach/Delta/Tidal Delta/Modified
Fluvial Influences (PSNERP #s): 40099, 40058, 40056, 40119, 40053, 40463, 40695, 40088, 40111, 40055, 40609
Terrestrial Veg: Closed Canopy-36.23%, Non-forest-51.14%, Other Natural Veg-12.62%
Marine Veg: Eelgrass (continuous), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: 7 Undeveloped beach access
Current Population Est: 330
Future Build-out Population Est: 370 (+12%)
% of Total Parcels in Drift Cell Vacant/Underutilized: 11%
Priority Species/Habitat: Chum, Coho, Steelhead, Bald Eagle, Surf Smelt/Sand Lance Spawning, Pacific Herring Spawning, Surf Scoter, Subtidal Hardshell Clam, Geoduck, Great Blue Herron, Estuarine Zone; Area of Ecological Significance
Historic Marsh (sq.ft.)/Channel Loss (ft.): 20712 / 242
Shoreform Change: -865 (Barrier Beach)
Critical Areas: Cat.2 CARA; Mod. Geohazard (small); Frequently Flooded Areas; Wetlands
Land Use: Rural Residential; 305(b) Waters of Concern; 303(d); south end Unclassified, north end Approved Shellfish Harvest Areas
Known Cultural and Historic Resources: Artifacts; Historical Debris; Activity referents to a campsite, fishing, and shellfish collecting. Two boulders with petroglyphs are recorded in the drift cell; Mosquito Fleet Trail





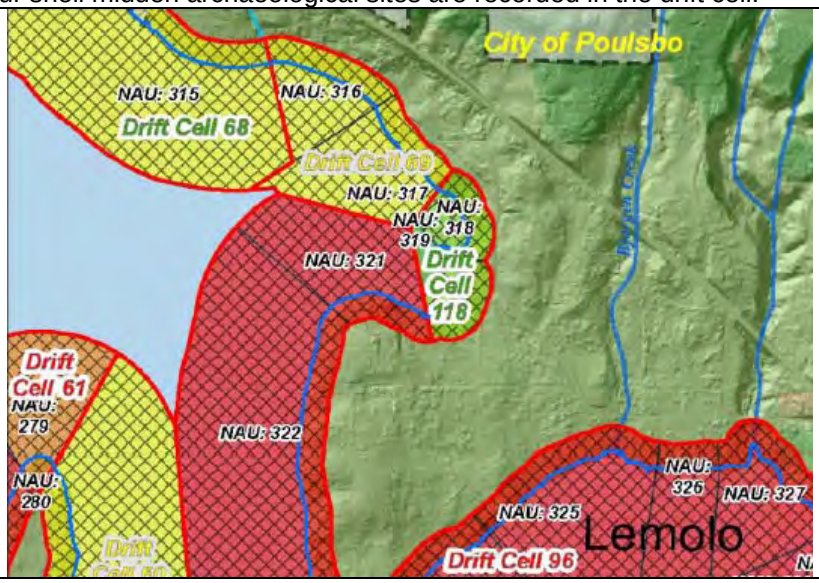
North Puget Sound Drift Cell 96 (Lemolo)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
337	Wave Deposition	Armoring Pilings	Wave Energy	Armoring Pilings	Enhance
336	Wave Deposition	Armoring	Water Quality		Enhance
335	Sediment Source/Transport	Groins	Wave Energy		Enhance & Restore Site Processes
334	Wave Deposition	Armoring	Wave Energy	Armoring	Enhance
333	Wave Deposition		NA		Enhance
332	Wave Deposition	Armoring	Frequency of	Overhang.	Enhance

North Puget Sound Drift Cell 96 (Lemolo)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
			Disturbance	Structure	
331	Fluvial Deposition	Groins Armoring	Light	Overhang. Structure Floats & Docks	Enhance & Create & Restore Site Processes
330	Wave Deposition	Groins Armoring	Light	Overhang. Structure Floats & Docks	Enhance & Create & Restore Site Processes
329	Wave Deposition	Pilings Armoring	Wave Energy	Heavily Mod. Area Armoring	Enhance & Create & Restore Site Processes
328	Urban Modified		Wave Energy	Heavily Mod. Area	Enhance & Create & Restore Site Processes
327	Tidal Erosion/Fluvial Deposition	Pilings Groins Armoring	Light	Floats & Docks	Enhance & Create & Restore Site Processes
326	Sediment Source Transport	Armoring Boat Launches Pilings Groins	Wave Energy	Armoring Pilings	Enhance & Create & Restore Site Processes
325	Fluvial Deposition	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
324	Wave Deposition	Pilings Armoring	Substrate/Freq. of Dist.	Pilings	Enhance & Create & Restore Site Processes
323	Sediment Source/Transport	Pilings Armoring	Substrate		Enhance & Create & Restore Site Processes
322	Sediment Source/Transport	Pilings Armoring Groins Boat Launch	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
321	Sediment Source/Transport	Pilings Armoring Groins Boat Launch	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes

North Puget Sound Drift Cell 118 (North Lemolo)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.35
% Armored: 65.9
Geomorphic Type: Open Shore (Depositional Beach)
Fluvial Influences (PSNERP #s): 40108
Terrestrial Veg: Closed Canopy-16.95%, Non-forest-81.10%, Other Natural Veg-1.95%
Overhanging Veg: 0-25%
Marine Veg: Salt Marsh (patchy)
Public Access: None
Current Population Est: 35
Future Build-out Population Est: 40
% of Total Parcels in Drift Cell Vacant/Underutilized: 14%
Priority Species/Habitat: Area of Ecological Significance; Great Blue Heron, **Historic Marsh (sq.ft.)/Channel Loss (ft.):** 0 / 0
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Frequently Flooded Area
Land Use: Rural Residential; 305(b) Waters of Concern; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referents to campsites, fishing, and shellfish collecting. Four shell midden archaeological sites are recorded in the drift cell.

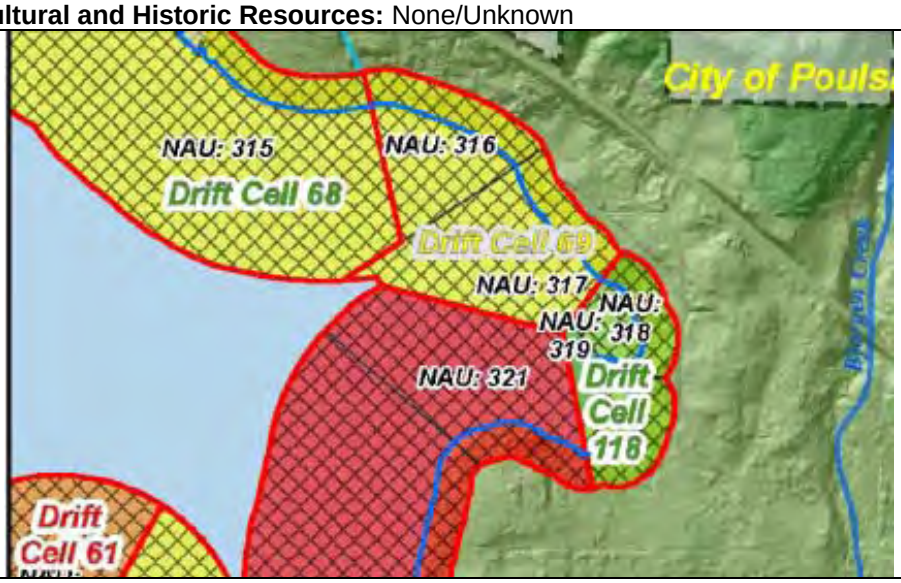


North Puget Sound Drift Cell 118 (North Lemolo)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
320	Wave Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
319	Wave Deposition	Armoring	Substrate		Protect & Conserve & Restore
318	Wave Deposition	Pilings Armoring	Substrate		Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 69 (Lemolo Shore Drive)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.345
% Armored: 73.5
Geomorphic Type: Open Shore (Sediment Source/Depositional Beach)
Fluvial Influences (PSNERP #s): 40655
Terrestrial Veg: Closed Canopy-13.09%, Non-forest-74.93%, Other Natural Veg-11.98%
Marine Veg: Salt Marsh Fringe (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Undeveloped beach access
Current Population Est: 38
Future Build-out Population Est: 45
% of Total Parcels in Drift Cell Vacant/Underutilized: 18%
Priority Species/Habitat: Area of Ecological Significance; Surf Smelt/Sand Lance Spawning; Estuarine Zone
Historic Marsh (sq.ft.) /Channel Loss (ft.): 0.0 / 0.15
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Frequently Flooded Area
Land Use: Rural Residential; 305(b) Waters of Concern; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: None/Unknown

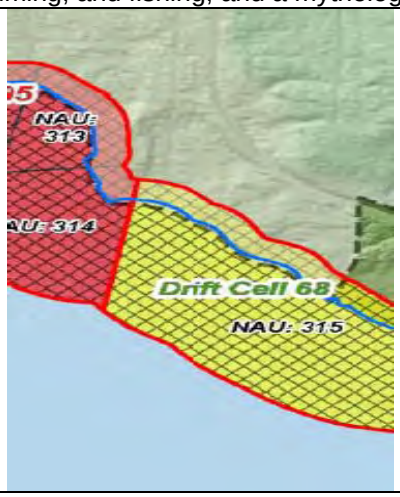


North Puget Sound Drift Cell 69 (Lemolo Shore Drive)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
317	Sediment Source/Transport	Armoring Boat Launches	Light	Overhanging Structure Floats & Docks	Restore & Restore Site Processes
316	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Overhanging Structure	Restore & Restore Site Processes

North Puget Sound Drift Cell 68 (Poulsbo – Partial City)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.53
% Armored: 78.7
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40092, 40094
Terrestrial Veg: Closed Canopy-0.32%, Non-forest-99.68%, Other Natural Veg-0%
Marine Veg: None
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 30
Future Build-out Population Est: 35
% of Total Parcels in Drift Cell Vacant/Underutilized: 14%
Priority Species/Habitat: Surf Smelt/Sand Lance Spawning; Subtidal Hardshell Clam; Estuarine Zone; Area of Ecological Significance
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Area of Ecological Significance
Land Use: Rural Residential; 305(b) Waters of Concern; east end Approved, west end Prohibited Shellfish Harvest Areas
Cultural Resources: Landform referents to promontories, activity referents to plant collecting, clamming, and fishing, and a mythological referent to a large boulder.

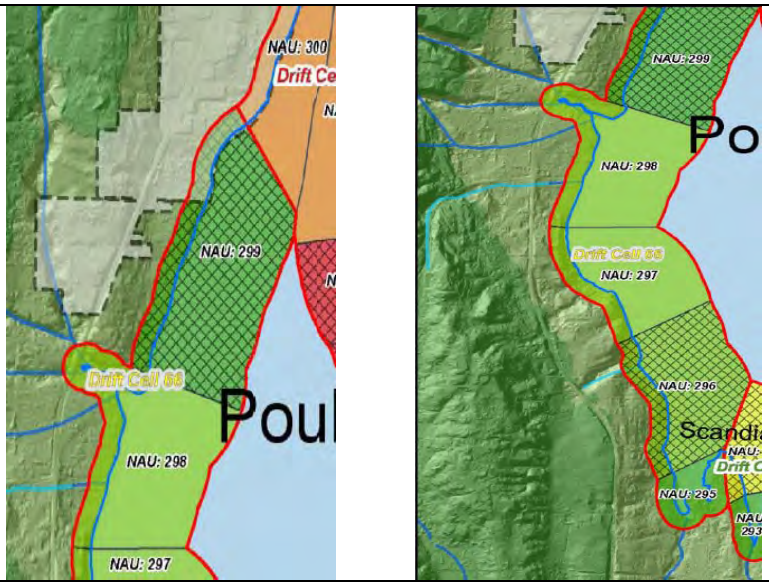


North Puget Sound Drift Cell 68 (Poulsbo – Partial City)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
315	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings Overhanging Structures	Restore & Restore Site Processes

North Puget Sound Drift Cell 66 (Liberty Bay – Partial City)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 2.21
% Armored: 25.9
Geomorphic Type: Embayment (Open Shore) (Sediment Source Beach/Delta/Tidal Delta/Drowned Channel)
Fluvial Influences (PSNERP #s): 40086, 40091, 40667, 40106, 40123
Terrestrial Veg: Closed Canopy-18.31%, Non-forest-69.77%, Other Natural Veg-11.92%
Overhanging Veg: 0-25%
Marine Veg: Salt Marsh (patchy)
Public Access: 1 beach access ROW
Current Population Est: 193
Future Build-out Population Est: 225
% of Total Parcels in Drift Cell Vacant/Underutilized: 15%
Priority Species/Habitat: Chum, Coho, Steelhead, Bald Eagle, Surf Smelt/Sand Lance Spawning, Harbor Seal, Hardshell Clam, Wetlands, Estuarine Zone
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Mod. Geohazard; Frequently Flooded Area; Wetland
Land Use: Rural Residential, Poulsbo Urban Transition Area; 305(b) Waters of Concern and 303(d); Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referents to campsites, fishing, and collecting oysters.



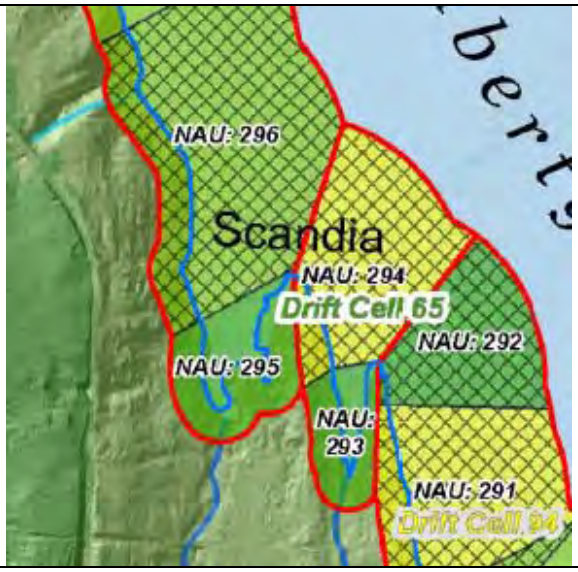
North Puget Sound Drift Cell 66 (Liberty Bay – Partial City)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
299	Tidal Erosion/Fluvial Dep.	Armoring Floats & Docks	Substrate		Protect & Conserve & Restore & Restore Site Processes
298	Fluvial Deposition	Pilings Armoring	Substrate		Conserve & Restore
297	Sediment Source/Transport	Pilings Armoring	Substrate		Conserve & Restore
296	Sediment	Pilings	Frequency of	Overhang.	Conserve &

North Puget Sound Drift Cell 66 (Liberty Bay – Partial City)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Source/Transport	Groins Armoring Boat Launches	Disturbance	Structures Pilings	Restore & Restore Site Processes
295	Tidal Erosion/Fluvial Dep.	Pilings Armoring	Frequency of Disturbance	Pilings	Protect & Conserve & Restore

North Puget Sound Drift Cell 65 (Scandia)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.41
% Armored: 73
Geomorphic Type: Embayment (Drowned Channel)
Fluvial Influences (PSNERP #s): 40123
Terrestrial Veg: Closed Canopy-12.26%, Non-forest-87.73%, Other Natural Veg-0%
Marine Veg: Salt Marsh (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 40
Future Build-out Population Est: 48
% of Total Parcels in Drift Cell Vacant/Underutilized: 16%
Priority Species/Habitat: Area of Ecological Significance; Coho; Chum; Bald Eagle; Surf Smelt/Sand Lance Spawning; Hardshell Clam; Wetlands; Estuarine Zone
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Frequently Flooded Areas
Land Use: Rural Residential; 303(d); Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: Unknown

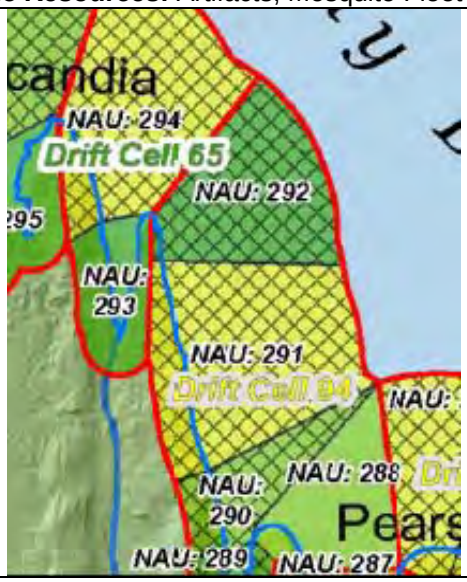


North Puget Sound Drift Cell 65 (Scandia)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
294	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings Overhanging Structures	Restore & Restore Site Processes
293	Tidal Erosion/Fluvial Dep.	Armoring Floats & Docks	Substrate		Protect & Conserve & Restore

North Puget Sound Drift Cell 94 (Little Scandia)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.66
% Armored: 69.2
Geomorphic Type: Open Shore (Embayment) (Sediment Source Beach/Drowned Channel Lagoon)
Fluvial Influences (PSNERP #s): 40123, 40612
Terrestrial Veg: Closed Canopy-15.80%, Non-forest-76.37%, Other Natural Veg-7.83%
Marine Veg: None
Overhanging Veg: 25-50%
Public Access: 1 Undeveloped beach access
Current Population Est: 58
Future Build-out Population Est: 65
% of Total Parcels in Drift Cell Vacant/Underutilized: 12% Residential; 4% Commercial
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle; Surf Smelt/Sand Lance Spawning; Estuarine Zone
Historic Marsh (sq.ft.) /Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat. 2 CARA
Land Use: Rural Residential, Rural Protection; 305(b) Waters of Concern; Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: Artifacts; Mosquito Fleet Trail?



North Puget Sound Drift Cell 94 (Little Scandia)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
292	Sediment Source/Transport	Armoring	Substrate		Protect & Conserve & Restore & Restore Site Processes
291	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy	Pilings Armoring	Restore & Restore Site Processes
290	Sediment	Pilings	Frequency of	Pilings	Conserver &

North Puget Sound Drift Cell 94 (Little Scandia)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Source/Transport	Armoring Boat Launches	Disturbance	Overhanging Structures	Restore & Restore Site Processes
289	Tidal Erosion/Wave Dep.	Pilings Armoring	Frequency of Disturbance	Pilings	Protect & Conserve & Restore & Restore Site Processes
288	Sediment Source/Transport	Armoring	Frequency of Disturbance	Overhanging Structures	Conserve & Restore

North Puget Sound Drift Cell 63 (East Pearson)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.56
% Armored: 35.5
Geomorphic Type: Embayment (Drowned Channel)
Fluvial Influences (PSNERP #s): 40612, 40096
Terrestrial Veg: Closed Canopy-35.71%, Non-forest-55.92%, Other Natural Veg-8.36%
Overhanging Veg: 0-25%
Marine Veg: Salt Marsh (patchy)
Public Access: None
Current Population Est: 65
Future Build-out Population Est: 78
% of Total Parcels in Drift Cell Vacant/Underutilized: 17%
Priority Species/Habitat: Area of Ecological Significance, Lagoons
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: -192 (Open Coastal Inlet)
Critical Areas: Cat.2 CARA, Frequently Flooded Area, Wetlands
Land Use: Rural Protection; 305(b) Waters of Concern
Known Cultural and Historic Resources: Artifacts; Place name for Pearson. One archaeological shell midden is recorded in the drift cell.

North Puget Sound Drift Cell 63 (East Pearson)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
287	Tidal Erosion/Fluvial Dep.	Pilings Armoring	Light	Overhanging Structures Floats & Docks	Conserve & Restore

North Puget Sound Drift Cell 62 (Pearson Point)

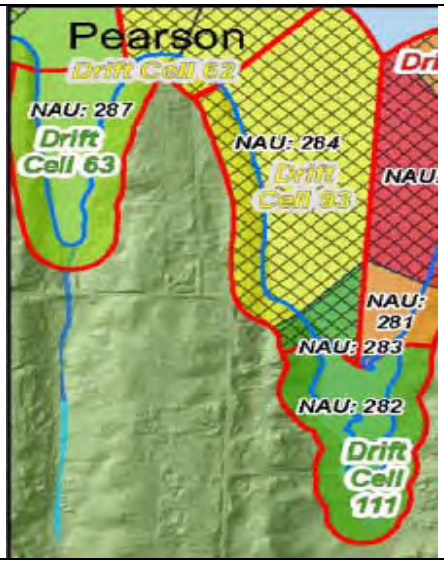
Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.13
% Armored: 88.1
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40112
Terrestrial Veg: Closed Canopy-0.89%, Non-forest-99.11%, Other Natural Veg-0%
Marine Veg: None
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 15
Future Build-out Population Est: 18
% of Total Parcels in Drift Cell Vacant/Underutilized: 17%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle, Sandlance/Surf Smelt; Subtidal Hardshell Clam; Estuarine Zone
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA
Land Use: Rural Protection; 305(b) Waters of Concern
Known Cultural and Historic Resources: Place name for Pearson.; Mosquito Fleet Trail

North Puget Sound Drift Cell 62 (Pearson Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
286	Sediment Source/Transport	Pilings Armoring Boat Launch	Wave Energy	Pilings	Restore & Restore Site Processes
285	Sediment Source/Transport	Pilings Armoring Boat Launch	Substrate		Restore & Restore Site Processes

North Puget Sound Drift Cell 93 (West Pearson)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.47
% Armored: 82.4
Geomorphic Type: Open Shore (Sediment Source Beach/Barrier Beach)
Fluvial Influences (PSNERP #s): 40098, 40114
Terrestrial Veg: Closed Canopy-32.44%, Non-forest-65.83%, Other Natural Veg-1.73%
Marine Veg: None
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 48
Future Build-out Population Est: 60
% of Total Parcels in Drift Cell Vacant/Underutilized: 19%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle; Surf Smelt/Sand Lance Spawning; Subtidal Hardshell Clam; Estuarine Zone
Historic Marsh/Channel Loss (%): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA
Land Use: Rural Protection; 305(b) Waters of Concern; Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: Place name for Pearson.

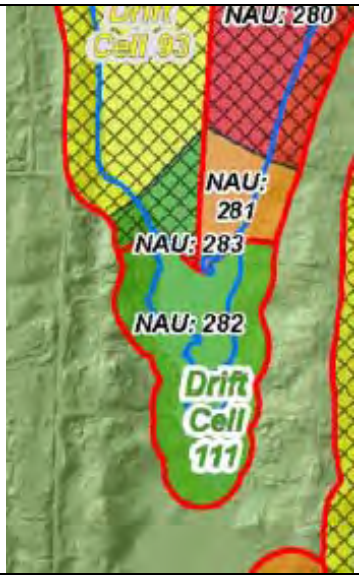


North Puget Sound Drift Cell 93 (West Pearson)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
284	Sediment Source/Transport	Pilings Armoring Boat Launch	Light	Overhanging Structures Floats & Docks	Restore & Restore Site Processes
283	Wave Deposition	Pilings Armoring	Wave Energy	Pilings Armoring	Protect & Conserve & Restore & Restore Site Processes

North Puget Sound Drift Cell 111 (Pearson Bay)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.72
% Armored: 7.3
Geomorphic Type: Embayment (Drowned Channel Lagoon)
Fluvial Influences (PSNERP #s): 41507
Terrestrial Veg: Closed Canopy-22.14%, Non-forest-38.16%, Other Natural Veg-39.70%
Marine Veg: Salt Marsh (continuous)
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 43
Future Build-out Population Est: 58
% of Total Parcels in Drift Cell Vacant/Underutilized: 30%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle, Wetlands, Estuarine Zone
Historic Marsh/Channel Loss (%): 0.15 / 0.00
Shoreform Change: -1384 (Barrier Estuary)
Critical Areas: Cat.2 CARA; Frequently Flooded Area; Wetlands
Land Use: Rural Protection
Known Cultural and Historic Resources: Unknown

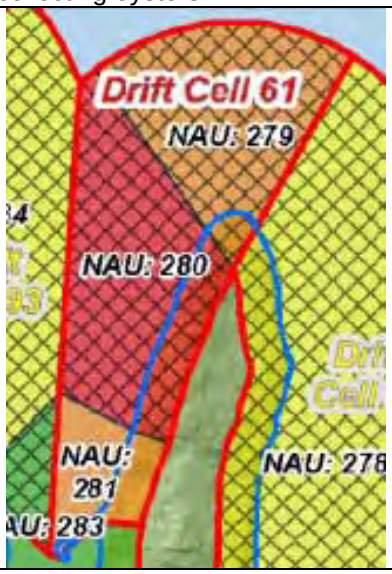


North Puget Sound Drift Cell 111 (Pearson 'Bay")

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
282	Tidal Erosion/Wave Dep.	Pilings Groins Armoring	Frequency of Disturbance	Overhanging Structures Pilings	Protect & Conserve & Restore

North Puget Sound Drift Cell 61 (West Virginia Point)

Drift Cell Disturbance Score: High (3)
Length (miles): 0.465
% Armored: 83.4
Geomorphic Type: Open Shore (Sediment Source Beach/Barrier Beach)
Fluvial Influences (PSNERP #s): 40052
Terrestrial Veg: Closed Canopy-22.02%, Non-forest-75.21%, Other Natural Veg-2.77%
Marine Veg: Salt Marsh (continuous)
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 55
Future Build-out Population Est: 63
% of Total Parcels in Drift Cell Vacant/Underutilized: 14%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle, Surf Smelt/Sand Lance Spawning, Subtidal Hardshell Clam, Geoduck, Rocksole Spawning, Estuarine Zone
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.0 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Frequently Flooded Area; Wetland
Land Use: Rural Protection; 305(b) Waters of Concern
Known Cultural and Historic Resources: Activity referent to campsite between Scandia and Keyport used for clamming and collecting oysters.



North Puget Sound Drift Cell 61 (West Virginia Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
281	Wave Deposition	Pilings	Light	Floats & Docks	Enhance
280	Sediment Source/Transport	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
279	Sediment Source/Transport	Armoring	Wave Energy	Armoring	Enhance & Restore Site Processes

North Puget Sound Drift Cell 60 (East Virginia Point)

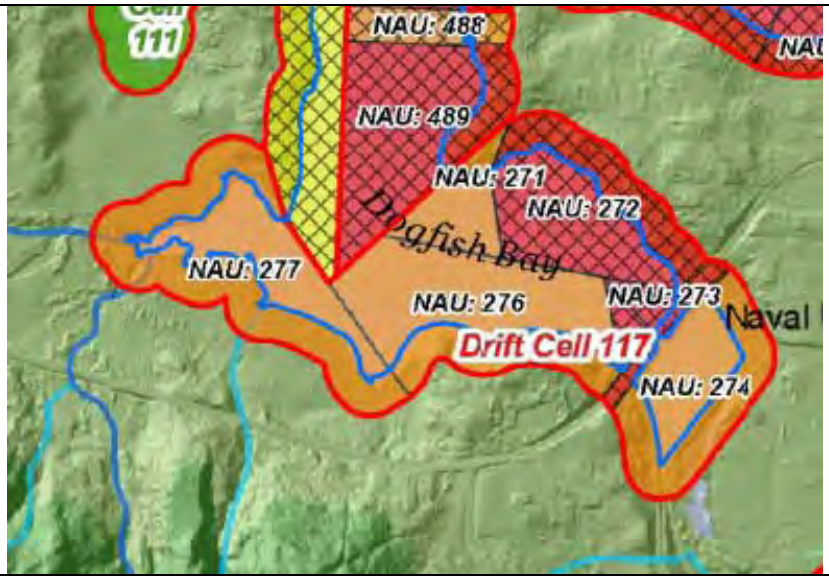
Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.76
% Armored: 66.9
Geomorphic Type: Open Shore (Sediment Source Beach)
Fluvial Influences (PSNERP #s): 40097, 40116
Terrestrial Veg: Closed Canopy-13.49%, Non-forest-86.51%, Other Natural Veg-0%
Marine Veg: None
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 115
Future Build-out Population Est: 130
% of Total Parcels in Drift Cell Vacant/Underutilized:13%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle, Surf Smelt/Sand Lance Spawning, Subtidal Hardshell Clam, Geoduck, Hardshell Clam, Rocksole Spawning
Historic Marsh (sq.ft.)/Channel Loss (ft.): 0.01 / 0.00
Shoreform Change: 0
Critical Areas: Cat.2 CARA
Land Use: Rural Protection; 305(b) Waters of Concern
Known Cultural and Historic Resources: Activity referent to camp site between Scandia and Keyport used for clamming and collecting oysters; Mosquito Fleet Trail

North Puget Sound Drift Cell 60 (East Virginia Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
278	Sediment Source/Transport	Pilings Armoring Boat Launches	Frequency of Disturbance	Overhanging Structures	Restore & Restore Site Processes

North Puget Sound Drift Cell 117 (Dogfish Bay)

Drift Cell Disturbance Score: High (3)
Length (miles): 1.94
% Armored: 39.9
Geomorphic Type: Embayment (Tidal Channel Marsh/Drowned Channel/Modified)
Fluvial Influences (PSNERP #s): 41523, 40128, 41529, 41524, 41525, 41527, 41526
Terrestrial Veg: Closed Canopy-26.71%, Non-forest-47.85%, Other Natural Veg-25.43%
Marine Veg: Salt Marsh (patchy)
Overhanging Veg: 0-25%
Public Access: **1** Park
Current Population Est: 123
Future Build-out Population Est: 145
% of Total Parcels in Drift Cell Vacant/Underutilized: 17%
Priority Species/Habitat: Area of Ecological Significance; Chum; Hardshell Clam; Lagoon; Wetlands
Historic Marsh (area sq ft) /Channel Loss (length ft) : 87,894 / 0.00
Shoreform Change: -2866 (Open Coastal Inlet)
Critical Areas: Cat.2 CARA; Frequently Flooded Area; Wetlands; Mod. Geohazard Area
Land Use: Rural Protection, LAMIRD; 305(b) Waters of Concern
Known Cultural and Historic Resources: Artifacts; Activity referent to collecting oysters in Keyport lagoon.



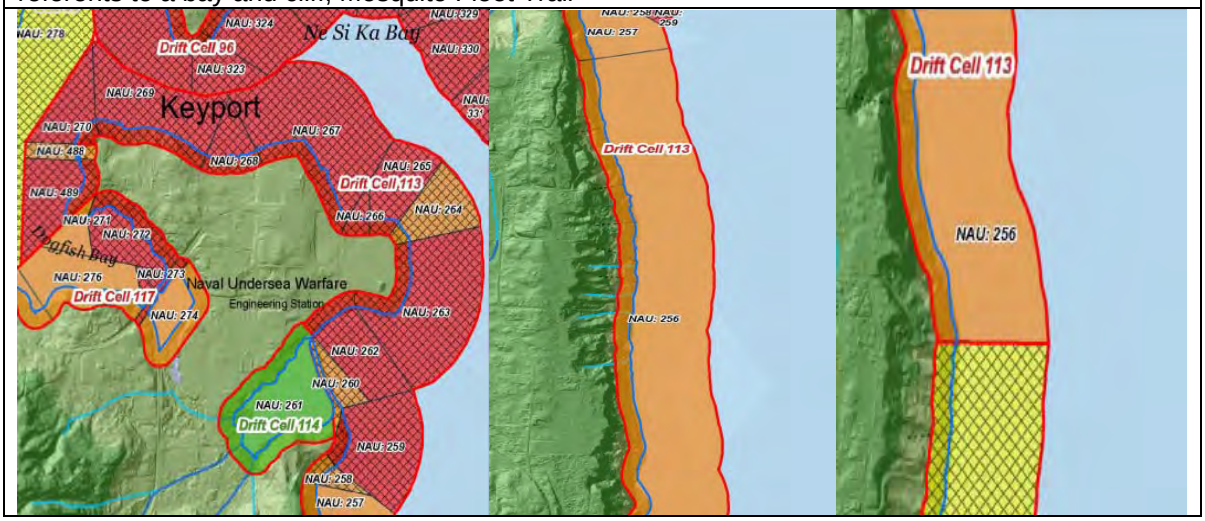
North Puget Sound Drift Cell 117 (Dogfish Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
277	Tidal Erosion/Fluvial Dep.	Pilings Armoring	Water Quality	Water Quality	Enhance
276	Sediment Source/Transport	Pilings Armoring Boat Launches	Light	Floats & Docks	Enhance
275	Urban Modified		Wave Energy	Heavily Modified Area	Enhance & Create & Restore Site Processes
274	Tidal Erosion	Pilings	Substrate		Enhance

North Puget Sound Drift Cell 117 (Dogfish Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Armoring			
273	Urban Modified		Wave Energy	Heavily Modified Area	Enhance & Create & Restore Site Processes
272	Wave Deposition	Pilings Armoring	Light	Floats & Docks	Enhance & Create & Restore Site Processes
271	Wave Deposition	Armoring	Frequency of Disturbance		Enhance

North Puget Sound Drift Cell 113 (Keyport)

Drift Cell Disturbance Score: High (3)
Length (miles): 4.43
% Armored: 36.4
Geomorphic Type: Open Shore/Embayment; (Sediment Source Beach/Depositional Beach/Barrier Beach/Longshore Lagoon/Modified)
Fluvial Influences (PSNERP #s): 40115, 40062, 40118, 40121, 40120, 40615
Terrestrial Veg: Closed Canopy-53.99%, Non-forest-42.75%, Other Natural Veg-3.25%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 25-50%
Public Access: 2 Undeveloped beach access, 3 Undeveloped view access, 1 Port boat launch
Current Population Est: 288
Future Build-out Population Est: 378
% of Total Parcels in Drift Cell Vacant/Underutilized: 25% Residential, 4% Commercial
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle; Surf Smelt/Sand Lance Spawning; Pacific Herring Spawning; Surf Scoter; Hardshell Clam; Subtidal Hardshell Clam; Geoduck; Pigeon Guillemot; Estuarine Zone
Historic Marsh (area sq ft)/Channel Loss (length ft): 47,195 / 1,458
Shoreform Change: -371 (Barrier Lagoon), -346 (Shoreform Absent)
Critical Areas: Cat.1 & 2 CARA; Mod/High Geohazard
Land Use: LAMIRD, Military, Rural Residential, Wastewater Pipeline Crossing and Treatment Plant); 305(b) Waters of Concern, 303(d); south end Prohibited Shellfish Harvest Area, north end Unclassified except NAUs 268-267 are Closed
Known Cultural and Historic Resources: Activity referent to camp site at Keyport and landform referents to a bay and cliff; Mosquito Fleet Trail



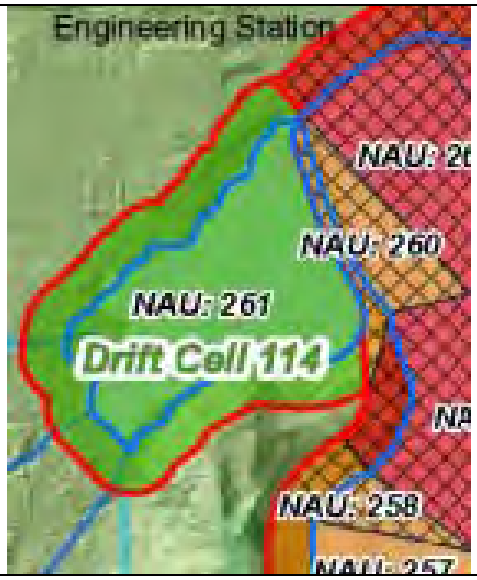
North Puget Sound Drift Cell 113 (Keyport)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
489	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
488	Wave/Fluvial Dep. / Tidal Eros.	Pilings Armoring	Wave Energy		Enhance & Restore Site Processes
270	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings	Enhance & Create & Restore Site Processes

North Puget Sound Drift Cell 113 (Keyport)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
269	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy	Armoring	Enhance & Create & Restore Site Processes
268	Sediment Source/Transport	Pilings Armoring Boat Launches Marinas	Frequency of Disturbance	Pilings Marinas Floats & Docks	Enhance & Create & Restore Site Processes
267	Sediment Source/Transport	Pilings Groins Armoring Marinas	Wave Energy	Pilings Armoring Marinas	Enhance & Create & Restore Site Processes
266	Urban Modified	*	Wave Energy/Slope	Heavily Mod. Area Armoring	Enhance & Create & Restore Site Processes
265	Urban Modified	*	Wave Energy	Heavily Mod. Area Armoring	Enhance & Create & Restore Site Processes
264	Wave Deposition	Armoring	Wave Energy	Armoring	Enhance & Restore Site Processes
263	Wave Deposition	Armoring	Substrate		Enhance & Create & Restore Site Processes
262	Wave Deposition	Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
260	Wave Deposition	Pilings Armoring	Wave Energy	Armoring	Enhance & Restore Site Processes
259	Sediment Source/Transport	Pilings Groins Armoring	Wave Energy	Armoring	Enhance & Create & Restore Site Processes
258	Sediment Source/Transport	Pilings Armoring	Wave Energy	Armoring	Enhance & Restore Site Processes
257	Sediment Source/Transport	Pilings Armoring	Wave Energy	Armoring	Enhance
256	Sediment Source/Transport	Pilings Groins Armoring	Frequency of Disturbance	Overhang. Structures	Enhance

North Puget Sound Drift Cell 114 (Keyport Lagoon)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.80
% Armored: 1.5
Geomorphic Type: Embayment (Drowned Channel Lagoon)
Fluvial Influences (PSNERP #s): 41530, 41531, 41609
Terrestrial Veg: Closed Canopy-46.02%, Non-forest-40.97%, Other Natural Veg-13.00%
Overhanging Veg: 25-50%
Marine Veg: None
Public Access: None
Current Population Est: 0
Future Build-out Population Est: 0
Priority Species/Habitat: Area of Ecological Significance; Lagoons; Wetlands; Bald Eagle; Surf Scoter; Pigeon Guillemot
Historic Marsh (area sq ft)/Channel Loss (length ft): 32,862 / 24
Shoreform Change: 0
Critical Areas: Cat.1 CARA; Fish and Wildlife Conservation Area; Moderate Geohazard; Wetlands
Land Use: Military; 305(b) Waters of Concern
Known Cultural and Historic Resources: Activity referent to campsite at Keyport. One archaeological shell midden is in the drift cell.

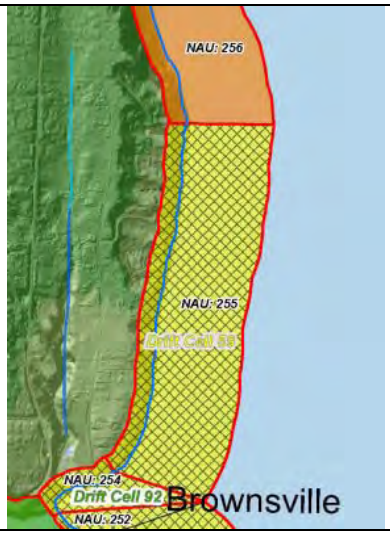


North Puget Sound Drift Cell 114 (Keyport Lagoon)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
261	Tidal Erosion/Wave Dep.	Armoring	Water Quality		Protect & Conserve & Restore *(Keyport Lagoon Restoration)*

North Puget Sound Drift Cell 59 (North Brownsville)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.80
% Armored: 48.2
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40165
Terrestrial Veg: Closed Canopy-17.84%, Non-forest-46.84%, Other Natural Veg-35.32%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 0-25%
Public Access: Marina (Port of Brownsville)
Current Population Est: 90
Future Build-out Population Est: 113
% of Total Parcels in Drift Cell Vacant/Underutilized: 20%
Priority Species/Habitat: Area of Ecological Significance; Surf Smelt/Sand Lance Spawning, Pacific Herring Spawning, Surf Scoter, Geoduck, Hardshell Clam
Historic Marsh (area sq ft)/Channel Loss (length ft): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Cat.2 CARA; Mod/High Geohazard
Land Use: Rural Residential; 303(d); Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Artifacts; Activity referents to a camp site at Burke Bay and plant collecting on the shoreline, landform referent to shoreline from Keyport to Brownsville; Mosquito Fleet Trail



North Puget Sound Drift Cell 59 (North Brownsville)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
255	Sediment Source/Transport	Pilings Armoring Marina	Frequency of Disturbance	Overhanging Structures Pilings Marina	Restore & Restore Site Processes

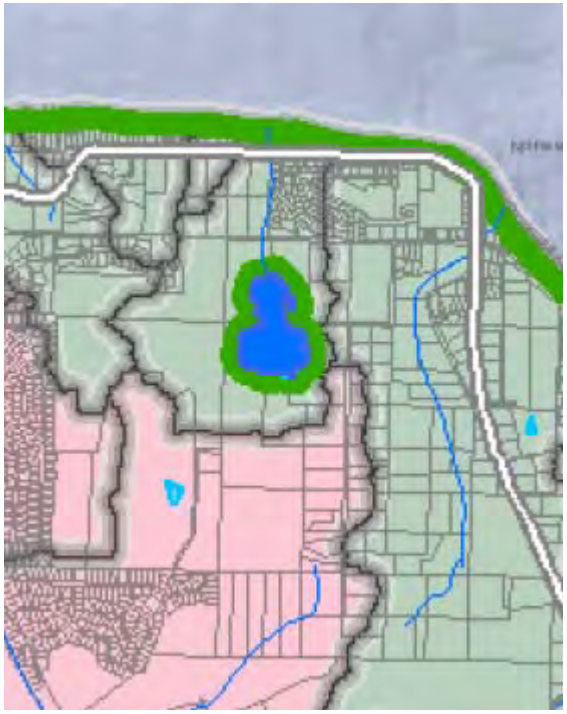
3.1.2 Freshwater Shoreline

3.1.2.1 Buck Lake

BUCK LAKE PSNERP Watershed # 50381 **PHYSICAL ENVIRONMENT**			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low/Low Impairment: Moderate/Moderate-High Synthesis: Conservation 2 / Least Impact to Processes 2 **Surface Storage:** Importance: Moderate-High /High Impairment: Moderate / High Synthesis: Protection 2 Restoration / Restoration **Groundwater Recharge:** Importance: Low / Moderate-High Impairment: Moderate / Moderate-High Synthesis: Conservation 1 / Conservation 2 **Groundwater Discharge:** Importance: High / High Impairment: Moderate / Moderate-High Synthesis: Protection 1-Restoration / Restoration 1 **Water Flow Synthesis:** Importance: Low / Moderate-High Impairment: Moderate / Moderate-High Synthesis: Conservation 2 / Restoration 2X	- 22 acres - Max depth 24 ft. - mean depth 7 ft. - 0.9 shoreline miles; - volume 157 acre ft.	- 2009: Improving trend (e.coli) - Classified as mesoeutrophic, characterized by mostly clear water, mod. high plant and animal production	- Soils: Till - Aerials show forested throughout, except for some open space/fields at County Park

BUCK LAKE PSNERP Watershed # 50381 **BIOLOGICAL RESOURCES**			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2) - Great Blue Herron (2)	- None/Unknown	- None

BUCK LAKE PSNERP Watershed # 50381 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential - Rural Wooded - Public Facility Site (shoreline jurisdiction): - Public Facility - Rural Residential Residential Vacant/Underutilized Parcels: 10%	**50381** Area: 265 Stream Miles: 1 Drains to Drift Cell #: 98 Pasture: 2 Scrub/Shrub: 10 Grassland: 14 Wetland: 15 Deciduous: 91 Evergreen: 48 Mixed: 53 Total Forested: 192 73.00% Total Impervious: 16 6.00%	- Buck Lake County Park (20 acres on east side of lake) - Hansville Greenway (265 acres on west side of lake) - WDFW Public Access (gravel boat launch for non-motorized boats immediately north of park)	- Moderate Geologic Hazard - Cat. 2 CARA (SW shore) - Class 2 Wildlife Habitat Conservation Area - Lake	- KPUD-North Peninsula - Trails (park parking lot and other amenities are outside of the jurisdiction boundary) - Private access/dock immediately north of WDFW property - Gravel boat launch and parking lot (WDFW)

BUCK LAKE PSNERP Watershed # 50381 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Evaluate fish passage status of culvert at Twin Spits Rd. crossing, and extent of suitable habitat upstream - Evaluate freshwater habitat conditions throughout the watershed - Correct problems as warranted - Water Flow Management : • Delivery: re-establish natural cover or use other green infrastructure measures • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in this area.	

3.1.2.2 Point No Point

POINT NO POINT PSNERP Watershed# 50372, 50383 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low Impairment: Moderate-High Synthesis: Least Impact to Processes 2 **Surface Storage:** Importance: High Impairment: High Synthesis: Restoration **Groundwater Recharge:** Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Groundwater Discharge:** Importance: High Impairment: High Synthesis: Restoration **Water Flow Synthesis:** Importance: High Impairment: Moderate-High Synthesis: Restoration 1	- Unknown	- None	- LWD present at marine rack line, but not above road (aerials) - Tidal and marsh grasses; some taller shrubs - Stream channelized to marine shoreline - Soils: Till, Gravels

POINT NO POINT PSNERP Watershed# 50372, 50383 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Bald Eagle (1) - Great Blue Heron (2)	- Knotweed (4.73 acres)	- None

POINT NO POINT PSNERP Watershed# 50372, 50383 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): -Public Facility -Rural Residential -Rural Commercial Site (shoreline jurisdiction): -Public Facility -Rural Residential Residential Vacant/Underutilized Parcels: 13%	**50372** **50383** Area: 915 380 Stream Miles: 4 3 Drains to Drift Cell #: 98 77 Pasture: 81 19 Scrub/Shrub: 31 12 Grassland: 91 36 Wetland: 35 27 Deciduous: 149 48 Evergreen: 197 85 Mixed: 194 101 Total Forested: 540 233 59.0% 61% Total Impervious: 123 51 14% 14%	- Point No Point Lighthouse and Park, 60.8 acres of undeveloped shoreline access	- Cat. 2 CARA - Frequently Flooded Area - Critical Drainage Area - Moderate Geologic Hazard - Class 1 and 2 Wildlife Habitat Conservation Area	- Point No Point Road - Parking lot at north end - Berm 100 yards from point - Tidal influenced outlets from shoreline and up Point No Point Rd. - KPUD-North Peninsula

POINT NO POINT PSNERP Watershed# 50372, 50383 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Remove noxious weeds; replant - Restore natural channels; remove obstructions to LWD transport (berm) - Water Flow Management: • Delivery: Least Impact to processes •Storage: Re-establish natural hydrology of wetlands by plugging ditches that drain wetland and restore natural outlet and native vegetation to slow water; re-establish flooding by removing dikes/levees or raising incised channel; remove any floodplain fill •Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. •Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas and restore natural discharge patterns by plugging/removing ditches and fill	

3.1.2.3 Do-Kag-Wats

DO-KAG-WATS PSNERP Watershed# 41511 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Surface Storage:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Recharge:** Importance: Low Impairment: Low Synthesis: Conservation 1 **Groundwater Discharge:** Importance: High Impairment: Low Synthesis: Protection 1 **Water Flow Synthesis:** Importance: Low Impairment: Moderate Synthesis: Conservation 2	- None	- None	- Soils: Peat - Marsh vegetation (aerials)

DO-KAG-WATS PSNERP Watershed# 41511 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Bald Eagle (1)	- None/Unknown	- None

DO-KAG-WATS PSNERP Watershed# 41511 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Tribal - Rural Residential Site (shoreline jurisdiction): - Tribal - Rural Residential Residential Vacant/Underutilized Parcels: 17%	**41511** Area: 1165 Stream Miles: 4 Drains to Drift Cell #: 112 Pasture: 0 Scrub/Shrub: 37 Grassland: 18 Wetland: 48 Deciduous: 402 Evergreen: 296 Mixed: 322 Total Forested: 1020 88.00% Total Impervious: 37 3.00%	- None	- Cat.2 CARA - Wetlands - Class One Wildlife Habitat Conservation Area	- Multiple structures and parking lot, part of church facility (aerials) - Port of Indianola - KPUD-North Peninsula; KPUD-Indianola - Path from church facility parking lot out along beach berm

DO-KAG-WATS PSNERP Watershed# 41511 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Removal of creosote logs/pilings and debris - Protect 35 acres salt marsh (Nearshore Prioritization) - Water Flow Management: • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in this area.	

3.2 Central Puget Sound

The Central Puget Sound Characterization Area consists of nearly 41 miles of marine shoreline from Brownsville to just beyond the Puget Sound Naval Shipyard in north Sinclair Inlet, including all the watersheds that empty into Puget Sound between those points. Within this Characterization Area are the towns of Brownsville, Illahee, Tracyton, Silverdale and Rocky Point. The City of Bremerton, is not included in this report, except where Drift Cells are shared.

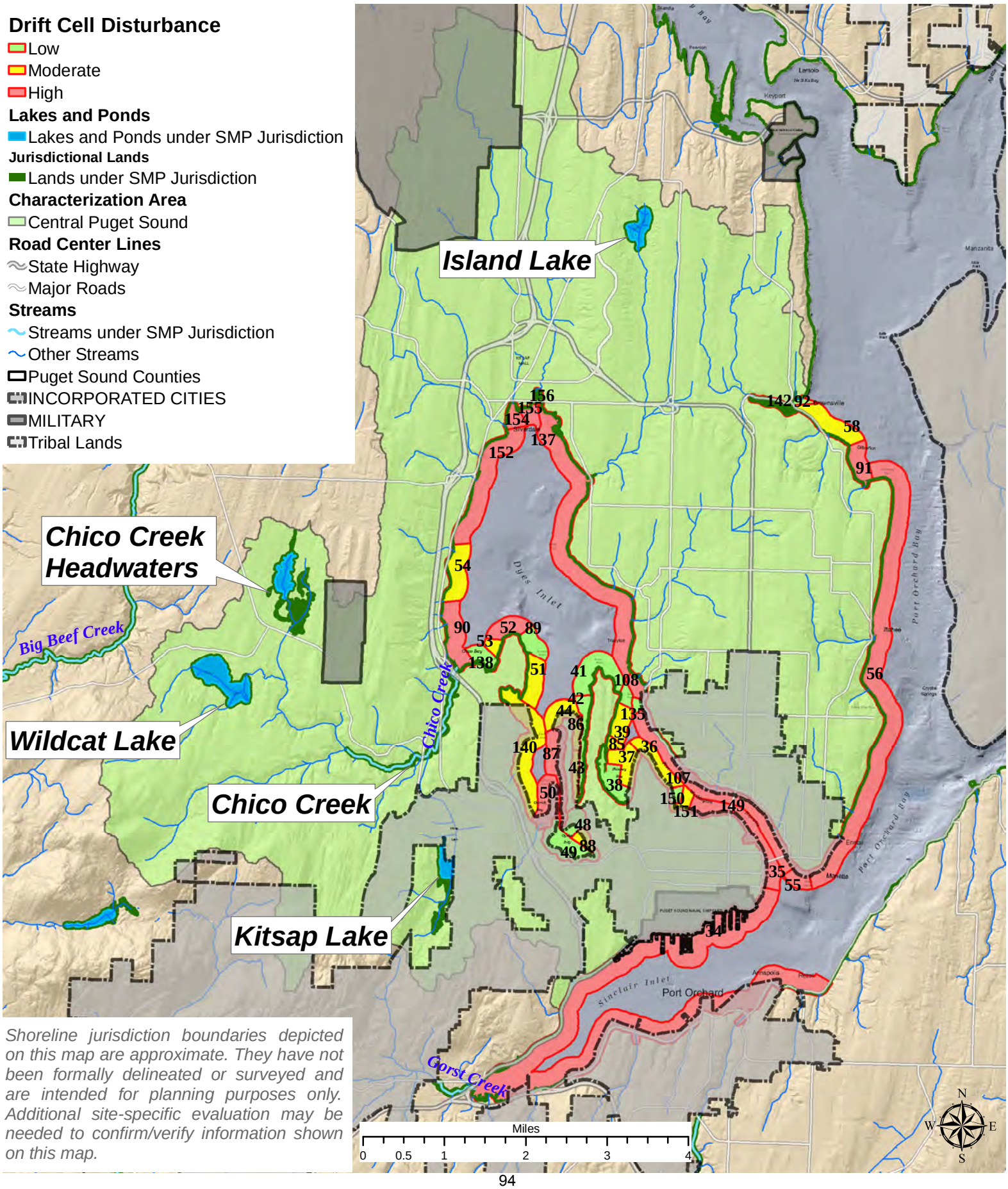
For the marine jurisdiction (200' upland, 1000' intertidal), there are **28 Drift Cells** which are comprised of 106 Nearshore Assessment Units (NAUs). There are 33 known and/or potential public access points within this Characterization Area, which include parks, ports, road-ends, right-of-ways and utility corridors.

For the freshwater jurisdictions, the North Puget Sound Characterization area has **five Freshwater Shoreline Jurisdictions**:

- Island Lake
- Chico Creek and floodplain
- Chico Headwaters wetland/marsh
- Wildcat Lake
- Kitsap Lake

The maps below show the drift cells along the marine shoreline and watershed drainage units in the Central Puget Sound Characterization area, respectively. The color-coding of the drift cells represents the degree of disturbance, ranging from highly disturbed in red to less-disturbed in green. The map depicting the drainage units also shows the minimum required shoreline jurisdiction in green.

Shoreline Master Program - Central Puget Sound Marine and Freshwater Jurisdiction



Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.

Shoreline Master Program - Central Puget Sound Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009

PSNERP Drainage Units

Lakes and Ponds under SMP Jurisdiction

Lakes and Ponds under SMP Jurisdiction

Jurisdictional Lands

Lands under SMP Jurisdiction

Characterization Area

Central Puget Sound

Road Center Lines

State Highway

Major Roads

Streams

Streams under SMP Jurisdiction

Other Streams

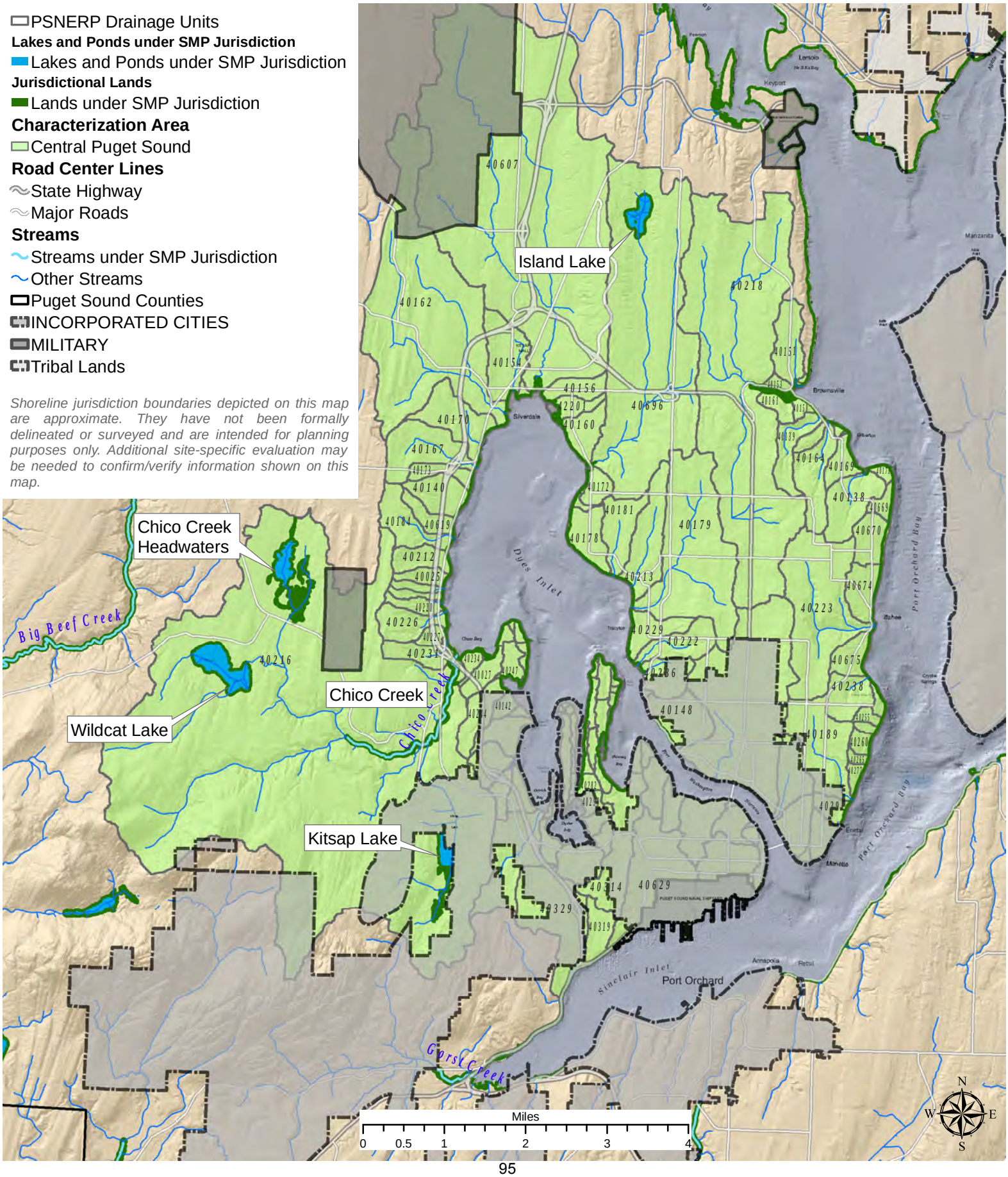
Puget Sound Counties

INCORPORATED CITIES

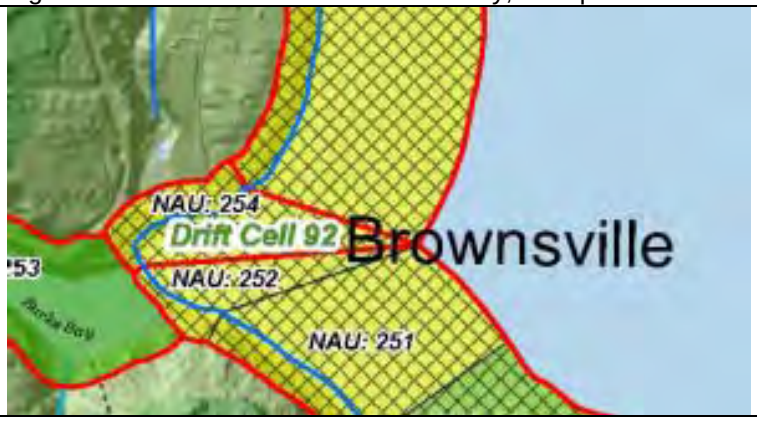
MILITARY

Tribal Lands

Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.



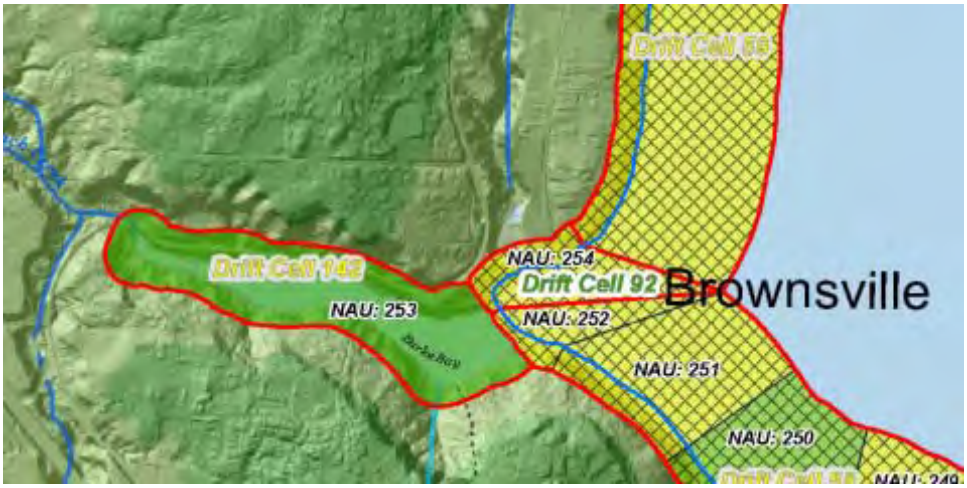
3.2.1 Marine Shoreline

Central Puget Sound Drift Cell 92 (Brownsville Marina)
Drift Cell Disturbance Score: Low (1) **Length (miles):** 0.19 **% Armored:** 90% **Geomorphic Type:** Embayment **Fluvial Influences (PSNERP #s):** 40137, 40151 **Terrestrial Veg:** Closed Canopy-10.31%, Non-forest-89.69%, Other Natural Veg-0% **Overhanging Veg:** 0-25% **Marine Veg:** None **Public Access:** Marina (Port of Brownsville **Current Population Est:** 3 **Future Build-out Population Est:** 3 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 0% Residential, 33% Commercial **Priority Species/Habitat:** Surf Smelt spawning, Sand Lance spawning, Herring spawning, Surf Scoter, Purple Martin, Great Blue Heron **Historic Marsh (area sq.ft.) /Channel Loss (length ft):** 0 / 0 **Shoreform Change:** -656 (Barrier Beach), -290 (Open Coastal Inlet) **Critical Areas:** Stream (F) **Land Use:** Rural Residential, Public Facility, Port of Brownsville, Leaking Underground Storage Tank, North Perry Ave. Water District; 303(d); Prohibited Shellfish Harvest Area **Known Cultural and Historical Resources:** Artifacts; Activity referent to a campsite at Burke Bay. An archaeological site is near the mouth of Burke Bay; Mosquito Fleet Trail


Central Puget Sound Drift Cell 92 (Brownsville Marina)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
254	Tidal Erosion/Wave Dep.	Pilings Armoring Floats & Docks	Light	Overhang. Structures Marinas	Restore & Restore Site Processes

Central Puget Sound Drift Cell 142 (Burke Bay)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 1.21
% Armored: 1%
Geomorphic Type: Embayment (Drowned Channel)
Fluvial Influences (PSNERP #s): 40153, 40218, 40161, 40158
Terrestrial Veg: Closed Canopy-81.24%, Non-forest-17.50%, Other Natural Veg-1.26%
Marine Veg: Patchy Salt Marsh
Overhanging Veg: 75-100%
Public Access: Undeveloped access (KC tidelands)
Current Population Est: 13
Future Build-out Population Est: 45
% of Total Parcels in Drift Cell Vacant/Underutilized: 53% Residential, 12% Commercial
Priority Species/Habitat: Chinook, Chum, Coho, Steelhead, Great Blue Heron
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 0 / 151
Shoreline Change: -573 (Bluff-backed Beach)
Critical Areas: Cat.2 CARA; Mod. and High Geologic Hazard; Wetland; Stream(F)
Land Use: Rural Residential; Urban Low-Density Residential; Port of Brownsville; North Perry Ave. Water District; 303(d); Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referent to a campsite at Burke Bay. An archaeological site is near the mouth of Burke Bay.



Central Puget Sound Drift Cell 142 (Burke Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
253	Tidal Erosion/Fluvial Dep.	Pilings Groins Armoring	Water Quality	Water Quality	Protect & Conserve & Restore

Central Puget Sound Drift Cell 58 (S.Brownsville)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.90
% Armored: 95%
Geomorphic Type: Open Shore (Embayment-250) (Sediment Source Beach/Delta)
Fluvial Influences (PSNERP #s): 40158, 40139, 40163, 40164, 40165, 40166
Terrestrial Veg: Closed Canopy-44.74%, Non-forest-49.86%, Other Natural Veg-5.41%; Noxious- Knotweed
Overhanging Veg: 0-25%
Marine Veg: Unknown
Public Access: 1 Port view access; 1 Undeveloped beach access (KC Tidelands)
Current Population Est: 73
Future Build-out Population Est: 95
% of Total Parcels in Drift Cell Vacant/Underutilized: 24%
Priority Species/Habitat: Pacific Herring spawning; Bald Eagle; Surf Scoter; Geoduck; Purple Martin; Great Blue Heron
Historic Marsh (area sq.ft)/Channel Loss (length ft): 0 / 667
Shoreform Change: -1125 (Bluff-backed Beach)
Critical Areas: Cat. 2 CARA; Mod. and High Geologic Hazard;
Land Use: Urban Low-Density Residential; Port of Brownsville; North Perry Ave. Water District; north end Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referent to a campsite at Burke Bay.

Central Puget Sound Drift Cell 58 (S.Brownsville)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
252	Sediment Source/Transport	Armoring Marinas	Wave Energy	Armoring Marinas	Restore & Restore Site Processes
251	Sediment Source/Transport	Pilings Armoring Marinas	Wave Energy	Pilings Armoring Marinas	Restore & Restore Site Processes
250	Fluvial Deposition	Pilings Armoring	Frequency of Disturbance	Pilings Overhanging Structures	Conserve & Restore & Restore Site Processes
249	Sediment Source/Transport	Pilings Armoring Boat Launch	Wave Energy	Pilings Armoring	Restore & Restore Site Processes

Central Puget Sound Drift Cell 91 (Gilberton)

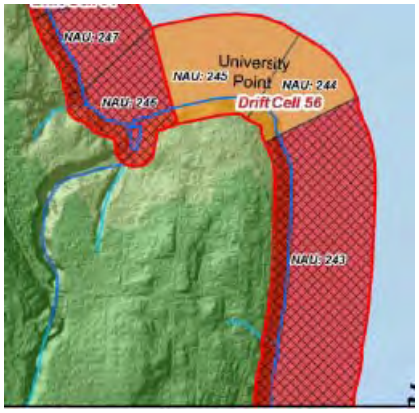
Drift Cell Disturbance Score: High (3)
Length (miles): 0.789
% Armored: 60%
Geomorphic Type: Open Shore (Embayment-246) (Sediment Source Beach/Tidal Delta Lagoon)
Fluvial Influences (PSNERP #s): 40166, 40138
Terrestrial Veg: Closed Canopy-33.80%, Non-forest-42.89%, Other Natural Veg-23.30%; Noxious- Knotweed, Tansy
Overhanging Veg: 0-25%
Marine Veg: Unknown
Public Access: 2 Undeveloped beach access
Current Population Est: 85
Future Build-out Population Est: 223
% of Total Parcels in Drift Cell Vacant/Underutilized: 32%
Priority Species/Habitat: Pacific Herring spawning; Bald Eagle; Hardshell clam;
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 0
Shoreform Change: 0
Critical Areas: Cat.1 CARA; Mod. Geologic Hazard;
Land Use: Urban Low-Density Residential; Port of Brownsville; North Perry Ave. Water District; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referents to a camp site at University Point, an intertidal spring, and plant collecting, fishing, and hunting; Mosquito Fleet Trail

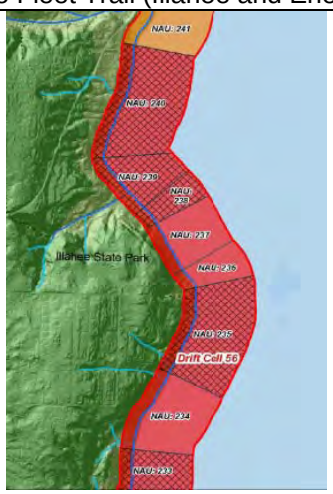
Central Puget Sound Drift Cell 91 (Gilberton)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
248	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
247	Sediment Source/Transport	Pilings Armoring	Substrate		Enhance & Create & Restore Site Processes
246	Wave/Fluvial Dep./ Tidal Erosion	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes

Central Puget Sound Drift Cell 56 (Illahee-Manette)

Drift Cell Disturbance Score: High (3)
Length (miles): 5.69
% Armored: 53%
Geomorphic Type: Open Shore (Embayment-241,239, 507) (Sediment Source Beach/Delta Lagoon/Delta/Depositional Beach)
Fluvial Influences (PSNERP #s): 40171, 40669, 40670, 40674, 40223, 40675, 40238, 40144, 40255, 40259, 40260, 40265, 40277, 40189, 40291, 40196
Terrestrial Veg: Closed Canopy-31.98%, Non-forest-50.81%, Other Natural Veg-17.21%
Marine Veg: Kelp (patchy), Eelgrass (continuous and patchy)
Overhanging Veg: 25-50%
Public Access: 2 Undeveloped view; 1 Port (Port of Illahee); 1 Park; 1 DNR (water access only)
Current Population Est: 488
Future Build-out Population Est: 1333
% of Total Parcels in Drift Cell Vacant/Underutilized: 33%
Priority Species/Habitat: Surf Smelt, Sand Lance, Herring (spawning and holding), Bald Eagle, Geoduck, Hardshell clam
Historic Marsh (area sq ft)/Channel Loss (length ft): 181,479 / 878
Shoreform Change: -1160 (Bluff-backed Beach)
Critical Areas: Cat. 1 and 2 CARA; Mod. and High Geologic Hazard;
Land Use: Urban Low-Density Residential, Public Facility, City; Port of Brownsville, Port of Illahee, Port of Bremerton; North Perry Ave. Water District, City of Bremerton Water; 303(d) (Enetai)
Known Cultural and Historic Resources: Artifact; Activity referents to campsites, fishing, collecting huckleberries, hunting, and a spiritual place at a spring. On archaeological site is near the mouth of Gilberton Creek; 2 Mosquito Fleet Trail (Illahee and Enetai)





Central Puget Sound	Drift Cell 56 (Illahee-Manette)				
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
245	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings Armoring	Enhance
244	Sediment Source/Transport		Water Quality		Enhance
243	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Light	Overhang. Structures Floats & Docks	Enhance & Create & Restore Site Processes
242	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
241	Fluvial Dep./Wave Deposition	Pilings Groins Armoring	Frequency of Disturbance	Pilings Overhang. Structures	Enhance
240	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
239	Fluvial Deposition	Armoring	Substrate		Enhance & Create & Restore Site Processes
238	Sediment Source/Transport	Pilings Armoring	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
237	Sediment Source/Transport		Substrate	Navigation Channel	Enhance & Create
236	Sediment Source/Transport	Pilings	Substrate	Navigation Channel	Enhance & Create
235	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
234	Sediment Source/Transport	Armoring	Substrate	Navigation Channel	Enhance & Create
233	Sediment Source/Transport	Pilings Groins Armoring Boat Launch	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
507	Fluvial Dep. / Wave Deposition	Armoring	Substrate	Navigation Channel	Enhance & Create
232	Fluvial Dep./Wave Deposition	Armoring	Substrate	Navigation Channel	Enhance & Create
231	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
230	Sediment Source/Transport	Pilings Groins Armoring	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes

Central Puget Sound	Drift Cell 56 (Illahee-Manette)				
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Boat Launches			

Central Puget Sound Drift Cell 107 (Washington Narrows **Mostly City of Bremerton*)

Drift Cell Disturbance Score: High (3)
Length (miles): 2.94
% Armored: 55%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40626, 40307, 40624, 40148
Terrestrial Veg: Closed Canopy-13.85%, Non-forest-69.27%, Other Natural Veg-16.88% Noxious-Knotweed
Marine Veg: Kelp (continuous)
Overhanging Veg: 0-25%
Public Access: 1 Undeveloped ROW
Current Population Est: 28
Future Build-out Population Est: 73
% of Total Parcels in Drift Cell Vacant/Underutilized: 27%
Priority Species/Habitat: Surf Smelt, Sand Lance, Bald Eagle, Waterfowl Concentration, Hardshell clam, Subtidal Hardshell clam, Peregrine Falcon
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 150
Shoreform Change: -1299 (Bluff-backed Beach), -1803 (Barrier Beach)
Critical Areas: Mod. Geologic Hazard
Land Use: City, Urban Low-Density Residential; Port of Tracyton; City of Bremerton Water
Known Cultural and Historic Resources: Artifacts; Activity referents to a campsite, fishing, and clamming, an Indian "fort", and a mythological place associated with a rock outcrop.

Central Puget Sound Drift Cell 107 (Washington Narrows **Mostly City of Bremerton*)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
477	Sediment Source/Transport	Armoring	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
476	Sediment Source/Transport	Pilings Armoring	Substrate		Enhance & Restore Site Processes

Central Puget Sound Drift Cell 108 (SE Dyes Inlet)

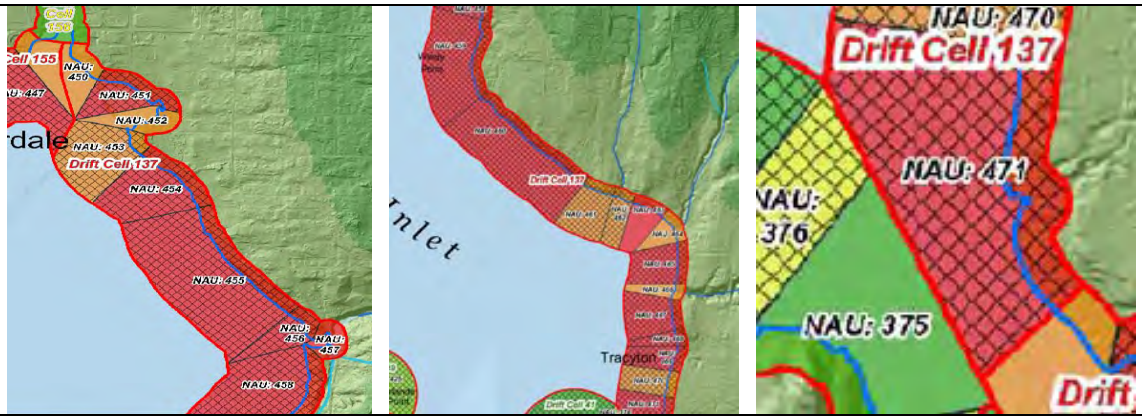
Drift Cell Disturbance Score: High (3)
Length (miles): 0.475
% Armored: 49%
Geomorphic Type: Embayment (Open Shore-474)
Fluvial Influences (PSNERP #s): 40236, 40222
Terrestrial Veg: Closed Canopy-34.92%, Non-forest-44.94%, Other Natural Veg-20.13%
Marine Veg: Kelp and Salt Marsh fringe (patchy)
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 20
Future Build-out Population Est: 250
% of Total Parcels in Drift Cell Vacant/Underutilized: 50%
Priority Species/Habitat: Bald Eagle, Waterfowl Concentrations, Great Blue Heron
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 161
Shoreform Change: -251 (Bluff-backed Beach)
Critical Areas: None/Unknown
Land Use: Urban Low-Density Residential; Port of Tracyton; City of Bremerton Water
Known Cultural and Historic Resources:
Reference to a mythological place associated with a rock outcrop, and two landform references to a cove and a promontory.

Central Puget Sound Drift Cell 108 (SE Dyes Inlet)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
474(city)	Sediment Source/Transport	Armoring	Substrate		Enhance & Create
473	Fluvial Deposition	Pilings Groins Armoring	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes
472	Fluvial Deposition		Water Quality		Enhance

Central Puget Sound Drift Cell 137 (East Dyes Inlet)

Drift Cell Disturbance Score: High (3)
Length (miles): 4.51
% Armored: 57%
Geomorphic Type: Open Shore/Embayment
Fluvial Influences (PSNERP #s): 40229, 40179, 40213, 40181, 40178, 40141, 40172, 40174(Barker), 40172, 40160, 42201, 40156
Terrestrial Veg: Closed Canopy-21.50%, Non-forest-61.60%, Other Natural Veg-16.90%, Noxious-Knotweed, Tansy
Marine Veg: Kelp (patchy), Eelgrass (patchy), Salt Marsh fringe (patchy and continuous)
Overhanging Veg: 0-25%
Public Access: 2 Undeveloped beach access; 1 Port (Port of Tracyton) 1 Park
Current Population Est: 388
Future Build-out Population Est: 1193
% of Total Parcels in Drift Cell Vacant/Underutilized: 46%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt, Sand Lance, Chinook, Chum, Coho, Steelhead, Bald Eagle, Waterfowl Concentrations, Estuarine Zone, Hardshell clam, Subtidal Hardshell clam
Historic Marsh (area sq ft)/Channel Loss (length ft): 210,407 / 1,019
Shoreform Change: -391 (Barrier Beach)
Critical Areas: Cat. 1 and 2 CARA, Mod. and High Geologic Hazard (patchy), Frequently Flooded Area, Wetland, Stream(F)
Land Use: Urban Low-Density Residential, Rural Residential, Port of Tracyton, Port of Silverdale, City of Bremerton Water, Silverdale Water District No.16; 305(b) Waters of Concern; All Prohibited Shellfish Harvest Areas, except at Windy Point (NAUs 458-459-Conditionally Approved)
Known Cultural and Historic Resources: A landform referent to a promontory and two place names for shoreline features.



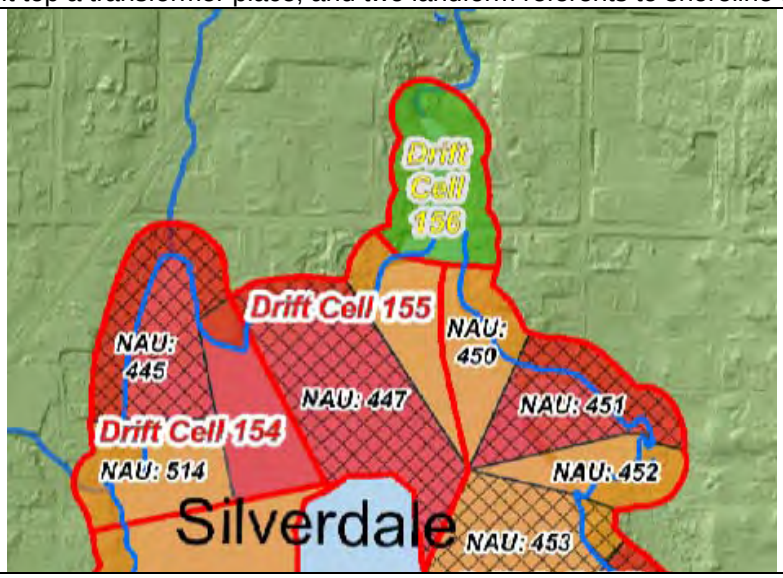
Central Puget Sound Drift Cell 137 (East Dyes Inlet)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
471	Fluvial Deposition	Pilings Groins Armoring	Substrate/Light	Overhang. Structures Floats & Docks	Enhance & Create & Restore Site Processes
470	Sediment Source/Transport	Pilings	Frequency of Disturbance	Pilings	Enhance & Restore Site Processes
469	Wave Deposition	Pilings Groins Armoring	Wave Energy (open)	Pilings Armoring	Enhance & Create & Restore Site Processes
468	Wave Deposition	Pilings	Wave Energy	Pilings	Enhance & Create

Central Puget Sound Drift Cell 137 (East Dyes Inlet)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Groins Armoring	(open)	Armoring	& Restore Site Processes
467	Sediment Source/Transport	Pilings Groins Armoring	Wave Energy (open)	Pilings Armoring	Enhance & Create & Restore Site Processes
466	Fluvial Deposition	Armoring	Substrate		Enhance
465	Sediment Source/Transport	Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
464	Fluvial Deposition		Substrate		Enhance
463	Sediment Source/Transport	Armoring Boat Launches	Substrate		Enhance & Create
462	Fluvial Deposition	Armoring	Substrate		Enhance & Restore Site Processes
461	Sediment Source/Transport	Pilings Armoring	Wave Energy (open)	Pilings Armoring	Enhance & Restore Site Processes
460	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy (open)	Pilings Armoring	Enhance & Create & Restore Site Processes
459	Wave Deposition	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
458	Sediment Source/Transport	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes
457	Tidal Erosion/Wave Deposition	Armoring	Light	Floats & Docks	Enhance & Create
456	Wave Deposition	Pilings Groins Armoring	Wave Energy (open)	Pilings Armoring	Enhance & Create & Restore Site Processes
455	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
454	Wave Deposition	Pilings Armoring	Substrate		Enhance & Create & Restore Site Processes
453	Wave Deposition	Pilings Armoring	Wave Energy (open)	Pilings	Enhance & Restore Site Processes
452	Wave Deposition/Tidal Erosion	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance
451	Wave Deposition/Tidal Erosion	Pilings Armoring	Light	Overhang. Structures Floats & Docks	Enhance & Create & Restore Site Processes

Central Puget Sound Drift Cell 137 (East Dyes Inlet)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
450	Tidal Erosion/Wave Deposition	Armoring	Water Quality		Enhance

Central Puget Sound Drift Cell 156 (Clear Creek Estuary)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.47
% Armored: 2.8%
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 40607
Terrestrial Veg: Closed Canopy-21.07%, Non-forest-46.45%, Other Natural Veg-32.48%; Noxious- Knotweed, Tansy
Marine Veg: Salt Marsh fringe (continuous)
Overhanging Veg: 50-75%
Public Access: 1 ROW; 1 Park
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels in Drift Cell Vacant/Underutilized: 0% Residential, 36% Commercial
Priority Species/Habitat: Area of Ecological Significance, Chinook, Chum, Coho, Steelhead, Bald Eagle, Waterfowl Concentrations,
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 16,019 / 0'
Shoreform Change: -595 (Barrier Estuary)
Critical Areas: Cat.2 CARA, Frequently Flooded Area
Land Use: Urban Medium/High-Density Residential, Urban High-Intensity ,Commercial/Mixed Use, Port of Silverdale, Silverdale Water District No.16; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Village site referent at head of Dyes Inlet, with associated fishing, clamming, hunting, and huckleberry collecting activities, herring fishing activity referent, referent top a transformer place, and two landform referents to shoreline features.

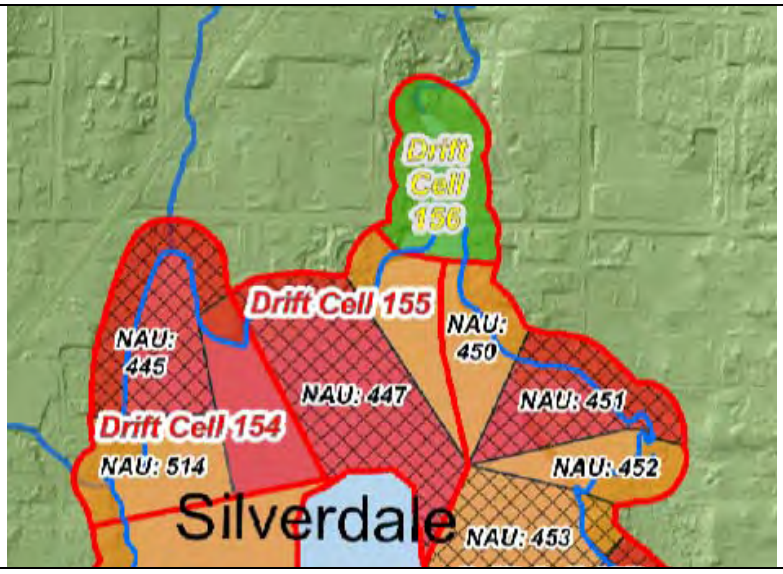


Central Puget Sound Drift Cell 156 (Clear Creek Estuary)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
449	Tidal Erosion/Wave Dep.	Armoring	Water Quality	Water Quality	Protect & Conserve & Restore

Central Puget Sound Drift Cell 155 (Silverdale)

Drift Cell Disturbance Score: High (3)
Length (miles): 0.23
% Armored: 41%
Geomorphic Type: Open Shore/ Embayment
Fluvial Influences (PSNERP #s): 40607, 40159
Terrestrial Veg: Closed Canopy-7.38%, Non-forest-36.75%, Other Natural Veg-55.87%; Noxious- Knotweed
Marine Veg: Salt Marsh fringe (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Park
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Waterfowl Concentration
Historic Marsh (area sq ft)/Channel Loss (length ft): 160,658 / 0
Shoreform Change: 0
Critical Areas: Frequently Flooded Area
Land Use: Urban High-Intensity Commercial/Mixed Use, Port of Silverdale, Leaking Underground Storage Tank, Silverdale Water District No.16; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Village site referent at head of Dyes Inlet, with associated fishing, clamming, hunting, and huckleberry collecting activities, and a landform referent to a small bay, to a transformer place, and two landform referents to shoreline features; Mosquito Fleet Trail

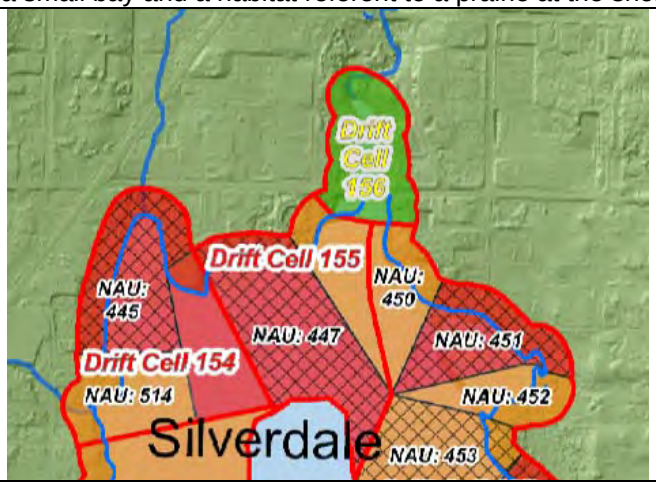


Central Puget Sound Drift Cell 155 (Silverdale)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
448	Wave Deposition	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance
447	Urban Modified	Heavily Mod. Areas	Frequency of Disturbance	Pilings Heavily Mod. Areas	Enhance & Create & Restore Site Processes

Central Puget Sound Drift Cell 154 (Old Town Silverdale)

Drift Cell Disturbance Score: High (3)
Length (miles): 0.58
% Armored: 97%
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 40159, 40024, 40154, 40162(Strawberry)
Terrestrial Veg: Closed Canopy-0%, Non-forest-100%, Other Natural Veg-0%; Noxious-knotweed
Marine Veg: Salt Marsh fringe (patchy)
Overhanging Veg: 0-25%
Public Access: 1 view ROW; 1 beach ROW (KC tidelands)
Current Population Est: 218
Future Build-out Population Est: 218 (+0%)
% of Total Parcels in Drift Cell Vacant/Underutilized: 16% Residential, 22% Commercial
Priority Species/Habitat: Area of Ecological Significance, Chum, Coho, Steelhead, Waterfowl Concentration
Historic Marsh (area sq ft)/Channel Loss (length ft): 129,271 / 0
Shoreform Change: -505 (Barrier Beach), -466 (Barrier Estuary), -1128 (Open Coastal Inlet)
Critical Areas: Cat. 1 and 2 CARA,
Land Use: Urban High-Intensity Commercial/Mixed Use, Urban Low-Intensity Commercial Mixed Use, Port of Silverdale, Leaking Underground Storage Tank, Silverdale Water District No.16; 305(b) Waters of Concern; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources:
Landform referent to a small bay and a habitat referent to a prairie at the shoreline.

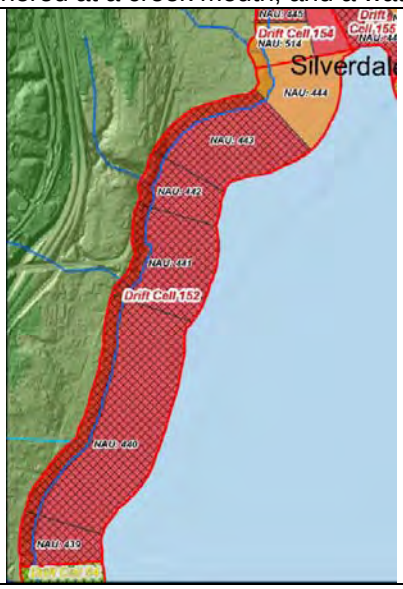


Central Puget Sound Drift Cell 154 (Old Town Silverdale)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
446	Urban Modified	Heavily Mod. Areas	Wave Energy/Slope	Heavily Mod. Area	Enhance & Create
445	Tidal Erosion/Fluvial Dep.	Heavily Mod. Areas Groins Armoring	Substrate		Enhance &Create & Restore Site Processes
514	Fluvial Dep./ Wave Dep.	Armoring	Light	Overhang. Structures	

Central Puget Sound Drift Cell 152 (West Dyes Inlet)

Drift Cell Disturbance Score: High (3)
Length (miles): 1.72
% Armored: 91.8
Geomorphic Type: Open Shore (Embayment-441)
Fluvial Influences (PSNERP #s): 40162, 40170, 40167, 40173, 40140, 40619
Terrestrial Veg: Closed Canopy-9.23%, Non-forest-87.37%, Other Natural Veg-3.40%; Noxious-Knotweed
Marine Veg: Eelgrass (patchy and continuous)
Overhanging Veg: 0-25%
Public Access: 1 Park; 2 Marina/Port (Port of Silverdale); 1 ROW beach access
Current Population Est: 415
Future Build-out Population Est: 468
% of Total Parcels in Drift Cell Vacant/Underutilized: 11% Residential, 7% Commercial
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt, Sand Lance, Pacific Herring (spawning), Chum, Estuarine Zone
Historic Marsh/Channel Loss (%): 156,583 / 373
Shoreform Change: -80 (Barrier Beach)
Critical Areas: Mod. Geologic Area (patchy)
Land Use: Urban Low-Density Residential, Urban Low-Intensity Commercial/Mixed Use, Port of Silverdale, Port of Bremerton, Silverdale Water District No.16; 305(b) Waters of Concern; north end Prohibited and south end Conditionally Approved Shellfish Harvest Areas
Known Cultural and Historic Resources: Habitat referent to a prairie at the shoreline, plant collecting referent to cattails gathered at a creek mouth, and a water referent to a creek.



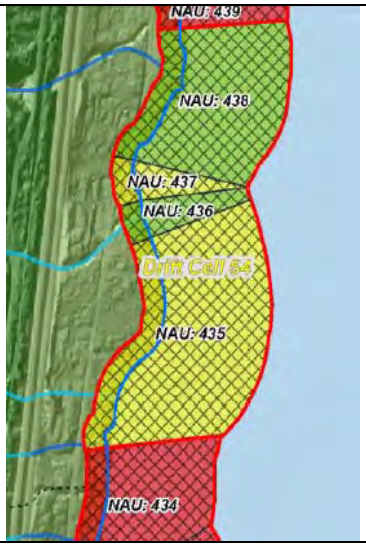
Central Puget Sound Drift Cell 152 (West Dyes Inlet)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
444	Wave Deposition	Armoring	Frequency of Disturbance		Enhance
443	Wave Deposition	Pilings Groins Armoring	Wave Energy	Pilings Armoring	Enhance & Create & Restore Site Processes
442	Fluvial Dep./ Wave	Armoring	Substrate		Enhance & Create

Central Puget Sound Drift Cell 152 (West Dyes Inlet)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Erosion				& Restore Site Processes
441	Fluvial Dep./Wave Dep.	Pilings Groins Armoring	Substrate		Enhance & Create & Restore Site Processes
440	Sediment Source/Transport	Pilings Groins Armoring Boat Launch	Light	Overhang. Structures Floats & Docks	Enhance & Create & Restore Site Processes
439	Sediment Source/Transport	Groins Armoring Boat Launch	Substrate		Enhance & Create & Restore Site Processes

Central Puget Sound Drift Cell 54 (Chico Way)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.80
% Armored: 93%
Geomorphic Type: Open Shore (Embayment-438)
Fluvial Influences (PSNERP #s): 40619, 40184, 40212.40025, 40026
Terrestrial Veg: Closed Canopy-17.55%, Non-forest-82.45%, Other Natural Veg-0%, Noxious- knotweed
Overhanging Veg: 0-25%
Marine Veg: Unknown
Public Access: None
Current Population Est: 155
Future Build-out Population Est: 165
% of Total Parcels in Drift Cell Vacant/Underutilized: 10%
Priority Species/Habitat: Surf Smelt, Sand Lance, Chum,
Historic Marsh/Channel Loss (%): 0 / 0
Shoreform Change: -1585 (Bluff-backed Beach)
Critical Areas: Stream (F)(NF)
Land Use: Urban Low-Density Residential, Port of Bremerton, Silverdale Water District No.16; 305(b) Waters of Concern; Conditionally Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Habitat referent to crabapples and a landform referent to gravelly beach substrate.

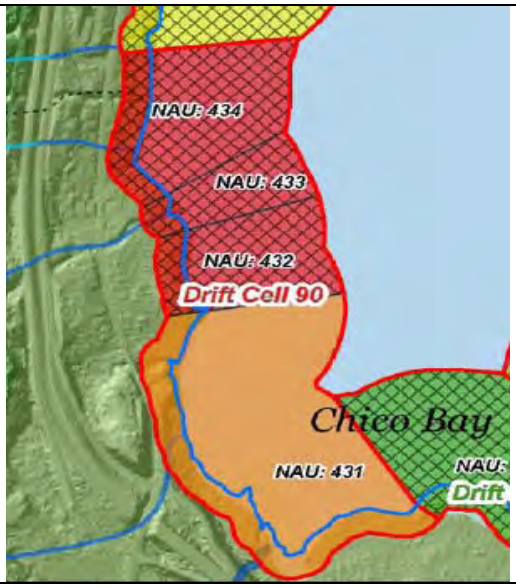


Central Puget Sound Drift Cell 54 (Chico Way)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
438	Fluvial Deposition	Armoring	Light	Overhang. Structures	Conserve & Restore & Restore Site Processes
437	Fluvial Dep./Wave Erosion	Armoring	Substrate		Restore & Restore Site Processes
436	Fluvial Dep./Wave Erosion	Armoring	Substrate		Conserve & Restore & Restore Site Processes
435	Sediment Source/Transport	Armoring Boat Launches	Substrate		Restore & Restore Site Processes

Central Puget Sound Drift Cell 90 (Chico Estuary)

Drift Cell Disturbance Score: High (3)
Length (miles): 1.24
% Armored: 53%
Geomorphic Type: Embayment (Open Shore-432)
Fluvial Influences (PSNERP #s): 40026, 40217, 40220, 40226, 40227, 40231, 40216(Chico), 40234
Terrestrial Veg: Closed Canopy-28%, Non-forest-60.62%, Other Natural Veg-11.37%; Noxious- knotweed
Overhanging Veg: 25-50%
Marine Veg: Salt Marsh fringe (patchy and continuous)
Public Access: 1 ROW boat launch; 1 Undeveloped Park; 1 Undeveloped view access; 1 Undeveloped beach access
Current Population Est: 165
Future Build-out Population Est: 188
% of Total Parcels in Drift Cell Vacant/Underutilized: 13%
Priority Species/Habitat: Chinook, Chum, Coho, Steelhead
Historic Marsh/Channel Loss (%): 0 / 268
Shoreform Change: -2924 (Bluff-backed Beach)
Critical Areas: Cat.2 CARA, Frequently Flooded Area
Land Use: Urban Low-Density Residential, Rural Residential, Port of Bremerton, Erland Point Water Co.; 305(b) Waters of Concern; north end Conditionally Approved, south end Approved Shellfish Harvest Areas
Known Cultural and Historic Resources:
Landform referent to a gravelly beach and activity referent to a village near the mouth of Chico Creek; Mosquito Fleet Trail



Central Puget Sound Drift Cell 90 (Chico Estuary)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
434	Fluvial Deposition	Pilings Armoring	Substrate		Enhance & Create & Restore Site Processes

Central Puget Sound Drift Cell 90 (Chico Estuary)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
433	Fluvial Deposition	Groins Armoring Pilings	Frequency of Disturbance	Overhang.Structures Pilings	Enhance & Create & Restore Site Processes
432	Wave Deposition	Groins Armoring	Substrate/Wave Energy		Enhance & Create & Restore Site Processes
431	Tidal Erosion/Fluvial Dep.	Pilings Groins Armoring	Light	Overhang.Structures Floats & Docks	Enhance

Central Puget Sound Drift Cell 138 (East Chico Bay)

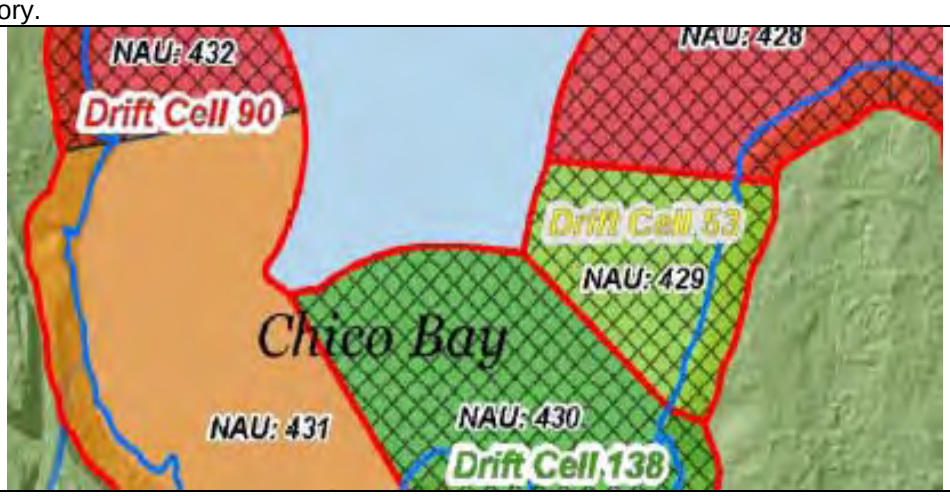
Drift Cell Disturbance Score: Low (1)
Length (miles): 0.61
% Armored: 11.4%
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 40234, 40027, 40228
Terrestrial Veg: Closed Canopy-17.11%, Non-forest-53.14%, Other Natural Veg-29.75% Noxious- Knotweed
Marine Veg: Salt Marsh (continuous)
Overhanging Veg: 0-25%
Public Access: None
Current Population Est: 55
Future Build-out Population Est: 68
% of Total Parcels in Drift Cell Vacant/Underutilized: 19%
Priority Species/Habitat: None/Unknown
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 211,008 / 907
Shoreform Change: 0
Critical Areas: Cat.2 CARA, Frequently Flooded Area
Land Use: Rural Residential, Port of Bremerton, Erland Point Water Co.; 305(b) Waters of Concern; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referent to a small lagoon.

Central Puget Sound Drift Cell 138 (East Chico Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
430	Tidal Erosion/Wave Dep.	Pilings Armoring	Frequency of Disturbance	Pilings	Protect & Conserve & Restore & Restore Site Processes

Central Puget Sound Drift Cell 53 (West Erlands Point)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.23
% Armored: 76%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40228
Terrestrial Veg: Closed Canopy-5.89%, Non-forest-91.14%, Other Natural Veg-2.97%,
Overhanging Veg: Unknown
Marine Veg: Unknown
Public Access: None
Current Population Est: 45
Future Build-out Population Est: 45 (+0%)
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: None/Unknown
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 0 / 0
Shoreform Change: 0
Critical Areas: None/Unknown
Land Use: Rural Residential, Port of Bremerton, Erland Point Water Co.:305(b) Waters of Concern; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referents to a small lagoon and a promontory.

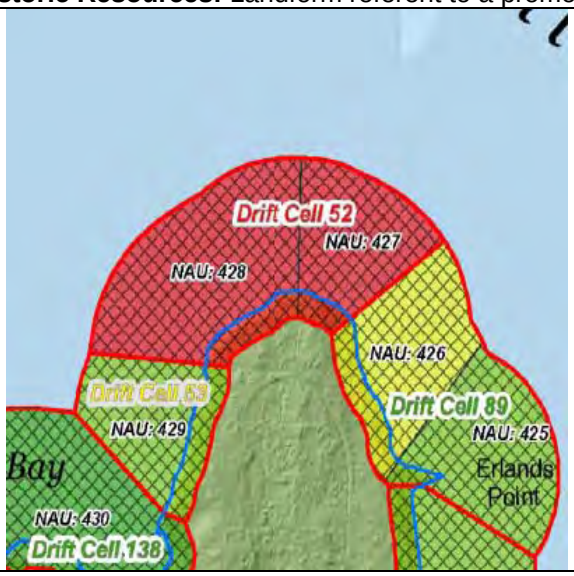


Central Puget Sound Drift Cell 53 (West Erlands Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
429	Sediment Source/Transport	Pilings Armoring Boat Launches	Light	Overhang.Structures Floats & Docks	Conserve & Restore & Restore Site Processes

Central Puget Sound Drift Cell 52 (Erlands Point)

Drift Cell Disturbance Score: High (3)
Length (miles): 0.30
% Armored: 91%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40228, 40224, 40225
Terrestrial Veg: Closed Canopy-8.62%, Non-forest-91.38%, Other Natural Veg-0%
Overhanging Veg: 0-25%
Marine Veg: Kelp (patchy)
Public Access: None
Current Population Est: 43
Future Build-out Population Est: 43
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: Surf Smelt, Sand Lance, Subtidal Hardshell clam
Historic Marsh (area sq ft)/Channel Loss (length ft): 0/0
Shoreform Change: 0
Critical Areas: None/Unknown
Land Use: Rural Residential, Port of Bremerton, Erland Point Water Co.; 305(b) Waters of Concern; Conditionally Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referent to a promontory.

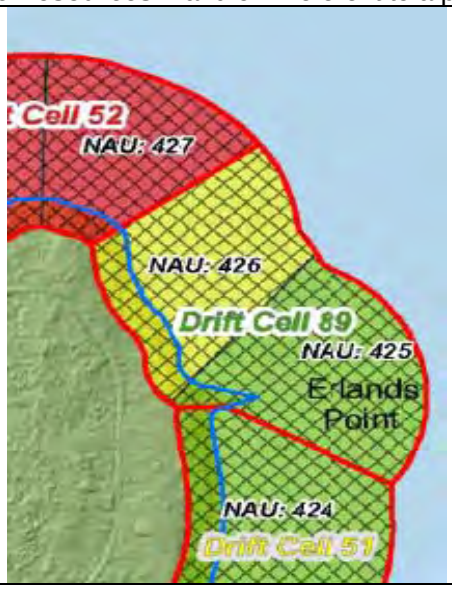


Central Puget Sound Drift Cell 52 (Erlands Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
428	Sediment Source/Transport	Groins Armoring Boat Launches	Substrate		Enhance &Create &Restore Site Processes
427	Sediment Source/Transport	Pilings Groins Armoring Boat Launches	Wave Energy	Pilings Armoring	Enhance &Create & Restore Site Processes

Central Puget Sound Drift Cell 89 (East Erlands Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.345
% Armored: 53%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40225,40241
Terrestrial Veg: Closed Canopy-15.23%, Non-forest-77.22%, Other Natural Veg-7.54%,
Overhanging Veg: 0-25%
Marine Veg: Eelgrass (patchy)
Public Access: None
Current Population Est: 50
Future Build-out Population Est: 53
% of Total Parcels in Drift Cell Vacant/Underutilized: 5%
Priority Species/Habitat: Surf Smelt, Sand Lance
Historic Marsh (area sq ft)/Channel Loss (length ft): 0.0 / 0.0
Shoreform Change: -337 (Barrier Beach)
Critical Areas: None/Unknown
Land Use: Rural Residential, Port of Bremerton, Erland Point Water Co.; Conditionally Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referent to a promontory.

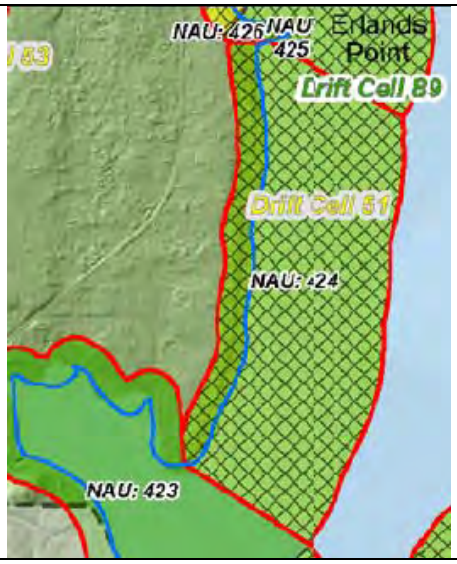


Central Puget Sound Drift Cell 89 (East Erlands Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
426	Wave Deposition	Pilings Armoring	Substrate		Restore &Restore Site Processes
425	Wave Deposition	Pilings Armoring	Substrate		Conserve &Restore & Restore Site Processes

Central Puget Sound Drift Cell 51 (South Elands Pt)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.62
% Armored: 49%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40241
Terrestrial Veg: Closed Canopy-16.39%, Non-forest-80.41%, Other Natural Veg-3.20%, Noxious- Knotweed
Overhanging Veg: 0-25%
Marine Veg: Eelgrass (patchy), Salt Marsh fringe (patchy)
Public Access: 1 Undeveloped beach access
Current Population Est: 88
Future Build-out Population Est: 88
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 0 / 0
Shoreform Change: 0
Critical Areas: None/Unknown
Land Use: Rural Residential, Port of Bremerton, Erland Point Water Co.; Conditionally Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Activity referent to a potlatch house and two landform references to large boulders on the beach.

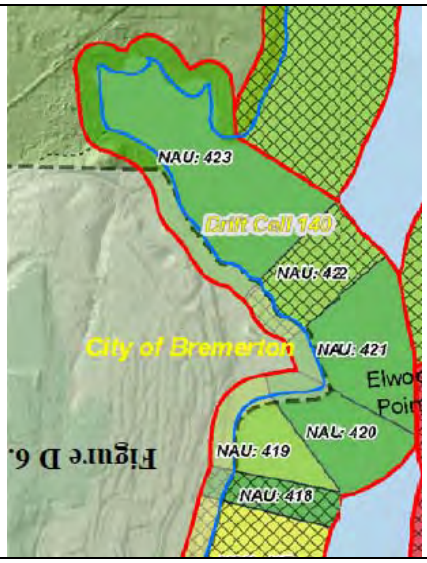


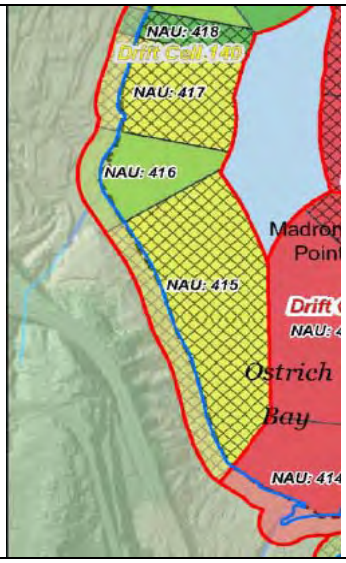
Central Puget Sound Drift Cell 51 (South Erlands Pt)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
424	Wave Deposition	Pilings Groins Armoring	Substrate/Wave Energy	Armoring Pilings	Conserve &Restore & Restore Site Processes

Central Puget Sound Drift Cell 140 (West Ostrich Bay **Mostly City of Bremerton*)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 2.28
% Armored: 60%
Geomorphic Type: Open Shore (Embayment-423,416)
Fluvial Influences (PSNERP #s): 40247, 40244, 40142, 40252, 40145, 40279, 40280, 40285
Terrestrial Veg: Closed Canopy-31.20%, Non-forest-53.10%, Other Natural Veg-15.70%; Noxious- Knotweed
Marine Veg: Salt Marsh fringe (continuous, patchy), Eelgrass (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Undeveloped beach access
Current Population Est: 73
Future Build-out Population Est: 85
% of Total Parcels in Drift Cell Vacant/Underutilized: 15%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt, Sand Lance, Seal and Sea Lion Haul Out
Historic Marsh (area sq ft)/Channel Loss (length ft): 69,279 / 485
Shoreform Change: -1275 (Barrier Beach), -486 (Bluff-backed Beach)
Critical Areas: None/Unknown
Land Use: Rural Residential, City, Port of Bremerton, Erland Point Water Co., City of Bremerton Water
Known Cultural and Historic Resources: Artifacts; Two landform referents to promontories and a place name referent for an area south of Elwood Point.

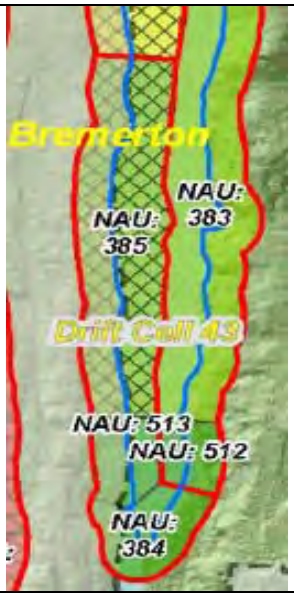




Central Puget Sound Drift Cell 140 (West Ostrich Bay **Mostly city*)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
423	Tidal Erosion/Fluvial Deposition	Pilings Armoring	Frequency of Disturbance	Pilings	Protect & Conserve & Restore

Central Puget Sound Drift Cell 43 (Mud Bay * NAU 385 in City of Bremerton)

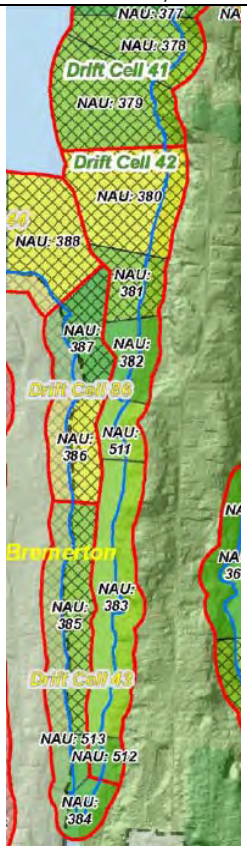
Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.72
% Armored: 37%
Geomorphic Type: Embayment/Open Shore
Fluvial Influences (PSNERP #s): 40146, 40282
Terrestrial Veg: Closed Canopy-44.60%, Non-forest-45.82%, Other Natural Veg-9.58%, Noxious- Knotweed, Tansy
Overhanging Veg: 25-50%
Marine Veg: Salt Marsh fringe (continuous and patchy)
Public Access: None
Current Population Est: 23
Future Build-out Population Est: 30
% of Total Parcels in Drift Cell Vacant/Underutilized: 30%
Priority Species/Habitat: Area of Ecological Significance, Bald Eagle
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 147
Shoreform Change: 0
Critical Areas: None/Unknown
Land Use: City, Urban Low-Density Residential, Port of Bremerton, State Clean-up Site, City of Bremerton Water, Rocky Point Water District 12
Known Cultural and Historic Resources: Landform referent to a promontory. A shell midden is recorded in the drift cell.



Central Puget Sound Drift Cell 43 (Mud Bay *385 in City of Bremerton)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
384	Tidal Erosion	Pilings	Frequency of Disturbance	Pilings	Protect & Conserve & Restore

Central Puget Sound Drift Cell 42 (E.Mud Bay)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.28
% Armored: 33%
Geomorphic Type: Embayment (512,511); Open Shore(383,382,381); Rocky Shore (380)
Fluvial Influences (PSNERP #s): 40282, 40147, 40245
Terrestrial Veg: Closed Canopy-44.01%, Non-forest-55.92%, Other Natural Veg-0.07%,
Overhanging Veg: 0-25%
Marine Veg: Salt Marsh fringe (patchy), Kelp (patchy)
Public Access: None
Current Population Est: 175
Future Build-out Population Est: 273
% of Total Parcels in Drift Cell Vacant/Underutilized: 25%
Priority Species/Habitat: Area of Ecological Significance, Bald Eagle, Great Blue Heron
Historic Marsh (area sq ft)/Channel Loss (length ft): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Cat.2 CARA, Mod. Geological Hazard
Land Use: Urban Low-Density Residential, Port of Bremerton, Rocky Point Water District No.12
Known Cultural and Historic Resources: Artifacts; Landform referent to a promontory.



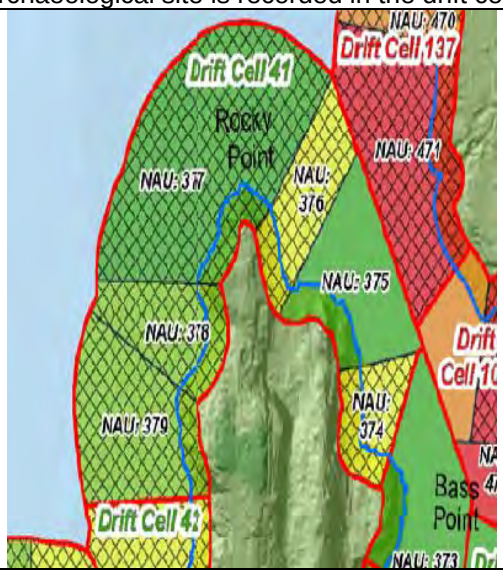
Central Puget Sound Drift Cell 42 (E.Mud Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
512	Tidal Erosion	Armoring	Substrate		Protect & Conserve & Restore
383	Sediment	Pilings	Light	Overhang.	Conserve & Restore

Central Puget Sound Drift Cell 42 (E.Mud Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Source/Transport	Armoring Boat Launches		Structure Floats & Docks	
511	Wave Deposition/Tidal Erosion	Armoring	Frequency of Disturbance	Overhang. Structure	Conserve & Restore
382	Wave Deposition		Substrate		Protect & Conserve & Restore
381	Wave Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
380	Wave Deposition/Transport	Pilings Groins Armoring	Light	Overhang. Structure Floats & Docks	Restore & Restore Site Processes

Central Puget Sound Drift Cell 41 (Rocky Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.99
% Armored: 80%
Geomorphic Type: Rocky Shoreline (Embayment-374)
Fluvial Influences (PSNERP #s): 40623, 40235, 40237
Terrestrial Veg: Closed Canopy-35.71%, Non-forest-62.68%, Other Natural Veg-1.60%, Noxious- Knotweed
Overhanging Veg: 0-25%
Marine Veg: Kelp (continuous, patchy), Salt Marsh fringe (patchy)
Public Access: None
Current Population Est: 170
Future Build-out Population Est: 258
% of Total Parcels in Drift Cell Vacant/Underutilized: 22%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt, Sand Lance, Bald Eagle, Great Blue Heron
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 42
Shoreform Change: 0
Critical Areas: Cat.2 CARA, Mod. Geological Hazard
Land Use: Urban Low-Density Residential, Port of Bremerton, Rocky Point Water District No.12; 305(b) Waters of Concern
Known Cultural and Historic Resources: Mythological referents to a battle represented by rock outcrops. A shell midden archaeological site is recorded in the drift cell.

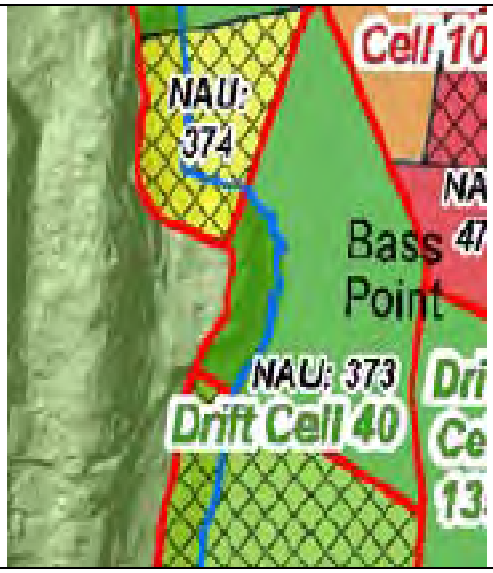


Central Puget Sound Drift Cell 41 (Rocky Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
379	Wave Deposition/Transport	Pilings Armoring Boat Launches	Frequency of Disturbance	Overhanging Structures	Conserve & Restore & Restore Site Processes
378	Wave Deposition/Transport	Groins Armoring	Substrate		Conserve & Restore & Restore Site Processes
377	Wave Deposition/Trans	Armoring Boat	Wave Energy/FOD		Protect &Conserve & Restore & Restore

Central Puget Sound Drift Cell 41 (Rocky Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	port	Launches			Site Processes
376	Wave Deposition/Transport	Pilings Armoring Boat Launches	Wave Energy	Pilings	Restore & Restore Site Processes
375	Transport	Armoring	Water Quality		Protect & Conserve & Restore
374	Wave,Tidal Erosion/ Fluvial Dep.	Pilings Armoring	Substrate		Restore & Restore Site Processes

Central Puget Sound Drift Cell 40 (Bass Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.17
% Armored: 6%
Geomorphic Type: Rocky Shoreline
Fluvial Influences (PSNERP #s): 40237, 40246
Terrestrial Veg: Closed Canopy-28.41%, Non-forest-71.59%, Other Natural Veg-0%, Noxious- Knotweed
Overhanging Veg: 0-25%
Marine Veg: Kelp (continuous)
Public Access: 1 Undeveloped beach access
Current Population Est: 10
Future Build-out Population Est: 15
% of Total Parcels in Drift Cell Vacant/Underutilized: 20%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt, Sand Lance, Bald Eagle, Waterfowl Concentration, Great Blue Heron
Historic Marsh (area sq.ft.) /Channel Loss (length ft): 0.0 / 0.0
Shoreform Change: 0
Critical Areas: Mod. Geologic Hazard Area
Land Use: Urban Low-Density Residential, Port of Bremerton, Rocky Point Water District No. 12
Known Cultural and Historic Resources: Tidal current referent.



Central Puget Sound Drift Cell 40 (Bass Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
373	Sediment Transport	Armoring Boat Launch	Light	Floats/Docks	Protect & Conserve & Restore

Central Puget Sound Drift Cell 39 (East Rocky Point)

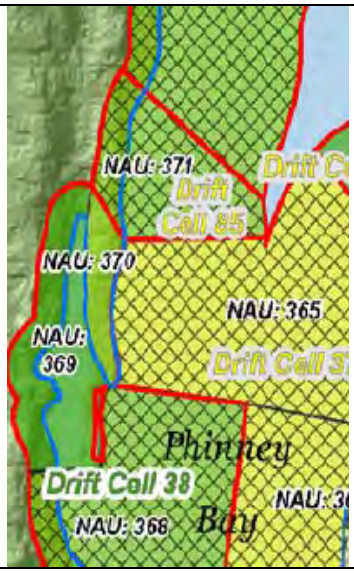
Drift Cell Score: Medium (2)
Length (miles): 0.87
% Armored: 36%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40246,40249, 40022
Terrestrial Veg: Closed Canopy-14.22%, Non-forest-63.42%, Other Natural Veg-22.36%,
Overhanging Veg: 0-25%
Marine Veg: Kelp (patchy), Salt Marsh (patchy)
Public Access: None
Current Population Est: 40
Future Build-out Population Est: 400
% of Total Parcels in Drift Cell Vacant/Underutilized: 64%
Priority Species/Habitat: Area of Ecological Significance, Bald Eagle, Waterfowl Concentration, Geoduck
Historic Marsh (area sq ft)/Channel Loss (length ft): 88,834 / 0
Shoreform Change: 0
Critical Areas: Cat.2 CARA
Land Use: Urban Low-Density Residential, Port of Bremerton, Rocky Point Water District No. 12
Known Cultural and Historic Resources: None/Unknown

Central Puget Sound Drift Cell 39 (East Rocky Point)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
372	Wave Deposition	Pilings Groins Armoring	Substrate		Conserve & Restore & Restore Site Processes

Central Puget Sound Drift Cell 85 (North Yacht Club)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.18
% Armored: 74%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40022, 40263
Terrestrial Veg: Closed Canopy-0.69%, Non-forest-97.20%, Other Natural Veg-2.21%,
Overhanging Veg: 0-25%
Marine Veg: Eelgrass (patchy)
Public Access: 1 Undeveloped beach access (KC Tidelands)
Current Population Est: 20
Future Build-out Population Est: 80
% of Total Parcels in Drift Cell Vacant/Underutilized: 67%
Priority Species/Habitat: Bald Eagle, Waterfowl Concentration
Historic Marsh (area sq ft)/Channel Loss (length ft): 5135 / 0
Shoreform Change: 0
Critical Areas: None/Unknown
Land Use: Urban Low-Density Residential, Port of Bremerton, Leaking Underground Storage Tank, Rocky Point Water District No.12
Known Cultural and Historic Resources: None/Unknown



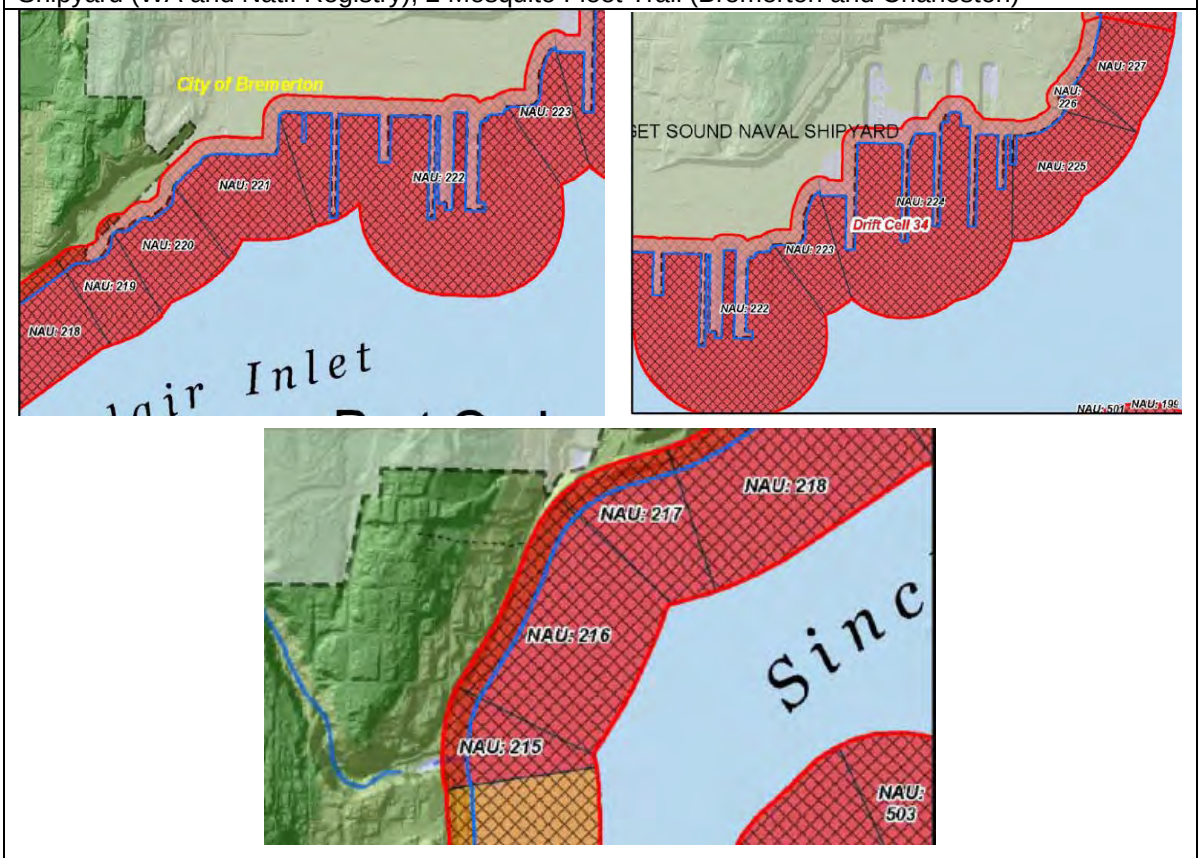
Central Puget Sound Drift Cell 85 (North Yacht Club)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
371	Sediment Source/Transport	Pilings Armoring Boat Launches	Substrate		Conserve & Restore & Restore Site Processes

Central Puget Sound Drift Cell 38 (Phinney Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
370	Sediment Source / Transport	Armoring Boat Launches Marinas	Substrate		Conserve & Restore
369	Tidal Erosion	Pilings Armoring	Water Quality		Protect & Conserve & Restore
368	Fluvial Deposition	Pilings Armoring	Light	Floats & Docks	Conserve & Restore & Restore Site Processes
367	Fluvial Deposition	Pilings Armoring	Water Quality	Water Quality	Conserve & Restore & Restore Site Processes

Central Puget Sound Drift Cell 34 (Sinclair Inlet-A *portions in City of Bremerton)

Drift Cell Disturbance Score: High (3)
Length (miles): 16.86
% Armored: 42%
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 40319, 40329
Terrestrial Veg: Closed Canopy-7.28%, Non-forest-79.12%, Other Natural Veg-13.60%, Noxious-Poison Hemlock, Giant Hogweed, Knotweed
Overhanging Veg: 0-25%
Marine Veg: Unknown
Public Access: 1 Park (view only?)
Current Population Est: 323
Future Build-out Population Est: 723
% of Total Parcels in Drift Cell Vacant/Underutilized: 27% Residential, 14% Commercial
Priority Species/Habitat: Seabird Colony (x2), Caspian Tern, Purple Martin
Historic Marsh (area sq ft)/Channel Loss (length ft): 224,941 / 1518
Shoreform Change: -4197 (Barrier Beach), -275 (Barrier Estuary), -15321 (Bluff-backed Beach), -21605 (Open Coastal Inlet), -5483 (Rocky Platform)
Critical Areas: Cat.2 CARA, Mod. Geologic Hazard, Critical Drainage Area
Land Use: City, Federal, Urban High-Intensity Commercial/Mixed Use, Urban Medium/High Density Residential, Port of Bremerton, Leaking Underground Storage Tank (x3), State Clean-up Site (x6), Federal (Superfund)Clean-up Site (x1), Navy (PSNS) Water, City of Bremerton Water; 305(b) Waters of Concern, Cat. 4b; 303(d)
Known Cultural and Historic Resources: Artifacts; Historical Debris; Place name referent to a locality now in the Puget Sound Naval Shipyard and two water referents to creeks flowing into Sinclair Inlet. Three archaeological sites are recorded in the drift cell; Puget Sound Naval Shipyard (WA and Natl. Registry); 2 Mosquito Fleet Trail (Bremerton and Charleston)



Central Puget Sound	Drift Cell 34 (Sinclair Inlet-A *portions in City of Bremerton)				
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
219	Urban Modified	Heavily Mod. Area	Substrate		Enhance & Create & Restore Site Processes
218	Urban Modified	Heavily Mod. Area	Wave Energy	Heavily Mod. Area Armoring	Enhance & Create & Restore Site Processes
217	Fluvial Deposition	Armoring	Substrate		Enhance & Create & Restore Site Processes
216	Urban Modified	Heavily Mod. Area Armoring	Wave Energy	Heavily Mod. Area Armoring	Enhance & Create & Restore Site Processes
215	Fluvial Deposition	Armoring	Substrate		Enhance & Create & Restore Site Processes

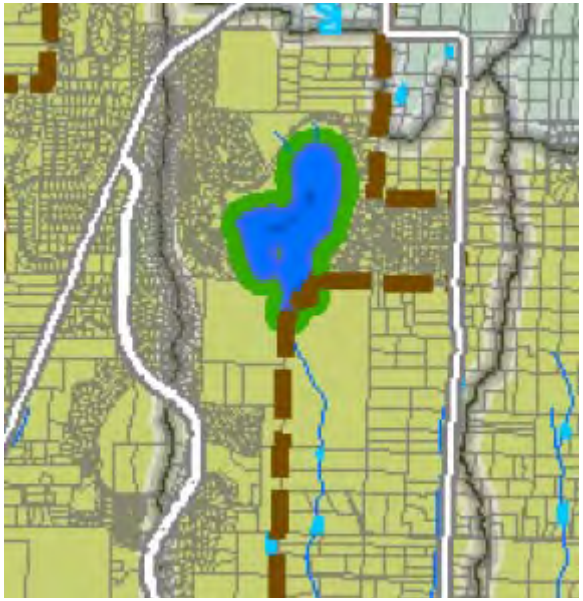
3.2.2 Freshwater Shoreline

3.2.2.1 Island Lake

ISLAND LAKE PSNERP Watershed # 40696 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low Impairment: High Synthesis: Least Impact to Processes 1 **Surface Storage:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2 **Groundwater Recharge:** Importance: Low Impairment: High Synthesis: Least Impact to Processes 1 **Groundwater Discharge:** Importance: High Impairment: High Synthesis: Restoration **Water Flow Synthesis:** Importance: Moderate Impairment: High Synthesis: Restoration- Least Impact 1	- Surrounding aquifer has not recharged in recent years, possibly due to a lack of stormwater infiltration (Haring, 2000)	- 2009: failed 2 e.coli tests - Mesotrophic classification - Swimmers Itch incidents increasing	- North and south ends of lake are mostly wooded (aerials) - Barker Creek headwaters at south end is channelized through the church camp and has little/no riparian cover - East and west ends of the County Park offer little/no riparian cover (lawns, some shrubs)

ISLAND LAKE PSNERP Watershed # 40696 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Bald Eagle (1)	- None/Unknown	- None

ISLAND LAKE PSNERP Watershed # 40696 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Low Density Residential - Public Facility - Urban Med/High Density Residential - Urban Low Intensity Commercial/Mixed Use - Rural Residential Site (shoreline jurisdiction): - Urban Low Density Residential - Public Facility Residential Vacant/Underutilized Parcels: 46%	**40696** Area: 2527 Stream Miles: 15 Drains to Drift Cell #: 137 Pasture: 24 Scrub/Shrub: 43 Grassland: 60 Wetland: 54 Deciduous: 180 Evergreen: 569 Mixed: 379 Total Forested: 1128 45.00% Total Impervious: 1190 47.00%	- Island Lake County Park (23 acres w/swimming, fishing, picnic shelters, playground and community center - closed Oct.-March)	- Cat.1 CARA (entire) - Moderate Geologic Hazard (northwest) - Critical Drainage Area - Class One Wildlife Habitat Conservation Area - Lake	- SFRs on the east and west sides of the lake; 20+ floats/overwater structures - Christa camp at south end with large pier/float - Bare shoreline along portions of County Park - Port of Brownsville; Port of Silverdale (SW shore) - Silverdale Water District No. 16 (west); Island Lake Water Co. (east)

ISLAND LAKE PSNERP Watershed # 40696 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: Least Impact to Processes • Storage: Re-establish natural hydrology in wetlands by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; remove any floodplain fill • Groundwater Recharge: Least Impact to Processes • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas and restore natural discharge patterns by plugging/removing ditches and fill	

3.2.2.2 Chico Creek

CHICO CREEK PSNERP Watershed # 40216 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watersheds)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate / Moderate-High / Modeate / Moderate/ Moderate-High / Moderate-High / Moderate-High Impairment: High / Moderate-High / High / Moderate-High / Low / Moderate / Low Synthesis: Restoration-Least Impact 1 / Restoration 2X / Restoration-Least Impact 1 / Restoration-Least Impact 2 / Protection 2 / Protection 2-Restoration / Protection 2 **Surface Storage:** Importance: Moderate / Moderate / Moderate-High / Moderate-High / Moderate-High / Moderate / Low Impairment: High / High / High / Moderate-High / Low / Moderate / Low Synthesis: Restoration-Least Impact 1 / Restoration-Least Impact 1 / Restoration 2 / Restoration 2X / Protection 2 / Protection 3-Restoration / Conservation 1 **Groundwater Recharge:** Importance: Moderate-High / High / Moderate-High / High / High /	- From Kitsap Golf and Country Club: Min 1.9cfs (1996); Max 500 cfs (1995); Mean Annual est. 26 cfs (Chico Alt. Futures, 2002) - Summer low flows with potential for drying up, inhibiting fish passage and life stages; no further consumptive use - 100 yr. Floodplain (and Channel Migration Zone?) located within 200' jurisdiction	- Improving long term trend; stationary short-term trend - Meeting water quality standards for fecal coliform; no health advisory - 305(b) Below Northlake Way: Temp(5), DO(5), FC(1), pH(1); Above Northlake Way: FC(1), pH(1), DO(5) - 303(d): Temperature and DO - Water quality likely affected by highway runoff (SR3 and Chico Way)	- Poor LWD and pool habitat in the channelized section (Haring, 2000) - Upstream of railroad is generally good habitat (LWD, pools) - Gravels present, though compacted in areas with fine sediments; also advanced outwash near upstream-most portion of jurisdiction - Riparian conditions generally poor from mouth to Kitsap Golf and Country Club (KGCC) (encroachment, lack of vegetation);newly planted through KGCC; fair/poor from KGCC to railroad; good/excellent above railroad

CHICO CREEK PSNERP Watershed # 40216 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watersheds)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Moderate / Moderate-High Impairment: High / Moderate-High / High / Moderate-High / Low / Low / Low Synthesis: Restoration 2 / Restoration 1 / Restoration 2 / Restoration 1 / Protection 1 / Protection 3 / Protection 2 **Groundwater Discharge:** Importance: Moderate-High / Moderate-High / High / Moderate-High / Moderate-High / Low / Low Impairment: High / Moderate-High / High / Moderate / Low / Moderate-High / Low Synthesis: Restoration 2 / Restoration 2X / Restoration / Protection 2-Restoration / Protection 2 / Least Impact 2 / Conservation 1 **Water Flow Synthesis:** Importance: Moderate / Moderate-High / Moderate-High / Moderate-High / Moderate-High / Moderate / Low Impairment: High / Moderate-High / High / Moderate-High / Low / Moderate / Low Synthesis: Restoration-Least Impact 1 / Restoration 2X / Restoration 2 / Restoration 2X / Protection 2 / Protection 3-Restoration / Conservation 1			

CHICO CREEK PSNERP Watershed # 40216 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Cutthroat - Chum - Coho - Steelhead (1)	- Osprey (2)	- Knotweed - Tansy - Watershed: Knotweed, Tansy, Giant Hogweed	- Area of Ecological Significance

CHICO CREEK PSNERP Watershed # 40216 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Reserve - Mineral Resource (?) - Rural Residential - Rural Wooded -Rural Protection - Urban Low-Density Residential - Public Facility - City - Military - Rural Commercial Site (shoreline jurisdiction): - Rural Residential - Public Facility - Rural Commercial - Rural Wooded Residential Vacant/Underutilized Parcels: 20% Commercial Vacant/Underutilized Parcels: 2%	**40216** Area: 10424 Stream Miles: 52 Drains to Drift Cell #: 90 Pasture: 7 Scrub/Shrub: 1205 Grassland: 206 Wetland: 195 Deciduous: 345 Evergreen: 6030 Mixed: 999 Total Forested: 7374 71.00% Total Impervious: 1014 10.00%	- Erlands Point Preserve (35 acres designated for riparian habitat) - Chico Way Salmon Viewing Park (4.5 acres above Golf Club Hill Rd. designated as riparian habitat and passive recreation and education)	- Cat.1 CARA up to Chico Way crossing; Cat.2 CARA upstream - Frequently Flooded Area - Moderate Geologic Hazard (upper) - Class 1 and 2 Wildlife Habitat Conservation Area - Stream (S)(F)	- Culverts at Kittyhawk Drive and SR3 are velocity barriers at high flows - DOT Trash Rack at RM 0.3 - Box culvert at Golf Club Hill Road and associated weirs are barriers at low flows - Channelized within rip-rap from mouth up to Kitsap Golf and Country Club - SFRs

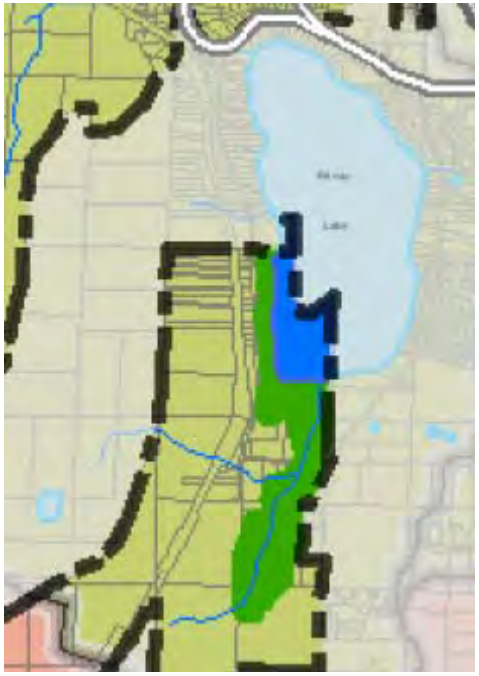
CHICO CREEK PSNERP Watershed # 40216 RECOMMENDATIONS	JURISDICTION MAP
- Implement LID - Reduce impacts of road crossings: Kitty Hawk Drive, SR3, Golf Club Hill Road, - Removal of DOT trash rack after bridges in place - Improve riparian and channel conditions below railroad crossing - Continue creating off-channel habitat for salmonid rearing and resting - Implement recommendations of the Chico Creek Alternative Futures Plan - Water Flow Management: • Delivery: Lower- re-establish natural cover or use other green infrastructure measures; Upper- For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Lower- Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by raising incised channel and remove floodplain fill; Upper: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers. • Groundwater Recharge: Lower- Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement or rain gardens; Upper- Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Lower- Reduce pumpage levels in areas that are important recharge areas and restore natural discharge patterns by plugging/removing ditches and fill; Upper- Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces).	

3.2.2.3 Kitsap Lake and Wetland

KITSAP LAKE and WETLAND PSNERP Watershed # 40216 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate Impairment: Moderate-High Synthesis: Restoration-Least Impact 2 **Surface Storage:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Groundwater Recharge:** Importance: High Impairment: Moderate-High Synthesis: Restoration 1 **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X	- 250 acres in area - Max. depth 29 ft. (average 18 ft.) - 2.7 miles of shoreline - associated wetland at the south end of the lake near the park	- Camp McKean (north of jurisdiction): Toxic Algae Bloom Advisory (microcystin) - Mesotrophic - Swimmers Itch - Park closed during summer 2009 (starting mid-July) - 305(b): Total Phosphorus (3), FC (5) - 303(d): FC	- Much of the lakeside riparian vegetation has been replaced with lawns and landscaping. - Soils: Peat, Lacustrine, Till. Jurisdiction surrounded by bedrock - Stream, lake and wetlands provide "prime" spawning and rearing habitat

KITSAP LAKE and WETLAND PSNERP Watershed # 40216 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Steelhead (1)	- Unknown	- None - Watershed: Knotweed, Tansy, Giant Hogweed - planted trout and warm-water game fish	- Class B Refugia

KITSAP LAKE and WETLAND PSNERP Watershed # 40216 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Reserve - Mineral Resource(?) - Rural Residential - Rural Wooded - Rural Protection - Urban Low-Density Residential - Public Facility - City - Military - Rural Commercial Site (shoreline jurisdiction): - Urban Reserve - Mineral Resource(?) Residential Vacant/Underutilized Parcels: 26%	**40216** Area: 10424 Stream Miles: 52 Drains to Drift Cell #: 90 Pasture: 7 Scrub/Shrub: 1205 Grassland: 206 Wetland: 195 Deciduous: 345 Evergreen: 6030 Mixed: 999 Total Forested: 7374 71.00% Total Impervious: 1014 10.00%	- Kitsap Lake Park (operated by city of Bremerton), 34 acres, boat launch, pier, picnic area	- Cat.2 CARA - Frequently Flooded Area - Moderate Geologic Hazard (west side of lake) - Moderate Geologic Hazard (west side of lake) - Wetland - Lake - Class 1 Wildlife Habitat Conservation Area	- Shoreline is heavily developed with SFRs, many with bulkheads - City of Bremerton Water - State Clean-Up Site

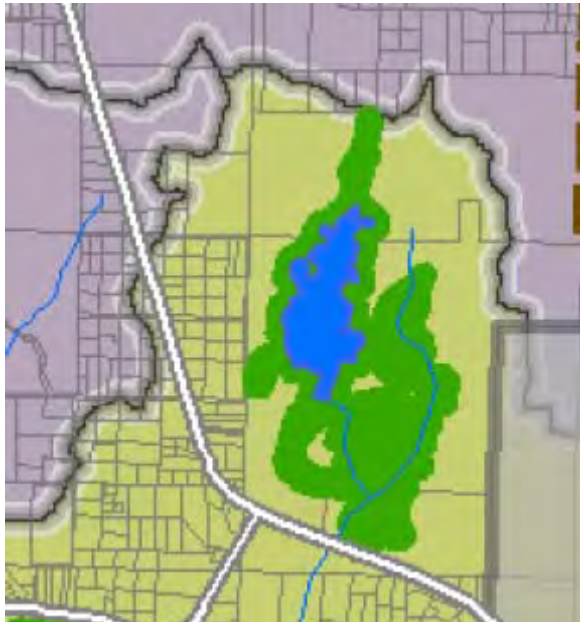
KITSAP LAKE and WETLAND PSNERP Watershed # 40216 **RECOMMENDATIONS**	**JURISDICTION MAP**
>Implement LID; retro-fit BMPs to existing development >Reduce impacts of road crossings >Develop and implement a short-term LWD strategy in Kitsap Creek, up to the railroad crossing >Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement and rain gardens. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in this area.	

3.2.2.4 Chico Headwaters Pond

CHICO HEADWATERS POND PSNERP Watershed # 40216 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Low Impairment: Moderate-High Synthesis: Least Impact 2 **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration	- Surface flow primarily in the winter (Chico Alt. Futures, 2002) - Pond/Lake area over 20 acres	- None - Concern over lead from rifle range (?)	- Soil: Till and Gravels - Low modification (aerials)

CHICO WETLAND PSNERP Watershed # 40216 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- None/Unknown	- Osprey (2)	- None mapped (Scotchbroom known) - Watershed: Knotweed, Tansy, Giant Hogweed	- Area of Ecological Significance (entire)

CHICO WETLAND PSNERP Watershed # 40216 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Reserve - Mineral Resource(?) - Rural Residential - Rural Wooded - Rural Protection - Urban Low-Density Residential - Public Facility - City - Military - Rural Commercial Site (shoreline jurisdiction): - Rural Wooded Residential Vacant/Underutilized Parcels: 25%	**40216** Area: 10424 Stream Miles: 52 Drains to Drift Cell #: 90 Pasture: 7 Scrub/Shrub: 1205 Grassland: 206 Wetland: 195 Deciduous: 345 Evergreen: 6030 Mixed: 999 Total Forested: 7374 71.00% Total Impervious: 1014 10.00%	- Newberry Hill Heritage Park (874 acres, with combined 274 KC Parks and 600 DNR); undeveloped, some trails	- Cat.1 CARA (NW half); Cat.2 CARA (SE half) - Frequently Flooded Area - Moderate Geologic Hazard (patchy) - Wetlands - Class 2 Wildlife Habitat Conservation Area	- Seabeck Hwy crosses southern tip - Kitsap Rifle and Revolver Club Gun Range (SE end) - DNR(?) road crosses through southern half and part of west end - Port of Bremerton - Silverdale Water District No.16

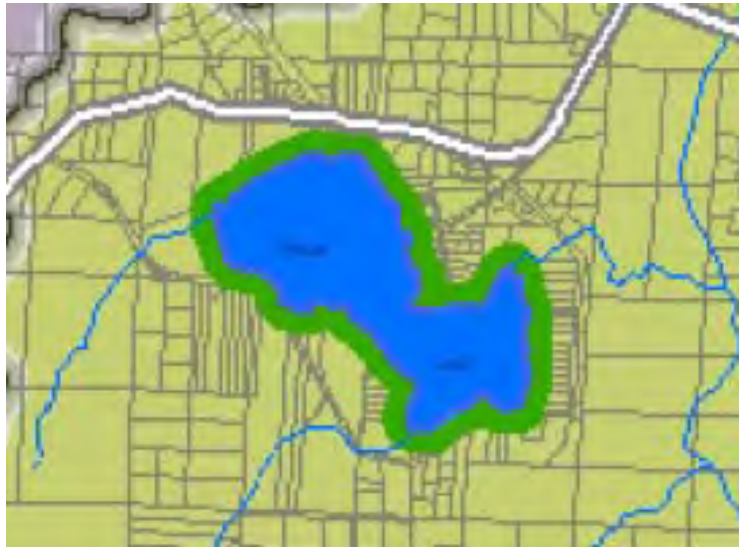
CHICO WETLAND PSNERP Watershed # 40216 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management: • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-density development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Least Impact to Processes	

3.2.2.5 Wildcat Lake

WILDCAT LAKE PSNERP Watershed # 40216 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Low Impairment: Moderate-High Synthesis: Least Impact 2 **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration	- 33 feet deep max. - 120 acres - 2160 acre feet volume - 2.2 miles of shoreline (DOE 1997)	- 2009: passed e.coli sampling - Unidentified illness in July 2009 - Blue-Green Algae Advisory, August 2009 - 305(b): Total Phosphorus (1); Wildcat Creek FC(5)	- Focal Sub Watershed Refugia (FSW) Areas - Moderately developed with some remaining good riparian areas - Soils: Till with some Unknown/Undifferentiated along the south shore; Some possible Advanced Outwash near the outlet of Wildcat Creek

WILDCAT LAKE PSNERP Watershed # 40216 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho (after 1999) - Steelhead (after 1999) (1) - Cutthroat (residential)	- Common Loon (1)	- Knotweed - Watershed: Knotweed, Tansy, Giant Hogweed - Warm-water game fish	-None

WILDCAT LAKE PSNERP Watershed # 40216 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Reserve - Mineral Resource(?) - Rural Residential - Rural Wooded - Rural Protection - Urban Low-Density Residential - Public Facility - City - Military - Rural Commercial Site (shoreline jurisdiction): - Rural Residential - Public Facility Residential Vacant/Underutilized Parcels: 14% Commercial Vacant/Underutilized Parcels: 1%	**40216** Area: 10424 Stream Miles: 52 Drains to Drift Cell #: 90 Pasture: 7 Scrub/Shrub: 1205 Grassland: 206 Wetland: 195 Deciduous: 345 Evergreen: 6030 Mixed: 999 Total Forested: 7374 71.00% Total Impervious: 1014 10.00%	- Wildcat Lake County Park (11 acres, fishing, swimming, picnic, basketball, volleyball, playground) - WDFW Boat Launch (east shore of lake at end of Lakeview Ct. NW)	- Cat.2 CARA (except eastern end) - Moderate Geologic Hazard Area (partial) - Frequently Flooded Area - Class One Wildlife Habitat Conservation Area	- Moderate shoreline development; significant armoring (May, 2003) - Cleared beach/boat launch areas at Wildcat Lake County Park, Lutherhaven and WDFW sites - Private Wells - Partial fish passage barrier at Wildcat Lake

WILDCAT LAKE PSNERP Watershed # 40216 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Implement LID - Reduce impacts of road crossings - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-density development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Least Impact to Processes	

3.3 South Puget Sound

The South Puget Sound Characterization Area consists of nearly 38 miles of marine shoreline from just beyond the Puget Sound Naval Shipyard in north Sinclair Inlet to the Kitsap-Pierce County line, including all the watersheds that empty into Puget Sound between those points. Within this Characterization Area are the towns of Gorst, Manchester, Southworth, Blake and Olalla. The City of Port Orchard, is not included in this report, except where Drift Cells are shared. Blake Island is also included in this Characterization Area.

For the marine jurisdiction (200' upland, 1000' intertidal), there are **22 Drift Cells** which are comprised of 129 Nearshore Assessment Units. There are 34 known and/or potential public access points within this Characterization Area, which includes parks, ports, right-of-ways, and utility corridors.

For the freshwater jurisdictions, the South Puget Sound Characterization area has **17 Freshwater Shoreline Jurisdictions**:

- Gorst Creek and floodplain
- Blackjack Creek and floodplain
- Square Lake
- Lower Curley Creek and floodplain
- Long Lake
- Upper Curley Creek
- Mace Lake
- Burley Creek and floodplain
- Horseshoe Lake
- Wicks Lake
- Big Lake (McCormick Woods)
- Rocky wetland
- Sunnyslope Wetland
- Carney Lake
- Wye Lake
- Fern Lake
- Coulter Creek and floodplain

The maps below show the drift cells along the marine shoreline and watershed drainage units in the South Puget Sound Characterization area, respectively. The color-coding of the drift cells represents the degree of disturbance, ranging from highly disturbed in red to less-disturbed in green. The map depicting the drainage units also shows the minimum required shoreline jurisdiction in green.

Shoreline Master Program - South Puget Sound
Marine and Freshwater Shoreline Jurisdiction

Drift Cell Disturbance
- Low
- Moderate
- High

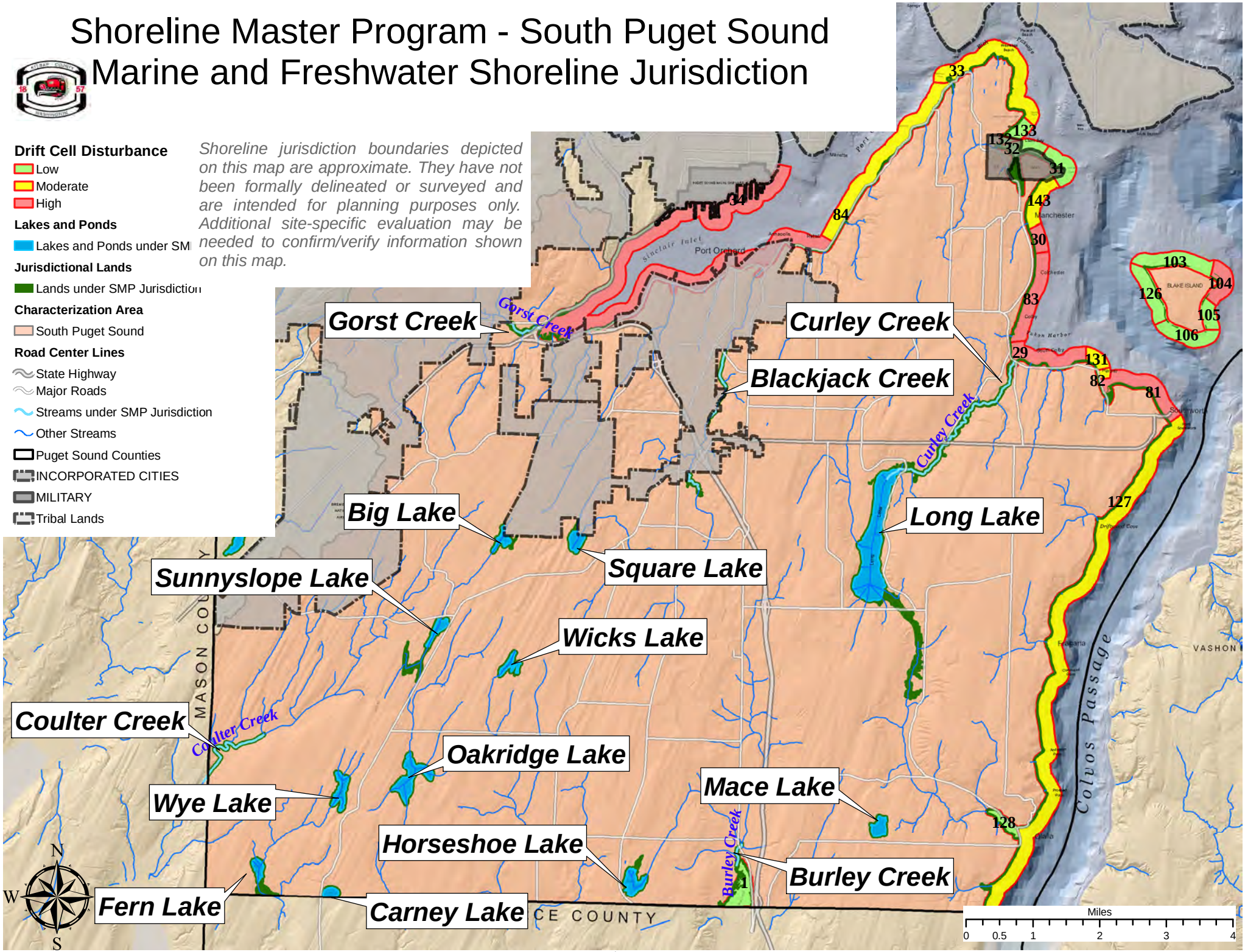
Lakes and Ponds
- Lakes and Ponds under SMP

Jurisdictional Lands
- Lands under SMP Jurisdiction

Characterization Area
- South Puget Sound

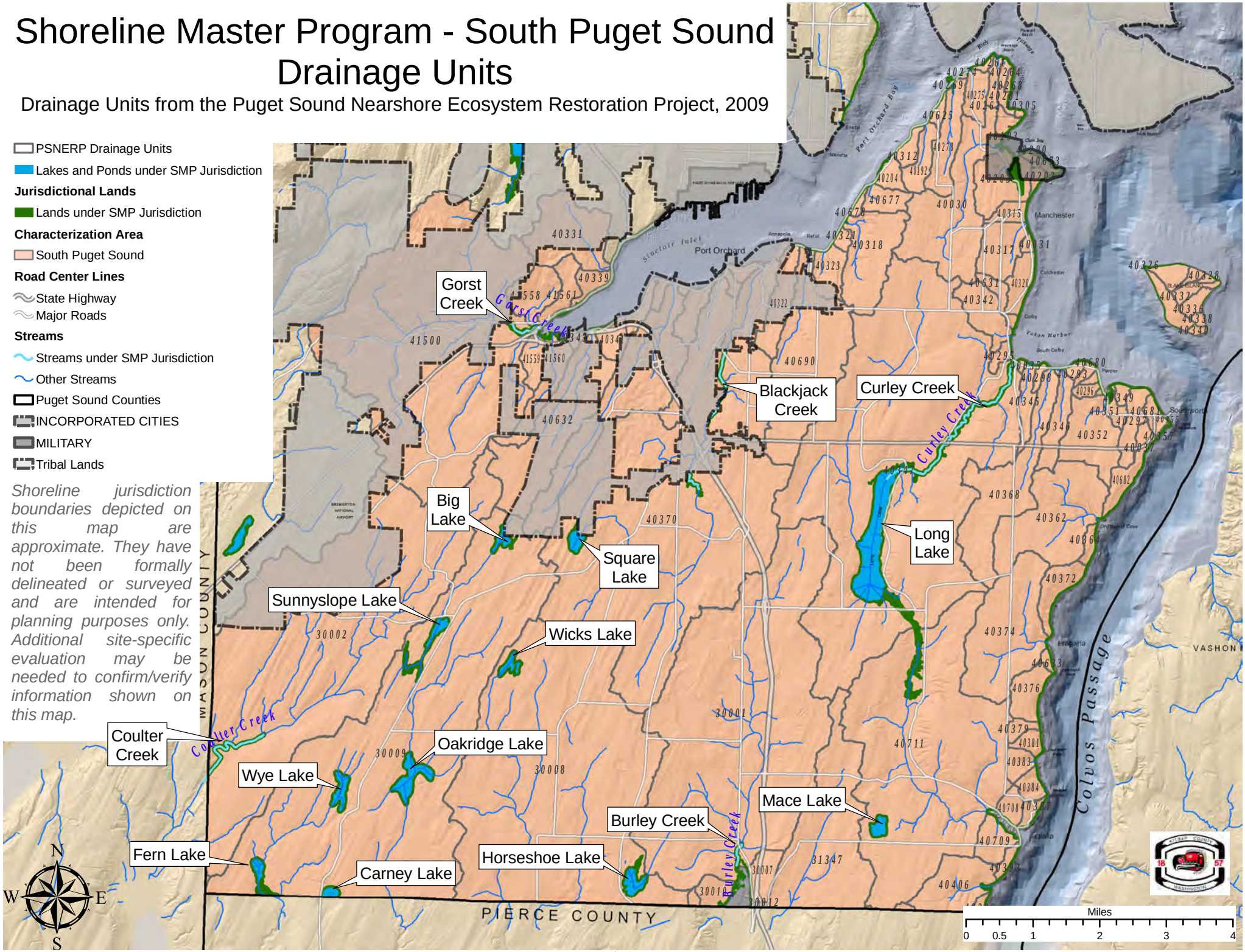
Road Center Lines
- State Highway
- Major Roads
- Streams under SMP Jurisdiction
- Other Streams
- Puget Sound Counties
- INCORPORATED CITIES
- MILITARY
- Tribal Lands

Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.



Shoreline Master Program - South Puget Sound Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009



3.3.1 Marine Shoreline

South Puget Sound Drift Cell 34 (Sinclair-B **portions in City of Bremerton and Port Orchard*)

Drift Cell Disturbance Score: High (3)

Length (miles): 16.86

% Armored: 42%

Geomorphic Type: Embayment; Rocky Shoreline (214); Open Shore (198)

Fluvial Influences (PSNERP #s): 40331, 40339, 41561, 41558, 41500(Gorst), 41559. 41560,40343, 40632, 40341, 40632, 40341,40344,40334, 40335, 40348, 40333, 40358, 40330, 40325, 40370(Blackjack), 40324, 40690, 40323, 40321

Terrestrial Veg: Closed Canopy – 7.28%, Non-forest – 79.12%, Other Natural Veg – 13.60%

Noxious- Knotweed, Giant Hogweed

Marine Veg: Salt Marsh fringe (patchy); Kelp (continuous); Eelgrass (beds)

Overhanging Veg: 0-25%

Public Access: 1 Park; 1 Public Dock (Annapolis)

Current Population Est: 323

Future Build-out Population Est: 723

% of Total Parcels in Drift Cell Vacant/Underutilized: 27% Residential, 14% Commercial

Priority Species/Habitat: Surf Smelt, Sand Lance, Chinook, Chum, Coho, Steelhead, Bald Eagle, Waterfowl Concentration, Shorebird Concentration, Hardshell clam, Great Blue Heron, Mountain Quail

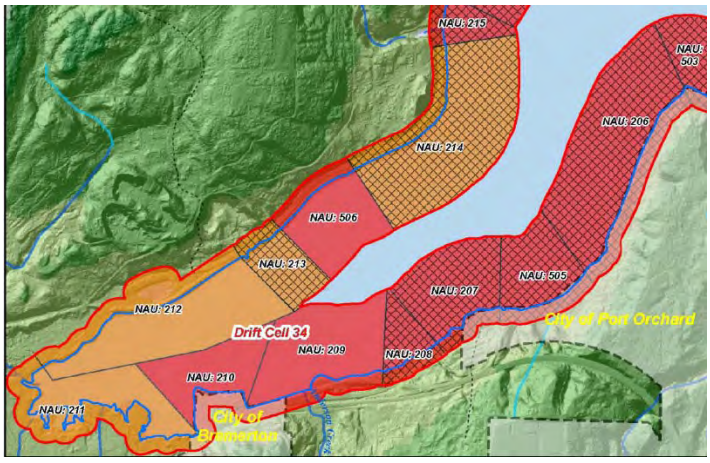
Historic Marsh (area sq ft)/Channel Loss (length ft): 224,941 / 1518

Shoreform Change: -4197 (Barrier Beach), -275 (Barrier Estuary), -15321(Bluff-Backed Beach), -21605 (Open Coastal Inlet), -5483 (Rocky Platform)

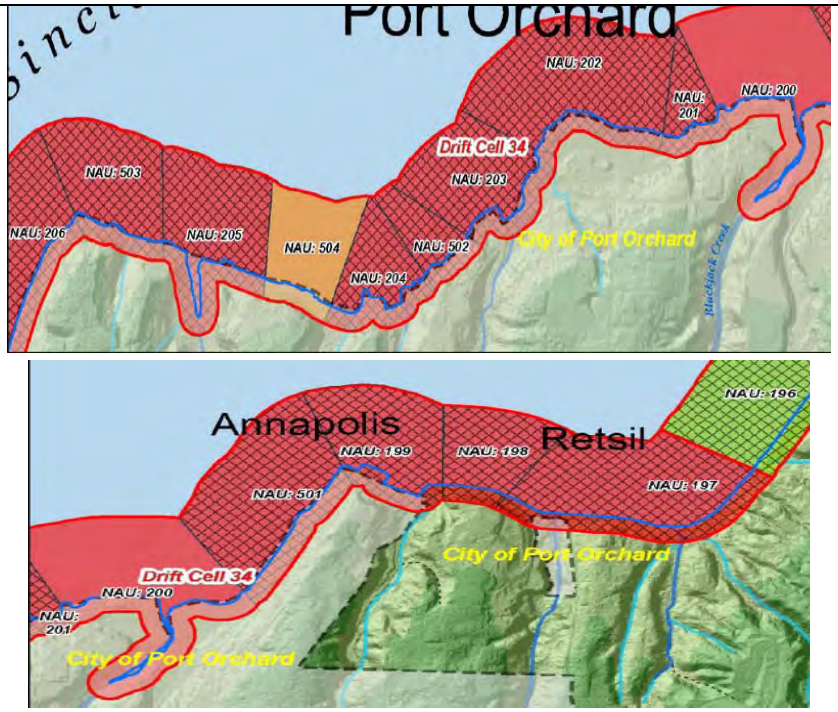
Critical Areas: Cat. 1 and 2 CARA, Mod. and High Geologic Hazard, Critical Drainage Area, Stream (F)(NF)(S)

Land Use: Urban Medium/High-Density Residential, Urban Reserve, Urban Industrial, Urban High-Intensity Commercial/Mixed Use, Port of Bremerton, State Clean-up Site (x5), Leaking Underground Storage Tank (x4), City of Bremerton Water, City of Port Orchard Water, Annapolis Water District; 305(b) Waters of Concern

Known Cultural and Historic Resources: Artifacts; Historical Debris; Place name referent to a locality now in the Puget Sound Naval Shipyard and two water referents to creeks flowing into Sinclair Inlet. Three archaeological sites are recorded in the drift cell; Mosquito Fleet Trail



South Puget Sound Drift Cell 34 (Sinclair-B **portions in City of Bremerton and Port Orchard*)



South Puget Sound Drift Cell 34 (Sinclair-B **portions in City of Bremerton and Port Orchard*)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
214	Transport	Armoring	Wave Energy		Enhance & Restore Site Processes
506	Tidal Erosion/Fluvial Deposition	Armoring	Substrate		Enhance & Create
213	Tidal Erosion/Fluvial Deposition	Pilings Armoring	Wave Energy		Enhance & Restore Site Processes
212	Tidal Erosion/Fluvial Deposition	Pilings Armoring	Frequency of Disturbance	Pilings	Enhance
211	Tidal Erosion/Fluvial Deposition	Pilings	Water Quality		Enhance
209	Fluvial Deposition	Heavily Mod. Area Armoring	Wave Energy	Heavily Mod. Area	Enhance & Create
208	Urban Modified	Heavily Mod.	Substrate		Enhance & Create

South Puget Sound Drift Cell 34 (Sinclair-B **portions in City of Bremerton and Port Orchard*)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Area			& Restore Site Processes
207	Urban Modified	Pilings Heavily Mod. Area	Frequency of Disturbance	Pilings Heavily Mod. Area Marinas	Enhance & Create & Restore Site Processes
199	Fluvial Deposition	Armoring	Substrate		Enhance & Create & Restore Site Processes
198	Wave Deposition	Pilings Armoring Marinas	Water Quality	Water Quality	Enhance & Create & Restore Site Processes
197	Fluvial Deposition	Pilings Armoring	Water Quality	Water Quality	Enhance & Create & Restore Site Processes

South Puget Sound Drift Cell 84 (Retsil-Waterman)

Drift Cell Disturbance Score: Medium (2)

Length (miles): 3.19

% Armored: 83%

Geomorphic Type: Open, Embayment, Rocky

Fluvial Influences (PSNERP #s): 40321, 40318, 40678, 40677, 40204, 40312, 40192, 40625, 40278

Terrestrial Veg: Closed Canopy– 9.87%, Non-forest – 85.64%, Other Natural Veg – 4.49%

Noxious- Knotweed, Giant Hogweed

Overhanging Veg: 0-25%

Marine Veg: Eelgrass (patchy and continuous), Kelp (patchy)

Public Access: 2 Undeveloped beach access; 1 Undeveloped view access; 1 Public Dock (Port of Waterman)

Current Population Est: 525

Future Build-out Population Est: 863

% of Total Parcels in Drift Cell Vacant/Underutilized: 20% Residential, <1% Commercial

Priority Species/Habitat: Surf Smelt, Sand Lance, Pacific Herring (holding area), Chum, Coho, Bald Eagle, Waterfowl Concentration, Harlequin Duck

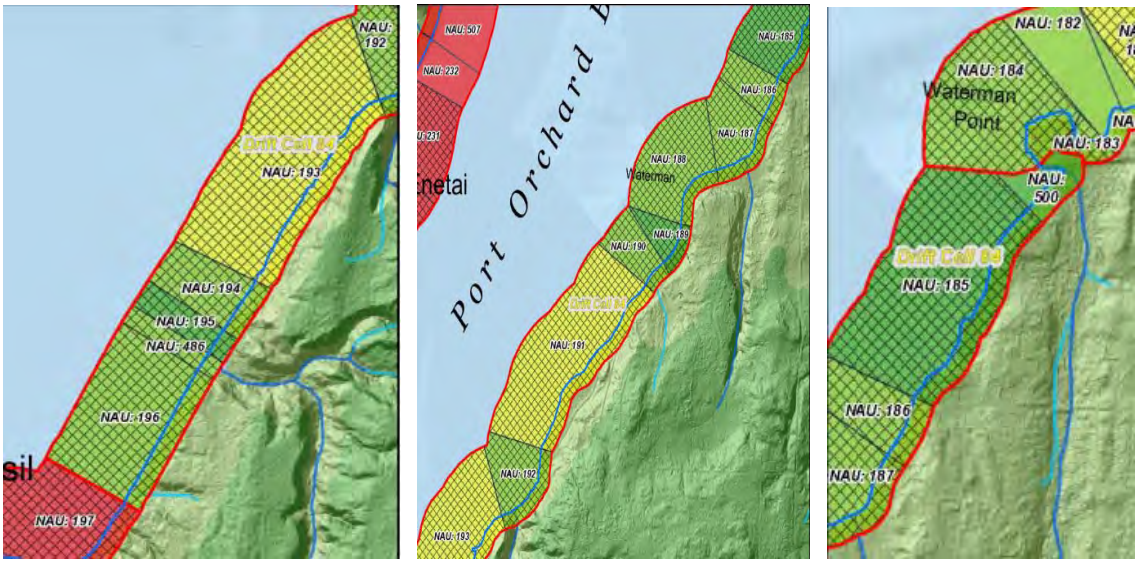
Historic Marsh (area sq ft)/Channel Loss (length ft): 17375 / 205

Shoreform Change: +881 (Barrier Estuary), -1545 (Bluff-Backed Beach), -2136 (Open Coastal Inlet)

Critical Areas: Cat.2 CARA, Mod. and High Geologic Hazard, Frequently Flooded Area

Land Use: Urban Low-Density Residential, Rural Residential, Port of Waterman, Annapolis Water District; 305(b) Waters of Concern, 303(d)

Known Cultural and Historic Resources: Activity referents to three camp sites where salmon and smelt were dried, activity referents to clamming and fishing localities and hunting and plant collecting activities, landform referents to promontories, and water referents to creeks; Mosquito Fleet Trail



South Puget Sound Drift Cell 84 (Retsil-Waterman)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
196	Wave Deposition	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes
486	Fluvial Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
195	Fluvial Deposition	Armoring	Substrate		Protect & Conserve & Restore & Restore Site Processes
194	Wave Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
193	Sediment Source/Transport	Pilings	Substrate		Restore & Restore Site Processes
192	Fluvial Deposition	Armoring Pilings	Substrate		Conserve & Restore & Restore Site Processes
191	Wave Deposition	Armoring Pilings Groins	Wave Energy (Open)	Armoring Pilings	Restore & Restore Site Processes
190	Wave Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
189	Wave Deposition	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Protect & Conserve & Restore & Restore Site Processes
188	Wave Deposition	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes
187	Fluvial Deposition	Armoring Pilings	Frequency of Disturbance	Pilings Overhanging Struct.	Conserve & Restore & Restore Site Processes
186	Wave Deposition & Transport	Armoring Pilings	Wave Energy (Rocky)	Pilings	Conserve & Restore & Restore Site Processes
185	Wave Deposition & Transport	Armoring Boat Launches Culverts Groins	Water Quality		Protect & Conserve & Restore & Restore Site Processes

South Puget Sound Drift Cell 84 (Retsil-Waterman)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
500	Wave & Tidal Erosion, Fluvial Deposition	Armoring	Substrate		Protect & Conserve & Restore

South Puget Sound Drift Cell 33 (Rich Passage)

Drift Cell Disturbance Score: Medium (2)

Length (miles): 2.6

% Armored: 60%

Geomorphic Type: Embayment, Rocky

Fluvial Influences (PSNERP #s): 40269, 40274, 40275, 40261, 40262, 40264, 40268, 40281, 40305

Terrestrial Veg: Closed Canopy– 40.49%, Non-forest – 53.06%, Other Natural Veg – 6.46%

Marine Veg: Kelp (patchy and continuous), Eelgrass (patchy)

Overhanging Veg: 25-50%

Public Access: 2 Parks, 1 Undeveloped beach access

Current Population Est: 275

Future Build-out Population Est: 333

% of Total Parcels in Drift Cell Vacant/Underutilized: 13%

Priority Species/Habitat: Area of Ecological Significance, Bald Eagle, Surf Scoter, Seal and Sea Lion Haul Out

Historic Marsh (area sq ft)/Channel Loss (length ft): 8179 / 103

Shoreform Change: 0

Critical Areas: Mod. Geologic Hazard

Land Use: Rural Residential, Public Facility, Port of Waterman, Annapolis Water District, Private Wells; 305(b) Waters of Concern

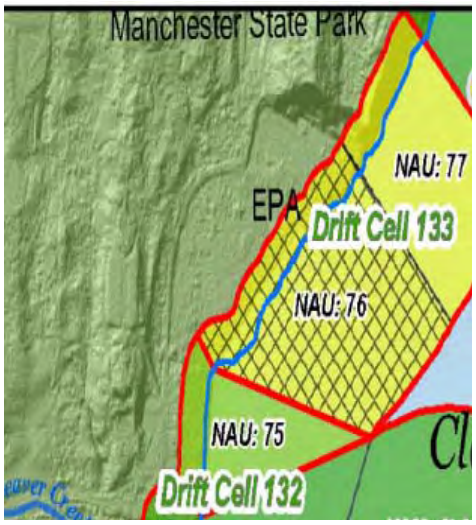
Known Cultural and Historic Resources: Artifacts; Landform referents to two localities with rock outcrops and a water referent to a creek; Manchester Net Depot/EPA Lab

South Puget Sound Drift Cell 33 (Rich Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
184	Transport	Armoring Groins	Wave Energy (Rocky)	Groins	Conserve & Restore & Restore Site Processes
183	Wave & Tidal Erosion, Fluvial Deposition	Armoring	Substrate		Conserve & Restore & Restore Site Processes
182	Wave Deposition & Transport	Armoring	Wave Energy (Rocky)		Conserve & Restore
181	Wave Deposition & Transport	Armoring	Wave Energy (Rocky)		Conserve & Restore
180	Wave Deposition & Transport	Armoring Pilings	Wave Energy (Rocky)	Pilings	Restore & Restore Site Processes
179	Wave & Tidal Erosion, Fluvial Deposition	Armoring Pilings Groins	Wave Energy (Embayment)	Navigation Channel	Restore & Restore Site Processes
178	Transport	Armoring Pilings	Wave Energy (Rocky)	Pilings	Restore & Restore Site Processes
88	Transport	Armoring Boat Launches Groins	Wave Energy (Rocky)	Groins	Restore & Restore Site Processes
87	Wave & Tidal Erosion, Fluvial Deposition	Armoring	Substrate	Navigation Channel	Restore & Restore Site Processes
86	Transport	Armoring Boat Launches Pilings	Wave Energy (Rocky)	Pilings	Restore & Restore Site Processes
85	Transport	Armoring Boat Launches Groins	Substrate		Protect & Conserve & Restore & Restore Site Processes
84	Transport	Armoring	Wave Energy (Rocky)		Protect & Conserve & Restore
83	Transport	Armoring Boat Launches	Wave Energy (Rocky)		Protect & Conserve & Restore & Restore Site Processes
82	Transport		Water Quality		Protect & Conserve & Restore

South Puget Sound Drift Cell 33 (Rich Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
81	Wave & Tidal Erosion, Fluvial Deposition		Frequency of Disturbance		Protect & Conserve & Restore
80	Transport	Armoring	Water Quality		Protect & Conserve & Restore
79	Transport	Armoring	Wave Energy (Rocky)		Protect & Conserve & Restore
78	Transport	Armoring	Frequency of Disturbance		Protect & Conserve & Restore

South Puget Sound Drift Cell 133 (N Clam Bay)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.45
% Armored: 21%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40193, 40305
Terrestrial Veg: Closed Canopy-30.13%, Non-forest: 69.31%, Other Vegetation: 0.57%
Overhanging Veg: 25-50%
Marine Veg: Eelgrass fringe (patchy)
Public Access: 1 Park
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels in Drift Cell Vacant/Underutilized: 0
Priority Species/Habitat: Area of Ecological Significance, Surf Scoter, Great Blue Heron
Historic Marsh(area sq ft)/Channel Loss (length ft): 0 / 0
Shoreform Change: -562 (Barrier Beach)
Critical Areas: Frequently Flooded Area
Land Use: Public Facility
Known Cultural and Historic Resources: Landform referent to the promontory at Point Glover.



South Puget Sound Drift Cell 133 (N Clam Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
77	Transport	Armoring Marinas	Water Quality	Net Pens, Marinas	Restore
76	Wave Deposition	Armoring Pilings Marinas	Water Quality	Net Pens, Marinas	Restore & Restore Site Processes

South Puget Sound Drift Cell 143 (Manchester)
Drift Cell Disturbance Score: Medium (2) **Length (miles):** 0.97 **% Armored:** 63% **Geomorphic Type:** Rocky, Open Shore **Fluvial Influences (PSNERP #s):** 40031, 40202, 40203, 40315, 40317 **Terrestrial Veg:** Closed Canopy-2.03%, Non-forest-96.21%, Other Natural Veg-1.76%, Knotweed **Overhanging Veg:** 0-25% **Marine Veg:** Eelgrass (patchy), Kelp (continuous) **Public Access:** 1 Park/Boat Launch (Port of Manchester), 3 Undeveloped beach access **Current Population Est:** 188 **Future Build-out Population Est:** 233 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 22% Residential, 1% Commercial **Priority Species/Habitat:** Area of Ecological Significance, Surf Smelt/Sand Lance, Bald Eagle, Great Blue Heron **Historic Marsh(area sq ft)/Channel Loss (length ft):** 0 / 306 **Shoreform Change:** 0 **Critical Areas:** Cat.1 & 2 CARA, Mod. Geologic Hazard, Critical Drainage Area **Land Use:** LAMIRD, Military, Leaking Underground Storage Tank; 305(b) Waters of Concern, 303(d); Prohibited Shellfish Harvest Area **Known Cultural and Historic Resources:** Activity referent for a summer camp site at the mouth of a creek where clams were dug and dried; Mosquito Fleet Trail


South Puget Sound Drift Cell 143 (Manchester)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**

South Puget Sound Drift Cell 143 (Manchester)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
65	Wave Deposition & Transport	Armoring Pilings	Wave Energy (Rocky)	Pilings	Protect & Conserve & Restore
64	Sediment Source/Transport	Armoring Boat Launches Pilings Marinas Groins	Wave Energy (Open)	Armoring Pilings Marinas	Restore & Restore Site Processes
63	Fluvial Deposition, Wave Deposition	Armoring Pilings	Frequency of Disturbance	Pilings	Enhance & Create & Restore Site Processes

South Puget Sound Drift Cell 30 (South Manchester)
Drift Cell Disturbance Score: High (3) **Length (miles):** 0.38 **% Armored:** 92% **Geomorphic Type:** Open Shore **Fluvial Influences (PSNERP #s):** 40031 **Terrestrial Veg:** Closed Canopy-14.42%, Non-forest-66.10%, Other Natural Veg-19.49% **Overhanging Veg:** 0-25% **Marine Veg:** Kelp (patchy) **Public Access:** None **Current Population Est:** 85 **Future Build-out Population Est:** 90 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 6% **Priority Species/Habitat:** Surf Smelt, Sand Lance, Pacific Herring (holding), Bald Eagle, Geoduck **Historic Marsh (sq.ft.)/Channel Loss (ft.):** 0 / 0 **Shoreform Change:** 0 **Critical Areas:** Cat. 1 CARA, Mod. Geologic Hazard, Critical Drainage Area **Land Use:** LAMIRD, Port of Manchester, Manchester Water District; 303(d); Approved Shellfish Harvest Area **Known Cultural and Historic Resources:** Landform referent for the shoreline north of Colby.


South Puget Sound Drift Cell 30 (South Manchester)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
516	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes

South Puget Sound Drift Cell 83 (Colchester-Colby)

Drift Cell Disturbance Score: High (3)

Length (miles): 1.45

% Armored: 75%

Geomorphic Type: Open Shore

Fluvial Influences (PSNERP #s): 40320, 40631, 40342, 40295

Terrestrial Veg: Closed Canopy– 8.88%, Non-forest – 84.73%, Other Natural Veg – 6.39%

Noxious- English Ivy/Blackberries, Knotweed

Overhanging Veg: 0-25%

Marine Veg: Eelgrass (patchy), Kelp (continuous, patchy), Salt Marsh fringe (patchy)

Public Access: 1 Park(?); 2 Undeveloped beach access

Current Population Est: 270

Future Build-out Population Est: 308

% of Total Parcels in Drift Cell Vacant/Underutilized: 13%

Priority Species/Habitat: Pacific Herring (holding), Dungeness Crab, Geoduck

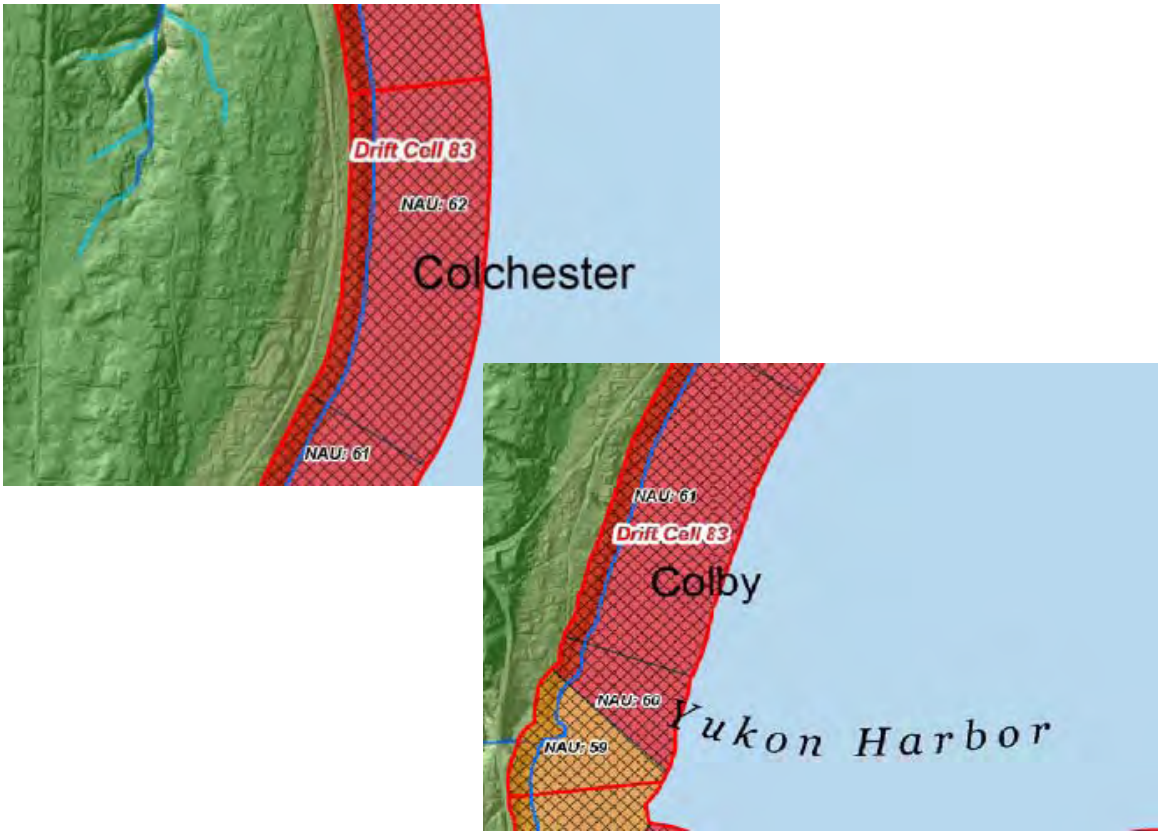
Historic Marsh(area sq ft)/Channel Loss (length ft): 0 / 306

Shoreform Change: -1118 (Bluff-Backed Beach)

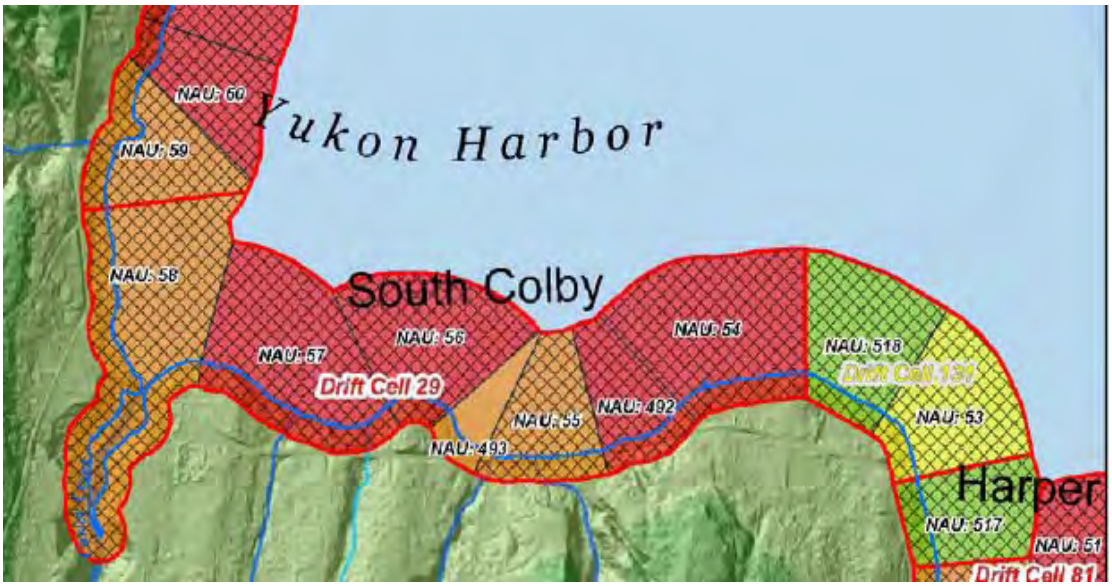
Critical Areas: Cat.1 CARA, Mod. Geologic Hazard, Critical Drainage Area

Land Use: LAMIRD, Rural Residential, Port of Manchester, State Clean-up Site, Manchester Water District; 305(b) Waters of Concern, 303(d); Approved Shellfish Harvest Area

Known Cultural and Historic Resources: Landform referent for the shoreline north of Colby; Mosquito Fleet Trail

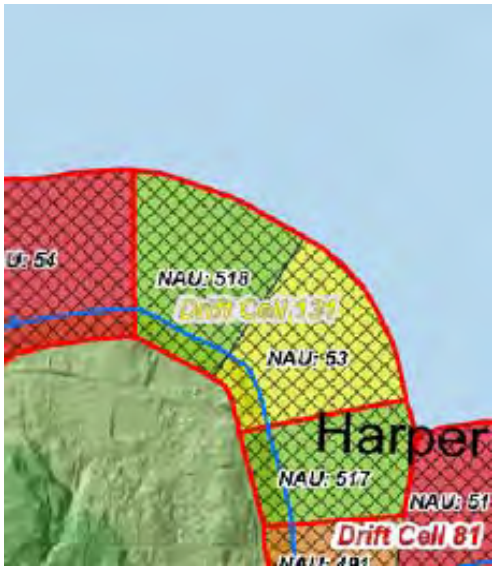


South Puget Sound Drift Cell 83 (Colchester-Colby)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
62	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Substrate		Enhance & Create & Restore Site Processes
61	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Substrate		Enhance & Create & Restore Site Processes
60	Sediment Source/Transport	Armoring Boat Launches	Substrate		Enhance & Create & Restore Site Processes
59	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Enhance & Restore Site Processes

South Puget Sound Drift Cell 29 (South Colby)
Drift Cell Disturbance Score: High (3) **Length (miles):** 2.07 **% Armored:** 60% **Geomorphic Type:** Open Shore/Embayment (55, 58) **Fluvial Influences (PSNERP #s):** 40295, 40035, 40034, 40298, 40368, 40346, 40293 **Terrestrial Veg:** Closed Canopy – 29.22%, Non-forest – 59.69%, Other Natural Veg – 11.09% **Overhanging Veg:** 0-25% **Marine Veg:** Eelgrass (patchy), Kelp (continuous, patchy), Salt Marsh fringe (patchy) **Public Access:** 4 Undeveloped beach access **Current Population Est:** 200 **Future Build-out Population Est:** 280 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 29% Residential, 1% Commercial **Priority Species/Habitat:** Pacific Herring (holding), Chinook, Chum, Coho, Steelhead, Waterfowl Concentration, Dungeness Crab, Geoduck **Historic Marsh (area sq ft)/Channel Loss (length ft):** 0 / 0 **Critical Areas:** Cat.1 and 2 CARA, Mod. Geologic Hazard, Stream (F)(S)(NF) **Land Use:** Rural Residential, Rural Protection, Port of Manchester, Port of Bremerton, Manchester Water District; 305(b) Waters of Concern, 303(d); Approved Shellfish Harvest Area **Known Cultural and Historic Resources:** Artifacts; Activity referent for a reek at Colby, where salmon were caught; Mosquito Fleet Trail


South Puget Sound Drift Cell 29 (South Colby)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
58	Tidal Erosion/Fluvial Deposition	Armoring Floats Pilings	Substrate		Enhance & Restore Site Processes.

South Puget Sound Drift Cell 29 (South Colby)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Groins			
57	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes
56	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes
493	Sediment Source/Transport	Armoring Boat Launches	Substrate		Enhance
55	Fluvial Deposition	Armoring Pilings	Substrate		Enhance & Restore Site Processes
492	Wave Deposition	Armoring Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes
54	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes

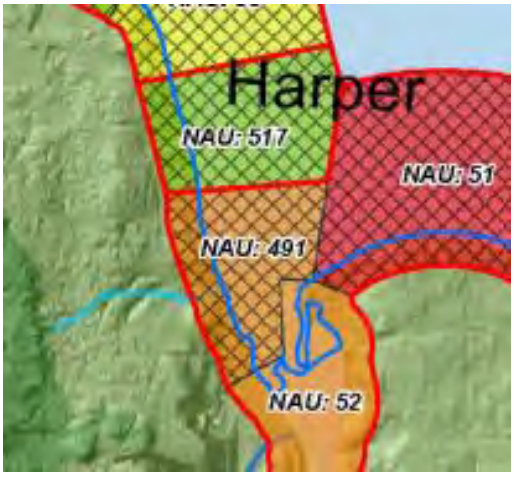
South Puget Sound Drift Cell 131 (North Harper)
Drift Cell Disturbance Score: Medium (2) **Length (miles):** 0.26 **% Armored:** 99% **Geomorphic Type:** Open Shore **Fluvial Influences (PSNERP #s):** 40680 **Terrestrial Veg:** Closed Canopy– 10.18%, Non-forest – 89.82%, Other Natural Veg - 0% **Overhanging Veg:** 0-25% **Marine Veg:** Kelp (patchy) **Public Access:** Public Dock (Harper) **Current Population Est:** 35 **Future Build-out Population Est:** 40 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 12% **Priority Species/Habitat:** Geoduck, Dungeness Crab **Historic Marsh (area sq ft)/Channel Loss (length ft):** 0 / 329 **Shoreform Change:** 0 **Critical Areas:** Unknown **Land Use:** Rural Residential, Port of Bremerton, Manchester Water District; 303(d); Approved Shellfish Harvest Area **Known Cultural and Historic Resources:** Mosquito Fleet Trail


South Puget Sound Drift Cell 131 (North Harper)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
518	Sediment Source/Transport	Armoring Boat Launches	Substrate		Conserve & Restore & Restore Site Processes
53	Wave Deposition	Armoring Pilings	Substrate		Restore & Restore Site Processes

South Puget Sound Drift Cell 131 (North Harper)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**

South Puget Sound Drift Cell 82 (Harper Dock)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.14
% Armored: 101%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40294
Terrestrial Veg: Closed Canopy– 12.87%, Non-forest – 87.13%, Other Natural Veg – 0%
Overhanging Veg: 0-25%
Marine Veg: Kelp (patchy)
Public Access: None
Current Population Est: 25
Future Build-out Population Est: 28
% of Total Parcels in Drift Cell Vacant/Underutilized: 10%
Priority Species/Habitat: Geoduck, Dungeness Crab
Historic Marsh/Channel Loss (%): 0 / 0
Shoreform Change: 0
Critical Areas: Mod. Geologic Hazard
Land Use: Rural Residential, Manchester Water District; 303(d); Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Unknown



South Puget Sound Drift Cell 82 (Harper Dock)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
517	Wave Deposition	Armoring Pilings Groins	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes

South Puget Sound Drift Cell 81 (North Southworth)

Drift Cell Disturbance Score: High (3)

Length (miles): 2.27

% Armored: 52%

Geomorphic Type: Embayment

Fluvial Influences (PSNERP #s): 40294, 40296, 40353, 40352, 40351, 40036, 40350, 40349, 40297, 40681

Terrestrial Veg: Closed Canopy– 30.88%, Non-forest – 54.72%, Other Natural Veg – 14.39% Noxious- Knotweed

Overhanging Veg: 0-25%

Marine Veg: Kelp (patchy), Eelgrass (continuous, patchy), Salt Marsh fringe (patchy)

Public Access: 1 Park; 2 Undeveloped beach access; 1 Ferry Terminal

Current Population Est: 165

Future Build-out Population Est: 208

% of Total Parcels in Drift Cell Vacant/Underutilized: 20%

Priority Species/Habitat: Surf Smelt, Sand Lance, Bald Eagle, Geoduck

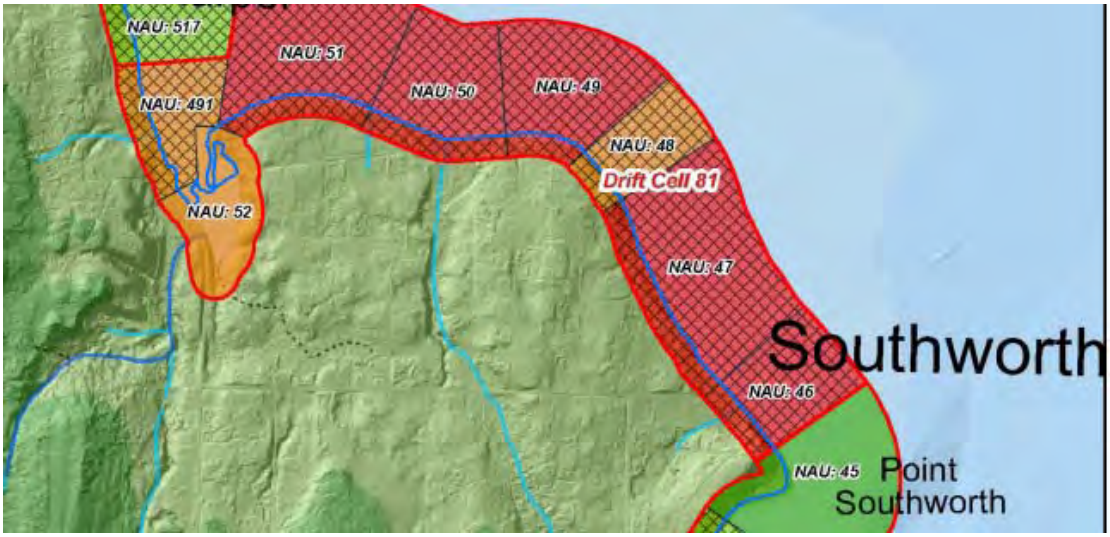
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 0

Shoreform Change: 0

Critical Areas: Cat.2 CARA, Mod. Geologic Hazard, Wetland, Frequently Flooded Area

Land Use: Rural Residential, Public Facility, Port of Bremerton, Leaking Underground Storage Tank, Manchester Water District; 305(b) Category 4c; Approved Shellfish Harvest Area

Known Cultural and Historic Resources: Landform referent for Point Southworth; end of Mosquito Fleet Trail



South Puget Sound Drift Cell 81 (North Southworth)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
491	Wave Deposition	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Enhance & Restore Site Processes

South Puget Sound Drift Cell 81 (North Southworth)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
52	Tidal Erosion, Wave Deposition	Armoring Pilings	Frequency of Disturbance	Pilings	Enhance
51	Wave Deposition	Armoring Pilings	Substrate		Enhance & Create & Restore Site Processes
50	Fluvial Deposition	Armoring	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
49	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Substrate	Navigation Channel	Enhance & Create & Restore Site Processes
48	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Enhance & Restore Site Processes
47	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Enhance & Create & Restore Site Processes
46	Sediment Source/Transport	Pilings Marinas	Frequency of Disturbance	Pilings Marinas	Enhance & Create & Restore Site Processes

South Puget Sound Drift Cell 127 (Colvos Passage)

Drift Cell Disturbance Score: Medium (2)

Length (miles): 8.96

% Armored: 33%

Geomorphic Type: Embayment, Open Shore

Fluvial Influences (PSNERP #s): 40355, 40357, 40037, 40682, 40362, 40364, 40372, 40374, 40633, 40376, 40379, 40381, 40383, 40384, 40387, 40711(Olalla), 40709, 40393, 40406, 40399

Terrestrial Veg: Closed Canopy– 65.71%, Non-forest – 24.59%, Other Natural Veg – 9.70%; Noxious- Knotweed

Overhanging Veg: 0-25%

Marine Veg: Eel Grass (continuous, patchy), Kelp (patchy), Salt Marsh fringe (continuous, patchy)

Public Access: 1 Park, 1 Undeveloped beach access, 3 Undeveloped view access

Current Population Est: 555

Future Build-out Population Est: 950

% of Total Parcels in Drift Cell Vacant/Underutilized: 36%

Priority Species/Habitat: Surf Smelt, Sand Lance (Southworth and Olalla), Chinook, Chum, Coho, Steelhead, Bald Eagle, Geoduck

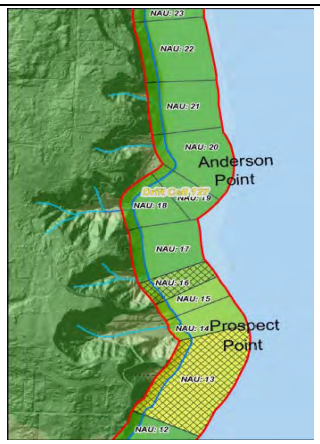
Historic Marsh (area sq ft)/Channel Loss (length ft): 0 / 3729

Shoreform Change: 0

Critical Areas: Cat. 1 & 2 CARA, Mod. & High Geologic Hazard, Frequently Flooded Area, Wetland, Stream (F)(NF)(S)

Land Use: Rural Residential, Rural Protection, Port of Bremerton, State Clean-up Site (Southworth), Leaking Underground Storage Tank (Olalla), Manchester Water District, WA Water- Southworth, KPUD-Driftwood Cove, Fragaria Landing, WA Water Service Co.; 305(b) (Olalla); Olalla south Unclassified Shellfish Harvest Area, N.Fragaria, Prospect Point, and Driftwood Cove Prohibited Shellfish Harvest Area

Known Cultural and Historic Resources: Landform referents to promontories along the shoreline and an activity referent to plant collecting on a promontory; Nelson House (WA and Natl. Registry)

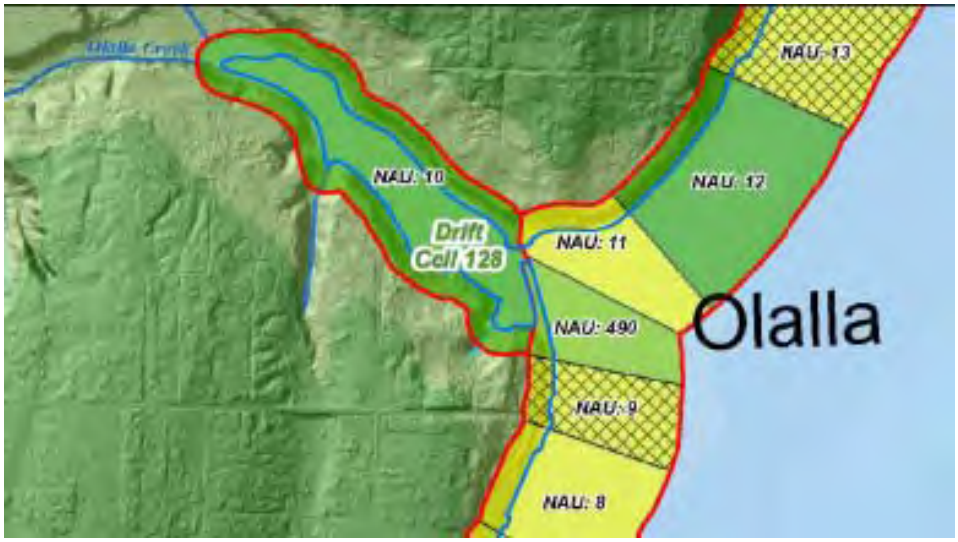
South Puget Sound Drift Cell 127 (Colvos Passage)	
	

South Puget Sound Drift Cell 127 (Colvos Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
45	Wave Deposition		Water Quality		Protect & Conserve & Restore
44	Sediment Source/Transport	Armoring Pilings Groins	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes
43	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes
42	Sediment Source/Transport	Armoring Boat Launches Pilings	Substrate		Protect & Conserve & Restore
41	Sediment Source/Transport	Armoring Boat Launches Pilings	Substrate		Conserve & Restore & Restore Site Processes
40	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Protect & Conserve & Restore
39	Fluvial Deposition				Protect & Conserve & Restore
38	Fluvial Deposition	Armoring Pilings	Substrate		Conserve & Restore & Restore Site Processes
37	Sediment Source/Transport	Armoring Pilings Marinas	Wave Energy (Open)	Armoring Pilings Marinas	Restore & Restore Site Processes

South Puget Sound Drift Cell 127 (Colvos Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
36	Sediment Source/Transport	Armoring Pilings	Substrate		Conserve & Restore
35	Sediment Source/Transport	Armoring Boat Launches Pilings	Wave Energy (Open)	Armoring Pilings	Conserve & Restore & Restore Site Processes
34	Sediment Source/Transport	Armoring Boat Launches Pilings	Substrate		Conserve & Restore & Restore Site Processes
33	Wave Deposition	Armoring	Substrate		Protect & Conserve & Restore
32	Sediment Source/Transport	Armoring Pilings	Substrate		Conserve & Restore & Restore Site Processes
31	Fluvial Deposition	Armoring	Substrate		Protect & Conserve & Restore
30	Sediment Source/Transport	Armoring	Light		Protect & Conserve & Restore
29	Sediment Source/Transport	Armoring Pilings	Substrate		Conserve & Restore
28	Wave Erosion (Open)	Armoring Pilings	Substrate	Navigation Channel	Restore & Restore Site Processes
27	Fluvial Deposition	Armoring Pilings	Substrate	Navigation Channel	Restore & Restore Site Processes
26	Wave Erosion (Open)	Armoring Pilings	Substrate	Navigation Channel	Conserve & Restore
25	Wave Deposition	Armoring Pilings	Substrate	Navigation Channel	Restore & Restore Site Processes
24	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Protect & Conserve & Restore
23	Wave Erosion				Protect & Conserve & Restore
22	Sediment Source/Transport				Protect & Conserve & Restore
21	Wave Erosion				Protect & Conserve & Restore
20	Wave Deposition		Frequency of		Protect & Conserve

South Puget Sound Drift Cell 127 (Colvos Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
			Disturbance		& Restore
19	Wave Deposition				Protect & Conserve & Restore
18	Fluvial Deposition				Protect & Conserve & Restore
17	Sediment Source/Transport	Armoring Pilings	Wave Energy (Open)	Armoring Pilings	Protect & Conserve & Restore
16	Sediment Source/Transport	Armoring Boat Launches	Substrate		Conserve & Restore & Restore Site Processes
15	Sediment Source/Transport		Substrate		Conserve & Restore
14	Fluvial Deposition	Armoring	Frequency of Disturbance	Overhanging Structures	Conserve & Restore
13	Sediment Source/Transport	Armoring Boat Launches Pilings Groins	Wave Energy (Open)	Armoring Pilings	Restore & Restore Site Processes
12	Sediment Source/Transport		Water Quality		Protect & Conserve & Restore
11	Wave Deposition	Armoring Pilings	Substrate	Navigation Channel	Restore
10	Tidal Erosion, Wave Deposition	Armoring	Water Quality		Protect & Conserve & Restore
490	Wave Deposition	Armoring	Substrate	Navigation Channel	Conserve & Restore
9	Sediment Source/Transport	Pilings	Substrate	Navigation Channel	Restore & Restore Site Processes
8	Sediment Source/Transport	Armoring Boat Launches	Substrate	Navigation Channel	Restore
7	Sediment Source/Transport	Armoring Boat Launches	Substrate	Navigation Channel	Restore
6	Fluvial Deposition	Armoring Boat Launches Pilings	Substrate		Conserve & Restore & Restore Site Processes

South Puget Sound Drift Cell 127 (Colvos Passage)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
5	Fluvial Deposition	Armoring Groins	Substrate		Protect & Conserve & Restore & Restore Site Processes
4	Fluvial Deposition	Armoring Groins	Substrate		Conserve & Restore & Restore Site Processes
3	Sediment Source/Transport	Armoring Boat Launches	Substrate		Conserve & Restore & Restore Site Processes
2	Sediment Source/Transport				Protect & Conserve & Restore

South Puget Sound Drift Cell 128 (Olalla Estuary)
Drift Cell Disturbance Score: Low (1) **Length (miles):** 1.35 **% Armored:** <1% **Geomorphic Type:** Embayment **Fluvial Influences (PSNERP #s):** 40709, 40711, 40708 **Terrestrial Veg:** Closed Canopy– 65.95%,Non-forest – 25.37%,Other Natural Veg – 8.68% **Overhanging Veg:** 75-100% **Marine Veg:** Salt marsh (continuous) **Public Access:** 1 boat ramp beach access **Current Population Est.:** 0 **Future Population Est.:** 0 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 37% **Priority Species/Habitat:** Unknown **Historic Marsh(area sq ft)/Channel Loss (length ft):** 0 / 409 **Shoreform Change:** None **Critical Areas:** Mod. and High Geologic Hazard, Wetlands, Cat. 2 CARA **Land Use:** Rural Protection, WA. Water Service Co., Leaking Underground Storage Tank, Port of Bremerton; conservation easement **Known Cultural and Historic Resources:** Activity referent to a village at the mouth of Olalla Creek, associated with cattail gathering and salmon fishing.


South Puget Sound Drift Cell 128 (Olalla Estuary)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
10	Tidal Erosion/Wave Deposition	Armoring	Water Quality		Protect & Conserve & Restore

South Puget Sound Drift Cell 1 (Burley Lagoon)

Drift Cell Disturbance Score: Low (1)

Length (miles): 2.9

% Armored: 0%

Geomorphic Type: Embayment

Fluvial Influences (PSNERP #s): 30012, 30007, 30001(Burley), 30010

Terrestrial Veg: Closed Canopy– 33.16%, Non-forest – 23.82%, Other Natural Veg – 43.82%; Noxious- Purple Loosestrife, Knotweed

Overhanging Veg: 0-25%

Marine Veg: Salt Marsh fringe (continuous)

Public Access: 1 Undeveloped beach access

Current Population Est: 70

Future Build-out Population Est: 113

% of Total Parcels in Drift Cell Vacant/Underutilized: 35%

Priority Species/Habitat: Chinook, Chum, Coho, Steelhead, Bald Eagle, Lagoon, Hardshell Clam, Osprey, Mountain Quail

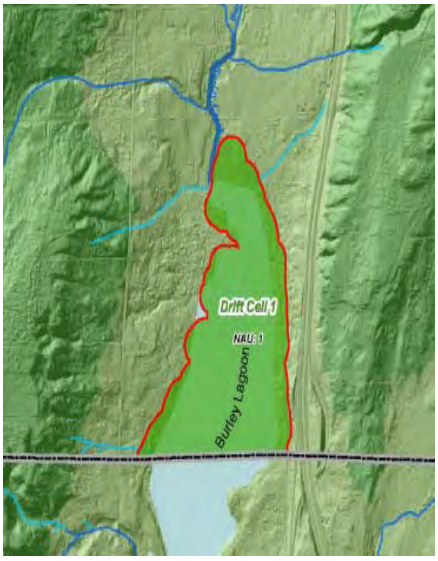
Historic Marsh (area sq ft) /Channel Loss (length ft): 0 / 7181

Shoreform Change: None

Critical Areas: Cat.2 CARA, Mod. Geologic Hazard, Frequently Flooded Area, Wetland, Stream (F) (NF)

Land Use: Rural Protection, Port of Bremerton, Leaking Underground Storage Tank, Private Wells

Known Cultural and Historic Resources: None/Unknown



South Puget Sound Drift Cell 1 (Burley Lagoon)

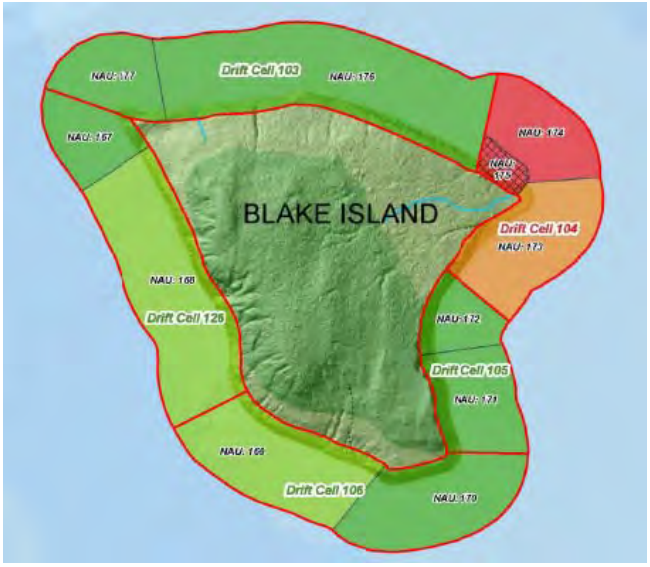
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
1	Fluvial Dep./ Wave Dep.	Pilings	Water Quality	Water Quality	Protect & Conserve & Restore

South Puget Sound Drift Cell 103 (N Blake Island)
Drift Cell Disturbance Score: Low (1) **Length (miles):** 1.08 mi. **% Armored:** 0% **Geomorphic Type:** Open Shore **Fluvial Influences (PSNERP #s):** 40327, 40328, 40679 **Terrestrial Veg:** Closed Canopy– 91.47%, Non-forest – 0.12%, Other Natural Veg – 8.40% **Overhanging Veg:** 50-75% **Marine Veg:** Eelgrass fringe (continuous), Kelp (patchy) **Public Access:** 1 Park **Current Population Est:** 0 **Future Build-out Population Est:** 0 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 0% **Priority Species/Habitat:** Area of Ecological Significance, Bald Eagle, Surf Smelt/Sand Lance spawn area **Historic Marsh(area sq ft)/Channel Loss (length ft):** 0 / 0 **Shoreform Change:** 0 **Critical Areas:** Stream (N) **Land Use:** Rural Residential; west end Approved Shellfish Harvest Area, east end Conditionally Approved Shellfish Harvest Area **Known Cultural and Historic Resources:** Artifacts


South Puget Sound Drift Cell 103 (N Blake Island)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
177	Wave Deposition	*	Frequency of Disturbance	*	Protect & Conserve & Restore
176	Sediment Source/Transport	*	Frequency of Disturbance	*	Protect & Conserve & Restore

South Puget Sound Drift Cell 103 (N Blake Island)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**

South Puget Sound Drift Cell 104 (Blake Jetty)
Drift Cell Disturbance Score: High (3) **Length (miles):** 4315 ft. **% Armored:** 41% **Geomorphic Type:** Open Shore **Fluvial Influences (PSNERP #s):** 40328, 40332, 40336 **Terrestrial Veg:** Closed Canopy– 38.06%, Non-forest – 55.69%, Other Natural Veg – 6.25% **Overhanging Veg:** 75 – 100% **Marine Veg:** Eelgrass fringe (continuous) **Public Access:** 1 Park (w/Marina) **Current Population Est:** 0 **Future Build-out Population Est:** 0 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 0% **Priority Species/Habitat:** Area of Ecological Significance, Bald Eagle **Historic Marsh(area sq ft)/Channel Loss (length ft):** 0 / 306 **Shoreform Change:** -1564 (Shoreform Absent) **Critical Areas:** Stream (N), Wetland **Land Use:** Rural Residential; 305(b) Waters of Concern; at marina Prohibited Shellfish Harvest Area, south end Conditionally Approved **Known Cultural and Historic Resources:** Historical Debris



South Puget Sound Drift Cell 104 (Blake Jetty)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
175	Wave Deposition		Wave Energy	Armoring	Enhance & Create & Restore Site

South Puget Sound Drift Cell 104 (Blake Jetty)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Armoring Pilings Marinas	(Open)	Pilings Marinas Heavily Modified Areas	Processes
174	Urban Modified	*	Wave Energy (Open)	Armoring Heavily Modified Areas	Enhance & Create
173	Wave Deposition	Armoring Pilings	Substrate	*	Enhance

South Puget Sound Drift Cell 105 (E.Blake Island)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.51
% Armored: 0%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40336, 40338
Terrestrial Veg: Closed Canopy - 100%, Non-forest - 0%, Other Natural Veg - 0%
Overhanging Veg: 75-100%
Marine Veg: Eelgrass fringe (continuous), Kelp (patchy)
Public Access: 1 Park
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Bald Eagle
Historic Marsh(area sq ft)/Channel Loss (length ft): 0 / 0
Shoreform Change: 0
Critical Areas: Mod. Geohazard area
Land Use: Rural Residential; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Unknown

South Puget Sound Drift Cell 105 (E.Blake Island)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
172	Sediment Source/Transport	*	Frequency of Disturbance	*	Protect & Conserve & Restore
171	Sediment Source/Transport	*	Frequency of Disturbance	*	Protect & Conserve & Restore

South Puget Sound Drift Cell 106 (S.Blake Island)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.73
% Armored: 0%
Geomorphic Type: Open Shore
Fluvial Influences (PSNERP #s): 40340, 40326
Terrestrial Veg: Closed Canopy- 100%, Non-forest - 0%, Other Natural Veg - 0%
Overhanging Veg: 75-100%
Marine Veg: Eelgrass fringe (patchy), Kelp (continuous, patchy)
Public Access: 1 Park
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels in Drift Cell Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Bald Eagle
Historic Marsh(area sq ft)/Channel Loss (length ft): 0 / 0
Shoreform Change: 0
Critical Areas: Mod. Geohazard area, Stream (U)
Land Use: Rural Residential; Approved Shellfish Harvest Area
Known Cultural and Historic Resources: Other

South Puget Sound Drift Cell 106 (S.Blake Island)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
170	Sediment Source/Transport	*	Frequency of Disturbance	*	Protect & Conserve & Restore
169	Sediment Source/Transport	*	Substrate	Navigation Channel	Conserve & Restore

South Puget Sound Drift Cell 126 (W.Blake Island)
Drift Cell Disturbance Score: Low (1) **Length (miles):** 0.88 **% Armored:** 0% **Geomorphic Type:** Open Shore **Fluvial Influences (PSNERP #s):** 40326, 40679 **Terrestrial Veg:** Closed Canopy– 92.12%, Non-forest - 0%, Other Natural Veg – 7.88% **Overhanging Veg:** 75-100% **Marine Veg:** Eelgrass fringe (continuous), Kelp (patchy) **Public Access:** 1 Park **Current Population Est:** 0 **Future Build-out Population Est:** 0 **% of Total Parcels in Drift Cell Vacant/Underutilized:** 0% **Priority Species/Habitat:** Area of Ecological Significance, Bald Eagle, Surf Smelt/Sand Lance spawn area **Historic Marsh(area sq ft)/Channel Loss (length ft):** 0 / 188 **Shoreform Change:** 0 **Critical Areas:** Mod. Geohazard area **Land Use:** Rural Residential; south end Approved Shellfish Harvest Area, north end Conditionally Approved Shellfish Harvest Area **Known Cultural and Historic Resources:** Artifacts


South Puget Sound Drift Cell 126 (W.Blake Island)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
168	Sediment Source/Transport	Pilings	Substrate	Navigation Channel	Protect & Conserve & Restore
167	Wave Deposition	*	Substrate	*	Conserve & Restore

3.3.2 Freshwater Shoreline

3.3.2.1 Gorst Creek

GORST CREEK PSNERP Watershed # 41500 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Surface Storage:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2 **Groundwater Recharge:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2 **Groundwater Discharge:** Importance: Moderate Impairment: High Synthesis: Restoration-Least Impact 1 **Water Flow Synthesis:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2	- 1991-1996: Instream flows ranged from a mean discharge (cfs) of 17.5-67.0 ; min: 1.6 cfs; max: 238 cfs (Haring, 2000). - Mean annual flow over 20 cfs - Consumptive water appropriation is subject to minimum instream flows established in WAC 173-515-030.	- 2009: Improving statistical trends for long term and stationary trends short term (3 years) trends for fecal coliform bacteria - No health advisory but failed part two of the Washington State water quality standard. Current water quality is moderate with some periods of elevated bacteria levels. - 305(b): DO(5), FC(4B), pH(1) - 303(d): DO	- Soils: Peat and gravels - Riparian condition is poor from the creek's mouth to river mile 0.8, with encroachment of businesses and backyards (minimum and optional jurisdiction) (Haring, 2000). - LWD is poor and consists mainly of deciduous species in lower 2 miles of creek. Little pool diversity in this reach (Haring, 2000). - Substrate in the mainstem is rated as fair, however slides in Parish Creek contribute fines downstream (Haring, 2000). - The unnamed tributary in the optional jurisdiction contains good substrate and rearing habitat conditions upstream of the SR 3 fish passage barrier (Haring, 2000).

GORST CREEK PSNERP Watershed # 41500 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
			- Commercial timber is the primary land use in the watershed (managed by the City of Bremerton); other land uses are residential development, commercial industry and highway corridors (SR 2 and SR 16).

GORST CREEK PSNERP Watershed # 41500 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Chinook (1) - Chum - Coho - Steelhead (1) - Cutthroat	- Shorebird concentrations - Waterfowl concentrations - Osprey (2) - Bald Eagle (1) - Great Blue Heron (2)	- Knotweed	- Category C Refugia

GORST CREEK PSNERP Watershed # 41500 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Limited Area of More Intense Rural Development - Rural Residential - Public Facility - Urban High-intensity Commercial/Mixed Use - Urban Low-density Residential - Urban Industrial Site (minimum shoreline jurisdiction): - Limited Area of More Intense Rural Development - Urban High-intensity Commercial/Mixed Use - Urban Low-density Residential Site (optional shoreline jurisdiction): - Limited Area of More Intense Rural Development - Urban High-intensity Commercial/Mixed Use	**41500** Area: 6159 Stream Miles: 32 Drains to Drift Cell #: 34 Pasture: 5 Scrub/Shrub: 525 Grassland: 159 Wetland: 176 Deciduous: 258 Evergreen: 3532 Mixed: 661 Total Forested: 4451 72.30% Total Impervious: 817 13.30%	- Jarstad Park, City of Bremerton (adjacent to minimum jurisdiction area) - Public access at Jarstad Park, picnic area	- Moderate Geologic Hazard (partial in minimum and optional jurisdiction) - CARA Cat. 1 (minimum jurisdiction) - CARA Cat. 2 (optional jurisdiction) - Streams (Type-F) - Wetlands - Class 1 and 2 Wildlife Habitat Conservation Area	- Port of Bremerton - Clifton Water System - State cleanup site (4 nearby locations) - Upstream of minimum jurisdiction area, at river mile 0.75 two Chinook rearing ponds and two yearling fall Chinook raceways are operated by the Suquamish Tribe. - Three fish passage barriers identified in optional jurisdiction area. One is a culvert under SR 3 with a significant drop at outlet; two additional barrier culverts upstream. - The Gorst Creek Restoration Project- replaced 700 feet of concrete channel with 1000 feet of built-meandering channel, in Jarstad Park (upstream/ outside of minimum

GORST CREEK PSNERP Watershed # 41500 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Residential Vacant/Underutilized Parcels: 14% Commercial Vacant/Underutilized Parcels: 45%				jurisdiction). - State highway 3 is located within minimum jurisdiction - State highways 3 and 16 is located within optional jurisdiction - Roads that intersect jurisdiction: ▪ W. Bellfair Valley Rd.

GORST CREEK PSNERP Watershed # 41500 RECOMMENDATIONS	JURISDICTION MAP
- Promote sustainable forestry throughout the watershed - Restore natural channel configuration and floodplain function in the lower 0.8 miles; seek removal or relocation of approximately six businesses and 10-12 residences that encroach on the natural floodplain - Restore functional riparian zones from the mouth to the old diversion site at RM 0.8 - Reduce impacts of road crossings, including indentified fish passage barriers, increased stormwater runoff to surface waters, water quality impacts from stormwater runoff and increased fine sediment delivery from road surfaces and associated ditch maintenance - Implement Low Impact Development strategies, including stormwater water quantity control and water quality treatment for stormwater runoff, particularly those areas just upstream of SR 3 - Assess condition and life expectancy of 600-foot long culvert under fill just upstream of SR 3; prevent collapse of culvert and ensure continued fish passage - Develop and implement a LWD strategy in the lower 2.3 miles of Gorst Creek to provide LWD presence and habitat diversity - Identify and correct sources of fecal coliform contamination - Water Flow Management : • Delivery: Re-establish natural cover or use other green • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel and removing any floodplain fill • Groundwater Recharge: Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement or rain gardens • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas and restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.2 Blackjack Creek

BLACKJACK CREEK PSNERP Watershed # 40370 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High/ Moderate-High/ Moderate-High Impairment: High/ High/ Moderate-High Synthesis: Restoration 2/ Restoration 2/ Restoration 2X **Surface Storage:** Importance: Moderate/ High/ High Impairment: High/ High/ High Synthesis: Restoration-Least Impact 1/ Restoration/ Restoration **Groundwater Recharge:** Importance: Moderate-High/ High/ Moderate Impairment: High/ Moderate-High/ Low Synthesis: Restoration 2/ Restoration 1/ Protection 3 **Groundwater Discharge:** Importance: Moderate-High/ Moderate-High/ Moderate-High Impairment: High/ High/ Moderate-High Synthesis: Restoration 2/ Restoration 2/ Restoration 2X **Water Flow Synthesis:** Importance: Moderate/ High/ High Impairment: High/ High/ High Synthesis: Restoration-Least Impact 1/	- 1993 mean discharge 14.9 cfs; min: 4.5 cfs, 74 cfs - 1994 mean discharge 13.5 cfs, min: 4.1 cfs, max: 65 cfs (recorded by Kitsap Public Utility District, 2000) (monitored downstream of jurisdiction) - No further consumptive water appropriation since 1960 (Haring, 2000).	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria - 305(b): DO(5), FCB(5), pH(2) - 303(d) listed for DO and FCB - No health advisory but failed part two of the Washington State water quality standard. Current water quality is poor with periods of elevated bacteria levels. - Kitsap County Public Works, SSWM program Benthic Macroinvertebrate Biological Monitoring ▪ 1998-2006 data indicate overall moderate biotic integrity with a range of BIBI scores, 30-40 (monitoring station is downstream of shoreline jurisdiction)	- Soils: Peat, till and gravels - From the creek's mouth to Sedgwick Road the riparian condition is considered fair, with mixed woody vegetation and limited trail access. In this reach the creek is located within a steep ravine (Haring, 2000). - From Sedgwick Road upstream agriculture encroaches on the riparian area and vegetation is lacking (Haring, 2000). - Upstream of Sedgwick Rd. riparian vegetation is also lacking. At river mile 3.5 LWD placement and fencing has been done by KCD and WDFW. - LWD presence is limited in the upper watershed (Haring, 2000). - Substrate in lower portion considered to be good; however concerns about watershed erosion, slides, vegetation removal, and sedimentation risks (Haring, 2000).

BLACKJACK CREEK PSNERP Watershed # 40370 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Restoration/ Restoration			Land use in the surrounding area is dominated by agriculture, several farms and residential development.

BLACKJACK CREEK PSNERP Watershed # 40370 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Steelhead (1)	- Mountain Quail - Bald Eagle (1)	- Watershed: Giant Hogweed, Tansy Ragwort, Canada Thistle, Bull Thistle, Knotweed	- Category D Refugia (majority of minimum and optional jurisdiction) - Category B Refugia (small length of mainstem in north and optional jurisdiction area in south)

BLACKJACK CREEK PSNERP Watershed # 40370 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Low-density Residential - Urban High-intensity Commercial/Mixed Use - - - Public Facility - Rural Wooded - Rural Protection - Rural Residential Site (minimum shoreline jurisdiction): - Urban Low-density Residential - Rural Protection Site (optional shoreline jurisdiction): - Rural Protection - Rural Residential Residential Vacant/Underutilized Parcels: 43% Commercial Vacant/Underutilized Parcels: 3%	**40370** Area: 7781 Stream Miles: 28 Drains to Drift Cell #: 34 Pasture: 169 Scrub/Shrub: 264 Grassland: 399 Wetland: 352 Deciduous: 607 Evergreen: 2985 Mixed: 903 Total Forested: 4495 57.80% Total Impervious: 2066 26.60%	- None	- Streams (Type-F) - Frequently Flooded Areas - Wetlands (primarily in optional jurisdiction) - Moderate Geologic Hazard (in northern reach of jurisdiction area between SE Lund Ave. and SE Sedgwick Rd.) (not present in optional jurisdiction except for short reach north of SW Lider Rd.) - CARA Category 2, and Category 1 - Class 1 Wildlife Habitat Conservation Area	- Port of Bremerton - Water Service Areas ▪ (minimum jurisdiction): Clifton Waterworks, Annapolis Water District ▪ (optional jurisdiction): KPUD Navy Yard Park; private wells - Blackjack Creek is ditched through agricultural areas, namely upstream of Sedgwick Rd. The floodplain function is maintained overall (Haring, 2000) - Slides, and agriculture are contributing to silt deposition downstream - State cleanup site - Federal superfund cleanup site (southwest of SE Sedgwick Rd./ Geiger Rd. SE intersection) - SE Sedgwick Rd. (major

BLACKJACK CREEK PSNERP Watershed # 40370 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
				road) intersects minimum jurisdiction area - Roads that intersect jurisdiction: ▪ SW Dogwood Rd, SE Lider Rd, Sidney Rd SW

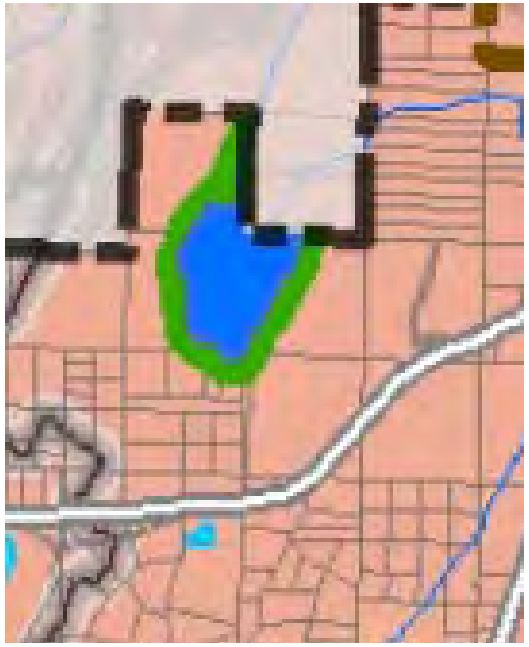
BLACKJACK CREEK PSNERP Watershed # 40370 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Reduce habitat impacts on agricultural lands; develop and implement farm plans that restore stream functions; correct areas that have unrestricted livestock access. - Reduce impacts of road crossings including increased stormwater runoff to surface waters, water quality impacts from stormwater runoff, and increased fine sediment delivery from road surfaces and associated ditch maintenance. - Implement low impact development, including stormwater water quantity control and water quality treatment for stormwater runoff; remediate existing stormwater impacts to the channel. - Restore natural channel configuration and floodplain function through the channelized areas (upstream of Sedgwick Rd). - Restore functional riparian zones throughout watershed with emphasis on agricultural area upstream of Sedgwick Rd. - Identify and correct sources of fecal coliform contamination. - Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.3 Square Lake

SQUARE LAKE PSNERP Watershed # 40370 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Surface Storage:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Groundwater Recharge:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X	- 60 acres - approx. 0.51 miles shoreline length	- 305(b): Invasive Exotic Species (4C)	- Soils: Peat and till - Shoreline jurisdiction is almost entirely within Square Lake State Park. Surrounding land use outside of the jurisdiction is rural residential, more intense development like McMormick Woods to the northeast, and to the west Coulter Creek Heritage Park.

SQUARE LAKE PSNERP Watershed # 40370 **BIOLOGICAL RESOURCES**			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho	- Mountain Quail - Bald Eagle (1)	- Watershed: Giant Hogweed, Tansy Ragwort, Canada Thistle, Bull Thistle, Knotweed	- Category B Refugia

SQUARE LAKE PSNERP Watershed # 40370 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Urban Low-Density Residential - Urban High-intensity Commercial/Mixed Use -Public Facility - Rural Wooded - Rural Protection - Rural Residential Site (shoreline jurisdiction): - Public Facility Residential Vacant/Underutilized Parcels: 14%	**40370** Area: 7781 Stream Miles: 28 Drains to Drift Cell #: 34 Pasture: 169 Scrub/Shrub: 264 Grassland: 399 Wetland: 352 Deciduous: 607 Evergreen: 2985 Mixed: 903 Total Forested: 4495 57.80% Total Impervious: 2066 26.60%	- Square Lake State Park (237 acres)	- Streams (Type-F) - Wetlands - Moderate geologic hazard (entire) - CARA Category 2 - Lakes (Type-F)	- Port of Bremerton - Boat ramp in Square Lake State Park at south end of lake - Roads that intersect jurisdiction: ▪ Square Lake Rd SW

SQUARE LAKE PSNERP Watershed # 40370 RECOMMENDATIONS	JURISDICTION MAP
- Reduce impacts of road crossings including increased stormwater runoff to surface waters, water quality impacts from stormwater runoff, and increased fine sediment delivery from road surfaces and associated ditch maintenance. - Implement low impact development, including stormwater water quantity control and water quality treatment for stormwater runoff; remediate existing stormwater impacts to the channel. - Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill	

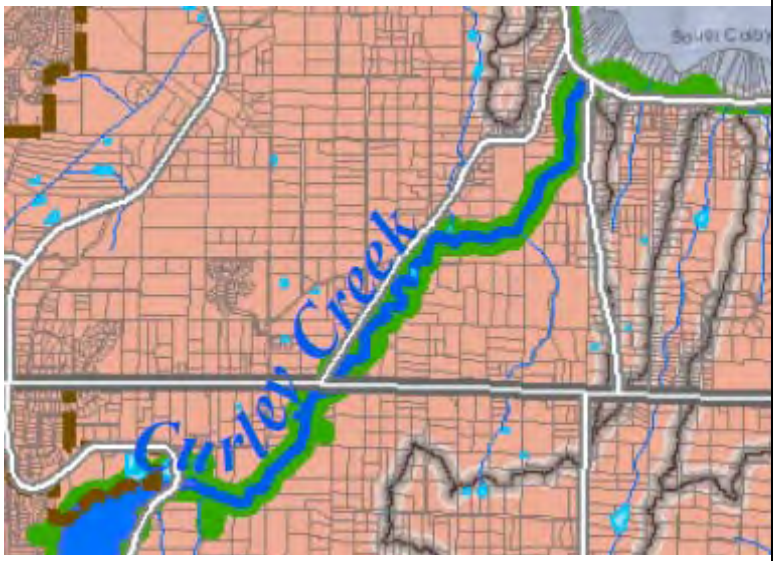
3.3.2.4 Curley Creek and Associated Wetland

CURLEY CREEK and ASSOCIATED WETLAND PSNERP Watershed # 40347 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Surface Storage:** Importance: Moderate Impairment: Moderate-High Synthesis: Restoration-Least Impact 2 **Groundwater Recharge:** Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X	- Exhibits low summer flows with potential of drying up or limiting fish passage (Haring, 2000) - Closed to further consumptive water appropriation during June 15-October 15 (WAC 173-515-040)	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria - 305(b): DO(5), FCB(5), Temp.(5), pH(1) - 303(d)a;DO, FCB, Temperature - No health advisory but failed part two of the Washington State water quality standard. Current water quality is moderate. In 2007 a pollution investigation and correction project was completed to address sources of fecal bacteria. - Periods of low dissolved oxygen and elevated temperature in Curley Creek are believed to be due to the creek's origin in Long Lake, which naturally lowers dissolved oxygen and increases temperatures. - KCPW, SSWM program Benthic Macroinvertebrate Biological	- Slopes: Till, High Slopes, Advanced Outwash and Peat - Headwaters are in wetlands north of Long Lake, which are also shared with Ollala Creek. Long Lake acts as a hydrological buffer during peak flows, moderating effects on habitat downstream (Haring, 2000). - From the river's mouth upstream to Sedgwick Rd. the riparian buffers are composed of mixed forest and are of generally good condition. From Sedgwick Rd. upstream to Long Lake the riparian condition is heavily affected by agriculture, with high abundance of invasive blackberry, lack of riparian buffers (Haring, 2000). - LWD condition is good with key large pieces downstream of Sedgwick Rd. There has been recruitment of LWD in this reach and north of Sedgwick Rd. to Long Lake. However, in this latter

CURLEY CREEK and ASSOCIATED WETLAND PSNERP Watershed # 40347 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
		Monitoring ▪ 2000-06 data indicate overall moderate-high biotic integrity with a range of BIBI scores, 27-44 (monitoring station is near the creek's mouth) ▪ There was only 1 occurrence of a high score (2003)	reach LWD abundance and condition is poor (Haring, 2000). - Substrates are mainly cobble from river mouth upstream to river mile (RM) 1.0. From RM 1.0-1.9 are generally stable and this reach has majority of spawning gravels. Upstream of Sedgwick Rd. substrate is generally natural sand/ silt (Haring, 2000). - Surrounding land use is rural residential and agriculture.

CURLEY CREEK and ASSOCIATED WETLAND PSNERP Watershed # 40347 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known**	**Non-regulatory**
- Chinook (1) - Chum - Coho - Steelhead (1)	- Mountain Quail - Osprey (2) - Bald Eagle (1)	- Knotweed - Watershed: Knotweed, Purple Loosestrife, Knapweed, Tansy Ragwort	- Category C Refugia

CURLEY CREEK and ASSOCIATED WETLAND PSNERP Watershed # 40347 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Protection - Rural Residential - Public Facility - Urban Low-density Residential - Urban High-intensity Commercial/Mixed Use Site (shoreline jurisdiction): - Rural Protection - Rural Residential Residential Vacant/Underutilized Parcels: 37%	**40347** Area: 8632 Stream Miles: 32 Drains to Drift Cell #: 29 Pasture: 196 Scrub/Shrub: 260 Grassland: 274 Wetland: 209 Deciduous: 1469 Evergreen: 2153 Mixed: 1754 Total Forested: 5376 62.30% Total Impervious: 2056 23.80%	- None	- Moderate Geologic Hazard (partial: from creek's mouth upstream approximately 1.5 miles) - Wetlands (small pockets near creek's mouth, southeast of Locker Rd. SE, south of SE Sedgwick Rd., east of Long Lake Rd. SE) - Frequently Flooded Area - Streams (Type-F) - CARA Category 2 - Class 1 and 2 Wildlife Habitat Conservation Area	- Manchester Water District 11; private wells - Port of Manchester - Fish passage barrier approximately 1 mile north of river's mouth (weir with flow notch) - SE Sedgwick Rd. (major road) intersects jurisdiction - Roads that intersect jurisdiction: ▪ Banner Rd SE, SE Southworth Dr, Locker Rd SE, SE Sedgwick Rd

CURLEY CREEK and ASSOCIATED WETLAND PSNERP Watershed # 40347 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Reduce habitat impacts on agricultural lands, including development and implementation of farm plans that restore stream functions - Reduce impacts of road crossings, including indentified fish passage barriers, increased stormwater runoff to surface waters, water quality impacts from stormwater runoff and increased fine sediment delivery from road surfaces and associated ditch maintenance - Maintain water chemistry and aquatic vegetation in Long Lake in a manner that protects salmonid habitat conditions in the lake and downstream - Develop and implement a short-term LWD strategy to provide LWD presence and habitat diversity until full riparian function is restored, particularly upstream of Sedgwick Rd. - Restore functional riparian zones throughout watershed, particularly in disturbed areas upstream of Sedgwick Rd; restore historic wetlands and off-channel habitat - Evaluate fish passage status of weir with flow notch just upstream of mouth of Unnamed 15.0187; implement corrective actions as warranted - Protect integrity of natural estuary - Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.5 Long Lake and Associated Wetland

LONG LAKE and ASSOCIATED WETLAND PSNERP Watershed # 40347, 40711 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: MH/ MH Impairment: MH/ MH Synthesis: R2X/ R2X **Surface Storage:** Importance: M/ M Impairment: MH/ MH Synthesis: RLI2/ RLI2 **Groundwater Recharge:** Importance: MH/ M Impairment: L/ MH Synthesis: P2/ RLI2 **Groundwater Discharge:** Importance: MH/ M Impairment: MH/ MH Synthesis: R2X/ RLI2 **Water Flow Synthesis:** Importance: MH/ M Impairment: MH/ MH Synthesis: R2X/ RLI2	-339 acres - 12-feet maximum depth - 5.1 miles shoreline length	- - 2009: Met the E.Coli standard, FCB (3) - Two public health advisories were issued due to Potently Toxic Blue-Green Algae - Classified as 'eutrophic' (poor water clarity, with high plant and animal production) - 305(b): Invasive Exotic Species(4C), FC(2) - Excessive aquatic plants and algae present (DOE Lake Monitoring Program, 1997)	- Soils: Till, Peat, Lacustrine, Advanced Outwash - Much of these wetlands acts as headwaters for Ollala and Curley Creek. During peak flows the wetland tenuates the flow downstream and affects habitat impacts (Haring, 2000). - Surrounding land use is rural residential and agriculture. Residential development surrounds lake. - Long Lake acts as a hydrological buffer during peak flows, moderating effects on habitat downstream (Haring, 2000).

LONG LAKE and ASSOCIATED WETLAND PSNERP Watershed # 40347, 40711 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Present	**Present**		**Non-regulatory**
- Coho -Chum - Steelhead (1) - Cutthroat	- Mountain Quail -Waterfowl Concentrations - Osprey (2) - Bald Eagle (1)	- Watershed: Knotweed, Purple Loosestrife, Knapweed,Tansy Ragwort, Giant Hogweed - Large populations of introduced game fish exist in lake and may pose a predation problem for juvenile salmonids	- Category C Refugia (Ollala)

LONG LAKE and ASSOCIATED WETLAND PSNERP Watershed # 40347, 40711 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Protection - Rural Residential - Public Facility - Urban Low-density Residential - Urban High-intensity Commercial/Mixed Use - Mineral Resource Site (shoreline jurisdiction): - Rural Protection - Rural Residential - Public Facility Residential Vacant/Underutilized Parcels: 21%	**40347 40711** Area: 8632 4770 Stream Miles: 32 22 Drains to Drift Cell #: 29 128 Pasture: 196 121 Scrub/Shrub: 260 208 Grassland: 274 315 Wetland: 209 192 Deciduous: 1469 675 Evergreen: 2153 1455 Mixed: 1754 1136 Total Forested: 5376 3265 62% 69% Total Impervious: 2056 659 24% 14%	- Long Lake Regional County Park (24.8 acres) - WDFW Public Access (concrete boat launch for motorized boats) - Public Fishing Access on west shore at Long Lake Park	- Moderate Geologic Hazard (partial: west and east shore), High Geologic Hazard (partial: short sections of southwest shore) - Wetlands (wetland pockets at north end, west of Long Lake Rd. SE) - Frequently Flooded Area - Streams (Type-F) -Lake - CARA Cat. 2, Cat. 1 - Class 1 and 2 Wildlife Habitat Conservation Area	- WA Water Service Co.; WA Water-Long Lake View Est 1-5; Long Lake Annapolis Water District; private wells - Port of Bremerton - Long Lake Boat Launch, concrete boat launch - Aerial review shows numerous docks (approx. 77) along shoreline - Airstrip at SE Fragaria Rd. and SE Olalla Valley Rd. is adjacent but outside of jurisdiction - Agricultural activities impact riparian buffer and floodplain. - Roads that intersect jurisdiction: SE Knutsen Ln, SE Mullenix Rd, Long Lake Rd., Domar Dr.

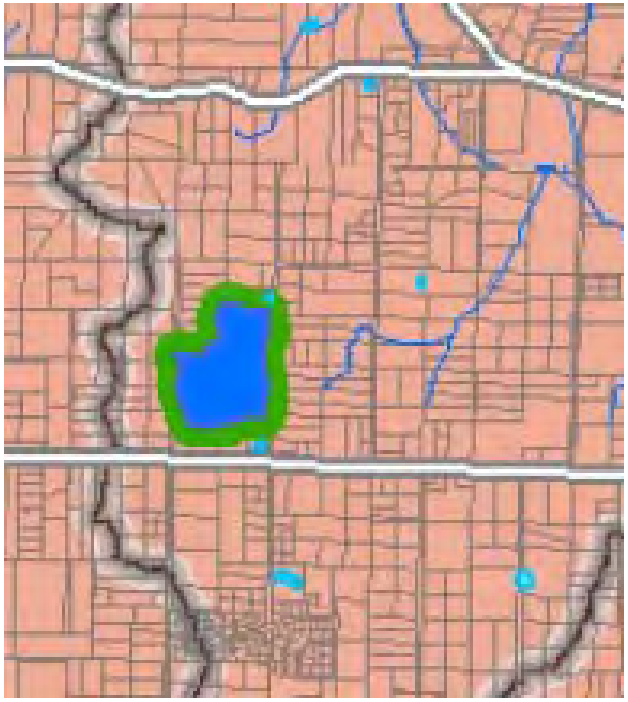
LONG LAKE and ASSOCIATED WETLAND PSNERP Watershed # 40347, 40711 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill - Maintain water chemistry and aquatic vegetation in Long Lake in a manner that protects salmonid habitat conditions in the lake and downstream - Restore functional riparian zones throughout watershed	

3.3.2.6 Mace Lake

MACE LAKE PSNERP Watershed # 40711 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Surface Storage:** Importance: Moderate Impairment: Moderate-High Synthesis: Restoration-Least Impact 2 **Groundwater Recharge:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X	-	- None - Aerial review shows high densities of aquatic plant growth	- Soils: Peat - Residential development surrounds the lake.

MACE LAKE PSNERP Watershed # 40711 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Present	**Present**		**Non-regulatory**
- Unknown	- Wood Duck	- Watershed: Knotweed, Giant Hogweed	- None

MACE LAKE PSNERP Watershed # 40711 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Protection - Rural Residential - Public Facility - Mineral Resource Site (shoreline jurisdiction): - Rural Protection Residential Vacant/Underutilized Parcels: 21%	**40711** Area: 4770 Stream Miles: 22 Drains to Drift Cell #: 128 Pasture: 121 Scrub/Shrub: 208 Grassland: 315 Wetland: 192 Deciduous: 675 Evergreen: 1455 Mixed: 1136 Total Forested: 3266 68.50% Total Impervious: 659 13.80%	- None	- Wetlands (entire) - Lakes (Type-N) - CARA Category 2	- WA Water Service Co.; private wells - Port of Bremerton - Aerial review shows no shoreline docks - Roads that intersect jurisdiction: ▪ Fagerud Rd SE

MACE LAKE PSNERP Watershed # 40711 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.7 Burley Creek

BURLEY CREEK PSNERP Watershed # 30001 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High/ Moderate-High Impairment: Moderate-High/ High Synthesis: Restoration 2X/ Restoration 2 **Surface Storage:** Importance: Moderate-High/ Moderate-High Impairment: Moderate-High/ High Synthesis: Restoration 2X/ Restoration 2 **Groundwater Recharge:** Importance: Moderate-High/ High Impairment: Moderate/ Moderate-High Synthesis: Protection 2-Restoration / Restoration 1 **Groundwater Discharge:** Importance: High/ Moderate-High Impairment: High/ High Synthesis: Restoration/ Restoration 2 **Water Flow Synthesis:** Importance: Moderate-High/ Moderate-High Impairment: Moderate-High/ High Synthesis: Restoration 2X/ Restoration 2	- Closed to further consumptive water appropriation (WAC 173-515-040) - 1991-1999: Instream flows ranged from 17.5-42.7 cfs for mean discharge, min: 8.2 cfs, max: 308 cfs. Of particular note is increase in flows beginning in 1996, a potential result of increased stormwater runoff. - Mean annual flow greater than 20 cfs at lowest reach	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria - 305(b): Estuary- DO(5), FCB(4B), pH (2) Bear Creek-DO(5), FCB(4B), pH(1) To SW Swofford Ln- FCB(2) To end of jurisdiction- FCB(4B) - 303(d): DO - KCPW, SSWM program Benthic Macroinvertebrate Biological Monitoring ▪ 2000-04 data indicate overall moderate biotic integrity with a range of BIBI scores, 31-40 (monitoring station is in the optional shoreline jurisdiction) - The Burley Watershed /Prevention Restoration Project was completed in 2001 to deal with pollution problems arising from failing septic systems and poor livestock management	- Soils: Till and peat (within minimum jurisdiction area) - Soils: Lacustrine, peat and gravels (within optional jurisdiction area) - Riparian condition is poor from river's mouth to river mile 0.75 (minimum jurisdiction area) with high-density rural development (Haring, 2000). - Riparian condition is fair with a dominating component of deciduous trees from river mile 0.75-2; riparian condition is poor upstream of river mile 2, heavily impacted by agriculture (optional jurisdiction area) (Haring, 2000) - Substrate is poor from river's mouth to Oak St. (within minimum and optional jurisdiction). Upstream of Oak St. gravel quality is generally good (optional jurisdiction) (Haring, 2000).

BURLEY CREEK PSNERP Watershed # 30001 **BIOLOGICAL RESOURCES**			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Chinook (1) (minimum jurisdiction area and southern reach of optional jurisdiction area, upstream to SE Burley Olalla Rd.) - Chum (minimum jurisdiction area and southern reach of optional jurisdiction area, upstream to SE Burley Olalla Rd.) - Coho (minimum and optional jurisdiction areas) - Steelhead (1) (minimum and optional jurisdiction areas)	- Osprey (2)	- Knotweed - Watershed: Tansy Ragwort, Knotweed, Butterfly Bush, Canada Thistle	- Category D Refugia

BURLEY CREEK PSNERP Watershed # 30001 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Protection - Rural Residential - Public Facility -Mineral Resource Site (minimum shoreline jurisdiction): - Rural Residential Site (optional shoreline jurisdiction): - Rural Protection -Rural Residential Residential Vacant/Underutilized Parcels: 28%	**30001** Area: 6642 Stream Miles: 22 Drains to Drift Cell #: 1 Pasture: 302 Scrub/Shrub: 267 Grassland: 256 Wetland: 200 Deciduous: 1016 Evergreen: 2014 Mixed: 1028 Total Forested: 4058 61.10% Total Impervious: 1541 23.20%	- Burley Park, Kitsap County (adjacent to but outside of minimum jurisdiction area)	- Moderate Geologic Hazard (in optional jurisdiction area, partial: primarily in reach that crosses SE Burley Olalla Rd.) - CARA Category 1 and 2 (minimum jurisdiction area) - CARA Category 2 (optional jurisdiction area) - Streams (Type-F) - Wetlands (in optional jurisdiction area) - Frequently Flooded Area - Class 1 and 2 Wildlife Habitat Conservation Area	- Port of Bremerton - WA Water Service Co.; private wells - Significant amount of channelization (Haring. 2000) - Complete fish passage barrier at Bethel-Burley Rd. crossing (identified by KCPW, prioritized as #3/35) (minimum jurisdiction) - Two partial fish passage barriers at Burley-Olalla Rd. and Bethel-Burley SE Rd. crossings (identified by KCPW, prioritized as #32 and #33 /35) (optional jurisdiction) - Impacts to water quality due to agricultural and livestock use of the riparian buffers, and lack of best management practices

BURLEY CREEK PSNERP Watershed # 30001 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
				- Roads that intersect minimum jurisdiction: Bethel Burley Rd Se, Se Spruce Rd, Se Fenton Rd - Roads that intersect optional jurisdiction: Bethel Burley Rd SE, SE Oak Rd, Se Burley Olalla Rd, SE Holman Rd

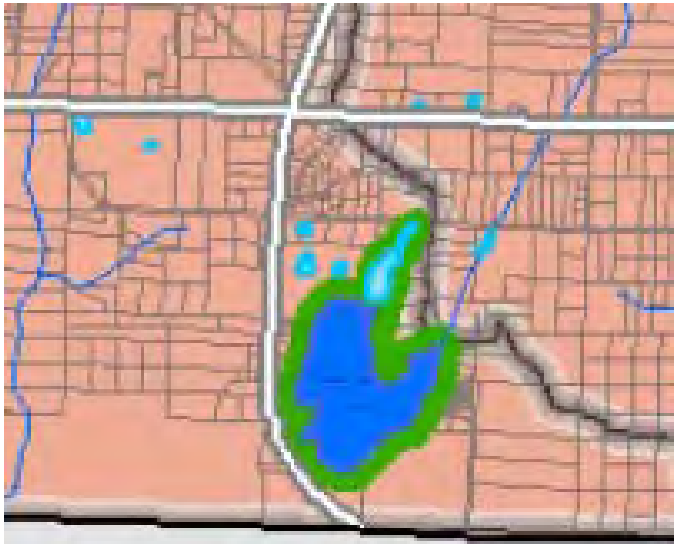
BURLEY CREEK PSNERP Watershed # 30001 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Implement LID, including stormwater water quantity control and water quality treatment for stormwater runoff - Reduce habitat impacts on agricultural lands, including development and implementation of farm plans that restore stream functions - Reduce impacts of road crossings, including indentified fish passage barriers, increased stormwater runoff to surface waters, water quality impacts from stormwater runoff and increased fine sediment delivery from road surfaces and associated ditch maintenance - Prioritize and correct identified fish passage barrier throughout watershed - Restore natural channel configuration in channelized portions - Implement a comprehensive program to prevent unrestricted livestock access to Burley Creek and tributaries - Develop and implement a LWD strategy in the lower two miles of Burley Creek to provide LWD presence and habitat diversity - Restore riparian presence and function on Burley Creek from mouth to river mile (RM) 0.75 and upstream of RM 2.0; encourage conifer regeneration in deciduous stands from RM 0.75-2.0 that historically had a coniferous component - Ensure that County Roads Department maintain roadside ditches in a manner that does not result in fine sedimentation into creeks - Identify and correct sources of fecal coliform contamination of freshwater - Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlets and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also, remove any floodplain fill. • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas; restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.8 Horseshoe Lake

HORSESHOE LAKE PSNERP Watershed # 30008 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: High Synthesis: Restoration 2 **Surface Storage:** Importance: Moderate Impairment: High Synthesis: Restoration- Least Impact 1 **Groundwater Recharge:** Importance: High Impairment: Moderate-High Synthesis: Restoration 1 **Groundwater Discharge:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2 **Water Flow Synthesis:** Importance: Moderate-High Impairment: High Synthesis: Restoration 2	- 40 acres - mean depth 12 ft. - max depth 20 ft. - volume 480 acre-ft -1.3 miles shoreline (DOE website)	- Meso-eutrophic classification (water that is periodically cloudy with algae growth, and has moderate plant and animal production) - 2009: met E.coli standard; no swimmers itch; 33 cases of waterborne in late July illness (Norovirus).	- Soils: South shore is mainly till; north shore comprised of mainly gravels and peat - General lack of riparian vegetation due to development and cleared land for public facilities

HORSESHOE LAKE PSNERP Watershed # 30008 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2) - Mountain Quail	- Nuttall's waterweed, yellow flag iris, lake quillwort, spreading rush, water-purslane, stonewort, fragrant waterlily, reed canarygrass, slender pondweed, big floating bladderwort (DOE website) - Watershed: Tansy/Ragwort, Bull Thistle, Butterfly Bush (KCNWP)	- None

HORSESHOE LAKE PSNERP Watershed # 30008 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential - Rural Industrial - Mineral Resource - Public Facility Site (shoreline jurisdiction): - Rural Residential Residential Vacant/Underutilized Parcels: 25%	**30008** Area: 6741 Stream Miles: 20 Drains to Drift Cell #: MINTER Pasture: 23 Scrub/Shrub: 390 Grassland: 371 Wetland: 253 Deciduous: 239 Evergreen: 3287 Mixed: 869 Total Forested: 4395 65.00% Total Impervious: 1226 18.00%	- Horseshoe Lake County Park (39 acres at SW shore, swimming, picnic, trails, playground, ballfield; closed 10/1-3/31 annually) - Horseshoe Lake WDFW Public Access (concrete boat launch, motorized boat use, open end of April thru October)	- Cat.2 CARA (entire) - Frequently Flooded Area - Moderate Geologic Hazard (north west and north east shores) - Wetland - Class 2 Wildlife Habitat Conservation Area - Lake	- Multiple SFRs and floats along shoreline and within wetland areas - Pier/floats at "Miracle Ranch" - Channel connecting lake to wetland off of NE shore, north tip crosses SW Spruce Rd. - Horseshoe Ave SW and SW Lake St. (and roads w/in Park) within jurisdiction area - Port of Bremerton - Private wells

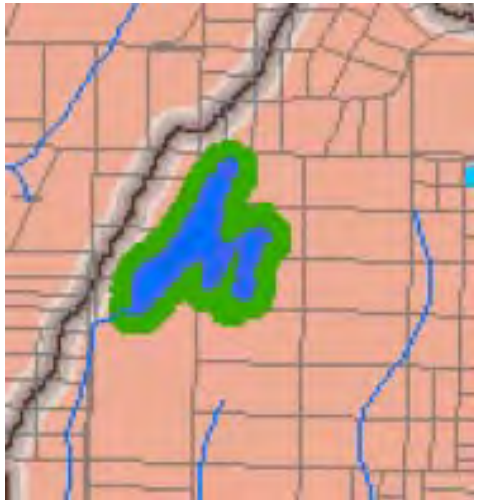
HORSESHOE LAKE PSNERP Watershed # 30008 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Insure proper manure storage and animal access from horse camp - Boater education to keep from spreading aquatic invasive species to other waterbodies - Water Flow Management : • Delivery: Re-establish natural cover or use other green • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel and removing any floodplain fill • Groundwater Recharge: Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement or rain gardens • Groundwater Discharge: Reduce pumpage levels in areas that are important recharge areas and restore natural discharge patterns by plugging/removing ditches and fill	

3.3.2.9 Wicks Lake and Associated Wetland

WICKS LAKE and ASSOCIATED WETLAND PSNERP Watershed #30008 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Surface Storage:** Importance: Low Impairment: Moderate-High Synthesis: Least Impact 2 **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate-High Synthesis: Restoration-Least Impact 2	- approx. 9 acres	- 2009: met E.coli standards; no other reported problems; no nutrient data available	- Riparian vegetation intact (visual of map); small cleared access at Park parking lot, some dirt roads/trials (?) within jurisdiction - Soils: Peat, Till, some gravels

WICKS LAKE and ASSOCIATED WETLAND PSNERP Watershed #30008 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2) - Mountain Quail	- Watershed: Bull and Canada Thistle, Tansy, Butterfly Bush	- None

WICKS LAKE and ASSOCIATED WETLAND PSNERP Watershed #30008 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential - Rural Industrial - Mineral Resource - Public Facility Site (shoreline jurisdiction): - Public Facility Residential Vacant/Underutilized Parcels: 0%	**30008** Area: 6741 Stream Miles: 20 Drains to Drift Cell #: MINTER Pasture: 23 Scrub/Shrub: 390 Grassland: 371 Wetland: 253 Deciduous: 239 Evergreen: 3287 Mixed: 869 Total Forested: 4395 65.00% Total Impervious: 1226 18.00%	- Wicks Lake County Park (100 acres, walking trails, water access)	- Cat. 2 CARA (entire) - Wetland - Class 2 Wildlife Habitat Conservation Area - Lake	- some trails, gravel parking lot - Port of Bremerton - City of Port Orchard-McCormick Woods water

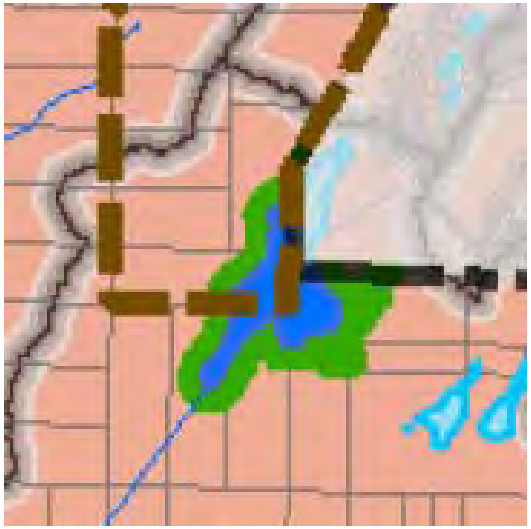
WICKS LAKE and ASSOCIATED WETLAND PSNERP Watershed #30008 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Least Impact to Processes • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Reduce pumpage levels in areas that area important recharge areas. Restore natural discharge patterns by plugging/removing ditches or fill.	

3.3.2.10 Big Lake (McCormick Woods)

BIG LAKE (McCormick Woods) PSNERP Watershed # 30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration	- Lake over 20 acres and associated wetlands	- None	- Soils:Harstine Gravelly Loam (Wetland Delineation Report, Dueker) - Small island in southeast bend (lake elevation at 440', island up to 450')

BIG LAKE (McCormick Woods) PSNERP Watershed # 30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- None/Unknown	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush	- Area of Ecological Significance

BIG LAKE (McCormick Woods) PSNERP Watershed # 30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Urban Low-Density Residential - Public Facility - Incorporated City Residential Vacant/Underutilized Parcels: 25%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- Coulter Creek Heritage Park (1195 acres, undeveloped; southern half of lake, plus land to the west)	- Cat.2 CARA - Wetland - Class 1 and 2 Wildlife Habitat Conservation Area - Lake	- Adjacent to existing McCormick Woods development (esp. McCormick West) - Port of Bremerton - City of Port Orchard-McCormick Woods water

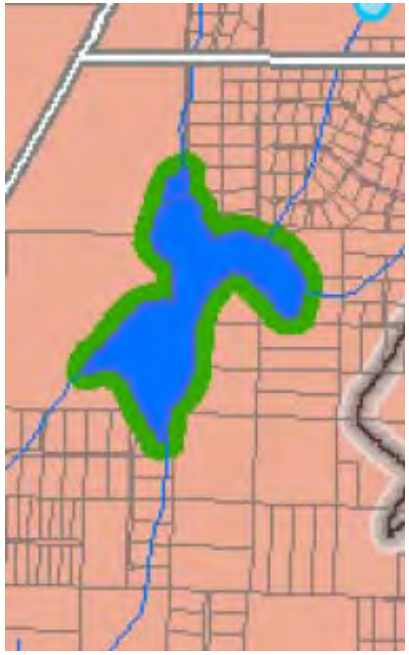
BIG LAKE (McCormick Woods) PSNERP Watershed # 30009 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.11 Oakridge Lake

OAKRIDGE LAKE PSNERP Watershed # 30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High/Moderate-High Impairment: Moderate/Moderate Synthesis: Protection 2-Restoration / Protection 2-Restoration **Surface Storage:** Importance: Moderate/Low Impairment: Moderate/Moderate Synthesis: Protection 3-Restoration / Conservation 2 **Groundwater Recharge:** Importance: Moderate/Moderate Impairment: Low/Low Synthesis: Protection 3/Protection 3 **Groundwater Discharge:** Importance: Moderate/Low Impairment: Moderate/Moderate Synthesis: Protection 3-Restoration /Conservation 2 **Water Flow Synthesis:** Importance: Moderate/Moderate Impairment: Moderate/Moderate Synthesis: Protection 3-Restoration /Protection 3-Restoration	- Lake over 20 acres and associated wetlands	- None	- Recently logged, only a buffer of riparian vegetation around the wetland/lake - Soils: Peat, Till

OAKRIDGE LAKE PSNERP Watershed # 30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush	- None

OAKRIDGE LAKE PSNERP Watershed # 30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Rural Wooded - Rural Residential Residential Vacant/Underutilized Parcels: 21%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- None	- Cat.2 CARA (north shore) - Moderate Geologic Hazard (partial west shore) - Wetland - Class 1 and 2 Wildlife Habitat Conservation Area	- End of Bear Track Lon, some SFRs - Logged, small buffer intact (100-170') (aerial images) - Port of Bremerton - Private Wells

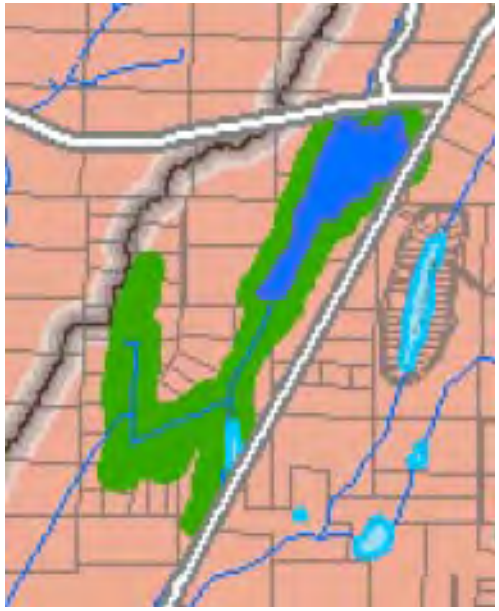
OAKRIDGE LAKE PSNERP Watershed # 30009 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management: • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.12 Lake Flora

LAKE FLORA PSNERP Watershed #30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Sythesis:Protection 3-Restoration	- Lake (?) over 20 acres	- None	- Soils: Peat; Till - Some surrounding areas logged with approx. 130' buffer; one or two tree width buffers from some SFRs and cleared land - North wetland holds standing water; land between north and south sections is dryer (till)

LAKE FLORA PSNERP Watershed #30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush	- None

LAKE FLORA PSNERP Watershed #30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Rural Wooded Residential Vacant/Underutilized Parcels: 22%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- None	- Cat.2 CARA (entire) - Moderate Geologic Hazard (partial) - Wetlands - Class 1 and 2 Wildlife Habitat Conservation Area - Stream (F)	- Port of Bremerton - Private Wells - One SFR within jurisdiction

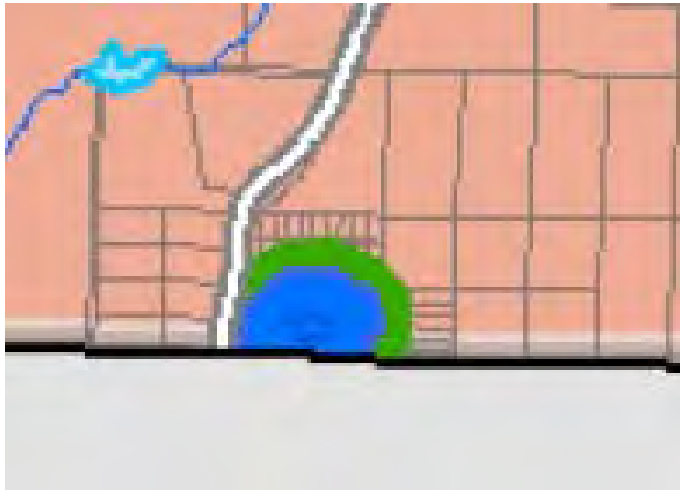
LAKE FLORA PSNERP Watershed #30009 RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.13 Carney Lake

CARNEY LAKE PSNERP Watershed #30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration	- 39 acre lake	- 2009: met E.coli water quality standard; no illness complaints - Classification: meso-oligotrophic (characterized by very clear water and low plant and animal production) - 305(b): Total Phosphorous (1)	- Little to no riparian vegetation; developed w/SFRs (aerials) - West shore residence has some downed trees hanging into lake - Soil: Till

CARNEY LAKE PSNERP Watershed #30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush	- None

CARNEY LAKE PSNERP Watershed #30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Rural Residential - Rural Wooded (only across road) Residential Vacant/Underutilized Parcels: 32%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- None (however, a WDFW public fishing access is just over the County line in Pierce County)	- Moderate Geologic Hazard Area - Frequently Flooded Area - Critical Drainage Area - Class 1 and 2 Wildlife Habitat Conservation Area - Lake	- SFRs - Multiple floats - Carney Lake Rd and 166th are within jurisdiction - Port of Bremerton - Private Wells

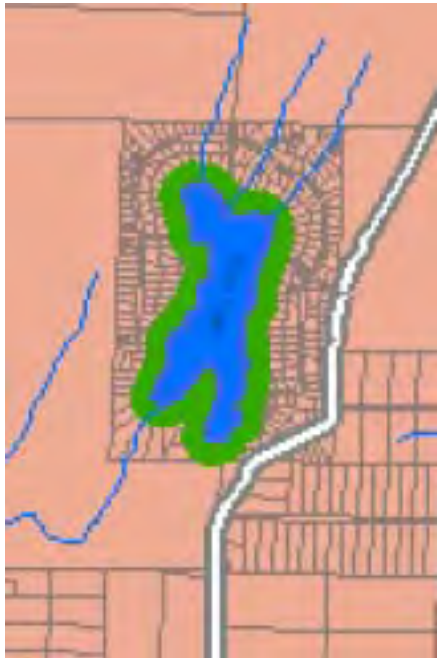
CARNEY LAKE PSNERP Watershed #30009 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.14 Wye Lake

WYE LAKE PSNERP Watershed #30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Surface Storage:** Importance: Low Impairment: Low Synthesis: Conservation 1 **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Water Flow Synthesis:** Importance: Low Impairment: Low Synthesis: Conservation 1	- 39 acres - max depth 15' -mean depth 10' - 370 acre feet volume - 1.7 miles shoreline (DOE, 1993) - Fed by six intermittent inlets and drains via an unnamed outlet to Fern Lake, Rocky Creek (DOE, 2007)	- 2009: met water quality standards for e.Coli; no health complaints - Classification: Meso-oligotrophic (characterized by mostly clear water, with moderate plant and animal production) - 305(b): Invasive Exotic Species (4C)	- Riparian Vegetation: lacking due to residential development and land clearing. Some parcels have a few trees/overhanging vegetation (aerials) - Soils: Till

WYE LAKE PSNERP Watershed #30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush - High algae in summer - Stocked with trout/large mouth bass	- None

WYE LAKE PSNERP Watershed #30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Rural Residential Residential Vacant/Underutilized Parcels: 22%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- WDFW Public Access (concrete boat launch, non-motorized use only, open end of April thru end of October only)	- Cat.2 CARA (entire) - Moderate Geologic Hazard Area (South and NW shores) - Frequently Flooded Area - Class 1 and 2 Wildlife Habitat Conservation Area - Lake	- SFRs with docks, floats and armoring (aerials) - Wye Lake Blvd within jurisdiction area - In 1972, there were 96 nearshore homes, mostly seasonal. In 1993, there were 110 homes and most are year-round residences (DOE, 1993) - 143 parcels around lake shore as of 2009 (KC parcel) - Private Wells - Port of Bremerton - WDFW boat launch - 75+ floats/docks

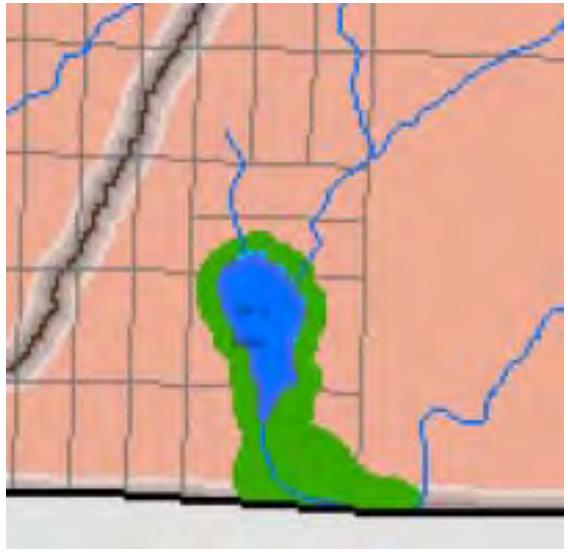
WYE LAKE PSNERP Watershed #30009 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.15 Fern Lake

FERN LAKE PSNERP Watershed #30009 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Surface Storage:** Importance: Low Impairment: Low Synthesis: Conservation 1 **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Water Flow Synthesis:** Importance: Low Impairment: Low Synthesis: Conservation 1	- Lake and associated wetlands over 20 acres - approx. 25' deep	- None	- Riparian vegetation intact (aerials) - Soils: Till

FERN LAKE PSNERP Watershed #30009 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Steelhead (up to lake) (1) - Cutthroat	- Osprey (2) - Western Toad (2) - Pacific Pond Turtle (1) - Mountain Quail	- Watershed: Tansy, Butterfly Bush	- Area of Ecological Significance

FERN LAKE PSNERP Watershed #30009 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - Incorporated City Site (shoreline jurisdiction): - Public Facility Residential Vacant/Underutilized Parcels: 0%	**30009** Area: 7856 Stream Miles: 33 Drains to Drift Cell #: ROCKY Pasture: 4 Scrub/Shrub: 604 Grassland: 235 Wetland: 390 Deciduous: 52 Evergreen: 5632 Mixed: 447 Total Forested: 6131 78.00% Total Impervious: 393 5.00%	- WDFW Public Access (Walk-in only access, open end of April thru end of October only; also known as Koeneman Lake)	- Moderate Geologic Hazard - Wetland - Class 1 and 2 Wildlife Habitat Conservation Area - Lake	- Port of Bremerton - trail from Carney Lake (only access)

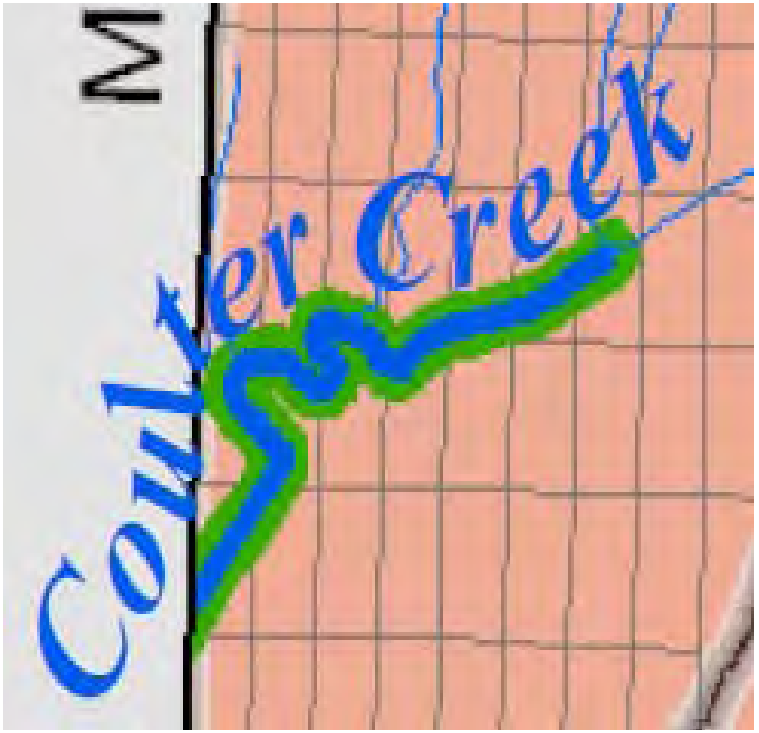
FERN LAKE PSNERP Watershed #30009 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.3.2.16 Coulter Creek

COULTER CREEK PSNERP Watershed #30002 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High / Moderate-High Impairment: Low/Low Synthesis: Protection 2 / Protection 2 **Surface Storage:** Importance: Low / Low Impairment: Low / Low Synthesis: Conservation 1 /Conservation 1 **Groundwater Recharge:** Importance: Moderate-High / Moderate Impairment: Low / Low Synthesis: Protection 2 / Protection 3 **Groundwater Discharge:** Importance: Moderate / Moderate Impairment: Low / Low Synthesis: Protection 3 / Protection 3 **Water Flow Synthesis:** Importance: Moderate / Low Impairment: Low / Low Synthesis: Protection 3 / Conservation 1	- Due to low summer flows, no consumptive appropriation from July 15-November 15t (Haring, 2000) - Stream over 20 cfs mean annual flow (?),	- 2009: long and short-term trends are stationary (sample site is much further upstream at Lake Flora Rd) - 305(b) listed: DO (5), pH (5), temperature (2)	- Good riparian vegetation, area is tree farm/forestry; timber activities have had some impact on forest maturity, forest patterns and in stream LWD recruitment (May 2003). - Soil: north is Till, south is Advanced Outwash - Substrate gravels in good condition (Haring, 2000)

COULTER CREEK PSNERP Watershed #30002 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Chinook (1) - Coho - Chum - Cutthroat - Steelhead (1)	- Reticulate Sculpin (2)	- Unknown	- Area of Ecological Significance - Class "C" Refugia (due to hatchery at mouth, otherwise, Class "A") - Waters requiring supplemental spawning and incubation protections for salmon species

COULTER CREEK PSNERP Watershed #30002 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Public Facility - Incorporated City - Urban Industrial Site (shoreline jurisdiction): - Rural Wooded Residential Vacant/Underutilized Parcels: 0%	**30002** Area: 7135 Stream Miles: 34 Drains to Drift Cell #: COULTER Pasture: 0 Scrub/Shrub: 707 Grassland: 203 Wetland: 276 Deciduous: 65 Evergreen: 5379 Mixed: 436 Total Forested: 5580 82.00% Total Impervious: 40 0.05%	- None	- Cat.2 CARA (entire) - Moderate Geologic Hazard (scattered) - Class 1 and 2 Wildlife Habitat Conservation Area - Stream (F)	- Private Wells - Port of Bremerton

COULTER CREEK PSNERP Watershed #30002 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Incorporate LID into any future development - Retain standing and dead woody material in riparian zones for near-term recruitment of LWD - Identify and correct low DO problem - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.4 North Hood Canal

The North Hood Canal Characterization Area consists of just over 40 miles of marine shoreline from Foulweather Bluff to the boundary of Little Anderson Creek Watershed (approx. Anderson Hill Rd.), and includes all watersheds that empty into Hood Canal between those points. Within this Characterization Area are the communities of Olympic View, Vinland, Lofall, Port Gamble and Driftwood Keys. The area does not include any cities, but does include Naval Base Kitsap-Bangor. Federal lands are not considered Kitsap County Shoreline Jurisdiction and therefore are not included in this report.

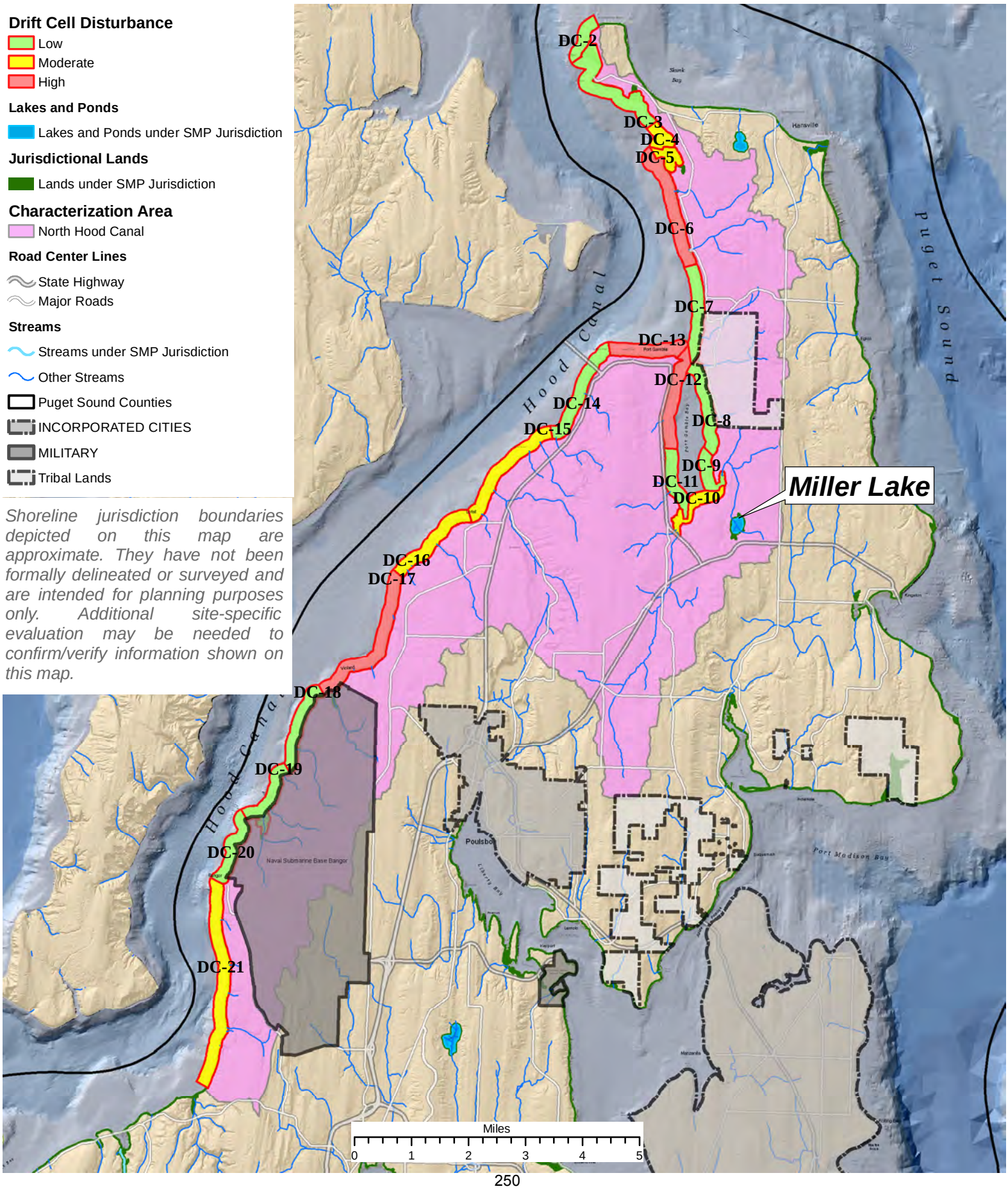
For the marine jurisdiction (200' upland, 1000' intertidal), there are **20 Drift Cells** which are comprised of 121 Nearshore Assessment Units (NAUs). There are 22 known and/or potential public access points within this Characterization Area, which include parks, ports, road-ends, right-of-ways and utility corridors.

For the freshwater jurisdictions, the South Puget Sound Characterization area has **two Freshwater Shoreline Jurisdictions**:

- Foulweather Bluff Preserve
- Miller Lake

The maps below show the drift cells along the marine shoreline and watershed drainage units in the North Hood Canal Characterization area, respectively. The color-coding of the drift cells represents the degree of disturbance, ranging from highly disturbed in red to less-disturbed in green. The map depicting the drainage units also shows the minimum required shoreline jurisdiction in green.

Shoreline Master Program - North Hood Canal
Marine and Freshwater Shoreline Jurisdiction



Shoreline Master Program - North Hood Canal Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009

- PSNERP Drainage Units
- Lakes and Ponds under SMP Jurisdiction

Jurisdictional Lands

- Lands under SMP Jurisdiction

Characterization Area

- North Hood Canal

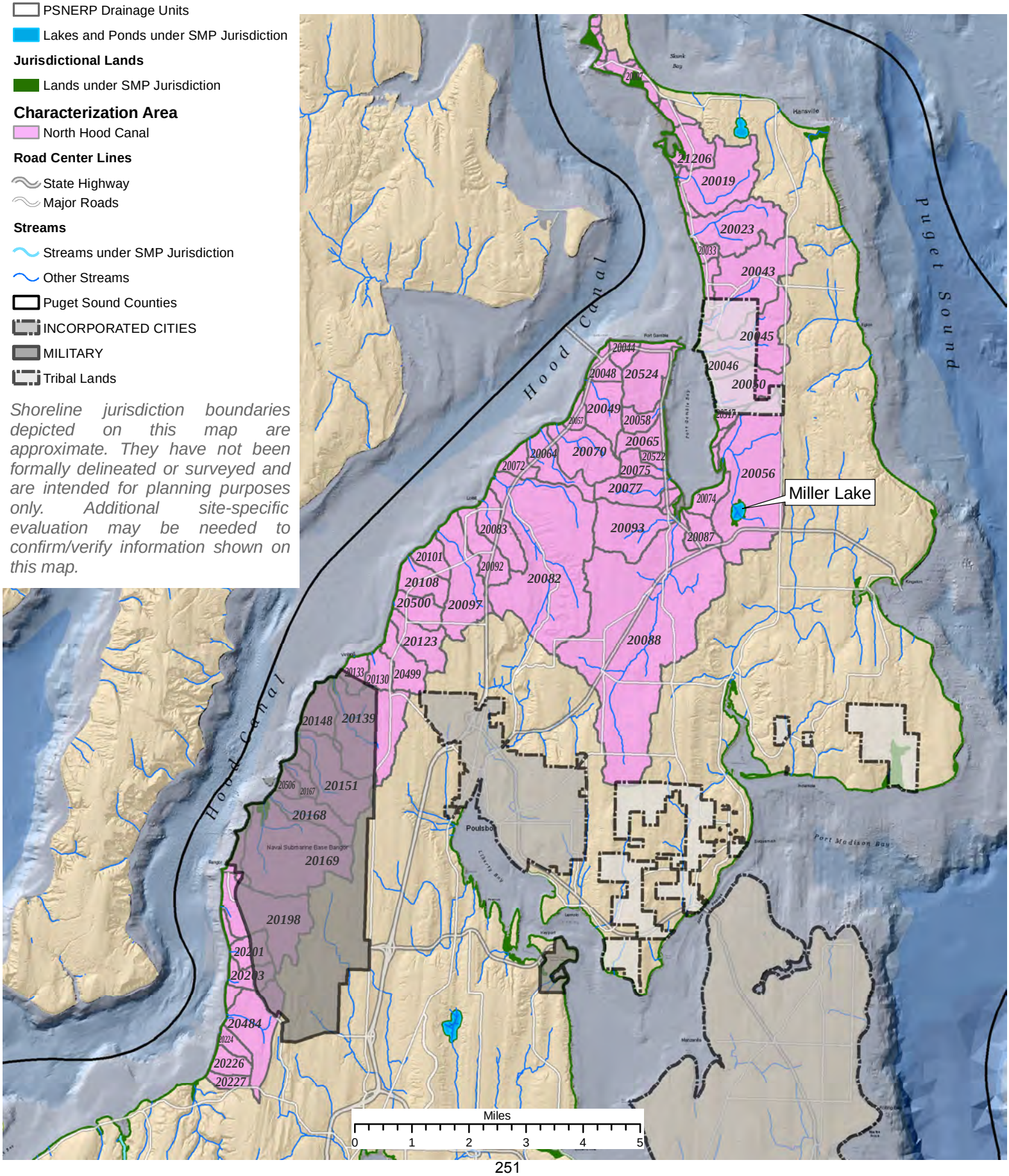
Road Center Lines

- State Highway
- Major Roads

Streams

- Streams under SMP Jurisdiction
- Other Streams
- Puget Sound Counties
- INCORPORATED CITIES
- MILITARY
- Tribal Lands

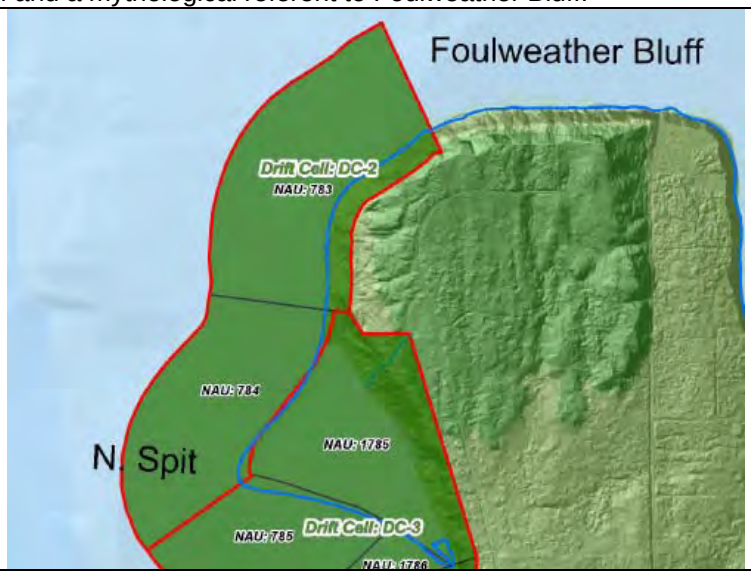
Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.



3.4.1 Marine Shoreline

North Hood Canal Drift Cell DC-2 (Foulweather Bluff)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.58
% Armored: 0%
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20002, 21204, 21256
Terrestrial Veg: Closed Canopy – 52.62%, Non-forest – 7.76%, Other Natural Veg – 39.62%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 23
Future Build-out Population Est: 30
% of Total Parcels Vacant/Underutilized: 23%
Priority Species/Habitat: Cliffs/Bluffs, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Mod/High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: Landform referent to a promontory south of Foulweather Bluff and a mythological referent to Foulweather Bluff.

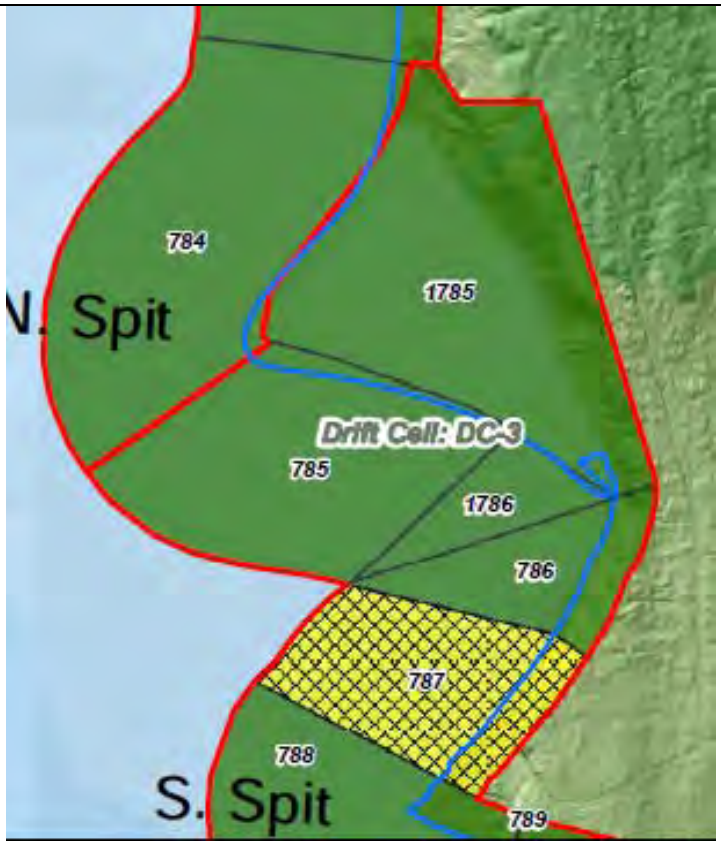


North Hood Canal Drift Cell DC-2 (Foulweather Bluff)

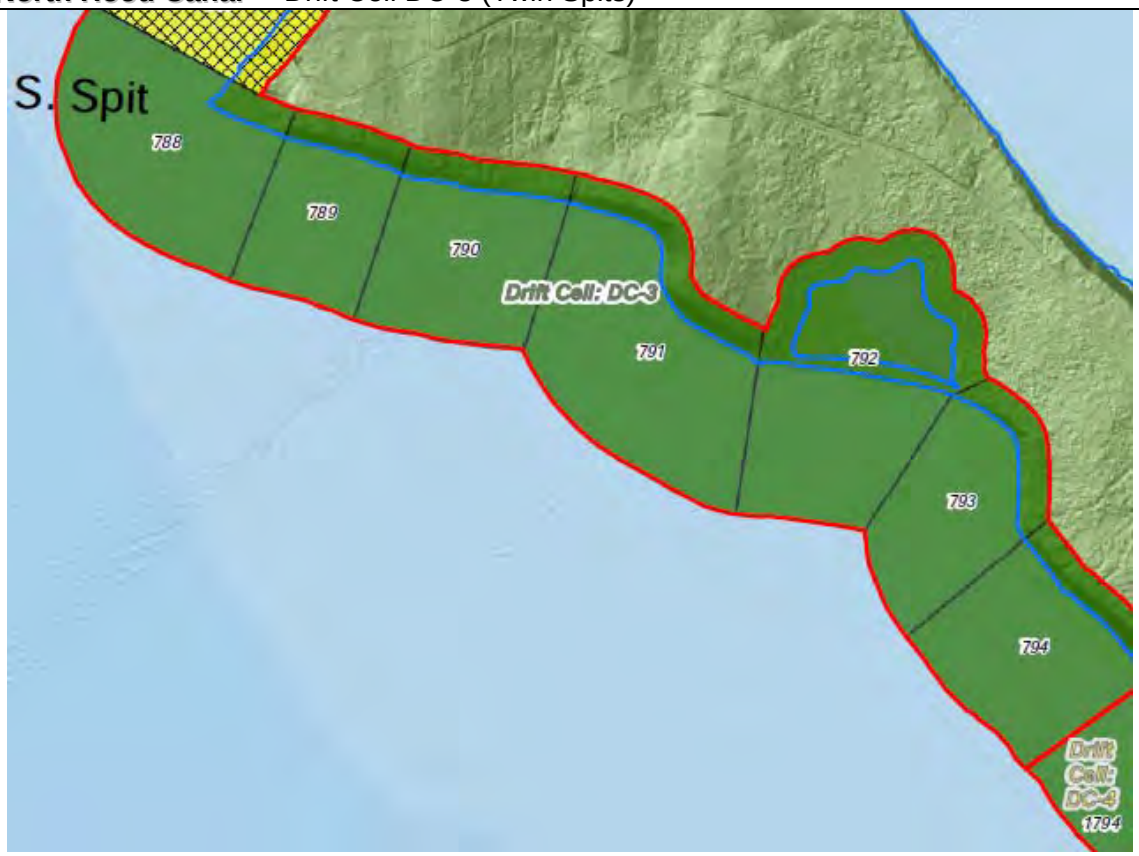
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
783	Sediment Transport, Wave Erosion (Open)		Water Quality		Protect, Conserve, Restore
784	Wave Deposition		Frequency of Disturbance		Protect, Conserve, Restore

North Hood Canal Drift Cell DC-3 (Twin Spits)

Drift Cell Disturbance Score: Low (1)
Length (miles): 3.7
% Armored: 6
Geomorphic Type: Open, Embayment
Fluvial Influences (PSNERP #s): 21204, 21256, 20005, 20006, 20007, 20008, 20011
Terrestrial Veg: Closed Canopy – 45.41%, Non-forest – 23.51%, Other Natural Veg – 31.08%, Poison hemlock, Policeman's Impatiens
Marine Veg: Eelgrass (continuous, patchy), Eelgrass Beds, Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: 1 Undeveloped beach access; 1 Undeveloped ROW access; 1 Preserve
Current Population Est: 140
Future Build-out Population Est: 170
% of Total Parcels Vacant/Underutilized: 18%
Priority Species/Habitat: Wetlands, Estuarine, Waterfowl Concentrations, Pacific Herring spawn areas, Surf Smelt/Sand Lance spawn areas, Bald Eagle, Osprey
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Streams (N), Wetlands, Mod/High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: Artifacts; Landform referents to an isthmus and two promontories south of Foulweather Bluff, habitat complexes south of Foulweather Bluff, and a reference to Foulweather Bluff as a mythological place. An archaeological shell midden site is recorded in the drift cell.



North Hood Canal Drift Cell DC-3 (Twin Spits)



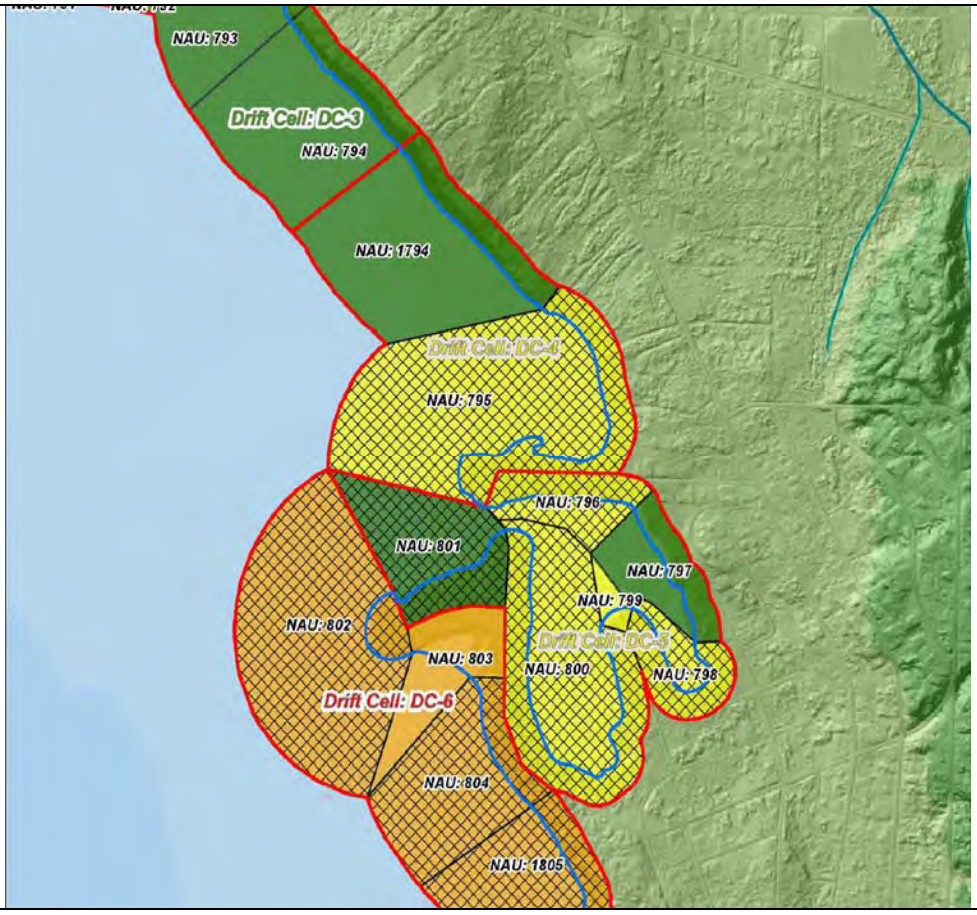
North Hood Canal Drift Cell DC-3 (Twin Spits)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
785	Wave Deposition				Protect, Conserve, Restore
1785	Wave Deposition, Tidal Erosion		Water Quality		Protect, Conserve, Restore
1786	Wave Deposition				Protect, Conserve, Restore
786	Wave Erosion, Sediment Transport		Frequency of Disturbance		Protect, Conserve, Restore
787	Wave Deposition	Armoring, Pilings	Light	Floats and docks w/ floats, Overhanging Structures	Restore, Enhance and Restore Site Processes
788	Wave Deposition	Armoring, Pilings	Wave Energy (Open)	Armoring, Pilings	Protect, Conserve, Restore
789	Wave Erosion, Sediment Transport		Water Quality		Protect, Conserve, Restore
790	Wave Erosion, Wave Deposition,	Armoring, Boat Launch	Substrate, Wave Energy	Armoring	Protect, Conserve, Restore

	Sediment Transport		(Open)		
791	Wave Erosion, Sediment Transport		Frequency of Disturbance		Protect, Conserve, Restore
792	Wave Deposition				Protect, Conserve, Restore
793	Wave Erosion, Sediment Transport	Pilings	Frequency of Disturbance	Pilings	Protect, Conserve, Restore
794	Wave Erosion, Sediment Transport	Pilings	Frequency of Disturbance	Pilings	Protect, Conserve, Restore

North Hood Canal Drift Cell DC-4 (North Driftwood Keys)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 0.89
% Armored: 41
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20011, 21205, 21206
Terrestrial Veg: Closed Canopy– 23.97%, Non-forest – 76.03%, Other Natural Veg – 0%, Policeman's Impatiens
Marine Veg: Eelgrass (continuous)
Overhanging Veg: 0-25%
Public Access: 1 Undeveloped beach access ROW
Current Population Est: 105
Future Build-out Population Est: 115
% of Total Parcels Vacant/Underutilized: 2%
Priority Species/Habitat: Estuarine Zone, Waterfowl Concentrations, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: -1665 (Barrier Estuary)
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Critical Drainage Area
Land Use: Rural Residential
Known Cultural and Historic Resources: None/Unknown



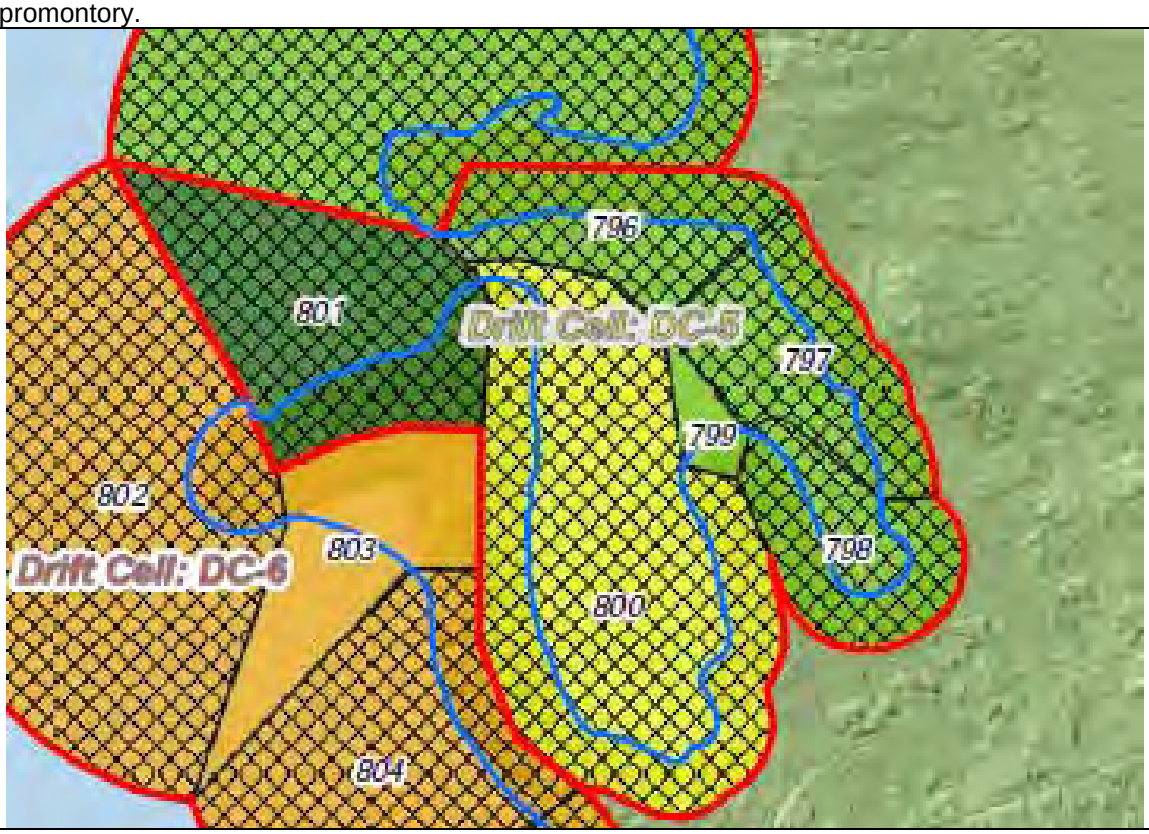
North Hood Canal Drift Cell DC- 4 (North Driftwood Keys)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
1794	Sediment	Armoring,	Substrate,	Armoring,	Protect, Conserve,

North Hood Canal Drift Cell DC- 4 (North Driftwood Keys)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Transport, Wave Erosion (Open)	Boat Launches, Pilings	Wave Energy (Open)	Pilings	Restore
795	Tidal Erosion & Wave Deposition	Armoring, Floats, Pilings, Groins	Substrate		Conserve, Restore, Enhance & Restore Site Processes

North Hood Canal Drift Cell DC-5 (Driftwood Keys)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 1.58
% Armored: 74
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 21206, 21207
Terrestrial Veg: Closed Canopy– 0.59%, Non-forest – 95.79%, Other Natural Veg – 3.62%, Policeman's Impatiens, Tansy
Marine Veg: Salt Marsh Fringe (continuous, patchy)
Overhanging Veg: 0-25%
Public Access: 1 beach access (privately developed, but ROW)
Current Population Est: 230
Future Build-out Population Est: 350
% of Total Parcels Vacant/Underutilized: 32%
Priority Species/Habitat: Area of Ecological Significance, Wetlands, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: -8321 (Barrier Estuary)
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Critical Drainage Area, Wetlands, Mod. Geohazard
Land Use: Rural Residential; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referent to a sheltered lagoon behind a promontory.



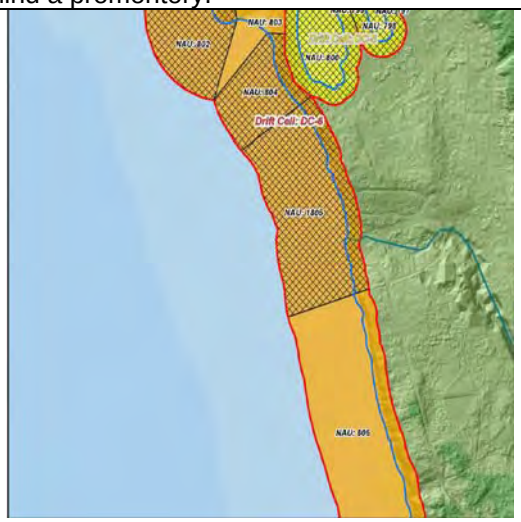
North Hood Canal Drift Cell DC-5 (Driftwood Keys)

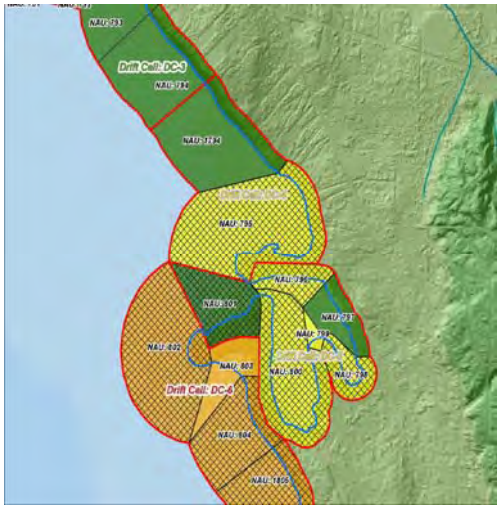
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
796	Tidal Erosion, Wave Deposition	Armoring, Floats, Pilings	Light	Floats and docks w/floats,	Conserve, Restore, Enhance & Restore Site Processes

North Hood Canal Drift Cell DC-5 (Driftwood Keys)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
				Overhanging Structures	
797	Tidal Erosion, Wave Deposition	Armoring, Floats, Pilings	Light	Floats and docks w/floats	Conserve, Restore, Enhance and Restore Site Processes
798	Tidal Erosion, Wave Deposition	Armoring, Floats, Pilings	Light	Floats and docks w/floats,	Conserve, Restore, Enhance & Restore Site Processes
799	Tidal Erosion, Wave Deposition	Armoring	Light	Overhanging Structures	Conserve, Restore, Enhance
800	Tidal Erosion, Wave Deposition	Armoring, Floats, Pilings, Marinas	Light	Floats and docks w/floats, Marinas, Overhanging Structures	Restore, Enhance & Restore Site Processes
801	Tidal Erosion, Wave Deposition	Armoring, Pilings	Wave Energy (Embayment)		Protect, Conserve, Restore & Restore Site Processes

North Hood Canal Drift Cell DC-6 (Hood Canal Drive)

Drift Cell Disturbance Score: High (3)
Length (miles): 2.21
% Armored: 30
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 21206, 21207, 20019, 20020, 20023, 20033
Terrestrial Veg: Closed Canopy– 55.37%, Non-forest – 37.76%, Other Natural Veg – 6.87%
Marine Veg: Eelgrass (continuous, patchy), but in decline ~13%/yr. (DNR, 2006)
Overhanging Veg: 25-50%
Public Access: 2 Undeveloped beach/view access
Current Population Est: 215
Future Build-out Population Est: 270
% of Total Parcels Vacant/Underutilized: 19%
Priority Species/Habitat: Area of Ecological Significance, Waterfowl Concentrations, Pacific Herring Spawning & adult holding areas, Surf Smelt/Sand Lance Spawning, Bald Eagle, Osprey, Great Blue Heron
Shoreform Change: -815 (Barrier Estuary)
Critical Areas: Cat. 1 & 2 CARA, Frequently Flooded Area, Critical Drainage Area, Streams (F), Mod. Geohazard
Land Use: Rural Residential, Public facility
Known Cultural and Historic Resources: Landform referents to a bluff and sheltered lagoon behind a promontory.

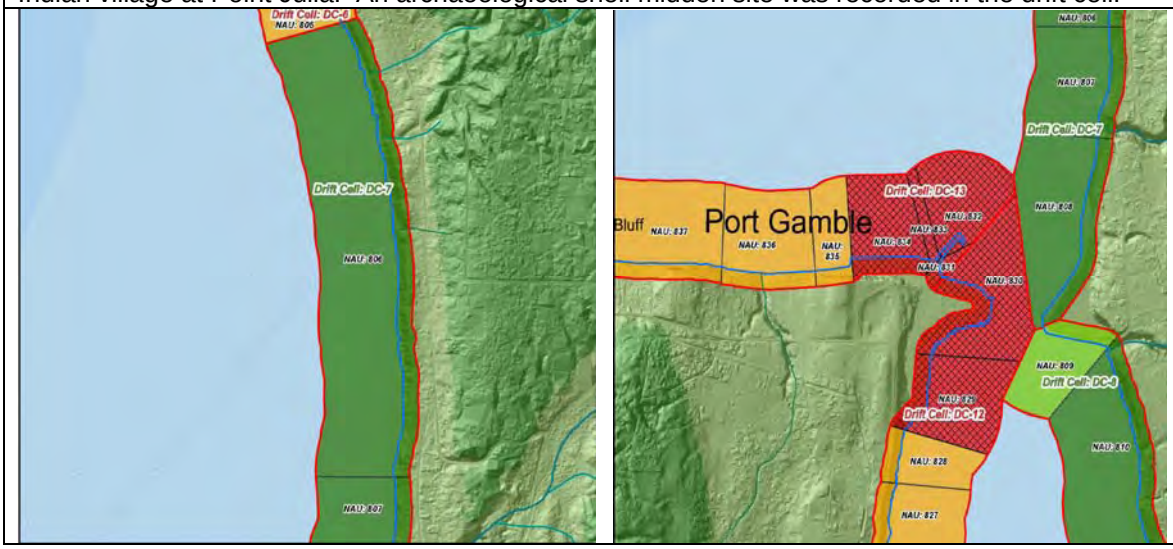




North Hood Canal Drift Cell DC-6 (Hood Canal Drive)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
802	Wave Deposition	Armoring	Wave Energy (Open)	Armoring	Enhance & Restore Site Processes
803	Wave Deposition	Armoring	Water Quality		Enhance
804	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch	Wave Energy (Open)		Enhance & Restore Site Processes
1805	Tidal Erosion, Fluvial & Wave Deposition	Armoring, Floats, Groins	Frequency of Disturbance	Overhanging Structures	Enhance & Restore Site Processes
805	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Floats/Docks	Frequency of Disturbance	Overhanging Structures	Enhance

North Hood Canal Drift Cell DC-7 (Little Boston)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.83
% Armored: 4
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20033, 20040, 20042, 20043, 20045
Terrestrial Veg: Closed Canopy– 46.04%, Non-forest – 33.23%, Other Natural Veg – 20.73%
Marine Veg: Eelgrass (continuous), but in decline ~13% /yr. (DNR, 2006), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 93
Future Build-out Population Est: 108
% of Total Parcels Vacant/Underutilized: 13%
Priority Species/Habitat: Area of Ecological Significance, Pacific Herring Spawning & adult holding areas, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA, Freq. Flooded Area, Streams (N) (U), Mod. Geohazard
Land Use: Rural residential; Tribe; 305(b) Waters of Concern
Known Cultural and Historic Resources: Place name for the historic period historic period Indian village at Point Julia. An archaeological shell midden site was recorded in the drift cell.

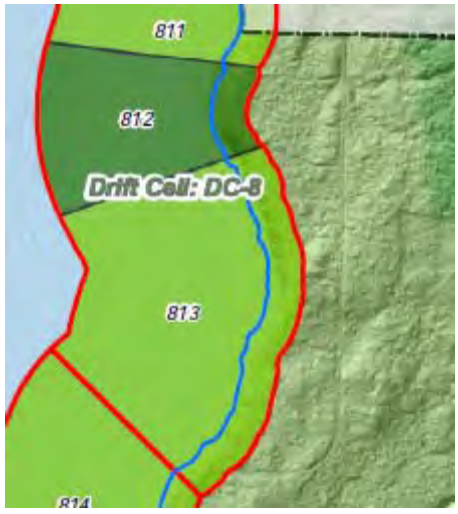


North Hood Canal Drift Cell DC-7 (Little Boston)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
806	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch, Floats/Docks	Light	Floats & Docks w/floats, overhanging structures	Protect, Conserve, Restore
807	Sediment Transport, Wave Erosion (Open), Fluvial & Wave Deposition		Water Quality		Protect, Conserve, Restore
808	Wave Deposition		Water Quality	Water Quality	Protect, Conserve, Restore

North Hood Canal Drift Cell DC-8 (East Port Gamble Bay)

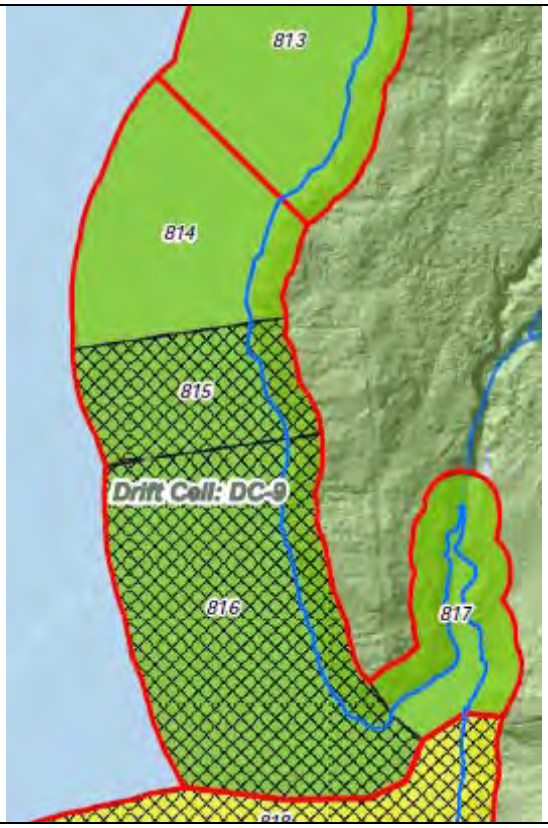
Drift Cell Disturbance: Low (1)
Length (miles): 1.90
% Armored: 12
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20042, 20045, 20046, 20050, 20517, 20518
Terrestrial Veg: Closed Canopy– 55.78%, Non-forest – 33.55%, Other Natural Veg – 10.67%
Marine Veg: Eelgrass (continuous, patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 60
Future Build-out Population Est: 73
% of Total Parcels Vacant/Underutilized: 18%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone/Slough, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Bald Eagle, Osprey
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (F) (N), Wetlands, Mod/High Geohazard
Land Use: Rural residential; Tribe; 305(b) Waters of Concern
Known Cultural and Historic Resources: Artifacts; The drift cell has an archaeological village site and two archaeological seasonal shell midden campsites recorded on the shoreline.



North Hood Canal Drift Cell DC-8 (East Port Gamble Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
809	Wave Deposition	Armoring, Pilings	Water Quality	Water Quality	Conserve, Restore and Restore Site Processes
810	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Pilings, Floats/Docks	Water Quality	Net Pens	Protect, Conserve, Restore
811	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Pilings, Floats/Docks	Water Quality	Net Pens	Conserve, Restore
812	Sediment Transport, Wave Erosion (Open)		Substrate		Protect, Conserve, Restore
813	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings, Floats/Docks	Light	Overhanging Structures	Conserve, Restore

North Hood Canal Drift Cell DC-9 (Martha-John)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.21
% Armored: 21
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20518, 20519, 20056
Terrestrial Veg: Closed Canopy– 58.99%, Non-forest – 39.70%, Other Natural Veg – 1.31%
Marine Veg: Eelgrass (continuous, patchy), Salt Marsh Fringe (patchy)
Overhanging Veg: 25-50%
Current Population Est: 88
Future Build-out Population Est: 118
% of Total Parcels Vacant/Underutilized: 24%
Public Access: 3 Undeveloped ROW beach/view access
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone/Slough, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (F), Mod/High Geohazard
Land Use: Rural Residential, Rural Wooded; 305(b) Waters of Concern
Known Cultural and Historic Resources: Unknown



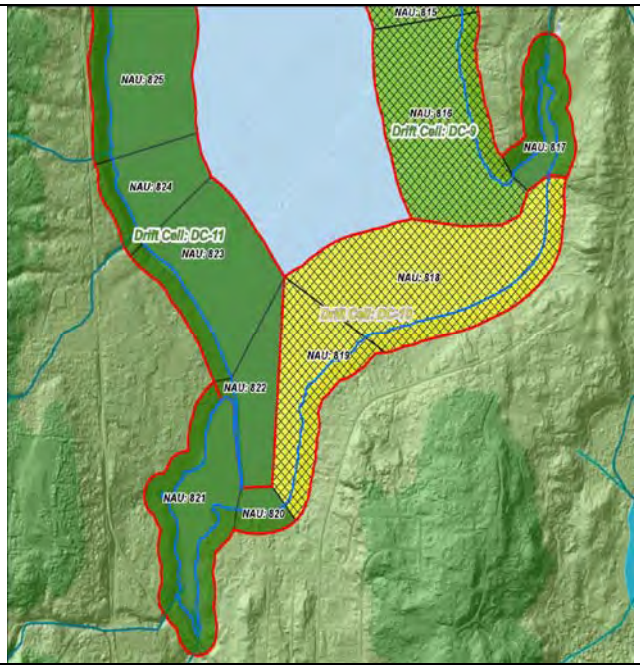
North Hood Canal Drift Cell DC-9 (Martha-John)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
814	Sediment Transport, Wave Erosion (Open)	Armoring	Light	Floats & docks w/floats, Overhanging Structures	Conserve, Restore

North Hood Canal Drift Cell DC-9 (Martha-John)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
815	Wave Deposition	Armoring, Pilings	Light	Floats & docks w/floats, Overhanging Structures	Conserve, Restore & Restore Site Processes
816	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring, Boat Launches, Pilings, Groins	Light	Floats & docks w/floats, Overhanging Structures	Conserve, Restore & Restore Site Processes
817	Tidal Erosion & Fluvial Deposition	Armoring, Floats, Pilings	Water Quality		Conserve and Restore

North Hood Canal Drift Cell DC-10 (Gamble Wood)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 2.17
% Armored: 28
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20056, 20074, 20087, 20088, 20093, 20479
Terrestrial Veg: Closed Canopy – 53.50%, Non-forest – 45.42%, Other Natural Veg – 1.08%
Marine Veg: Eelgrass (patchy), Salt Marsh Fringe (patchy)
Overhanging Veg: 25-50%
Public Access: 1 Undeveloped ROW beach access
Current Population Est: 138
Future Build-out Population Est: 178
% of Total Parcels Vacant/Underutilized: 22%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Lagoon, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Great Blue Heron
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA, Critical Drainage Area, Frequently Flooded Area, Streams (F) (N), Mod. Geohazard
Land Use: Rural Protection, Rural Residential, Rural Wooded; 305(b) Waters of Concern; Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: North end of a trail from Old Man House at Suquamish.



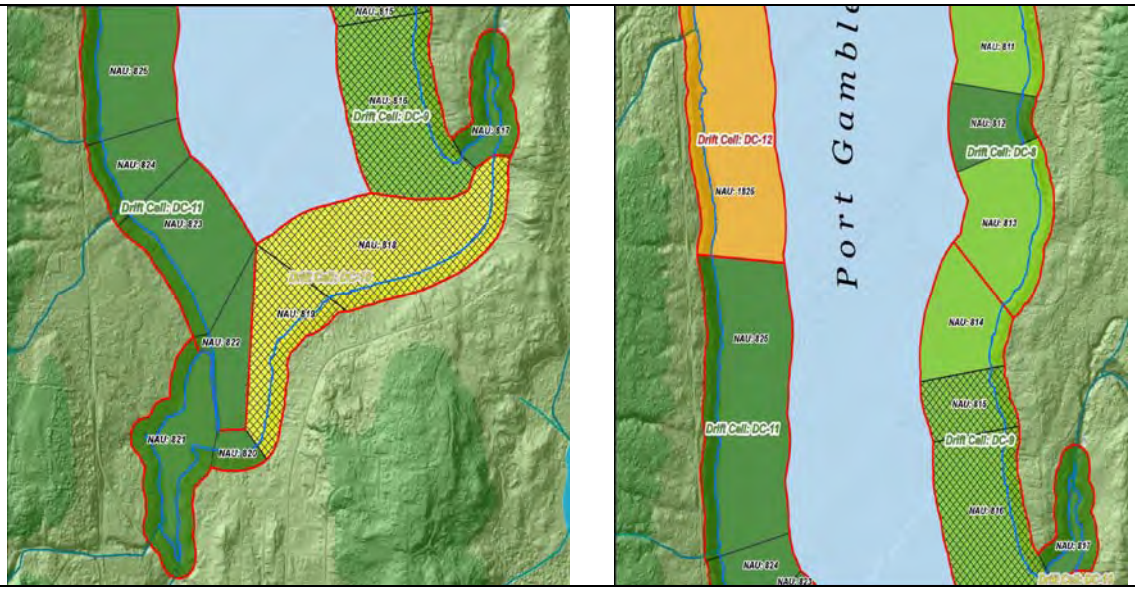
North Hood Canal Drift Cell DC-10 (Gamble Wood)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
818	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring, Boat Launches, Culverts, Pilings, Floats/Docks	Light	Floats and Docks w/Floats, Overhanging Structures	Restore, Enhance & Restore Site Processes

North Hood Canal Drift Cell DC-10 (Gamble Wood)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
819	Tidal Erosion, Fluvial & Wave Deposition	Armoring, Floats, Pilings, Groins	Light	Floats and Docks w/Floats, Overhanging Structures	Restore, Enhance & Restore Site Processes
820	Tidal Erosion, Fluvial & Wave Deposition		Water Quality		Protect, Conserve, Restore
821	Tidal Erosion, Fluvial & Wave Deposition	Floats, Pilings	Water Quality	Water Quality	Protect, Conserve, Restore

North Hood Canal Drift Cell DC-11 (West Port Gamble Bay)

Drift Cell Disturbance Score : Low (1)
Length (miles): 1.58
% Armored: 10
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20065, 20522, 20075, 20076, 20078, 20479
Terrestrial Veg: Closed Canopy – 66.71%, Non-forest – 29.61%, Other Natural Veg – 3.68%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 58
Future Build-out Population Est: 70
% of Total Parcels Vacant/Underutilized: 19%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Bald Eagle, Great Blue Heron
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Streams (F), Wetlands, Mod. Geohazard
Land Use: Rural Protection, Rural Wooded; Approved Closed Status Shellfish Harvest Area
Known Cultural and Historic Resources: Unknown

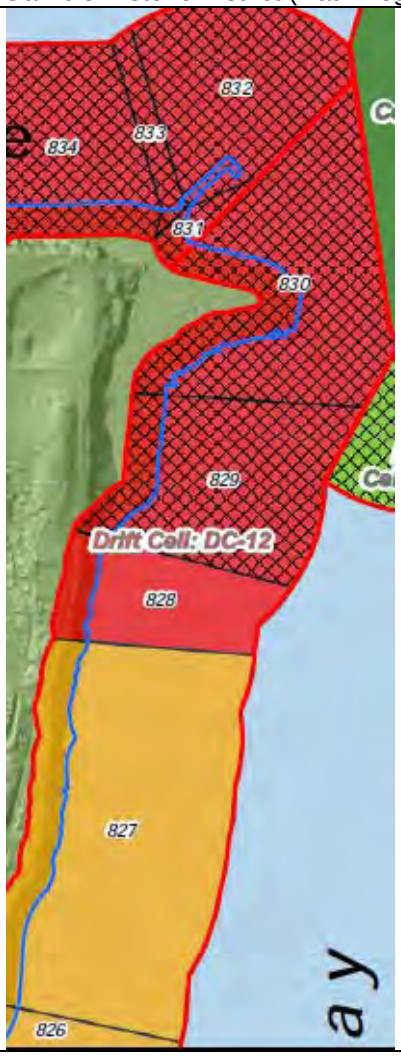


North Hood Canal Drift Cell DC-11 (West Port Gamble Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
822	Wave Deposition		Water Quality		Protect, Conserve, Restore
823	Wave Deposition, Fluvial Deposition	Armoring	Substrate		Protect, Conserve, Restore
824	Sediment Transport, Wave Erosion (Open), Fluvial Deposition		Water Quality		Protect, Conserve, Restore
825	Sediment Transport, Wave Erosion (Open)				Protect, Conserve, Restore

North Hood Canal Drift Cell DC-12 (North Port Gamble Bay)

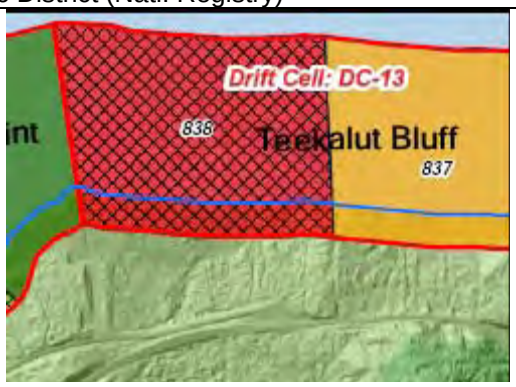
Drift Cell Disturbance Score: High (3)
Length (miles): 1.99
% Armored: 30
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20524, 20520, 20521, 20058, 20065
Terrestrial Veg: Closed Canopy– 62.56%, Non-forest – 36.29%, Other Natural Veg – 1.16%
Marine Veg: Eelgrass (continuous, patchy), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Bald Eagle, Osprey
Shoreform Change: -1488 (Bluff-backed Beach)
Critical Areas: Cat. 1 & 2 CARA, Freq. Flooded area, Streams (F), Wetlands, Mod. Geohazard area
Land Use: LAMIRD, Rural Wooded, State Cleanup site; 305(b) Waters of Concern; Approved Closed Status Shellfish Harvest Area
Known Cultural and Historic Resources: Artifacts; Place name for the town of Port Gamble; Port Gamble Historic District (Natl. Registry)



North Hood Canal Drift Cell DC-12 (North Port Gamble Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
1825	Sediment Transport, Wave Erosion (Open)	Pilings	Frequency of Disturbance	Pilings, Overhanging Structures	Enhance
826	Sediment Transport, Wave Erosion (Open)	Pilings	Water Quality		Enhance
827	Sediment Transport, Wave Erosion (Open)	Pilings	Frequency of Disturbance		Enhance
828	Sediment Transport, Wave Erosion (Open)	Pilings	Water Quality	Water Quality	Enhance and Create
829	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring	Wave Energy (Embayment)	Heavily Modified Area	Enhance, Create & Restore Site Processes
830	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring, Floats, Marinas	Water Quality	Marinas, Heavily Modified Area, Water Quality	Enhance, Create & Restore Site Processes

North Hood Canal Drift Cell DC-13 (Teekalut Bluff)

Drift Cell Disturbance Score: High (3)
Length (miles): 1.73
% Armored: 60
Geomorphic Type: Open, Rocky
Fluvial Influences (PSNERP #s): 20524, 20044
Terrestrial Veg: Closed Canopy– 33.23%, Non-forest – 66.77%, Other Natural Veg – 0%
Marine Veg: Eelgrass (continuous, patchy), Kelp (continuous, patchy)
Overhanging Veg: 25-50%
Public Access: 1 Cemetery(Port Gamble Cemetery); 1 Park
Current Population Est: 83
Future Build-out Population Est: 95
% of Total Parcels Vacant/Underutilized: 13%
Priority Species/Habitat: Area of Ecological Significance, Pacific Herring Spawning & adult holding areas, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: -980 (Bluff-backed Beach)
Critical Areas: Cat. 1 & 2 CARA, Freq. Flooded Area, Streams (U), Mod. Geohazard
Land Use: LAMIRD, Public Facility, Rural Residential; Prohibited Shellfish Harvest Area
Known Cultural and Historic Resources: Landform referent and place name for Teekalet Bluffs; Port Gamble Historic District (Natl. Registry)



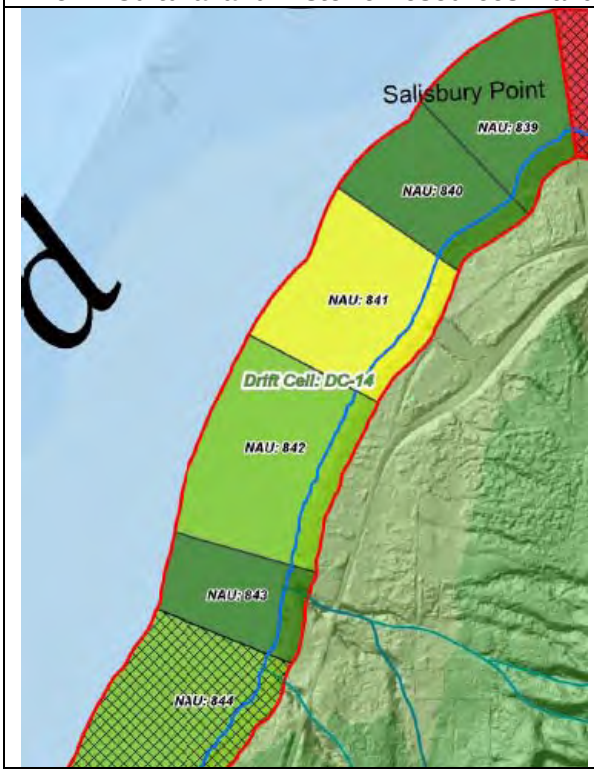
North Hood Canal Drift Cell DC-13 (Teekalut Bluff)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
831	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring	Wave Energy (Rocky)	Heavily Modified Areas	Enhance, Create & Restore Site Processes

North Hood Canal Drift Cell DC-13 (Teekalut Bluff)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
832	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring	Wave Energy (Rocky)	Heavily Modified Areas	Enhance, Create & Restore Site Processes
833	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring	Wave Energy (Rocky)	Heavily Modified Areas	Enhance, Create & Restore Site Processes
834	Tidal Erosion, Fluvial & Wave Deposition, Sediment Transport, Wave Erosion (Estuary)	Armoring	Wave Energy (Rocky)	Heavily Modified Areas	Enhance, Create & Restore Site Processes
835	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Rocky)		Enhance
836	Sediment Transport. Wave Erosion (Open), Fluvial Deposition	Armoring, Pilings	Wave Energy (Rocky), Frequency of Disturbance	Pilings	Enhance and Restore Site Processes
837	Sediment Transport, Wave Erosion (Open)	Armoring, Groins	Frequency of Disturbance	Overhanging Structures	Enhance
838	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Culverts	Substrate		Enhance, Create & Restore Site Processes

North Hood Canal Drift Cell DC-14 (Salisbury Point)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.95
% Armored: 45
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20044, 20048, 20049, 20057, 20070
Terrestrial Veg: Closed Canopy– 48.59%, Non-forest – 51.41%, Other Natural Veg – 0%, Tansy, Knotweed
Marine Veg: Eelgrass (continuous, patchy)
Overhanging Veg: 25-50%
Public Access: 1 Park, 2 Beach, 2 View
Current Population Est: 193
Future Build-out Population Est: 213
% of Total Parcels Vacant/Underutilized: 10%
Priority Species/Habitat: Estuarine Zone, Pacific Herring Spawning & adult holding areas, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Streams (F) (N), Mod/High Geohazard
Land Use: Public Facility, Rural Residential
Known Cultural and Historic Resources: Landform referent to Salsbury Point



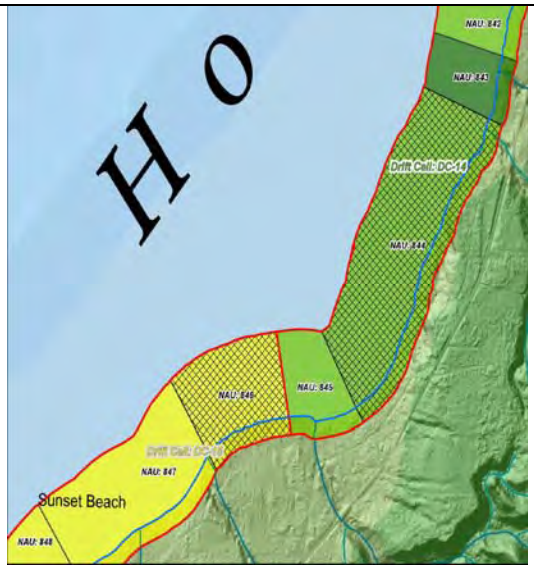
North Hood Canal Drift Cell DC-14 (Salisbury Point)

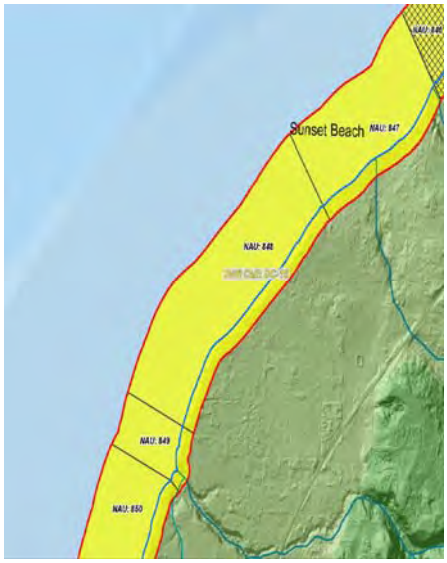
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
839	Wave Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
840	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings, Floats/Docks	Frequency of Disturbance	Pilings	Conserve, Restore and Restore Site Processes

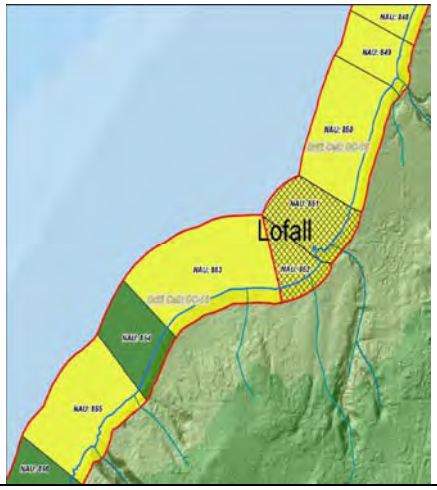
North Hood Canal Drift Cell DC-14 (Salisbury Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
841	Sediment Transport, Wave Erosion (Open)	Armoring, Marinas	Light	Marinas, Overhanging Structures	Restore, Enhance
842	Sediment Transport, Wave Erosion (Open)	Armoring, Floats/Docks	Substrate		Conserve, Restore
843	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Open)	Armoring	Protect, Conserve, Restore
844	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Groins, Floats/Docks	Substrate		Conserve, Restore & Restore Site Processes
845	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches	Frequency of Disturbance	Overhanging Structures	Conserve, Restore

North Hood Canal Drift Cell DC-15 (Sunset Beach)

Drift Cell Disturbance Score : Medium (2)
Length (miles): 2.24
% Armored: 56
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20070, 20064, 20072, 20082, 20083, 20092
Terrestrial Veg: Closed Canopy – 27.72%, Non-forest – 70.12%, Other Natural Veg – 2.16%, Knotweed
Marine Veg: Eelgrass (continuous), Kelp (patchy)
Overhanging Veg: 0-25%
Public Access: 1 Park, 1 Undeveloped beach access; 3 Undeveloped view (beach?) access
Current Population Est: 285
Future Build-out Population Est: 323
% of Total Parcels Vacant/Underutilized: 12%
Priority Species/Habitat: Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA, Freq. Flooded Area, Streams (F) (N), Mod. Geohazard
Land Use: Public Facility, Rural Residential; 305(b) Waters of Concern
Known Cultural and Historic Resources: Unknown



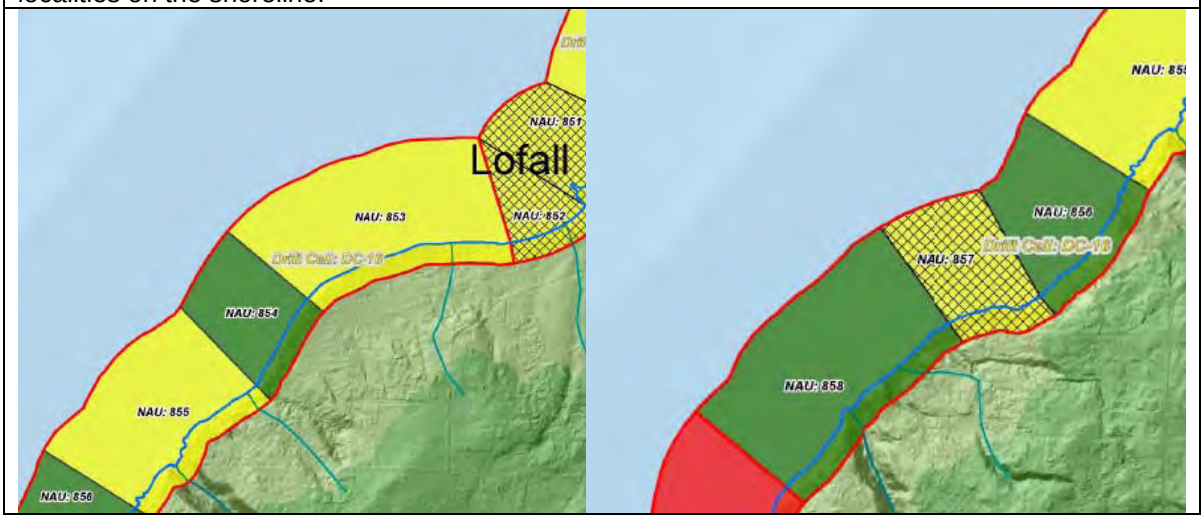




North Hood Canal Drift Cell DC-15 (Sunset Beach)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
846	Wave Deposition	Armoring	Substrate		Conserve, Restore, Enhance & Restore Site Processes
847	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring, Boat Launch, Groins	Substrate		Conserve, Restore, Enhance
848	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings, Groins	Water Quality	Water Quality	Conserve, Restore, Enhance
849	Fluvial Deposition	Armoring	Water Quality	Water Quality	Conserve, Restore, Enhance
850	Sediment Transport, Wave Erosion (Open)	Armoring	Substrate	Navigation Channel	Restore, Enhance
851	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Boat Launches, Pilings, Marinas, Groins	Substrate	Navigation Channel	Restore, Enhance & Restore Site Processes
852	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings, Marinas, Floats/Docks	Substrate	Navigation Channel	Restore, Enhance & Restore Site Processes

North Hood Canal Drift Cell DC-16 (Lofall)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 1.72
% Armored: 29
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20092, 20097, 20101, 20108
Terrestrial Veg: Closed Canopy – 51.20%, Non-forest – 48.73%, Other Natural Veg – 0.06%
Marine Veg: Eelgrass (continuous), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 158
Future Build-out Population Est: 183
% of Total Parcels Vacant/Underutilized: 14%
Priority Species/Habitat: Estuarine Zone, Surf Smelt/Sand Lance Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA, Critical Drainage Area, Freq. Flooded Area, Streams (F) (N), Mod/High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: Landform referent to shoreline and place names for localities on the shoreline.



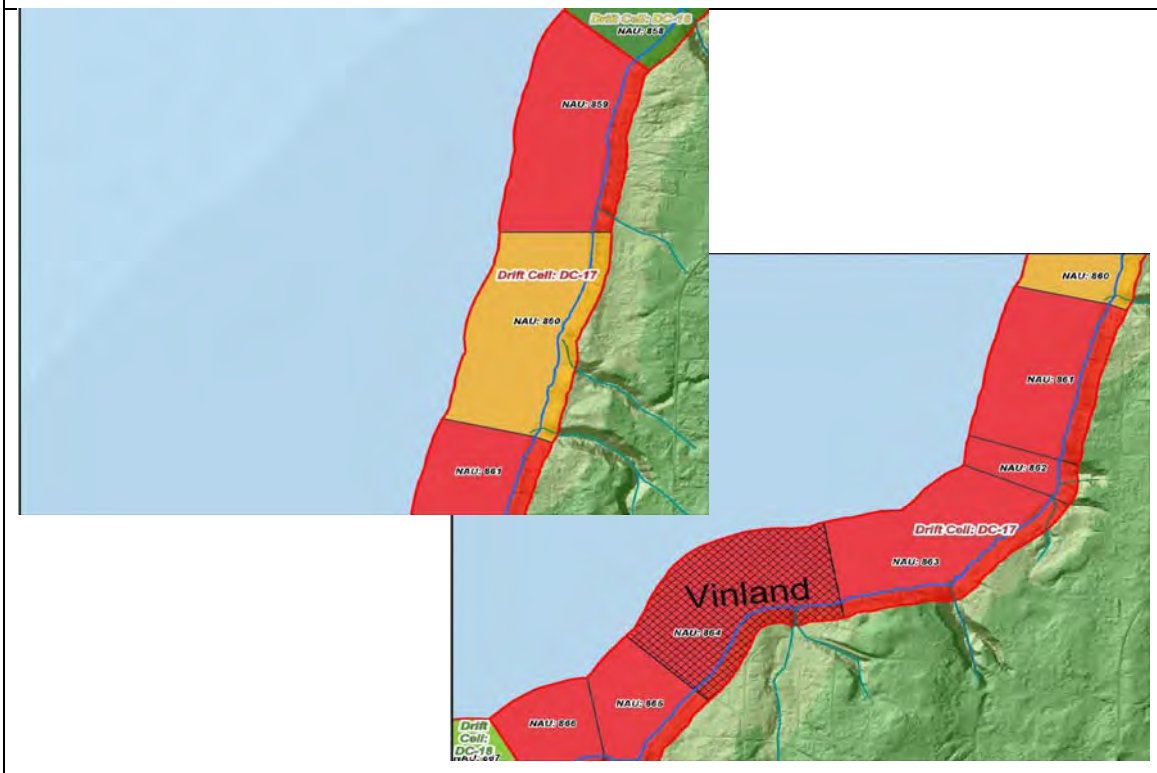
North Hood Canal Drift Cell DC-16 (Lofall)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
853	Wave Deposition	Armoring, Pilings	Water Quality	Water Quality	Conserve, Restore, Enhance and Restore Site Processes
854	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch	Wave Energy (Open)	Armoring	Protect, Conserve, Restore
855	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Pilings, Groins	Frequency of Disturbance	Pilings, Overhanging Structures	Conserve, Restore, Enhance
856	Sediment Transport, Wave	Armoring, Boat Launch	Substrate		Protect, Conserve, Restore

North Hood Canal Drift Cell DC-16 (Lofall)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Erosion (Open)				
857	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch, Pilings	Substrate		Conserve, Restore, Enhance & Restore Site Processes
858	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance	Overhanging Structures	Protect, Conserve, Restore

North Hood Canal Drift Cell DC-17 (Vinland)

Drift Cell Disturbance Score: High (3)
Length (miles): 2.85
% Armored: 17
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20108, 20500, 20123, 20499, 20130, 20133, 20139, 20148
Terrestrial Veg: Closed Canopy – 62.47%, Non-forest – 32.59%, Other Natural Veg – 4.95%, Bull & Canada Thistles
Marine Veg: Eelgrass (continuous)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 218
Future Build-out Population Est: 248
% of Total Parcels Vacant/Underutilized: 10%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt/Sand Lance Spawning, Bald Eagle, Osprey
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Streams (F) (N), Mod/High Geohazard
Land Use: Military, Rural Residential; 303(d) Vinland
Known Cultural and Historic Resources: Artifacts; Geographic referent to shoreline.



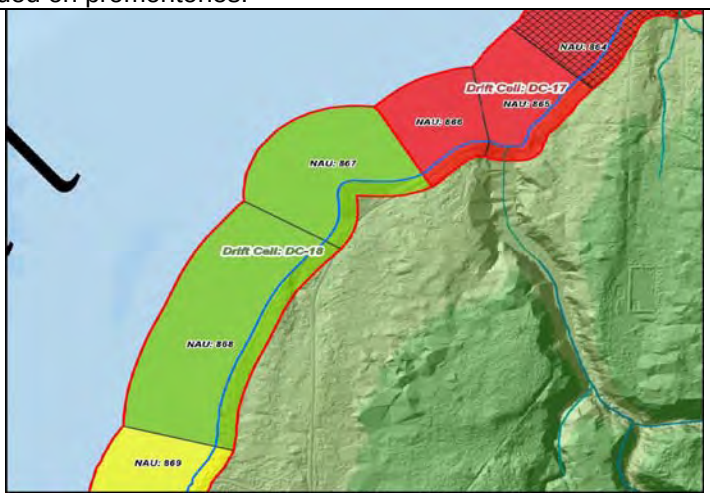
North Hood Canal Drift Cell DC-17 (Vinland)

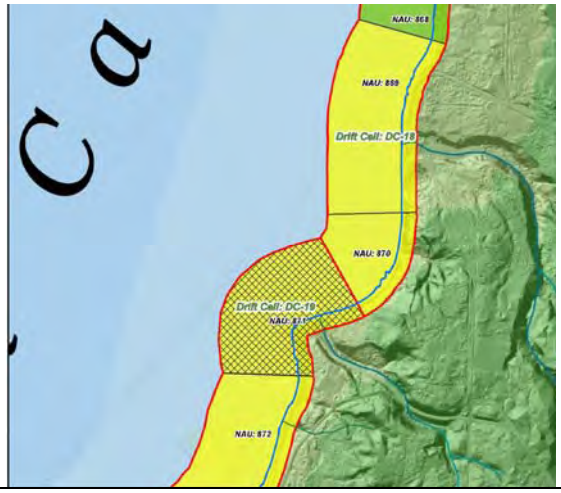
NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
859	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings	Light	Overhanging Structures	Enhance, Create
860	Sediment	Armoring,	Light	Overhanging	Enhance

North Hood Canal Drift Cell DC-17 (Vinland)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Transport, Wave Erosion (Open)	Groins		Structures	
861	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings	Water Quality	Water Quality	Enhance, Create
862	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings	Water Quality	Water Quality	Enhance, Create
863	Sediment Transport, Wave Erosion (Open)	Armoring, Floats/Docks	Water Quality	Water Quality	Enhance, Create & Restore Site Processes
864	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring, Boat Launches, Groins	Water Quality	Water Quality, Heavily Modified Areas	Enhance, Create
865	Sediment Transport, Wave Erosion (Open), Tidal Erosion, Fluvial Deposition, Wave Deposition		Slope	Heavily Modified Areas	Enhance, Create
866	Wave Deposition	Marinas	Slope	Marinas, Heavily Modified Areas	Enhance, Create

North Hood Canal Drift Cell DC-18 (North Bangor)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.64
% Armored: 0
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20148, 20151, 20160
Terrestrial Veg: Closed Canopy – 59.43%, Non-forest – 22.01%, Other Natural Veg – 18.56%
Marine Veg: Eelgrass (continuous, patchy), Kelp (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Surf Smelt/Sand Lance Spawning, Bald Eagle, Great Blue Heron
Shoreform Change: 0
Critical Areas: Cat. 1 CARA
Land Use: Military
Known Cultural and Historic Resources: Artifacts; The drift cell has two archaeological shell midden sites recorded on promontories.

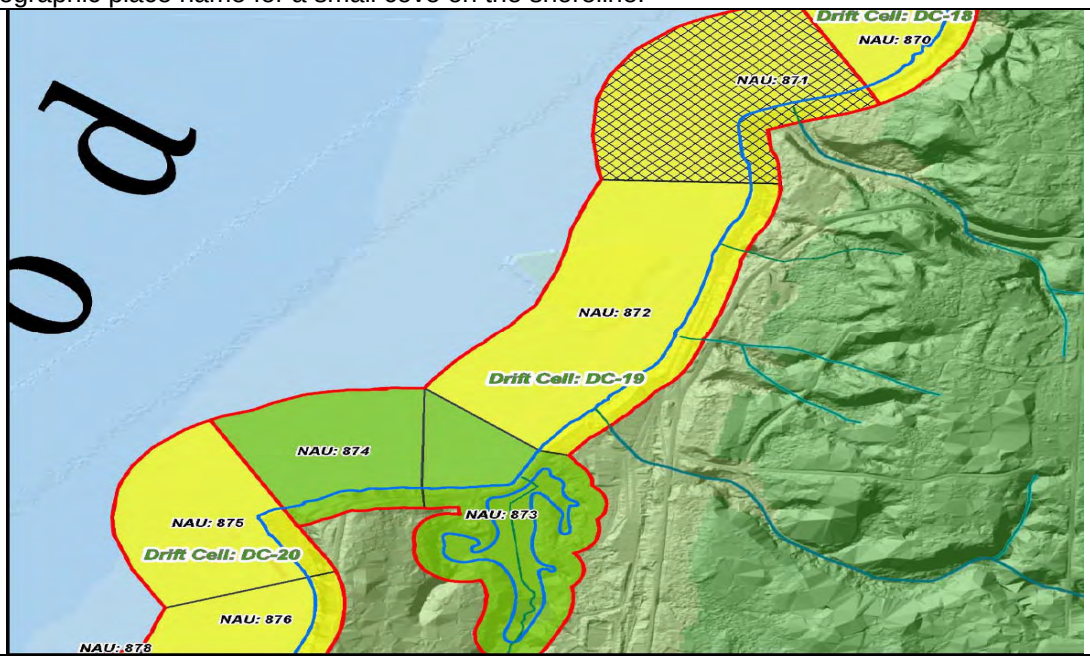




North Hood Canal Drift Cell DC-18 (North Bangor)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
867	Wave Deposition		Slope	Heavily Modified Areas	Conserve, Restore
868	Sediment Transport, Wave Erosion (Open)		Slope	Heavily Modified Areas	Conserve, Restore
869	Sediment Transport, Wave Erosion (Open)	Marinas	Slope	Marinas, Heavily Modified Areas	Restore, Enhance
870	Sediment Transport, Wave Erosion (Open)		Water Quality	Heavily Modified Areas, Water Quality	Restore, Enhance

North Hood Canal Drift Cell DC-19 (Central Bangor)

Drift Cell Disturbance Score: Low (1)
Length (miles): 3.59
% Armored: 9
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20160, 20167, 20506, 20168, 20169, 20170
Terrestrial Veg: Closed Canopy – 65.44%, Non-forest – 30.86%, Other Natural Veg – 3.70%
Marine Veg: Eelgrass (continuous, patchy), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 0
Future Build-out Population Est: 0
% of Total Parcels Vacant/Underutilized: 0%
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt/Sand Lance Spawning, Osprey
Shoreform Change: 0
Critical Areas: Cat. 1 CARA
Land Use: Military; 303(D)
Known Cultural and Historic Resources: Place name for Devil's Hole mythological place and a geographic place name for a small cove on the shoreline.



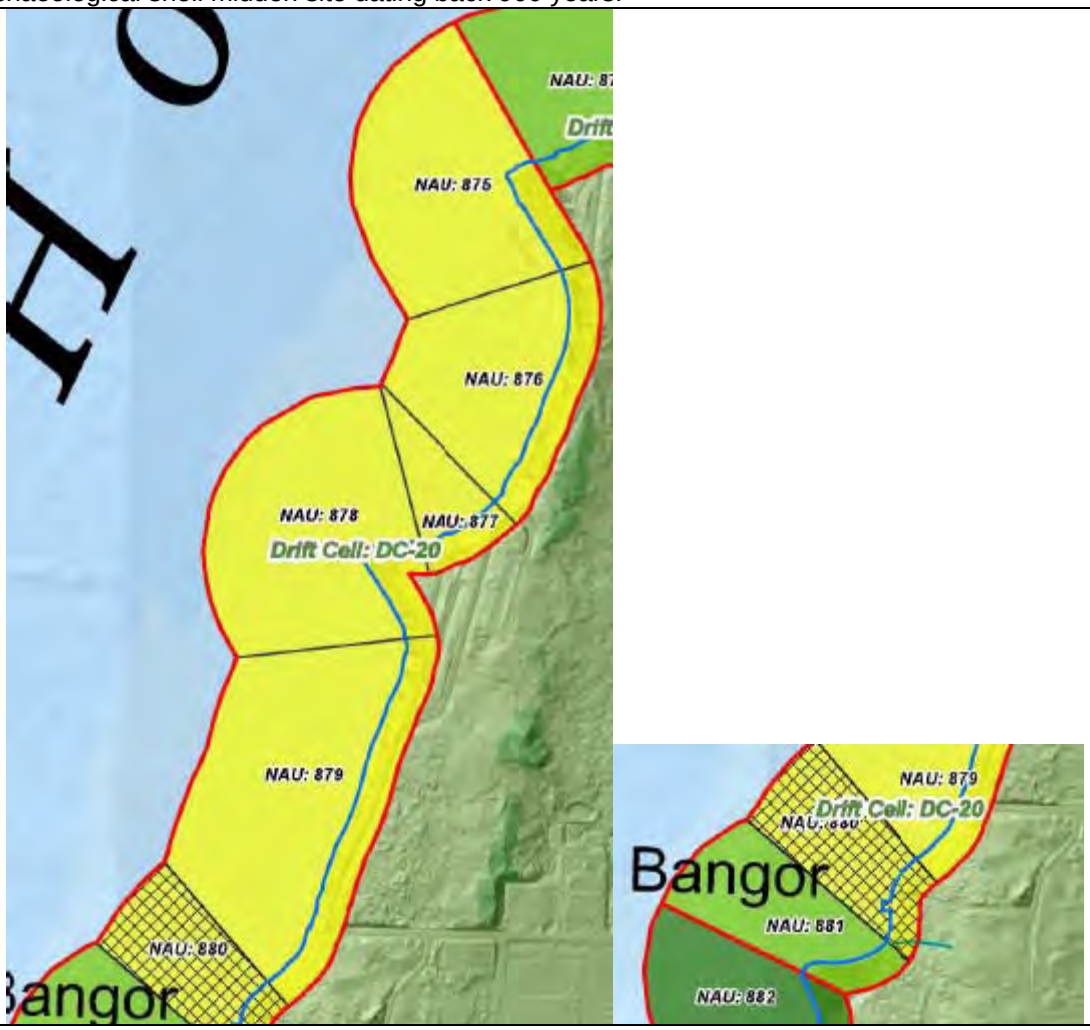
North Hood Canal Drift Cell DC-19 (Central Bangor)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
871	Wave Deposition	Armoring, Marinas	Water Quality	Marinas, Heavily Modified Areas, Water Quality	Restore, Enhance & Restore Site Processes
872	Sediment Transport, Wave Erosion (Open)	Armoring, Marinas	Water Quality	Marinas, Heavily Modified Areas, Water Quality	Restore, Enhance

North Hood Canal Drift Cell DC-19 (Central Bangor)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
873	Wave Deposition		Slope	Heavily Modified Areas	Conserve, Restore
874	Sediment Transport, Wave Erosion (Open)		Slope	Heavily Modified Areas	Conserve, Restore

North Hood Canal Drift Cell DC-20 (South Bangor)

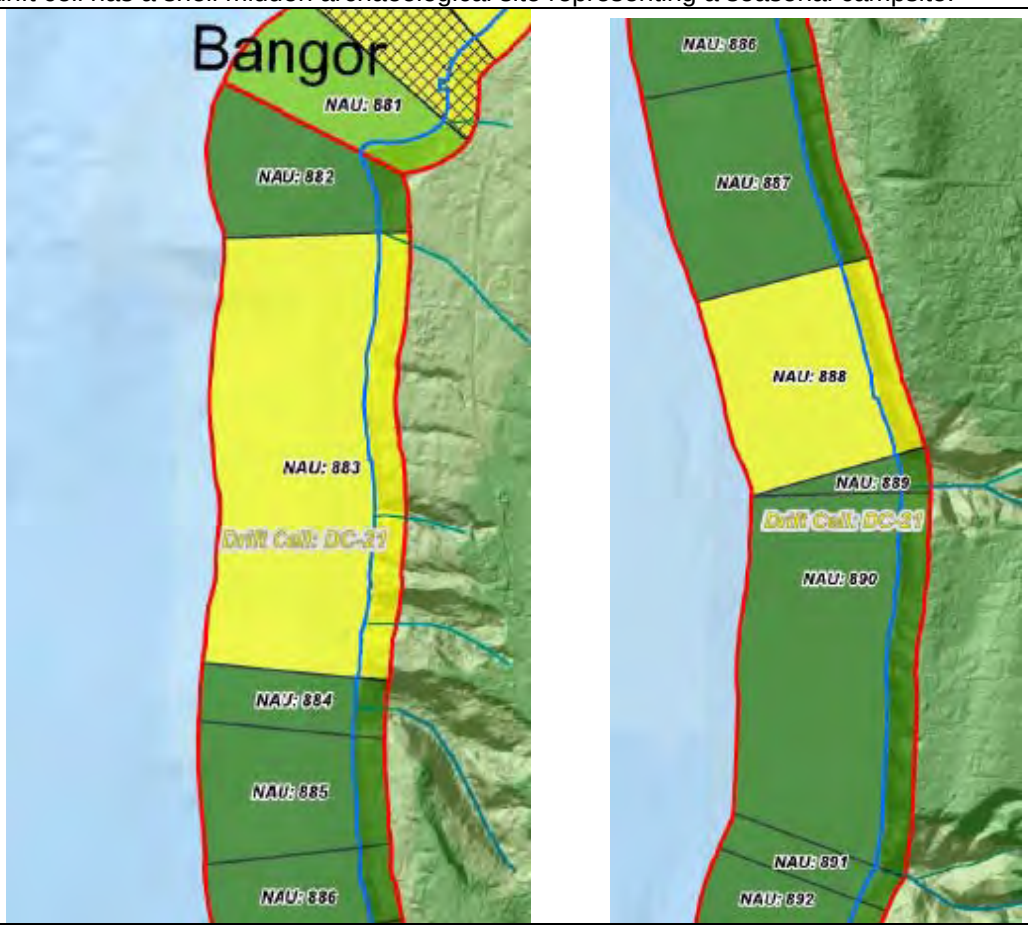
Drift Cell Disturbance Score: Low (1)
Length (miles): 1.46
% Armored: 7
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20170
Terrestrial Veg: Closed Canopy – 49.38%, Non-forest – 41.31%, Other Natural Veg – 9.31%
Marine Veg: Eelgrass (patchy), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: None
Current Population Est: 18
Future Build-out Population Est: 20
% of Total Parcels Vacant/Underutilized: 11%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Surf Smelt/Sand Lance Spawning, Bald Eagle, Great Blue Heron, Mountain Quail
Shoreform Change: -1011 (Barrier Beach)
Critical Areas: Frequently Flooded Area, Streams (N)
Land Use: Military, Rural Residential; 303(d)
Known Cultural and Historic Resources: Artifacts; Geographic landform referent to King's Spit and place name for a mythological place at Devil's Hole. The drift cell has a recorded archaeological shell midden site dating back 900 years.



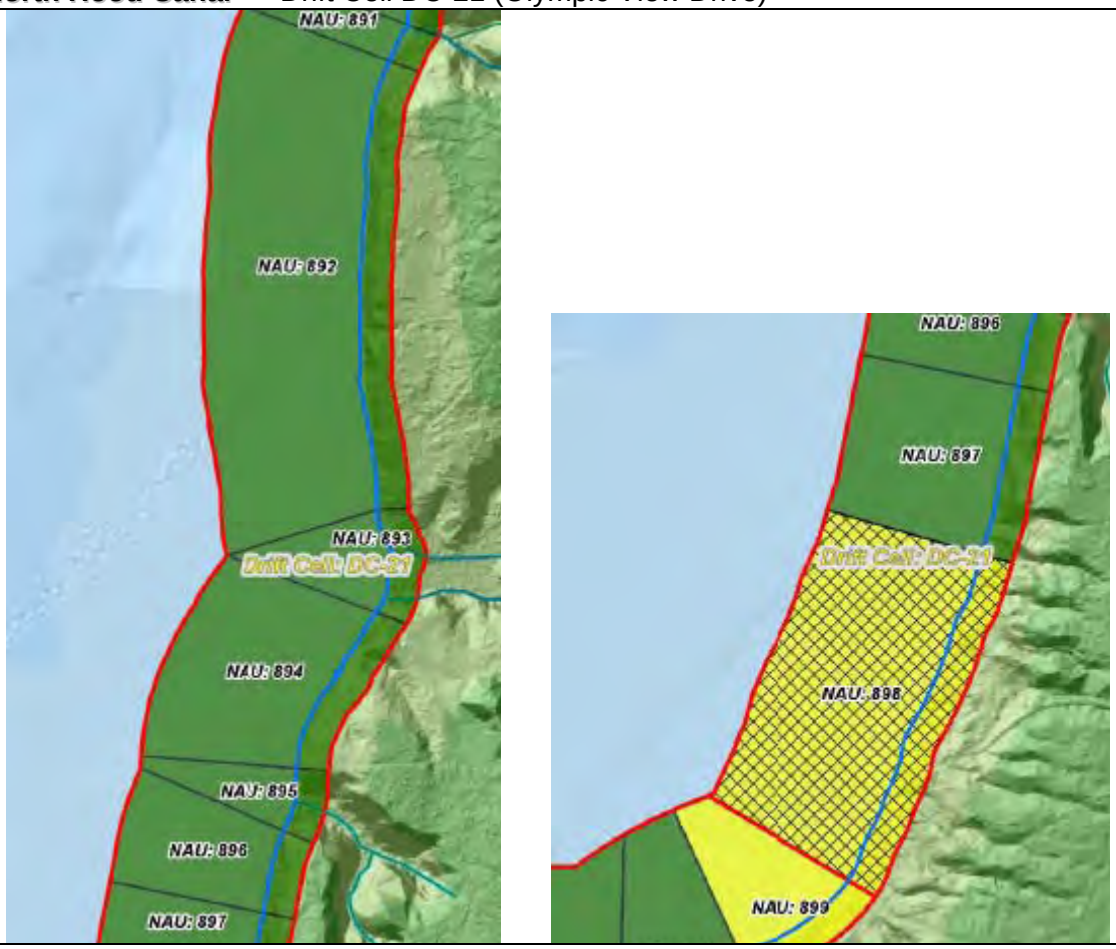
North Hood Canal Drift Cell DC-20 (South Bangor)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
875	Wave Deposition	Armoring, Marinas	Slope	Marinas, Heavily Modified Areas	Restore, Enhance
876	Wave Erosion (Open), Sediment Transport	Armoring, Marinas	Slope	Marinas, Heavily Modified Areas	Restore, Enhance
877	Wave Erosion (Open), Sediment Transport	Marinas	Water Quality	Marinas, Heavily Modified Areas, Water Quality	Restore, Enhance
878	Wave Deposition	Marinas	Water Quality	Marinas, Heavily Modified Areas, Water Quality	Restore, Enhance and Restore Site Processes
879	Wave Erosion (Open), Sediment Transport		Water Quality	Heavily Modified Areas, Water Quality	Restore, Enhance
880	Wave Erosion (Open), Sediment Transport	Armoring, Boat Launches, Culverts, Pilings, Marinas	Light	Floats and docks w/floats, Marinas, Heavily Modified Areas	Restore, Enhance & Restore Site Processes
881	Wave Deposition	Pilings, Marinas	Water Quality	Marinas, Water Quality	Conserve, Restore and Restore Site Processes

North Hood Canal Drift Cell DC-21 (Olympic View Drive)

Drift Cell Disturbance Score: Medium (2)
Length (miles): 3.2
% Armored: 26
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20170, 20198, 20538, 20201, 20203, 20217, 20484, 20224, 20226, 20227
Terrestrial Veg: Closed Canopy – 61.14%, Non-forest – 34.15%, Other Natural Veg – 4.70%, Tansy
Marine Veg: Eelgrass (patchy), Kelp (continuous, patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 278
Future Build-out Population Est: 328
% of Total Parcels Vacant/Underutilized: 3%
Priority Species/Habitat: Surf Smelt/Sand Lance Spawning, Bald Eagle, Great Blue Heron
Shoreform Change: 0
Critical Areas: Cat. 1 & 2 CARA, Frequently Flooded Area, Streams (F) (N), Mod/High Geohazard
Land Use: Rural Protection, Rural Residential, Federal (Superfund) Cleanup site, Unclassified Shellfish Harvest Area
Known Cultural and Historic Resources: Artifacts; Geographic landform referent to King's Spit. The drift cell has a shell midden archaeological site representing a seasonal campsite.



North Hood Canal Drift Cell DC-21 (Olympic View Drive)



North Hood Canal Drift Cell DC-21 (Olympic View Drive)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
882	Wave Deposition	Armoring	Water Quality	Water Quality	Protect, Conserve, Restore
883	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Floats/Docks	Water Quality	Water Quality	Conserve, Restore, Enhance
884	Wave Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
885	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch	Substrate		Protect, Conserve, Restore
886	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
887	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings	Substrate		Protect, Conserve, Restore
888	Sediment Transport, Wave	Armoring	Substrate		Conserve, Restore, Enhance

North Hood Canal Drift Cell DC-21 (Olympic View Drive)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Erosion (Open)				
889	Fluvial Deposition		Light	Overhanging Structures	Protect, Conserve, Restore
890	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Open)	Armoring	Protect, Conserve, Restore
891	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
892	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings, Groins, Floats/Docks	Substrate		Conserve, Restore, Enhance and Restore Site Processes
893	Fluvial Deposition	Armoring	Water Quality		Protect, Conserve, Restore
894	Sediment Transport, Wave Erosion (Open)	Floats/Docks	Light	Piers, floats & docks w/floats	Protect, Conserve, Restore
895	Sediment Transport, Wave Erosion (Open)		Substrate		Protect, Conserve, Restore
896	Sediment Transport, Wave Erosion (Open)		Water Quality		Protect, Conserve, Restore
897	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches	Substrate		Protect, Conserve, Restore
898	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Groins Floats/Docks,	Substrate		Conserve, Restore, Enhance & Restore Site Processes

3.4.2 Freshwater Shoreline

3.4.2.1 Foulweather Bluff Preserve

FOULWEATHER BLUFF PRESERVE PSNERP Watershed # 20007, 20008 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low Impairment: Low Synthesis: Conservation 1 **Surface Storage:** Importance: High Impairment: Low Synthesis: Protection 1 **Groundwater Recharge:** Importance: Low Impairment: Low Synthesis: Conservation 1 **Groundwater Discharge:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Water Flow Synthesis:** Importance: Moderate Impairment: Low Synthesis: Protection 3	- None	- None	- Abundant LWD along the marine barrier beach and along the back of the brackish lagoon and marsh (aerials) - Tall alders near Twin Spits Rd, followed by second growth western red cedar and hemlock, some doug fir and madrona - The brackish marsh supports over 50 plant species, both fresh and marine (TNC website) - Soils: Peat

FOULWEATHER BLUFF PRESERVE PSNERP Watershed # 20007, 20008 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Bald Eagle (1)	- None (however, poison hemlock and policeman's impatiens are in adjacent watersheds)	- None

FOULWEATHER BLUFF PRESERVE PSNERP Watershed # 20007, 20008 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential Site (shoreline jurisdiction): - Rural Residential	**2007 2008** Area: 81 57 Stream Miles: 0 0 Drains to Drift Cell #: DC-3 Pasture: 0 0 Scrub/Shrub: 0 0 Grassland: 1 1 Wetland: 21 4 Deciduous: 10 12 Evergreen: 33 16 Mixed: 9 19 Total Forested: 52 47 64% 82% Total Impervious: 2 2 2% 4%	- Foulweather Bluff Preserve (The Nature Conservancy- parking along Twin Spits Rd, public access during daylight hours, stewards on-site to answer questions, 1 mile of trail)	- Cat.2 CARA (partial) - Wetland	- KPUD-North Peninsula

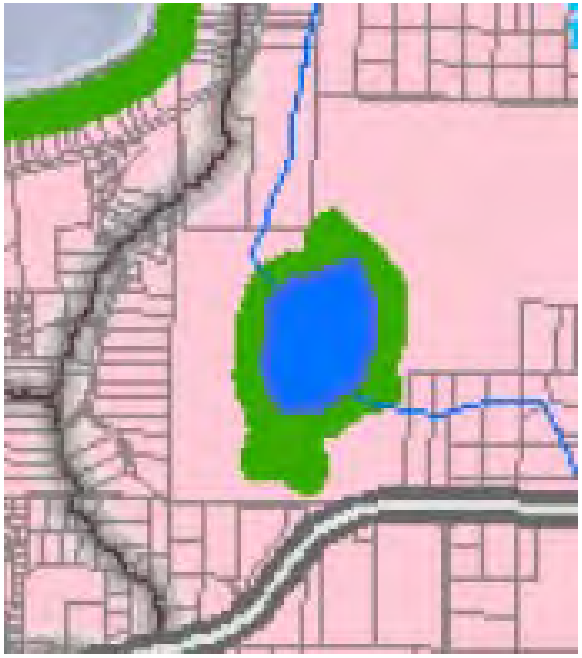
FOULWEATHER BLUFF PRESERVE PSNERP Watershed # 20007, 20008 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.4.2.2 Miller Lake

MILLER LAKE PSNERP Watershed # 20056 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Low Impairment: Moderate Synthesis: Conservation 2 **Surface Storage:** Importance: High Impairment: Moderate Synthesis: Protection 1- Restoration **Groundwater Recharge:** Importance: Low Impairment: Moderate Synthesis: Conservation2 **Groundwater Discharge:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Water Flow Synthesis:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration	- Lake helps maintain stable stream flows - Lake over 20 acres	- 2009: Martha John Creek has a steady long and short-term trend with moderate water quality - 305(b): FCB(4b), Temp(1)	- Floodplain connectivity rated good (<10% connectivity or habitat loss) (Kuttel, 2003) - Miller Lake has a wide, relatively intact coniferous riparian buffer - Soils: Peat (NE); Till (SW)

MILLER LAKE PSNERP Watershed # 20056 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Osprey (2)	- Unknown	- None

MILLER LAKE PSNERP Watershed # 20056 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Public Facility - LAMIRD Site (shoreline jurisdiction): - Rural Wooded Residential Vacant/Underutilized Parcels: 0%	**20056** Area: 1730 Stream Miles: 6 Drains to Drift Cell #: DC-9 Pasture: 49 Scrub/Shrub: 72 Grassland: 131 Wetland: 78 Deciduous: 235 Evergreen: 531 Mixed: 508 Total Forested: 1274 74.00% Total Impervious: 103 6.00%	- None	- Cat.2 CARA (partial) - Moderate Geologic Hazard (west shore) - Wetland - Class 2 Wildlife Habitat Conservation Area - Lake	- Crossing at 288th St. causes backwatering and debris blockage (removal causes torrent, possibly flushing out juvenile salmonids. - Port of Kingston - KPUD North Peninsula

MILLER LAKE PSNERP Watershed # 20056 RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management: • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.5 Central Hood Canal

The Central Hood Canal Characterization Area consist of nearly 27 miles of marine shoreline from the Little Anderson Creek Watershed (approximately located at Anderson Hill Road) to the Kitsap-Mason County line, and includes all watersheds that empty into Hood Canal between those points. Within this Characterization Area are the towns of Lone Rock, Seabeck, Camp Union and Holly. The area does not include any cities.

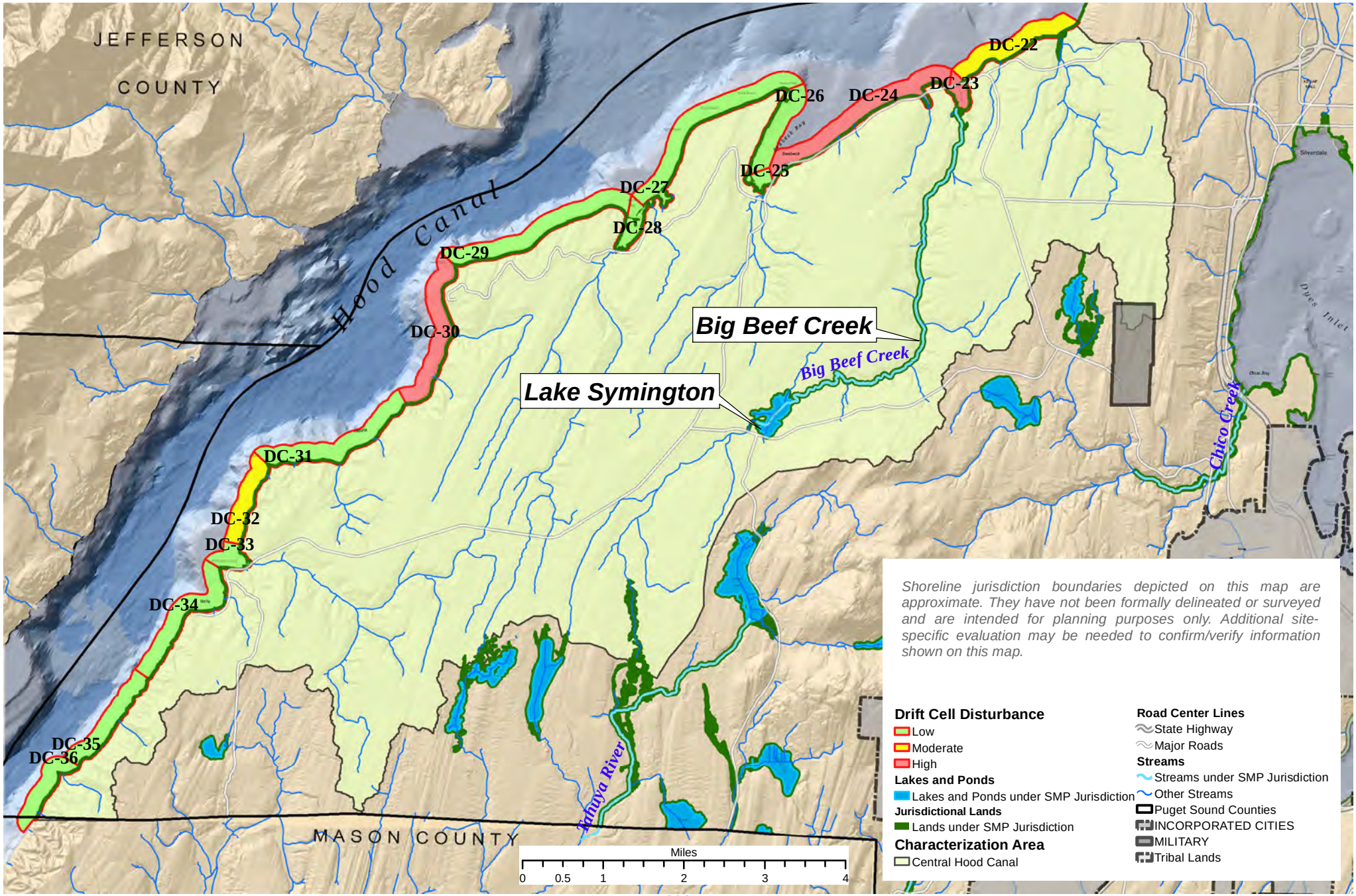
For the marine jurisdiction (200' upland, 1000' intertidal), there are **15 Drift Cells** which are comprised of 96 Nearshore Assessment Units (NAUs). There are 12 known and/or potential public access points within this Characterization Area which includes parks, ports, road-ends, right-of-ways and utility corridors.

For the freshwater jurisdictions, the South Puget Sound Characterization area has **2 Freshwater Shoreline Jurisdictions**:

- Lower Big Beef Creek
- Lake Symington

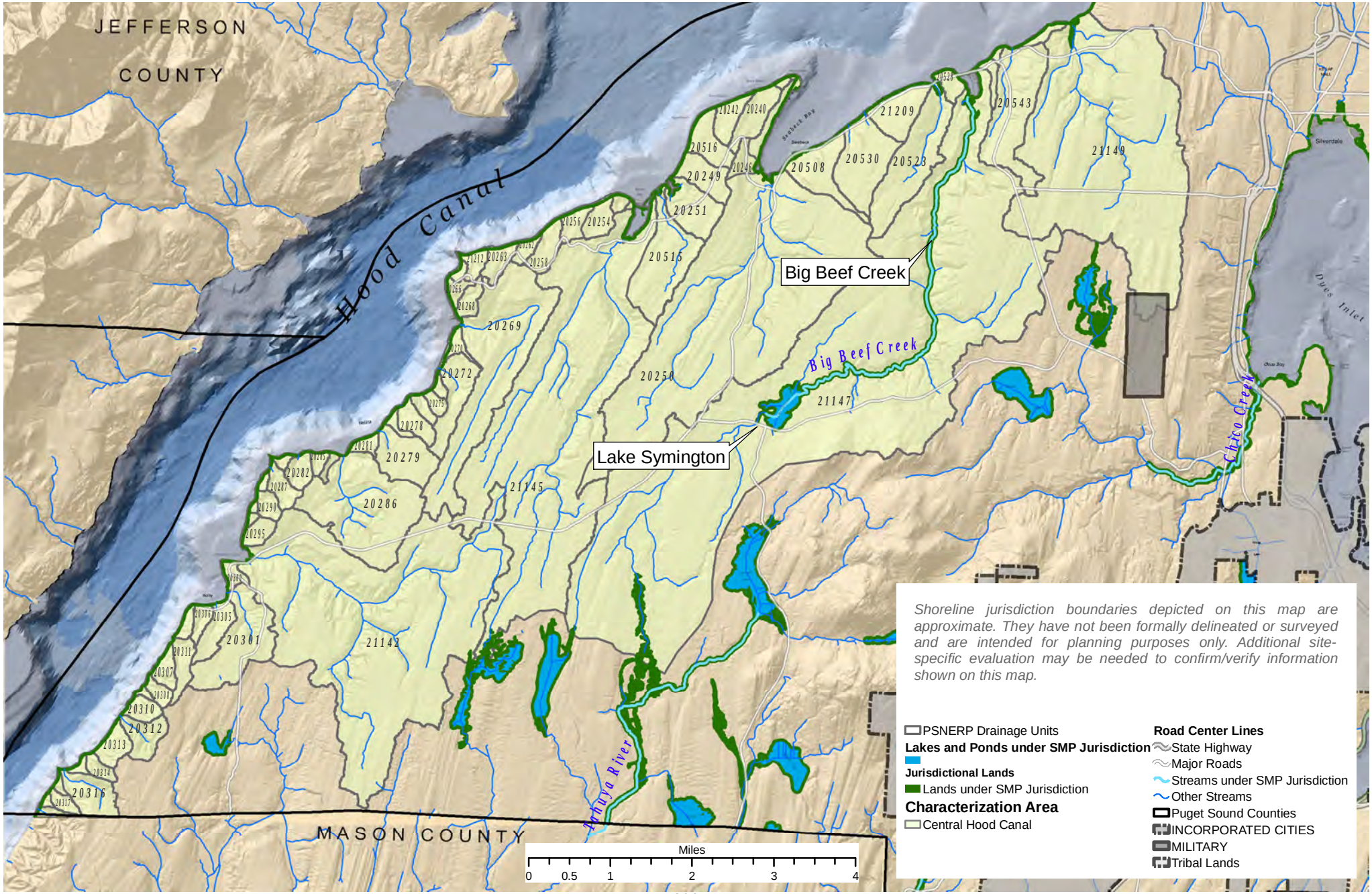
The maps below show the drift cells along the marine shoreline and watershed drainage units in the Central Hood Canal Characterization area, respectively. The color-coding of the drift cells represents the degree of disturbance, ranging from highly disturbed in red to less-disturbed in green. The map depicting the drainage units also shows the minimum required shoreline jurisdiction in green.

Shoreline Master Program - Central Hood Canal
Marine and Freshwater Jurisdiction



Shoreline Master Program - Central Hood Canal Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009



3.5.1 Marine Shoreline

Central Hood Canal Drift Cell DC-22 (Little Anderson)

Drift Cell Disturbance Score: Medium (2)

Length (miles): 1.53

% Armored: 37

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20227, 20229, 21149, 20543, 20552, 21210, 21147

Terrestrial Veg: Closed Canopy– 51.62%, Non-forest – 42.81%, Other Natural Veg – 5.58%, Knotweed

Marine Veg: Eelgrass (continuous), Kelp (patchy)

Overhanging Veg: 0-25%

Public Access: 1 Park (view)

Current Population Est: 128

Future Build-out Population Est: 168

% of Total Parcels Vacant/Underutilized: 21%

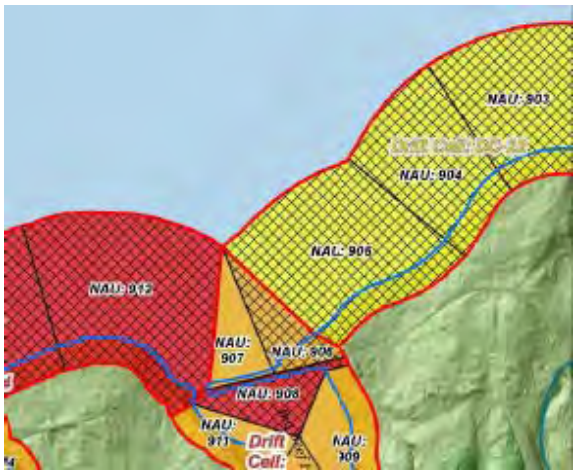
Priority Species/Habitat: Wetlands, Surf Smelt/Sand Lance Spawning, Bald Eagle

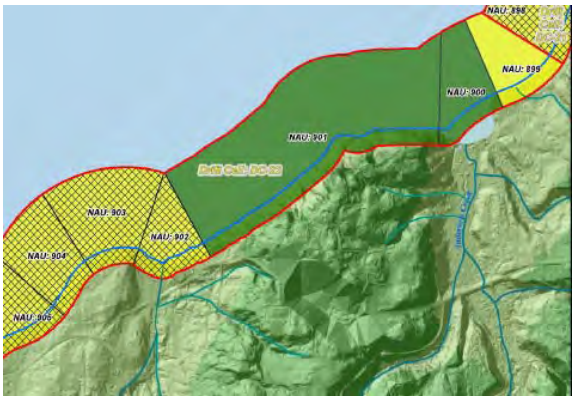
Shoreform Change: 0

Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (F) (N), Wetlands, Mod/High Geohazard

Land Use: Rural Protection, Federal (Superfund) Cleanup Site

Known Cultural and Historic Resources: Place name referent to Big Beef Harbor and referent to a village site at a trail to Dyes Inlet.

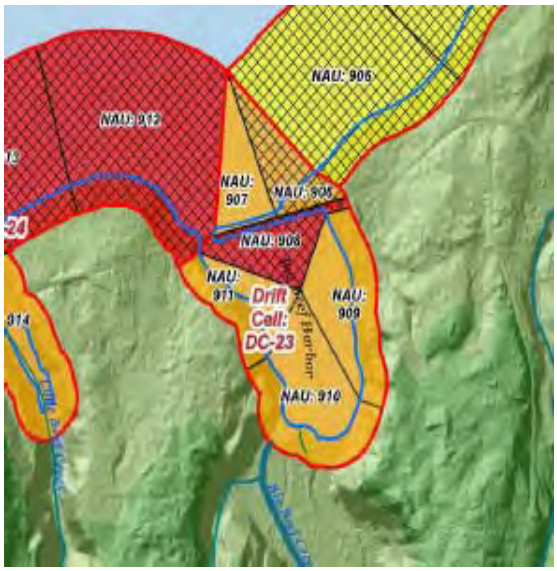




Central Hood Canal Drift Cell DC-22 (Little Anderson)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
899	Wave Deposition	Armoring	Substrate		Conserve, Restore, Enhance
900	Wave Deposition, Tidal Erosion, Fluvial Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
901	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
902	Fluvial Deposition	Armoring, Groins	Light	Floats and docks w/floats	Conserve, Restore, Enhance & Restore Site Processes
903	Sediment Transport, Wave Erosion (Open)	Armoring	Substrate		Conserve, Restore, Enhance & Restore Site Processes
904	Sediment Transport, Wave Deposition, Wave Erosion (Open)	Armoring, Boat Launches, Pilings	Substrate		Conserve, Restore, Enhance & Restore Site Processes
905	Wave Deposition	Armoring	Substrate		Conserve, Restore, Enhance & Restore Site Processes

Central Hood Canal Drift Cell DC-23 (Big Beef Harbor)

Drift Cell Disturbance Score: High (3)
Length (miles): 1.08
% Armored: 37
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 21210, 21147
Terrestrial Veg: Closed Canopy – 59.74%, Non-forest – 27.49%, Other Natural Veg – 12.77%
Marine Veg: Eelgrass (continuous, patchy), Kelp (patchy)
Overhanging Veg: 25-50%
Public Access: 1 ROW view
Current Population Est: 43
Future Build-out Population Est: 55
% of Total Parcels Vacant/Underutilized: 22%
Priority Species/Habitat: Wetlands, Bald Eagle
Shoreform Change: -1055 (Barrier Beach)
Critical Areas: Cat. 1 CARA, Frequently Flooded Area, Streams (S) (F) (N), Wetlands, Mod. Geohazard
Land Use: Rural Protection**,** Public Facility, Leaking Underground Storage Tank
Known Cultural and Historic Resources: Geographic place name referent to Big Beef Harbor and large rock on the shoreline associated with a myth.



Central Hood Canal Drift Cell DC-23 (Big Beef Harbor)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
906	Wave Deposition	Armoring	Wave Energy (Open)	Armoring	Enhance & Restore Site Processes
907	Sediment Transport,	Armoring	Wave Energy	Armoring	Enhance

Central Hood Canal Drift Cell DC-23 (Big Beef Harbor)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Wave Erosion (Open)		(Open)		
908	Wave Deposition, Tidal Erosion, Fluvial Deposition	Armoring, Floats	Light	Floats and docks w/floats, Overhanging Structures	Enhance, Create & Restore Site Processes
909	Wave Deposition, Tidal Erosion, Fluvial Deposition	Armoring	Light	Overhanging Structures	Enhance
910	Wave Deposition, Tidal Erosion, Fluvial Deposition		Water Quality	Water Quality	Enhance
911	Wave Deposition, Tidal Erosion, Fluvial Deposition		Water Quality		Enhance

Central Hood Canal Drift Cell DC-24 (Seabeck)

Drift Cell Disturbance Score: High (3)

Length (miles): 3.14

% Armored: 66

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20250, 20508, 20530, 21209, 20528, 20523, 21210

Terrestrial Veg: Closed Canopy– 33.68%, Non-forest – 63.77%, Other Natural Veg – 2.55%, English Ivy

Marine Veg: Eelgrass (continuous)

Overhanging Veg: 0-25%

Public Access: 1 Marina (Port of Bremerton/Seabeck)

Current Population Est: 300

Future Build-out Population Est: 363

% of Total Parcels Vacant/Underutilized: 18%

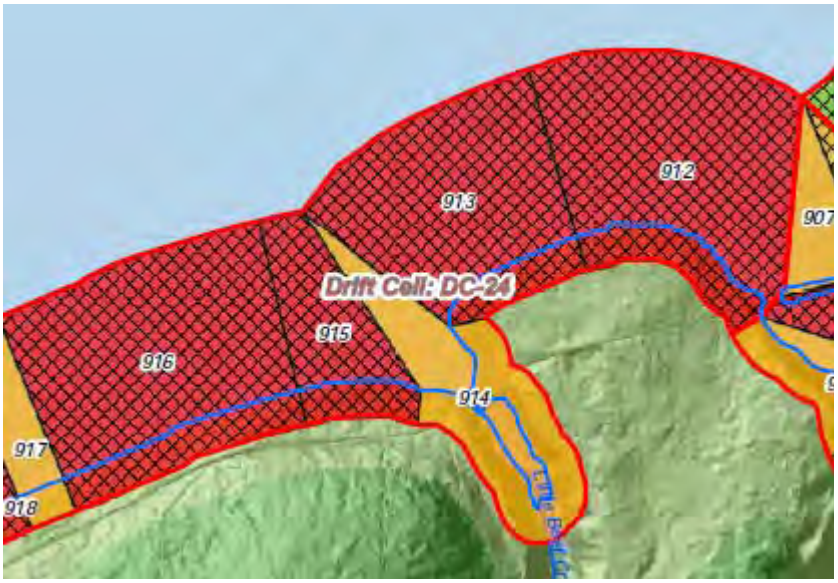
Priority Species/Habitat: Area of Ecological Significance, Estuarine, Pacific Herring Spawning, Surf Smelt/Sand Lance Spawning, Bald Eagle, Purple Martin

Shoreform Change: -109 (Barrier Beach)

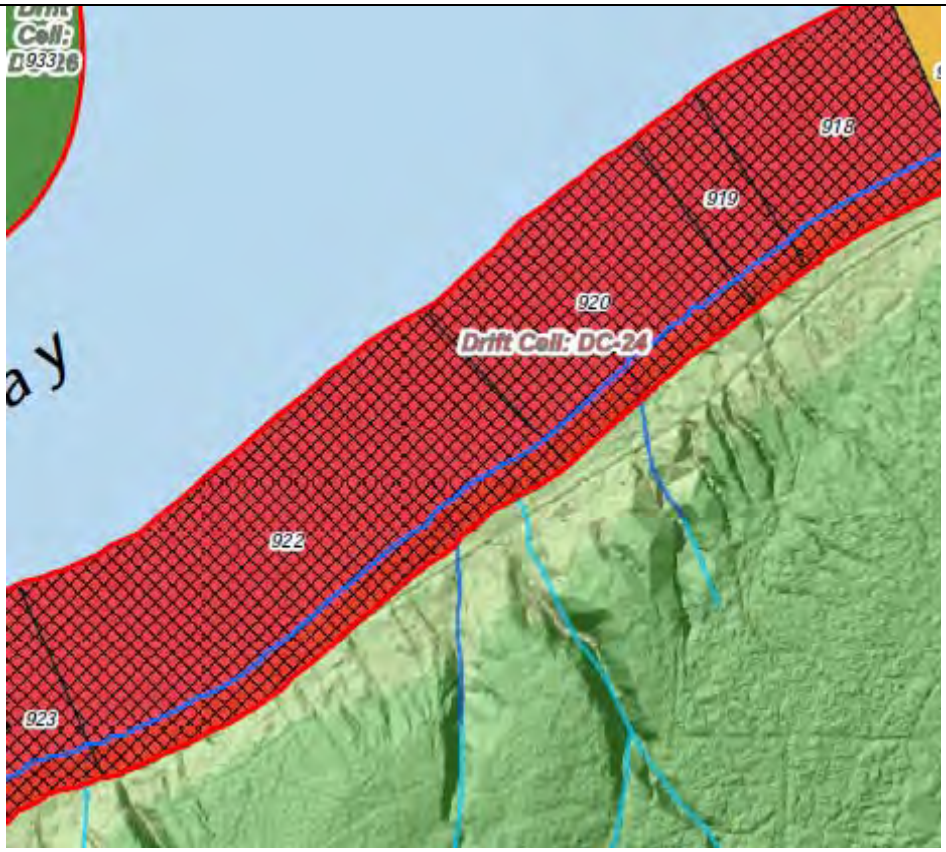
Critical Areas: Cat. 1 CARA, Frequently Flooded area, Streams (F) (N), Wetlands, Mod/High Geohazard

Land Use: Rural Wooded, Rural Residential, Rural Protection, Public Facility, Leaking Underground Storage Tank; 305(b) Waters of Concern; Prohibited Shellfish Harvest (western end)

Known Cultural and Historic Resources: Landform referent to shoreline attributes and camping localities on the shoreline.



Central Hood Canal Drift Cell DC-24 (Seabeck)

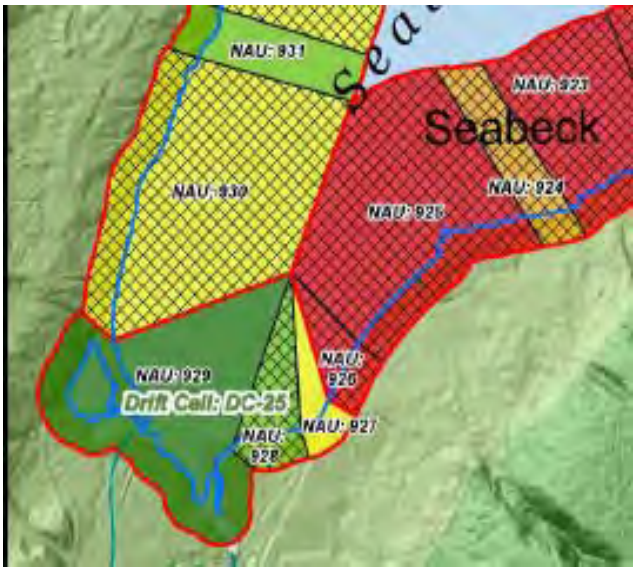


Central Hood Canal Drift Cell DC-24 (Seabeck)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
912	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Culverts, Floats/Docks, Pilings, Groins	Light	Floats and docks w/ floats, Overhanging Structures	Enhance, Create & Restore Site Processes
913	Wave Deposition	Armoring, Groins	Substrate		Enhance, Create & Restore Site Processes
914	Tidal Erosion, Wave Deposition, Fluvial Deposition	Armoring	Substrate		Enhance
915	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings	Wave Energy (Open)	Armoring, Pilings	Enhance, Create & Restore Site Processes
916	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings Floats/Docks	Light	Floats and docks w/ floats, Overhanging Structures	Enhance, Create & Restore Site Processes
917	Sediment Transport, Wave Erosion (Open)	Armoring	Light	Overhanging Structures	Enhance, Create & Restore Site Processes
918	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches	Substrate		Enhance, Create & Restore Site Processes
919	Sediment Transport, Wave Erosion (Open)	Armoring, Groins	Substrate		Enhance, Create & Restore Site Processes
920	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings Floats/Docks	Substrate		Enhance, Create & Restore Site Processes
922	Sediment Transport, Wave Erosion (Open), Fluvial	Armoring, Boat Launches, Groins,	Substrate		Enhance, Create & Restore Site Processes

Central Hood Canal Drift Cell DC-24 (Seabeck)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Deposition	Floats/Docks			
923	Wave Deposition	Armoring, Pilings, Groins	Light	Floats and docks w/floats	Enhance, Create & Restore Site Processes
924	Wave Deposition	Armoring, Pilings	Wave Energy (Open)	Armoring, Pilings	Enhance, Create & Restore Site Processes
925	Wave Deposition	Armoring, Pilings, Marina	Water Quality	Marina, Water Quality	Enhance, Create & Restore Site Processes
926	Wave Deposition	Armoring	Water Quality	Water Quality	Enhance, Create & Restore Site Processes

Central Hood Canal Drift Cell DC-25 (Nicks Lagoon/Seabeck)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.94
% Armored: 13
Geomorphic Type: Embayment
Fluvial Influences (PSNERP #s): 20238, 20246, 20250
Terrestrial Veg: Closed Canopy– 32.30%, Non-forest – 39.11%, Other Natural Veg – 28.59%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 25-50%
Public Access: 1 Park/Preserve
Current Population Est: 38
Future Build-out Population Est: 48
% of Total Parcels Vacant/Underutilized: 21%
Priority Species/Habitat: Area of Ecological Significance, Wetlands, Pacific Herring Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 1 CARA, Frequently Flooded Area, Streams (F) (N), Wetlands
Land Use: Rural Protection; 305(b) Waters of Concern
Known Cultural and Historic Resources: Geographic referent to a mythological place at the head of Seabeck Bay.

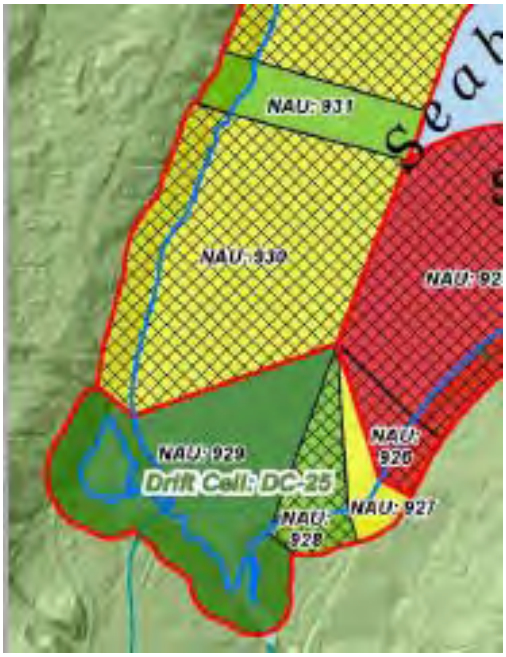


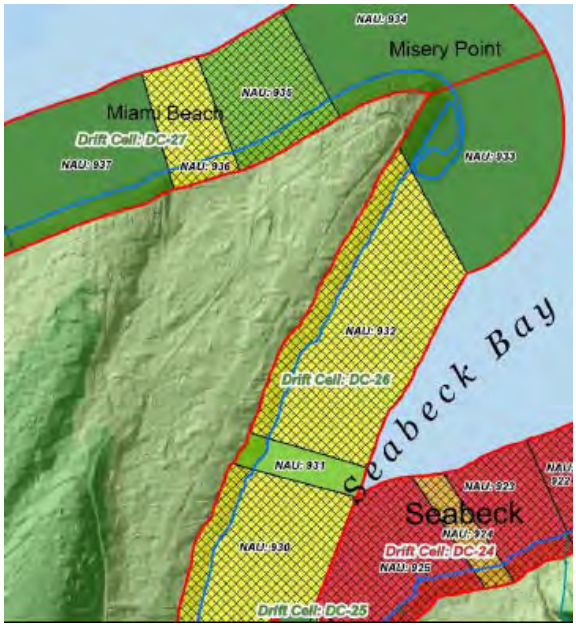
Central Hood Canal Drift Cell DC-25 (Nicks Lagoon/Seabeck)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
927	Fluvial Deposition, Tidal Erosion, Wave Erosion	Armoring	Water Quality	Water Quality	Restore, Enhance
928	Fluvial	Armoring	Water	Water	Conserve, Restore

Central Hood Canal Drift Cell DC-25 (Nicks Lagoon/Seabeck)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Deposition, Tidal Erosion, Wave Erosion		Quality	Quality	& Restore Site Processes
929	Tidal Erosion, Wave Deposition, Fluvial Deposition	Armoring, Floats, Pilings	Water Quality	Water Quality	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-26 (West Seabeck Bay)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.6
% Armored: 32
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20238, 20239, 20246
Terrestrial Veg: Closed Canopy– 47.40%, Non-forest – 38.39%, Other Natural Veg – 14.21%,
Marine Veg: Eelgrass (continuous, patchy), Kelp (continuous)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 88
Future Build-out Population Est: 108
% of Total Parcels Vacant/Underutilized: 18%
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Wetlands, Pacific Herring Spawning & Surf Smelt/Sand lance Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Freq. Flooded Area, Wetlands, Mod. Geohazard
Land Use: Rural Residential, Rural Protection; 303(d)
Known Cultural and Historic Resources: Geographic place name referent to Misery Point.





Central Hood Canal Drift Cell DC-26 (West Seabeck Bay)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
930	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring, Boat Launches, Pilings,	Water Quality	Water Quality	Restore, Enhance & Restore Site Processes

Central Hood Canal Drift Cell DC-26 (West Seabeck Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
		Groins, Floats/Docks			
931	Sediment Transport, Wave Erosion (Open)	Armoring	Water Quality	Water Quality	Conserve, Restore
932	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Groins, Floats/Docks	Water Quality	Water Quality	Restore, Enhance & Restore Site Processes
933	Wave Deposition		Water Quality		Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-27 (Miami Beach)

Drift Cell Disturbance Score: Low (1)

Length (miles): 2.73

% Armored: 26

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20239, 20240, 20241, 20242, 20249, 20251, 20515, 20516, 21211

Terrestrial Veg: Closed Canopy– 60.75%, Non-forest – 34.43%, Other Natural Veg – 4.81%, Giant Hogweed

Marine Veg: Eelgrass (continuous, patchy), Salt Marsh Fringe (continuous, patchy)

Overhanging Veg: 50-75%

Public Access: 1 Park; 1 Boat Launch

Current Population Est: 240

Future Build-out Population Est: 288

% of Total Parcels Vacant/Underutilized: 14%

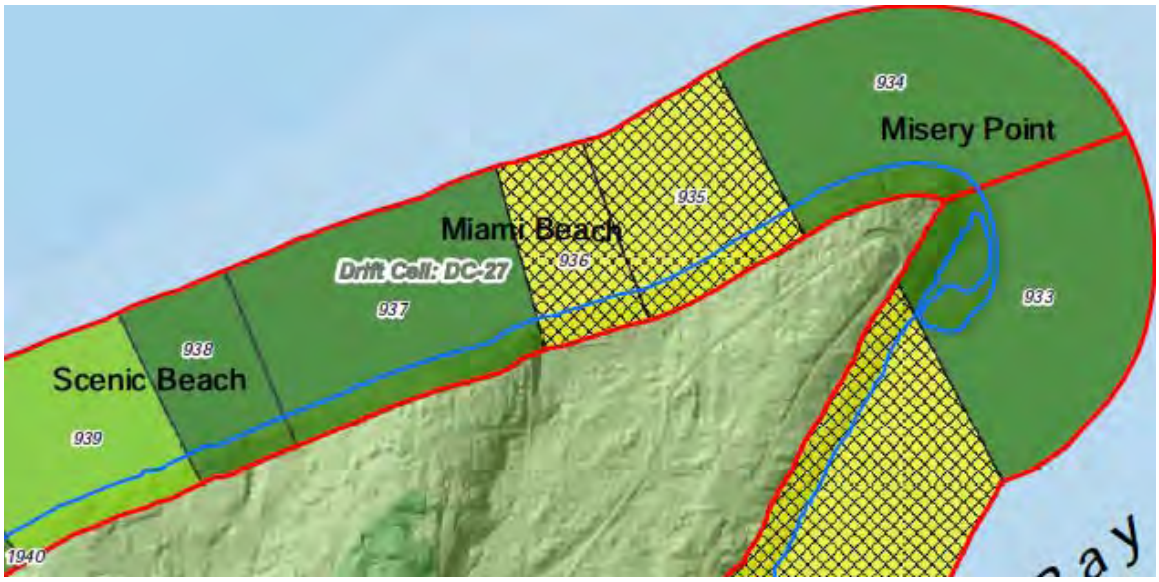
Priority Species/Habitat: Area of Ecological Significance, Pacific Herring Spawning & Surf Smelt/Sand Lance Spawning, Bald Eagle

Shoreform Change: 0

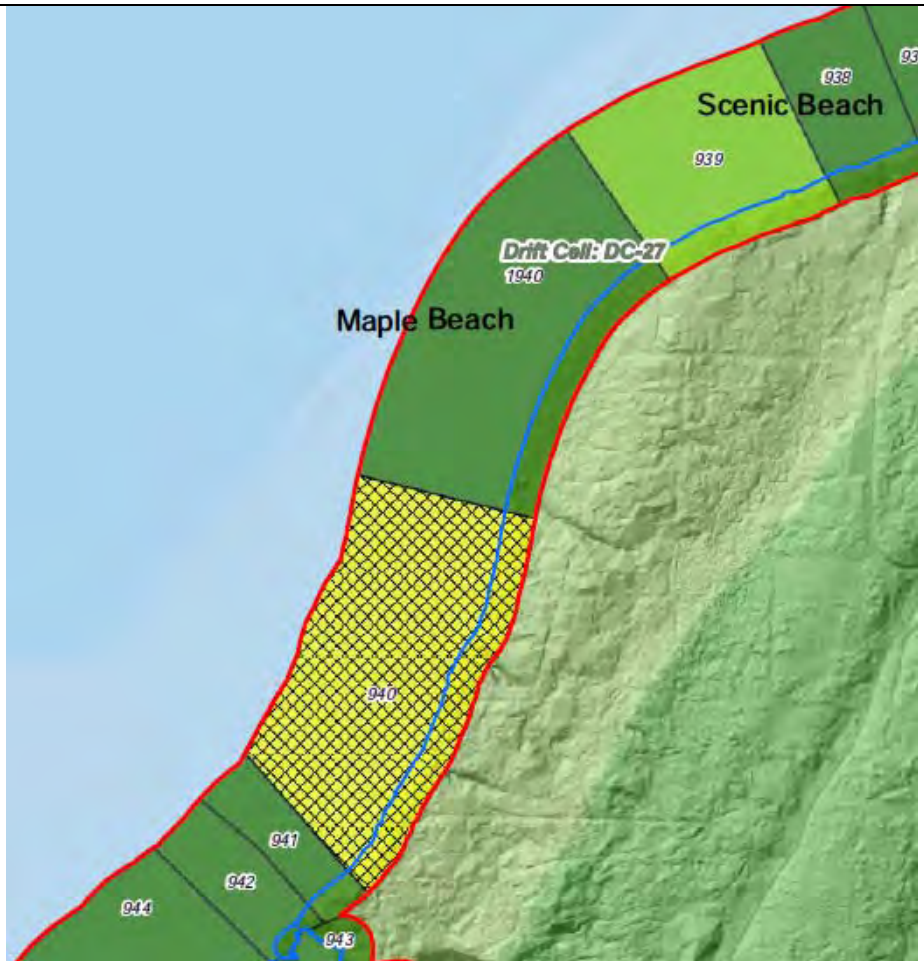
Critical Areas: Cat. 1 & 2 CARA, Freq. Flood. Area, Streams (F) (N), Mod/High Geohazard

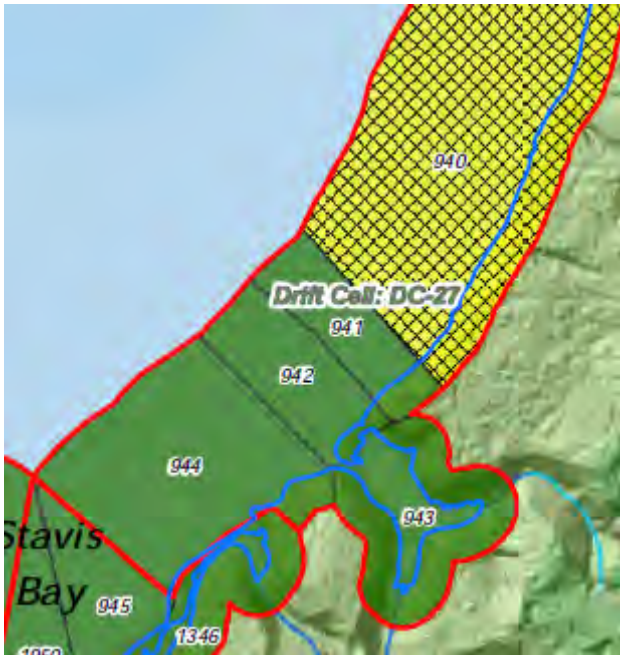
Land Use: Rural Wooded, Rural Residential, Public Facility; 305(b) Waters of Concern

Known Cultural and Historic Resources: Reference to fishing activities, seasonal campsites on shoreline, and a seasonal potlatch house.



Central Hood Canal Drift Cell DC-27 (Miami Beach)





Central Hood Canal Drift Cell DC-27 (Miami Beach)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
934	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Open)		Protect, Conserve, Restore
935	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring, Boat Launch, Pilings, Floats/Docks	Light	Floats and docks w/floats, Overhanging Structures	Restore, Enhance & Restore Site Processes
936	Wave Deposition	Armoring	Substrate		Restore, Enhance & Restore Site Processes
937	Sediment Transport, Wave Erosion (Open), Wave Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
938	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
939	Sediment Transport, Wave Erosion (Open)	Armoring, Floats/Docks	Light	Floats and docks w/floats, Overhanging Structures	Conserve, Restore
1940	Wave Deposition	Armoring	Frequency of Disturbance		Protect, Conserve, Restore
940	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch, Pilings, Floats/Docks	Light	Floats and docks w/floats, Overhanging Structures	Restore, Enhance & Restore Site Processes
941	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Open)	Armoring	Protect, Conserve, Restore
942	Wave Deposition		Frequency of Disturbance	Overhanging Structures	Protect, Conserve, Restore
943	Tidal Erosion, Wave Deposition, Fluvial Deposition				Protect, Conserve, Restore
944	Wave Deposition	Armoring	Frequency of Disturbance	Overhanging Structures	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-28 (Stavis Bay)

Drift Cell Disturbance Score: Low (1)

Length (miles): 2.58

% Armored: 0

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 21211, 20515, 21145, 20553

Terrestrial Veg: Closed Canopy – 71.25%, Non-forest – 3.75%, Other Natural Veg – 25.00%

Marine Veg: Eelgrass (continuous, patchy), Salt Marsh Fringe (continuous, patchy)

Overhanging Veg: 50-75%

Public Access: 1 Undeveloped Park (divided by private property); 1 view access

Current Population Est: 30

Future Build-out Population Est: 60

% of Total Parcels Vacant/Underutilized: 46%

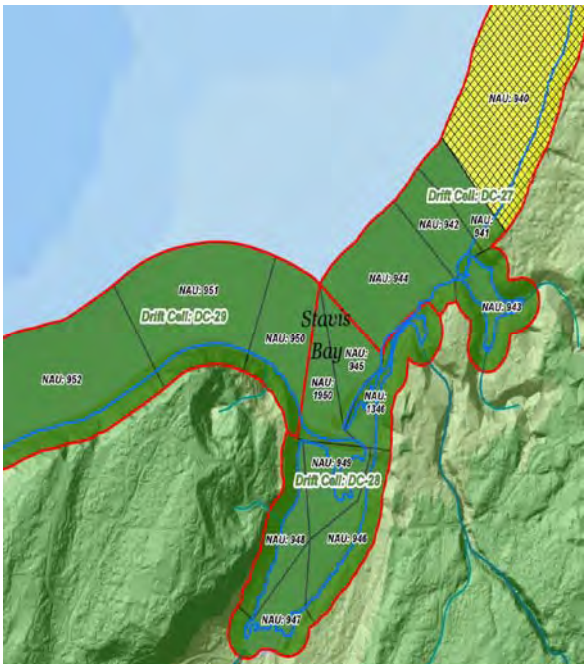
Priority Species/Habitat: Area of Ecological Significance, Lagoons, Wetlands, Pacific Herring Spawning, Bald Eagle

Shoreform Change: 0

Critical Areas: Cat. 1 & 2 CARA, Frequently Flooded Area, Streams (F) (N), Wetlands, Mod/High Geohazard

Land Use: Rural Residential; 305(b) Waters of Concern

Known Cultural and Historic Resources: Reference to fishing for flounders and camping on shoreline.

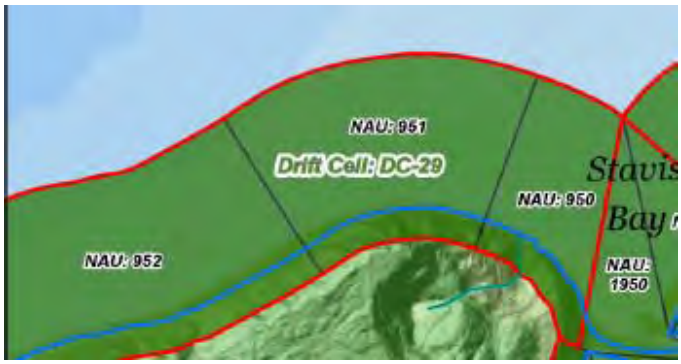


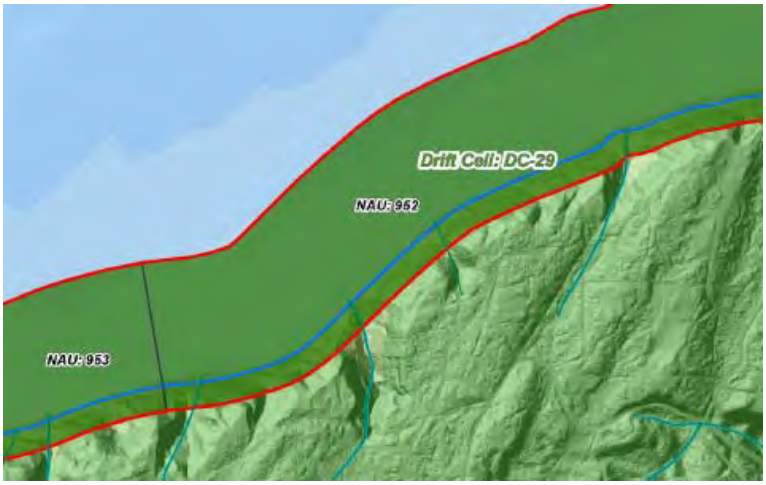
Central Hood Canal Drift Cell DC-28 (Stavis Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
945	Wave Deposition				Protect, Conserve,

Central Hood Canal Drift Cell DC-28 (Stavis Bay)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
					Restore
1346	Tidal Erosion, Wave Deposition, Fluvial Deposition		Water Quality		Protect, Conserve, Restore
946	Tidal Erosion, Wave Deposition, Fluvial Deposition		Water Quality		Protect, Conserve, Restore
947	Tidal Erosion, Wave Deposition, Fluvial Deposition		Frequency of Disturbance	Overhanging Structure	Protect, Conserve, Restore
948	Tidal Erosion, Wave Deposition, Fluvial Deposition		Water Quality	Water Quality	Protect, Conserve, Restore
949	Tidal Erosion, Wave Deposition, Fluvial Deposition				Protect, Conserve, Restore
1950	Wave Deposition		Frequency of Disturbance		Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-29 (Hood Canal)

Drift Cell Disturbance Score: Low (1)
Length (miles): 2.43
% Armored: 17
Geomorphic Type: Open
Fluvial Influences (PSNERP #s): 20553, 20253, 20254, 20256, 20258, 20262, 20263, 21212
Terrestrial Veg: Closed Canopy– 81.74%, Non-forest – 17.55%, Other Natural Veg – 0.71%
Marine Veg: Eelgrass (continuous, patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 93
Future Build-out Population Est: 133
% of Total Parcels Vacant/Underutilized: 28%
Priority Species/Habitat: Area of Ecological Significance, Pacific Herring Spawning, Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (N) (U), Mod/High Geohazard
Land Use: Rural Residential
Known Cultural and Historic Resources: Reference to fishing in July and August.





Central Hood Canal Drift Cell DC-29 (Hood Canal)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
950	Sediment Transport, Wave Erosion (Open)	Armoring, Floats/Docks	Light	Floats and docks w/floats	Protect, Conserve, Restore
951	Sediment Transport, Wave Erosion (Open)		Water Quality		Protect, Conserve, Restore
952	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance	Overhanging Structures	Protect, Conserve, Restore
953	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Floats/Docks	Substrate		Protect, Conserve, Restore
954	Wave Deposition	Armoring	Frequency of Disturbance	Overhanging Structures Structures	Conserve and Restore

Central Hood Canal Drift Cell DC-30 (Hood Point)

Drift Cell Disturbance Score: High (3)

Length (miles): 2.19

% Armored: 24

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 21212, 20542, 20266, 20268, 20269, 20270, 20272, 20274, 20275, 20276

Terrestrial Veg: Closed Canopy – 83.26%, Non-forest – 10.84%, Other Natural Veg – 5.90%

Marine Veg: Eelgrass (continuous, patchy)

Overhanging Veg: 50-75%

Public Access: 1 Park; 1 Public tidelands (DNR)

Current Population Est: 55

Future Build-out Population Est: 85

% of Total Parcels Vacant/Underutilized: 65%

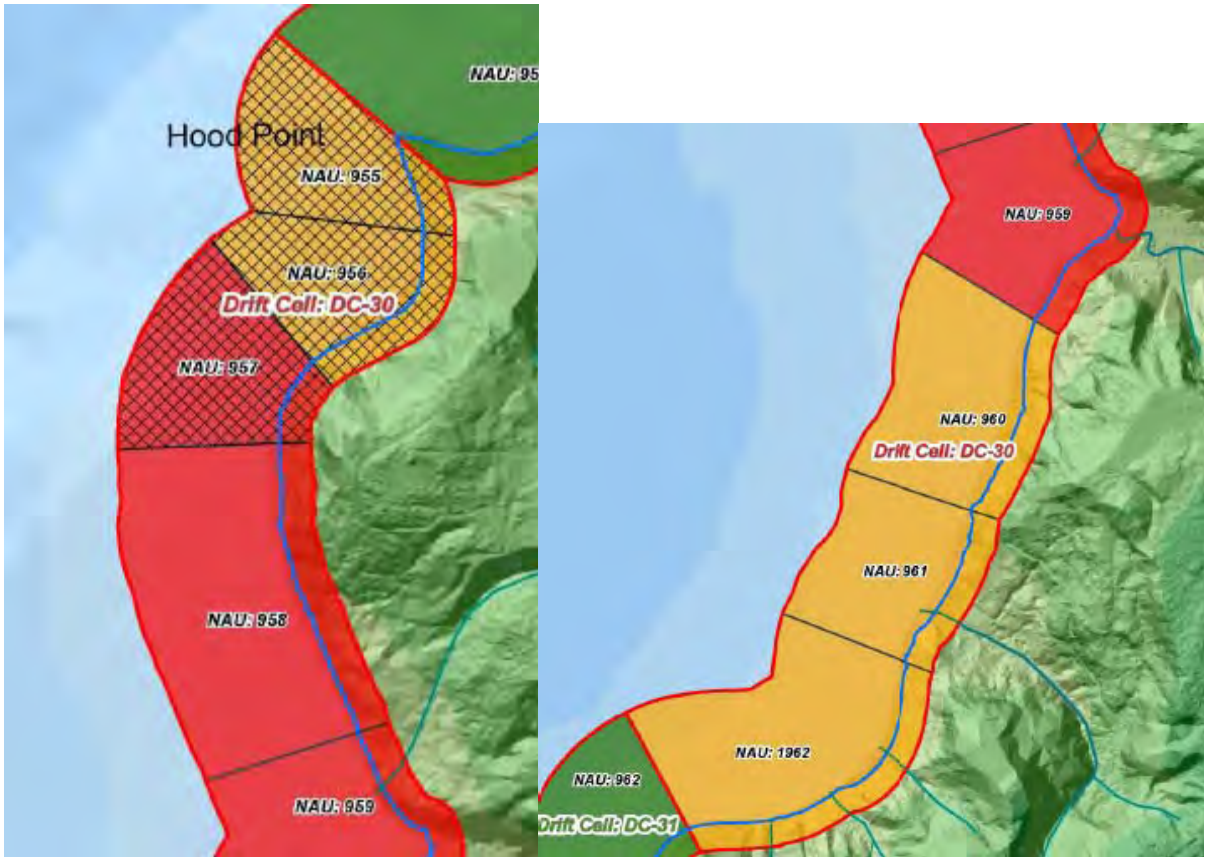
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt/Sand Lance Spawning, Wetlands, Bald Eagle, Osprey

Shoreform Change: 0

Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Mod/High Geohazard

Land Use: Rural Wooded, Rural Residential, Rural Protection, Public Facility

Known Cultural and Historic Resources: Reference to collecting mussels and fishing in July and August.



Central Hood Canal Drift Cell DC-30 (Hood Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
955	Wave Deposition	Armoring	Substrate		Enhance & Restore Site Processes
956	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Groins	Wave Energy (Open)	Armoring	Enhance, Create & Restore Site Processes
957	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings, Groins	Frequency of Disturbance	Pilings	Enhance, Create & Restore Site Processes
958	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings, Floats/Docks	Substrate		Enhance, Create
959	Wave Deposition, Tidal Erosion, Fluvial Deposition	Armoring, Groins	Water Quality	Water Quality	Enhance, Create
960	Sediment Transport, Wave Erosion (Open)				Enhance
961	Fluvial Deposition, Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch, Floats/Docks	Substrate		Enhance
1962	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch	Substrate		Enhance

Central Hood Canal Drift Cell DC-31 (Nellita)

Drift Cell Disturbance Score: Low (1)

Length (miles): 2.14

% Armored: 15

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20276, 20278, 20279, 20280, 20281, 20282, 20283, 20284, 20285, 20286,

Terrestrial Veg: Closed Canopy – 94.20%, Non-forest – 4.54%, Other Natural Veg – 1.26%

Marine Veg: Eelgrass (continuous)

Overhanging Veg: 50-75%

Public Access: None

Current Population Est: 18

Future Build-out Population Est: 45

% of Total Parcels Vacant/Underutilized: 46%

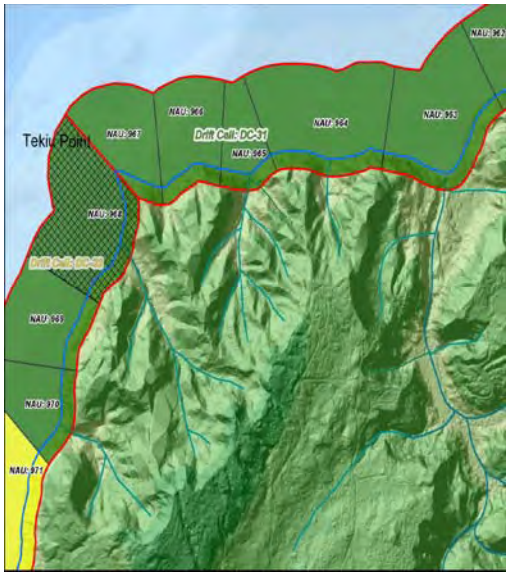
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt/Sand Lance Spawning, Bald Eagle

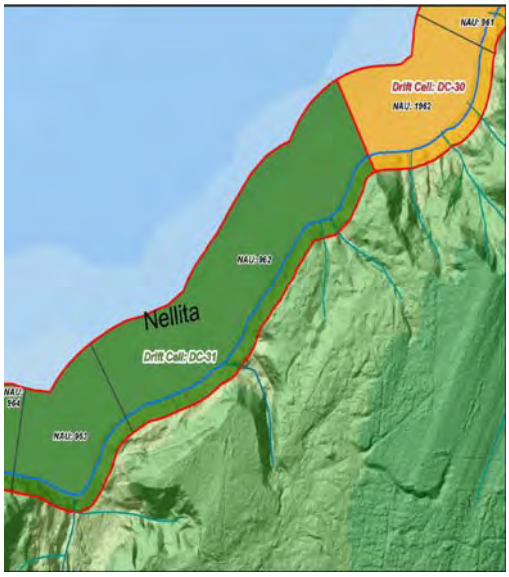
Shoreform Change: 0

Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (F) (N) (U), Mod./High Geohazard

Land Use: Rural Wooded, Rural Residential

Known Cultural and Historic Resources: Artifacts; Reference to camping on the shoreline, fishing off Tekiu Point, and camping at Nellita. A seasonal camp site archaeological shell midden was recorded in the drift cell.





Central Hood Canal Drift Cell DC-31 (Nellita)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
962	Sediment Transport, Wave Erosion (Open),	Armoring, Boat Launch,	Frequency of Disturbance	Pilings, Overhanging	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-31 (Nellita)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Fluvial Deposition	Pilings, Floats/Docks		Structures	
963	Fluvial Deposition, Sediment Transport, Wave Erosion (Open)	Pilings	Frequency of Disturbance	Pilings	Protect, Conserve, Restore
964	Sediment Transport, Wave Erosion (Open)	Boat Launch, Pilings, Floats/Docks	Wave Energy (Open)	Pilings	Protect, Conserve, Restore
965	Sediment Transport, Wave Erosion (Open), Fluvial Deposition	Armoring	Substrate, Wave Energy (Open)	Armoring	Protect, Conserve, Restore
966	Sediment Transport, Wave Erosion (Open)	Armoring	Substrate		Protect, Conserve, Restore
967	Wave Deposition				Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-32 (Tekiu Point)

Drift Cell Disturbance Score: Medium (2)

Length (miles): 1.13

% Armored: 24

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20283, 20287, 20289, 20290, 20291, 20293, 20295

Terrestrial Veg: Closed Canopy – 75.73%, Non-forest – 19.73%, Other Natural Veg – 4.54%

Marine Veg: Eelgrass (continuous, patchy)

Overhanging Veg: 50-75%

Public Access: None

Current Population Est: 40

Future Build-out Population Est: 73

% of Total Parcels Vacant/Underutilized: 45%

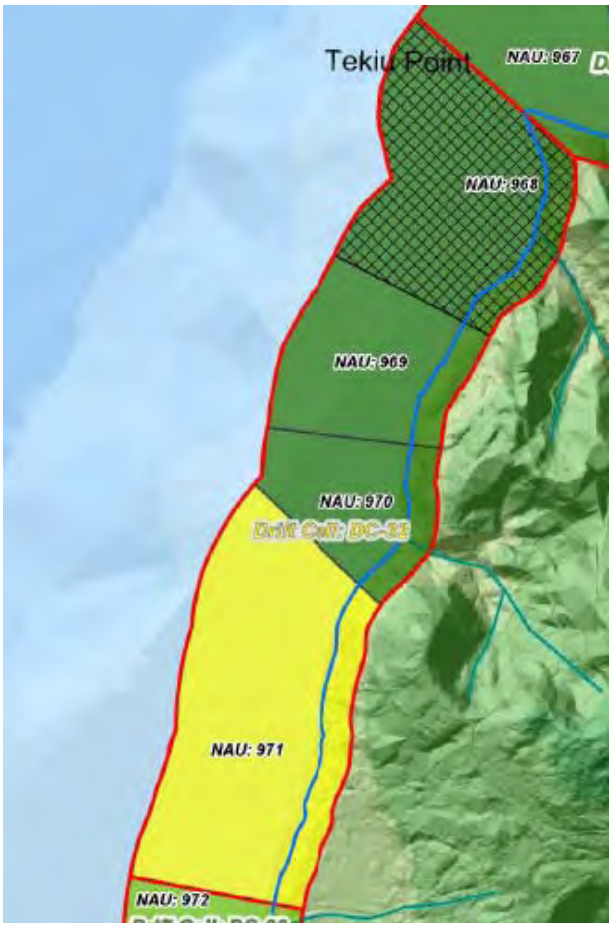
Priority Species/Habitat: Area of Ecological Significance, Surf Smelt/Sand Lance Spawning, Bald Eagle

Shoreform Change: 0

Critical Areas: Cat. 2 CARA, Streams (F) (N) (U), Mod/High Geohazard

Land Use: Rural Wooded, Rural Residential

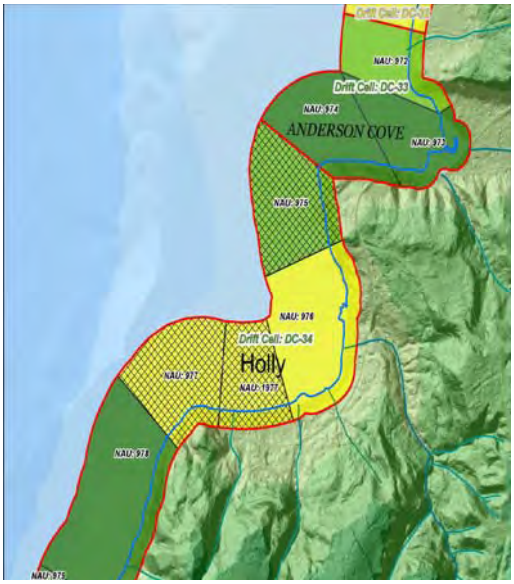
Known Cultural and Historic Resources: Reference to fishing activities off Tekiu Point and camping on the shoreline.



Central Hood Canal Drift Cell DC-32 (Tekiu Point)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
968	Wave Deposition, Fluvial Deposition	Armoring, Groins	Substrate		Protect, Conserve, Restore & Restore Site Processes
969	Sediment Transport, Wave Erosion (Open)	Armoring, Pilings	Light	Floats and docks w/floats	Conserve, Restore, Enhance and Restore Site Processes
970	Sediment Transport, Wave Erosion (Open)				Protect, Conserve, Restore
971	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches, Pilings	Water Quality	Water Quality	Conserve, Restore, Enhance

Central Hood Canal Drift Cell DC-33 (Anderson Cove)

Drift Cell Disturbance Score: Low (1)
Length (miles): 0.79
% Armored: 6
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20295, 20300, 21142
Terrestrial Veg: Closed Canopy – 81.92%, Non-forest – 5.96%, Other Natural Veg – 12.12%
Marine Veg: Eelgrass (continuous)
Overhanging Veg: 50-75%
Public Access: 1 ROW view access
Current Population Est: 5
Future Build-out Population Est: 15
% of Total Parcels Vacant/Underutilized: 67%
Priority Species/Habitat: Area of Ecological Significance, Wetlands
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Frequently Flooded Area, Streams (F) (N), Mod/High Geohazard
Land Use: Rural Wooded, Rural Residential; 303(d)
Known Cultural and Historic Resources: Reference to summer camps in Anderson Cove for clamming and fishing and landform referent for promontory.



Central Hood Canal Drift Cell DC-33 (Anderson Cove)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
972	Sediment Transport, Wave Erosion (Open)	Armoring, Culverts, Pilings	Water Quality	Water Quality	Conserve, Restore
973	Wave Deposition, Tidal Erosion,	Floats,	Water	Water	Protect, Conserve,

Central Hood Canal Drift Cell DC-33 (Anderson Cove)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Fluvial Deposition	Pilings	Quality	Quality	Restore
974	Sediment Transport, Wave Erosion (Open)	Pilings	Water Quality	Water Quality	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-34 (Holly)

Drift Cell Disturbance Score: Low (1)

Length (miles): 2.01

% Armored: 27

Geomorphic Type: Embayment, Open

Fluvial Influences (PSNERP #s): 20300, 20301, 20302, 20305, 20306, 20307, 20311

Terrestrial Veg: Closed Canopy – 69.37%, Non-forest – 30.63%, Other Natural Veg – 0%, Yellow Flag Iris, Knotweed

Marine Veg: Eelgrass (continuous, patchy)

Overhanging Veg: 50-75%

Public Access: 1 ROW view

Current Population Est: 113

Future Build-out Population Est: 178

% of Total Parcels Vacant/Underutilized: 34%

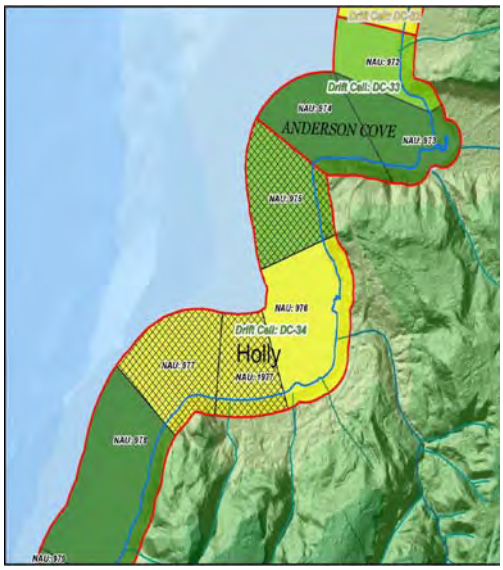
Priority Species/Habitat: Area of Ecological Significance, Estuarine Zone, Surf Smelt/Sand Lance Spawning

Shoreform Change: 0

Critical Areas: Cat. 1 & 2 CARA, Frequently Flooded area, Streams (F) (N) (U), Mod/High Geohazard

Land Use: Rural Wooded, Rural Residential; 303(d)

Known Cultural and Historic Resources: Landform referent for promontory, reference to sea mammal hunting activities, and reference to summer camps along the shoreline.



Central Hood Canal Drift Cell DC-34 (Holly)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
975	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launch	Water Quality	Water Quality	Conserve, Restore & Restore Site Processes

Central Hood Canal Drift Cell DC-34 (Holly)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
976	Fluvial Deposition	Armoring, Pilings	Water Quality	Water Quality	Restore, Enhance
1977	Wave Deposition	Armoring	Water Quality	Water Quality	Restore, Enhance & Restore Site Processes
977	Sediment Transport, Wave Erosion (Open)	Armoring, Boat Launches	Water Quality	Water Quality	Restore, Enhance & Restore Site Processes
978	Sediment Transport, Wave Erosion (Open)	Armoring	Wave Energy (Open)	Armoring	Protect, Conserve, Restore
979	Sediment Transport, Fluvial Deposition, Wave Erosion (Open)				Protect, Conserve, Restore
980	Sediment Transport, Wave Erosion (Open)		Water Quality	Water Quality	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-35 (South Holly)

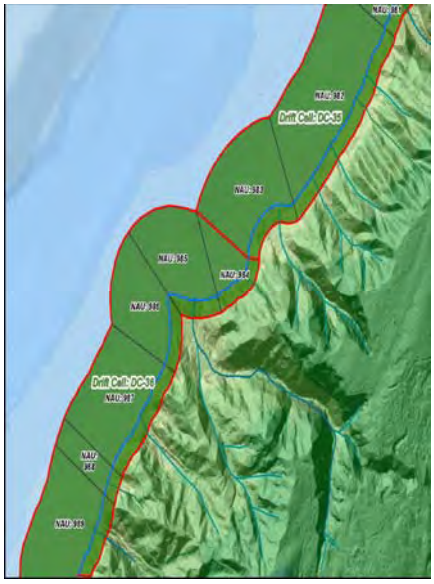
Drift Cell Disturbance Score: Low (1)
Length (miles): 1.48
% Armored: 0
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20307, 20308, 20309, 20310, 20312, 20313, 20314, 20315
Terrestrial Veg: Closed Canopy – 97.36%, Non-forest – 0%, Other Natural Veg – 2.64%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 75-100%
Public Access: 1 Park (Kayak access only)
Current Population Est: 0
Future Build-out Population Est: 25
% of Total Parcels Vacant/Underutilized: 44%
Priority Species/Habitat: Area of Ecological Significance
Shoreform Change: 0
Critical Areas: Cat. 2 CARA, Streams (F) (N) (U), Mod. Geohazard
Land Use: Rural Wooded
Known Cultural and Historic Resources: Reference to summer campsites along the shoreline.

Central Hood Canal Drift Cell DC-35 (South Holly)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
1980	Sediment Transport, Wave Erosion (Open)		Water Quality	Water Quality	Protect, Conserve, Restore
981	Fluvial Deposition		Water Quality	Water Quality	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-35 (South Holly)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
982	Sediment Transport, Wave Erosion (Open)		Water Quality	Water Quality	Protect, Conserve, Restore
983	Wave Deposition		Water Quality	Water Quality	Protect, Conserve, Restore

Central Hood Canal Drift Cell DC-36 (County Line)

Drift Cell Disturbance Score: Low (1)
Length (miles): 1.01
% Armored: 7
Geomorphic Type: Embayment, Open
Fluvial Influences (PSNERP #s): 20315, 20316, 20317, 20318, 20320, 20478
Terrestrial Veg: Closed Canopy – 81.47%, Non-forest – 10.91%, Other Natural Veg – 7.62%
Marine Veg: Eelgrass (patchy)
Overhanging Veg: 50-75%
Public Access: None
Current Population Est: 25
Future Build-out Population Est: 48
% of Total Parcels Vacant/Underutilized: 47%
Priority Species/Habitat: Area of Ecological Significance; Bald Eagle
Shoreform Change: 0
Critical Areas: Cat. 2 CARA; Freq. Flooded Area, Streams (F) (N) (U), Mod. Geohazard
Land Use: Rural Wooded
Known Cultural and Historic Resources: Geographic landform referent for Chimom Point and reference to summer camp sites on the shoreline.



Central Hood Canal Drift Cell DC-36 (County Line)

NAU #	Dominant Process (DP)	DP Stressors	Controlling Factors (CF)	CF Stressors	Prioritization Recommendations
984	Sediment Transport, Wave Erosion (Open)		Water Quality	Water Quality	Protect, Conserve, Restore
985	Fluvial & Wave	Pilings	Frequency of	Pilings	Protect, Conserve,

Central Hood Canal Drift Cell DC-36 (County Line)					
NAU #	**Dominant Process (DP)**	**DP Stressors**	**Controlling Factors (CF)**	**CF Stressors**	**Prioritization Recommendations**
	Deposition		Disturbance		Restore
986	Fluvial & Wave Deposition		Light	Floats and docks w/floats, Overhanging Structures	Protect, Conserve, Restore
987	Sediment Transport, Wave Erosion (Open)	Armoring, Floats/Docks	Substrate		Protect, Conserve, Restore
988	Sediment Transport, Wave Erosion (Open)				Protect, Conserve, Restore
989	Sediment Transport, Wave Erosion (Open)	Armoring	Frequency of Disturbance		Protect, Conserve, Restore

3.5.2 Freshwater Shoreline

3.5.2.1 Lower Big Beef Creek

LOWER BIG BEEF CREEK PSNERP Watershed #21147 **PHYSICAL ENVIRONMENT**			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High/Moderate-High Impairment: Moderate/Moderate Synthesis: Protection 2-Restoration / Protection 2-Restoration **Surface Storage:** Importance: Moderate/High Impairment: Moderate/High Synthesis: Protection 3 / Restoration 1 **Groundwater Recharge:** Importance: Moderate-High / Moderate-High Impairment: Low / Moderate Synthesis: Protection 2 / Protection 2-Restoration **Groundwater Discharge:** Importance: Moderate / Moderate-High Impairment: Moderate / Moderate-High Synthesis: Protection 3-Restoration /Restoration 2X **Water Flow Synthesis:** Importance: Moderate / Moderate-High Impairment: Low/Moderate Synthesis: Protection 3 / Protection 2-Restoration	- Begins in same marsh as Tahuya River, flows through Lake Wm.Symington - Shallow perched aquifer supplies the majority of base flow. Additionally, the Seabeck Aquifer supplies flow near the mouth (Kuttel, 20003) - approx. 40 cfs mean annual flow (USGS)	- Summer water temperatures at the outlet of Lake Symington routinely exceed salmonid habitat requirements due to its shallow depth. (Kuttel, 2003) - 2009: Long and Short-term trend is stationary for fecal coliform - 305(b): DO(5), pH(1-2), Temperature(5), FCB(1), Fish Habitat(4c), Copper (1) - 303(d): DO and Temperature	- Steep, moderately confined ravine from lake to RM 2.0; RM 2.0 to mouth, valley widens and gradient drops to less than 1%; this lower reach includes floodplain and complex side-channel habitat.(Kuttel,2003) - Entire watershed from RM 5.0 (just below lake) upstream was logged between 1920-50. - Floodplain connectivity rated as Fair. Channel complexity of the lower two miles reduced due to modifications (see below) - Soils: fine sediments rated at fair/good; sediment supply has increased 8-fold over natural background production, due to logging and road building on steep, unstable slopes and the bridge causeway under Seabeck Hwy impedes tidal flushing

LOWER BIG BEEF CREEK PSNERP Watershed #21147 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
			- LWD is lacking in quality and quantity because riparian forest is dominated by red alder with patches of conifers, illegal salvage, removal of log jams and channelization; led to loss of pool habitat

LOWER BIG BEEF CREEK PSNERP Watershed #21147

LOWER BIG BEEF CREEK PSNERP Watershed #21147 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Chinook (hatchery stock returns) (1) - Coho - Chum (Summer and Fall) (1) - Steelhead (1) - Cutthroat	- Osprey (2)	- English Ivy - Watershed: English Ivy, Yellow Flag Iris	- Class "C" Refugia (due to UW Research Station and WDFW weir and Lake Symington dam, otherwise would be Class "A") - Waters requiring supplemental spawning and incubation protection for salmonid species

LOWER BIG BEEF CREEK PSNERP Watershed #21147 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Public Facility -Rural Wooded - Rural Protection - Mineral Resource - Rural Commercial - Rural Residential Site (shoreline jurisdiction): - Public Facility - Rural Wooded - Rural Protection - Mineral Resource Residential Vacant/Underutilized Parcels: 42%	**21147** Area: 8130 Stream Miles: 37 Drains to Drift Cell #: DC-23 Pasture: 4 Scrub/Shrub: 442 Grassland: 231 Wetland: 391 Deciduous: 320 Evergreen: 4969 Mixed: 1098 Total Forested: 6387 79% Total Impervious: 633 8%	- University of Washington (up to RM 2.0) - Washington Department of Natural Resources - Washington Department of Fisheries	- Cat.1 CARA (entire) - Moderate Geologic Hazard (most) - Frequently Flooded Area - Class 1 and 2 Wildlife Habitat Conservation Area - Stream (S)(F)	- Weir at RM 0.1 is a complete fish passage barrier and is used to count migrating coho salmon. Adults are passed over the weir to continue upstream. - Diking (SW bank), road construction, filling and alteration of side channel habitat associated with operating of the Big Beef Research Station (some removed/adjusted) - Kidhaven Rd. constructed down an ephemeral stream channel that is prone to wasout and increasing sediment loads - Big Beef Causeway - Lake Symington Dam and Fish Ladder: likely prevents most juvenile migration both up and downstream under certain flow conditions; increased downstream temperatures

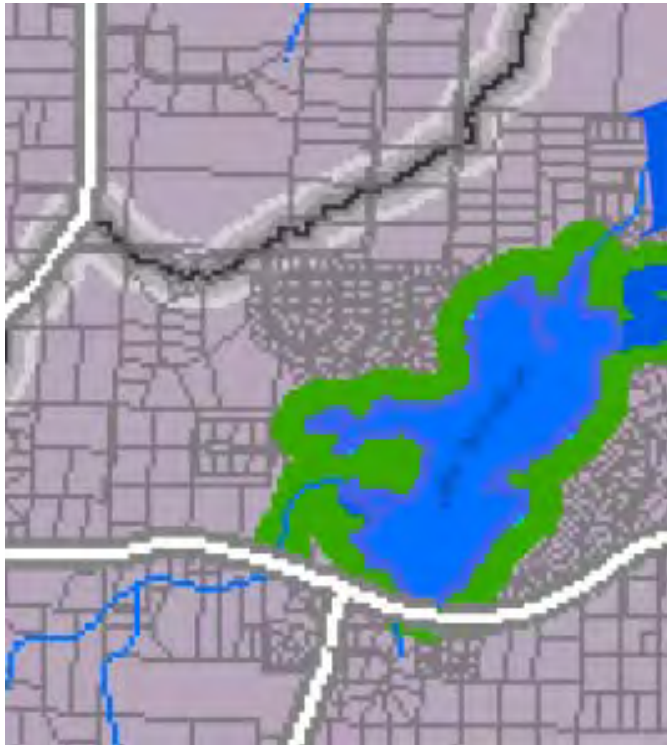
LOWER BIG BEEF CREEK PSNERP Watershed #21147 RECOMMENDATIONS	JURISDICTION MAP
- The Causeway and bridge should be replaced with a raised causeway or bridge at the earliest opportunity (May, 2003) - Restore stream-riparian connectivity with the estuary - Restore the lower floodplain and riparian corridor, as well as the historic delta in order to maximize the opportunity for full creek-tidal water exchange/circulation - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.5.2.2 Lake Symington

LAKE SYMINGTON PSNERP Watershed # 21147 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: High Impairment: High Synthesis: Restoration 1 **Groundwater Recharge:** Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Groundwater Discharge:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Protection 2X **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration	- 60 acres - Mean depth 7' - Max depth 23' 422 acre feet volume - 2.74 shoreline miles	- 2009: meets e. Coli standards; no other health issues - Classification: mesotrophic (Characterized by mostly clear water. However, abundant aquatic plant growth is a concern for residents of Lake Symington) - 305(b): DO (1), FCB (2), Temp. (5), Fish Habitat (4c), Total Phosphorus (1) - 303(d): Temperature	- Soils: Gravels, Till; lake bottom sandy/silty - Overhanging vegetation present, but sparse (DOE lake monitoring report)) - Lake built in an area of historic meandering stream channel, riparian wetlands and beaver ponds used for salmonid rearing, current lake does not provide these features (LWD, meandering channel, wetlands and ponds absent) (Kuttel, 2003) - Directly above lake and downstream of Holly Rd: "hot-spot" for coho rearing, relatively natural with good instream LWD and rearing pools. - Island near SW end of lake provides waterfowl habitat and nesting

LAKE SYMINGTON PSNERP Watershed # 21147 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho (rearing in upstream segment) - Cutthroat - Steelhead (1)	- Osprey (2)	- Watershed: English Ivy, Yellow Flag Iris - Warm-water exotic fish - Aquatic Weeds: moderate/heavy (DOE)	- None

LAKE SYMINGTON PSNERP Watershed # 21147 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Public Facility - Rural Wooded - Rural Protection - Mineral Resource - Rural Commercial - Rural Residential Site (shoreline jurisdiction): - Rural Residential Residential Vacant/Underutilized Parcels: 17%	**21147** Area: 8130 Stream Miles: 37 Drains to Drift Cell #: DC-23 Pasture: 4 Scrub/Shrub: 442 Grassland: 231 Wetland: 391 Deciduous: 320 Evergreen: 4969 Mixed: 1098 Total Forested: 6387 79% Total Impervious: 633 8%	- None	- Cat.1 CARA (entire) - Moderate Geologic Hazard (outlet) - Frequently Flooded Area - Class 1 and 2 Wildlife Habitat Conservation Area - Lake	- Port of Bremerton - KPUD: Frog Pond Water System - 1998: 50% of shoreline developed (DOE) - Other than lawns, very little human disturbance along shoreline (DOE) - Multiple roads around lake, including Holly Rd, Coho Run, Big Beef Crossing, and Redwing Trail - multiple SFRs

LAKE SYMINGTON PSNERP Watershed # 21147 RECOMMENDATIONS	JURISDICTION MAP
- Long-term solution to temperatures and salmonid predation includes removal of the dam and lake or a significant modification of flow through the lake - Manage for temperature, nutrients and fecal coliform as well as exotic fish and vegetation species in a manner that protects salmonid habitat conditions in the lake and downstream. - Water Flow Management Category: Protection Restoration • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channel. Also remove any floodplain fill • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6 South Hood Canal

The South Hood Canal Characterization Area includes those watersheds that drain to Hood Canal, from the Union River Watershed (Bremerton Airport) to the Dewatto River Watershed, to the Mason County line (not including marine shoreline in Mason County). Within this Characterization Area are the communities of Tahuya, Mission Lake and Dewatto. There are no cities within this Characterization Area.

There are no marine Shoreline Jurisdictions within this Characterization Area. Watersheds that drain to Hood canal are split at the Kitsap-Mason County line.

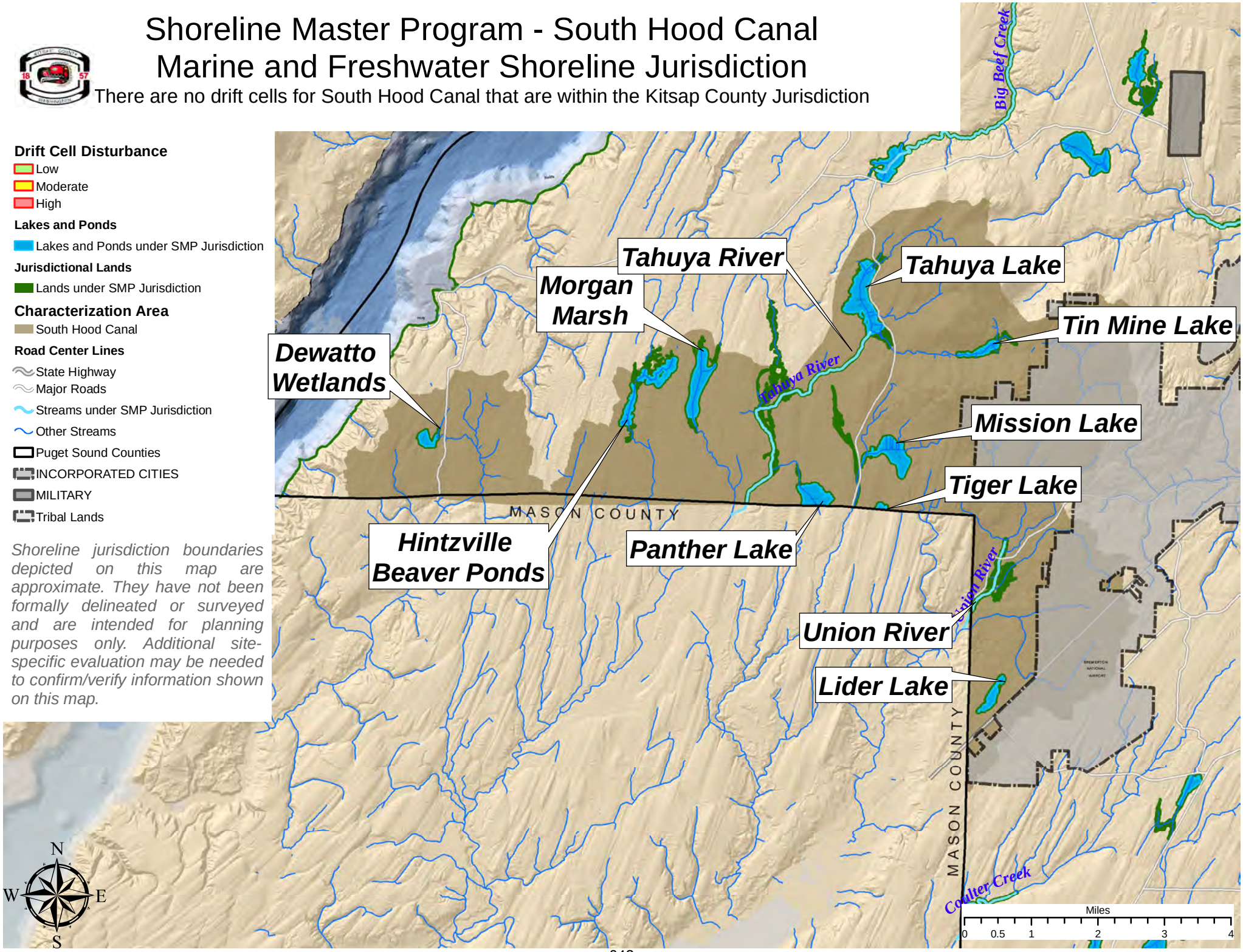
For the freshwater jurisdictions, the South Hood Canal Characterization area has **11 Freshwater Shoreline Jurisdictions**:

- Lider Lake
- Union River and floodplain
- Tiger Lake
- Mission Lake and River floodplain
- Panther Lake
- Tahuya River
- Tahuya Lake
- East Tahuya River
- Morgan Marsh
- Hintzville Beaver Ponds
- Dewatto Wetland

The map below shows the watershed drainage units in the South Hood Canal Characterization area. The map also depicts the minimum required shoreline jurisdiction in green.

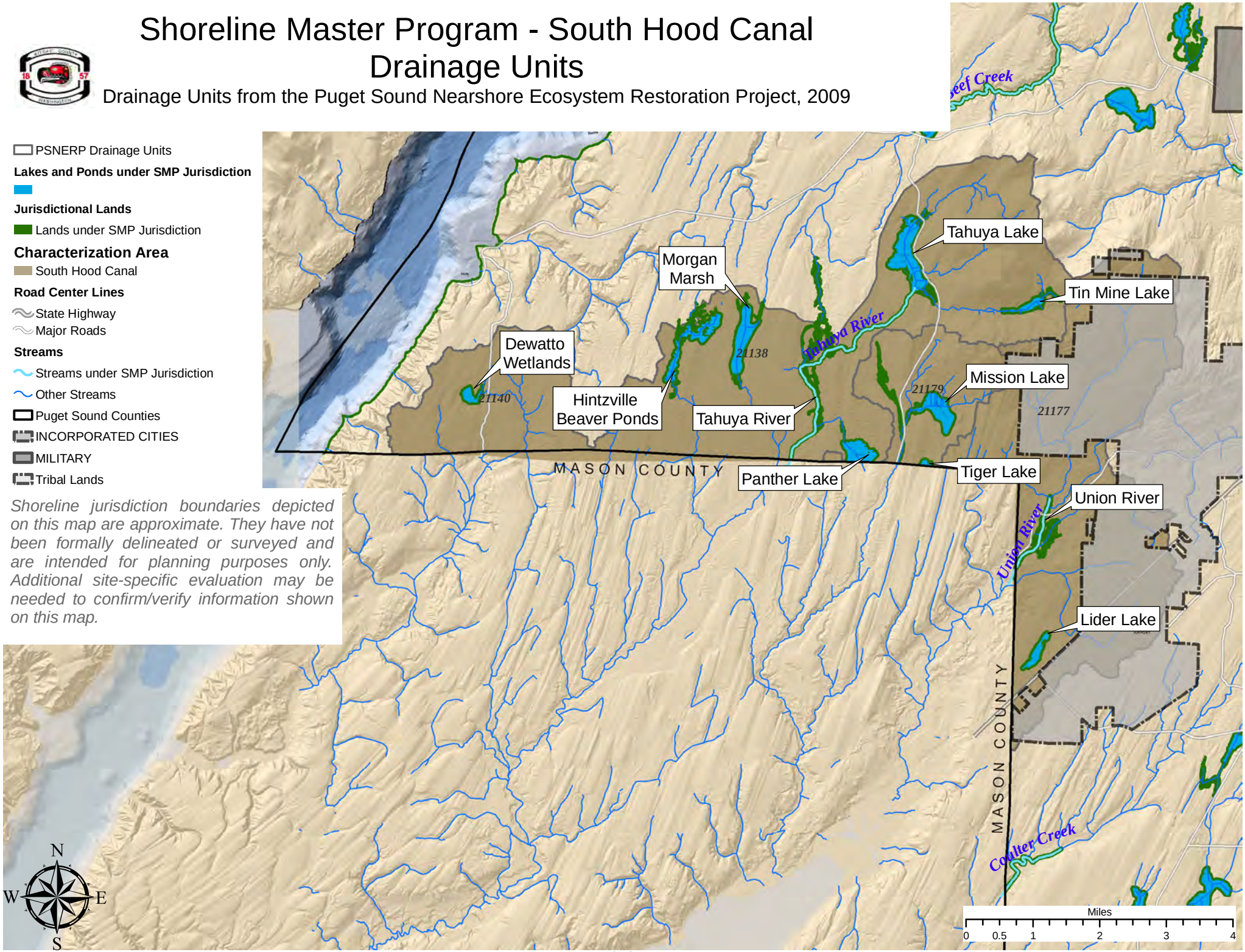
Shoreline Master Program - South Hood Canal
Marine and Freshwater Shoreline Jurisdiction

There are no drift cells for South Hood Canal that are within the Kitsap County Jurisdiction



Shoreline Master Program - South Hood Canal Drainage Units

Drainage Units from the Puget Sound Nearshore Ecosystem Restoration Project, 2009



3.6.1 Marine Shoreline

There are no marine Shoreline Jurisdictions within the South Hood Canal Characterization Area. Watersheds that drain to Hood canal are split at the Kitsap-Mason County line.

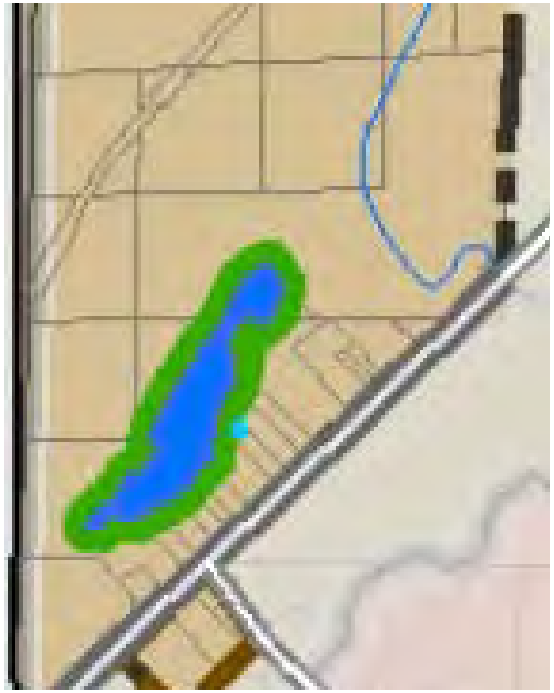
3.6.2 Freshwater Shoreline

3.6.2.1 Lider Lake

LIDER LAKE PSNERP WATERSHED 21177 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High Impairment: High Synthesis: Restoration **Surface Storage:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X **Groundwater Recharge:** Importance: Moderate Impairment: High Synthesis: Restoration-Least Impact to Processes 1 **Groundwater Discharge:** Importance: Moderate Impairment: Moderate Synthesis: Protection 3-Restoration **Water Flow Synthesis:** Importance: Moderate-High Impairment: Moderate-High Synthesis: Restoration 2X	- None	- None	- Soils: Till - Land use outside of/ adjacent to shoreline jurisdiction area is dominated by industrial forestry, consisting of cutblocks and immature forest. - Aerial review shows the riparian buffer to be approx. 50-75 feet wide of mature forest.

LIDER LAKE PSNERP WATERSHED 21177 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**		**Non-regulatory**
- Unknown	- Unknown	- Watershed: Knotweed, Giant Hogweed	- Category B Refugia

LIDER LAKE PSNERP WATERSHED 21177 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Forest Resource Lands - Rural Residential - Rural Wooded - Mineral Resource - Public Facility - Rural Protection Site (shoreline jurisdiction): - Rural Residential - Rural Protection Residential Vacant/Underutilized Parcels: 47%	**21177** Area: 8707 Stream Miles: 45 Drains to Drift Cell #:Union R. Pasture: 3 Scrub/Shrub: 808 Grassland: 334 Wetland: 330 Deciduous: 362 Evergreen: 5070 Mixed: 603 Total Forested: 6035 69.30% Total Impervious: 1032 11.80%	- None	- Cat. 2 CARA - Wetlands	- Aerial review shows approx. 3 docks at southern wetted-shore of wetland. - Port of Bremerton - SR 16 is located adjacent but outside of jurisdiction; jurisdiction is at closest point 0.25 miles from highway - State cleanup site located < 0.2 miles from jurisdiction - Roads that intersect jurisdiction: NE Log Yard Rd. - Private wells

IDER LAKE PSNERP WATERSHED 21177 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Evaluate fish passage status of culvert at Twin Spits Rd. crossing, and extent of suitable habitat upstream - Evaluate freshwater habitat conditions throughout the watershed - Correct problems as warranted - Water Flow Management : • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channels. Also, remove any floodplain fill. • Groundwater Recharge: Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement or rain gardens • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.2 Union River

UNION RIVER PSNERP # 21177 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High /High Impairment: Moderate-High / Moderate Synthesis: Restoration 1/ Protection 1-Restoration **Surface Storage:** Importance: High/ Moderate Impairment: Moderate-High/ Moderate Synthesis: Restoration 1/ Protection 3-Restoration **Groundwater Recharge:** Importance: High/ High Impairment: High/ Low Synthesis: Restoration/ Protection 1 **Groundwater Discharge:** Importance: High / High Impairment: Moderate / Moderate Synthesis: Protection 1-Restoration / Protection 1-Restoration **Water Flow Synthesis:** Importance: High / High Impairment: Moderate-High/ Moderate Synthesis: Restoration 1/ Protection 1-Restoration	- 1998 Flow data showed outflow from Union River Reservoir exceeded inflow during summer chum spawning, which may impact available spawning habitat and access (Kuttel, 2003).	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria - Water quality over the last year has been moderate, with a few periods of elevated bacterial levels. - 305(b): Lower-FCB(4a), DO(2), pH(2) Above Belfair Valley Rd- DO(5), pH(1), FCB(1) - 303(d): DO	- Soils: lacustrine - Floodplain connectivity rated fair for upper mainstem. Numerous headwater wetland complexes that provide rearing habitat in the upper watershed (May and Peterson, 2003). - Riparian buffers consist of a mix of mature and immature coniferous and deciduous trees. Buffers are moderately wide with some development encroachment on the upper Union River. May and Peterson (2003) rated the riparian condition as fair. - May and Peterson (2003) rated LWD abundance as moderate on the Union River. - Throughout the Union River watershed, stream clean-outs and riparian logging have led to low key LWD piece abundance (Kuttel, 2003). - Some deep pools with cover present; however pool frequency rated as poor (May and Peterson,

UNION RIVER PSNERP # 21177 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
			2003). - Fine sediments were rated as good on the mainstem. Streambank stability was rated as optimal upstream of river mile 5.0 (May and Peterson, 2003). - Land use outside of/adjacent to shoreline jurisdiction area is dominated by industrial forestry, water storage/diversion and rural residential development (Kuttel, 2003).

UNION RIVER PSNERP # 21177 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Chinook (1) - Coho - Steelhead (1) - Cutthroat	- Unknown	- Knotweed - Watershed: Knotweed, Giant Hogweed	- Category B Refugia

UNION RIVER PSNERP # 21177 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Forest Resource Lands - Rural Residential - Rural Wooded - Mineral Resource - Public Facility - Rural Protection Site (shoreline jurisdiction): - Rural Protection Residential Vacant/Underutilized Parcels: 22%	**21177** Area: 8707 Stream Miles: 45 Drains to Drift Cell #: Union R. Pasture: 3 Scrub/Shrub: 808 Grassland: 334 Wetland: 330 Deciduous: 362 Mixed: 603 Evergreen: 5070 Total Forested: 6035 69.30% Total Impervious: 1032 11.80%	- None	- Cat. 2 CARA - Frequently Flooded Area - Wetlands - Streams (F-type) - Class 1 Wildlife Habitat Conservation Area	- Port of Bremerton - The Bremerton Water Utility maintains the Union River Reservoir, outside of the shoreline jurisdiction. - Private wells - Roads that intersect min. jurisdiction: W Belfair Valley Rd. - Roads that intersect optional jurisdiction: Wilkinson Rd W; Minard Rd W; Broussard Ln W - Encroaching homes and farms in floodplain by diking and agricultural activities

UNION RIVER PSNERP # 21177 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Leave LWD in streams. - Maintain mature riparian forest buffers, preferably composed of coniferous trees that provide large and long-lived large woody debris. - Improve LWE abundance through proper riparian zone management (to improve stream structure, percent pools, pool frequency). - Encourage beaver population growth (to improve stream structure, percent pools). - Replant degraded areas to re-establish riparian forest buffers - Water Flow Management: • Delivery: Re-establish natural cover or use other green infrastructure measures • Storage: Re-establish natural hydrology by plugging ditches that drain wetlands and restore natural outlet and native vegetation to slow water; re-establish overbank flooding by removing dikes/levees or raising incised channels. Also, remove any floodplain fill. • Groundwater Recharge: Avoid/minimize impacts to recharge areas through clustering and provide native cover on balance of site to facilitate infiltration. Existing urban development can be retrofitted using green infrastructure measures such as permeable pavement or rain gardens • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.3 Tiger Lake

TIGER LAKE PSNERP WATERSHED # 21179 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Surface Storage:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Groundwater Recharge:** Importance: High Impairment: Moderate Synthesis: Protection 1 **Groundwater Discharge:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Water Flow Synthesis:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration	- 110 acres (only 6.3 in Kitsap) - 40-feet maximum depth - 2.5 miles shoreline length	- 2009: Water quality met the E.Coli standard - Classified as 'oligo-mesotrophic' (characterized by clear water, with limited plant and animal production)	- Soils: Till - Lake shoreline does not have many aquatic plants. Lake bottom is gravel with low growing plants (WDOE Lake Monitoring Program, 1997). - Shoreline erosion reported as primary problem (1997). High levels of runoff from shoreline development and clearcutting (WDOE Lake Monitoring Program, 1997).

TIGER LAKE PSNERP WATERSHED # 21179 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Bald Eagle (1)	- Unknown	- Category B Refugia

TIGER LAKE PSNERP WATERSHED # 21179 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential - Rural Wooded Site (shoreline jurisdiction): - Rural Residential Residential Vacant/Underutilized Parcels: 23%	**21179** Area: 2036 Stream Miles: 12 Drains to Drift Cell #: Big Mission R. Pasture: 0 Scrub/Shrub: 347 Grassland: 150 Wetland: 39 Deciduous: 49 Evergreen: 1119 Mixed: 230 Total Forested: 1398 68.70% Total Impervious: 23 1.10%	- WDFW Public Access (gravel boat launch for motorized boats)	- Moderate geologic hazard (west shore) - Frequently Flooded Area - Class 1 Wildlife Habitat Conservation Area	-Residential development surrounding lake shore. - Aerial review shows approx. 6 docks in shoreline jurisdiction area. - Numerous water intake lines (WDOE Lake Monitoring Program, 1997). - Public fishing access at north end of lake - Port of Bremerton - Boat Launch (gravel) - Roads that intersect jurisdiction: Unnamed road off of NE Tiger Lake Rd. W - Private wells

TIGER LAKE PSNERP WATERSHED # 21179 RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

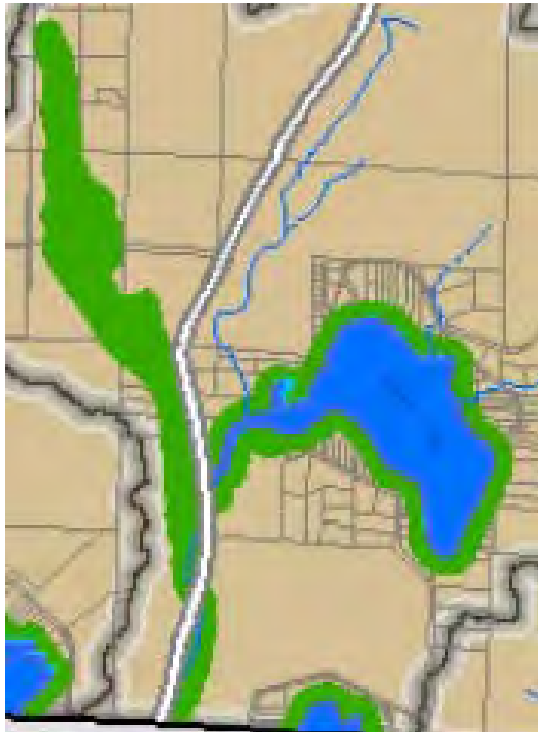
3.6.2.4 Mission Lake and Associated Wetland

MISSION LAKE and ASSOCIATED WETLAND PSNERP WATERSHED #21179 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High/ High Impairment: Moderate/ Low Synthesis: Protection 1-Restoration / Protection 1 **Surface Storage:** Importance: High/ High Impairment: Low/ Low Synthesis: Protection 1/ Protection 1 **Groundwater Recharge:** Importance: High/ Moderate-High Impairment: Low/ Low Synthesis: Protection 1/ Protection 2 **Groundwater Discharge:** Importance: Moderate/ Moderate-High Impairment: Low/ Low Synthesis: Protection 3/ Protection 2 **Water Flow Synthesis:** Importance: High/ High Impairment: Low/ Low Synthesis: Protection 1/ Protection 1	- WA Department of Fisheries monitored summer flows in upper mainstem (1980). Low flow of 1.1 cfs estimated. Upstream of RM 7.4 stream goes dry during low flow periods (Kuttel, 2003). - 2004 Wet Season flow: min: 27.03 cfs, max: 33.41 cfs, 29 cfs (geometric mean value) -Dry season flow: min: 4.0, max: 6.30, 5.03 cfs (GMV) (Michaud and Britton, 2005) (monitoring completed outside of shoreline jurisdiction) <u>Lake</u> - 88 acres - 25-feet maximum depth - 1.9 miles shoreline length	- 2009: Water quality met the E.Coli standard - Classified as 'mesotrophic' (characterized by mostly clear water, with moderate plant and animal production) - 305(b): Invasive Exotic Species(4c), Total Phosphorus (1) - 2004 monitoring study results showed: Temperature was above standard on one occasion. Nutrient and total suspended solid concentrations were low to moderate which in combination with the low runoff resulted in low pollutant yields (Michaud and Britton, 2005).	- The shoreline jurisdiction area is surrounded by industrial forests managed by DNR and other land owners (Kuttel, 2003). - Soils: Till - These glacial sediments are highly erodible. - Floodplain connectivity rated fair for upper stream reaches - The riparian condition was rated fair for the upper mainstem of Big Mission Creek. The riparian buffer is moderately wide and composed of a mix of mature and immature coniferous and deciduous trees (May and Peterson, 2003). - Lake shoreline has moderate to high aquatic plant growth (WDOE Lake Monitoring Program, 1995) - LWD abundance rated as moderate. In the 1960s, WA Department of Fisheries removed

MISSION LAKE and ASSOCIATED WETLAND PSNERP WATERSHED #21179 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
			log jams. Channel cleanouts are a continued problem associated with development along the creek (May and Peterson, 2003). - Fine sediments rated optimal throughout mainstem. Pool frequency rated poor; pool quality good with some deep pools with cover. Bank stability rated as optimal in headwaters (May and Peterson, 2003).

MISSION LAKE and ASSOCIATED WETLAND PSNERP WATERSHED #21179 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho	- Unknown	- Purple loosestrife (WDOE Lake Monitoring Program, 1995)	- Area of Ecological Significance - Category C Refugia

MISSION LAKE and ASSOCIATED WETLAND PSNERP WATERSHED #21179 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Residential - Rural Wooded Site (shoreline jurisdiction): - Rural Residential - Rural Wooded Residential Vacant/Underutilized Parcels: 24%	**21179** Area: 2036 Stream Miles: 12 Drains to Drift Cell #: Big Mission R. Pasture: 0 Scrub/Shrub: 347 Grassland: 150 Wetland: 39 Deciduous: 49 Evergreen: 1119 Mixed: 230 Total Forested: 1398 68.70% Total Impervious: 23 1.10%	- WDFW Public Access (gravel boat launch for motorized boats)	- Moderate Geologic Hazard - Cat. 2 CARA - Frequently Flooded Area (narrow buffer on west shore) - Wetlands - Streams (Type-F) - Lake (Type-F)	- Partial fish barrier located downstream of lake outlet (Kuttel, 2003) - Residential development surrounds lake shore - Aerial review shows numerous docks along shoreline (approx. 37 docks). - Port of Bremerton - Public fishing access on east shore - Boat Launch (gravel) - Roads that intersect jurisdiction: N. Mission Rd. W; Gold Creek Rd. W; Camp Sundown Rd. NW - Bank armoring is associated with development along stream - Water Flow Management Category: Protection bank (Kuttel, 2003). - Private wells

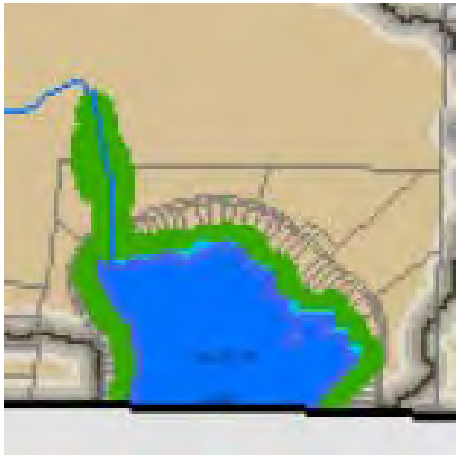
MISSION LAKE and ASSOCIATED WETLAND PSNERP WATERSHED #21179 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Improve LWD abundance through proper riparian zone management. Leave LWD in streams. (In order to maintain stream structure/pool frequency) - Maintain riparian forest buffers along streams to improve streambank stability. - Water Flow Process Management: • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.5 Panther Lake

PANTHER LAKE PSNERP WATERSHED # 21138 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Surface Storage:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Groundwater Recharge:** Importance: High Impairment: Moderate Synthesis: Protection 1 **Groundwater Discharge:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration **Water Flow Synthesis:** Importance: High Impairment: Moderate Synthesis: Protection 1-Restoration	- 48 acres - 36-feet maximum depth - 1.3 miles shoreline length	- 2009: Met the E.Coli standard - Classified as 'oligo-mesotrophic' (clear water with limited plant and animal growth) - 305(b): Total Phosphorus (1)	- DOE Lake Monitoring Program recorded that the lake has approx. 50% riparian vegetation (1996) - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that extensive logged areas exist outside of/adjacent to the shoreline jurisdiction. - Soils: Till

PANTHER LAKE PSNERP WATERSHED # 21138 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Wood Duck - Osprey (2) - Mountain Quail - Great Blue Heron (2) - Bald Eagle (1) - Mink	- Unknown	- Area of Ecological Significance (west shore) - Category A Refugia

PANTHER LAKE PSNERP WATERSHED # 21138 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Rural Protection - Forest Resource Lands - Mineral Resource Site (shoreline jurisdiction): - Rural Residential - Rural Wooded Residential Vacant/Underutilized Parcels: 18%	**21138** Area: 9221 Stream Miles: 43 Drains to Drift Cell #: N/A Pasture: 0 Scrub/Shrub: 1372 Grassland: 654 Wetland: 360 Deciduous: 79 Evergreen: 5866 Mixed: 560 Total Forested: 6504 70.50% Total Impervious: 105 1.10%	- None	- Moderate Geologic Hazard (west shore) - Frequently Flooded Area (west shore) - Wetlands - Lake (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- Residential development exists along the shoreline. - Aerial review shows private docks along shoreline (approximately 36 docks). - Port of Bremerton - Public fishing access at south end - Roads that intersect jurisdiction: Panther Lake Rd. W - Private wells

PANTHER LAKE PSNERP WATERSHED # 21138 **RECOMMENDATIONS**	**JURISDICTION MAP**
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

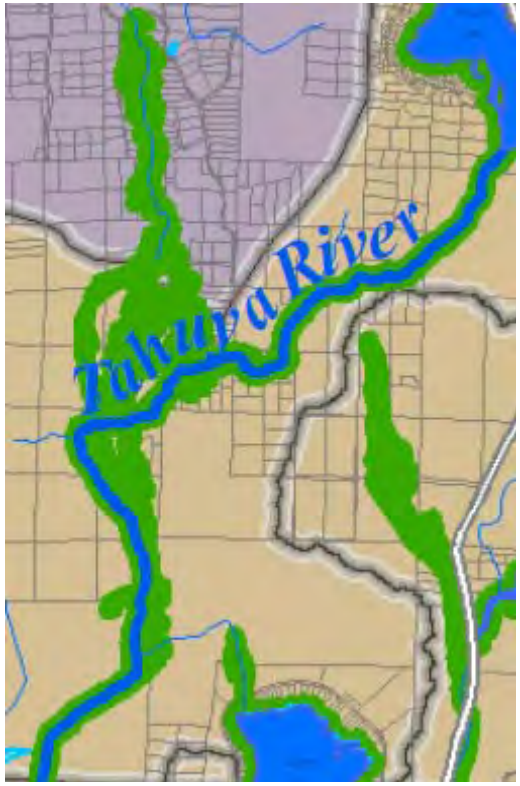
3.6.2.6 Tahuya River and Optional Floodplain

TAHUYA RIVER and OPTIONALFLOODPLAIN PSNERP WATERSHED # 21138 (+21147) PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High/ High/ High Impairment: Moderate/ Moderate/ Moderate Synthesis: P1R/ P1R/ P1R (Protection 1-Restoration) **Surface Storage:** Importance: High / High/ High Impairment: Moderate/ Moderate/ Moderate Synthesis: P1R/ P1R/ P1R (Protection 1-Restoration) **Groundwater Recharge:** Importance: High/ High/ High Impairment: Moderate/ Moderate/ Low Synthesis: Protection 1-Restoration/ Protection 1-Restoration / Protecion1 **Groundwater Discharge:** Importance: High/ High/ High Impairment: Moderate/ Moderate/ Low Synthesis: Protection 1-Restoration/ Protection 1-Restoration/ Protection1 **Water Flow Synthesis:** Importance: High/ High/ High Impairment: Moderate/ Moderate/ Moderate Synthesis:P1R/ P1R/ P1R (Protection 1-Restoration)	- Wide range in monitored flows indicate that drainage is driven by surface runoff (Michaud and Britton, 2005). - 2004 Wet Season flow: min: 94.93 cfs, max: 99.14 cfs, 97.04 cfs (geometric mean value); Dry season flow: min: 3.90 cfs, max: 4.81 cfs, 4.33 cfs (GMV) (Michaud and Britton, 2005) (monitoring completed outside of shoreline jurisdiction) - No recent flow records over multiple years. Many of the smaller tributaries dry up in early summer and in dry winter spells (Kuttel, 2003).	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria - 305(b): County line- DO(5), Bio assessment(2), FCB(2), pH(1) Upstream- DO(1), pH(2), Temp.(1) Lake Inlet- DO(1), FC(1), pH(1), Temp.(1) - 303(d): DO - There have been periods of low dissolved oxygen in this stream, which may be due to low summer flow conditions and the river's headwaters in Lake Tahuya, naturally lowering dissolved oxygen due to low water circulation and increased temperatures. - The Skokomish Tribe recorded water temperatures downstream of Lake Tahuya in 1996 (summer). 'High' temperatures recorded; for ex., Temperatures exceeded 16.3 °C on 43 of 50 days. (Kuttel,	- Riparian habitat ratings indicate that riparian buffers are wide, intact and composed of a mix of mature and immature coniferous and deciduous trees. The riparian condition was rated fair by the 2003 Kitsap Salmonid Refugia Report. - Stream modifications by the Washington Department of Fisheries occurred in the Tahuya River watershed in the 1960s. Consequently, numerous logjams and beaver dams were removed from the Tahuya mainstem. LWD abundance rated as moderate. - Pool quality on the Tahuya River mainstem rated as good; pools with cover present. Pool quality on tributaries rated as optimal; deep pools with cover are abundant (May and Peterson, 2003). >Fine sediment rated optimal throughout entire watershed (May and Peterson, 2003). - The upper watershed has

TAHUYA RIVER and OPTIONALFLOODPLAIN PSNERP WATERSHED # 21138 (+21147) PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
		2003) - Temperatures in exceedance of water quality standards on 2 or 4 dry season samplings. - Nutrient levels were recorded as consistently low. - Total suspended solids within moderate range (Michaud and Britton, 2005).	numerous headwater wetland complexes, providing extensive rearing habitat. - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that extensive logged areas exist outside of/adjacent to the shoreline jurisdiction. - Soils :Till / peat - The glacial till is moderately erodible (Kuttel, 2003).

TAHUYA RIVER AND FLOODPLAIN PSNERP WATERSHED # 21138 (+21147) BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Steelhead (1) - Cutthroat	- Wood Duck - Osprey (2) - Great Blue Heron (2) - Mountain Quail - Bald Eagle (1)	- Unknown	- Area of Ecological Significance - Category A/ Category C Refugia

TAHUYA RIVER AND FLOODPLAIN PSNERP WATERSHED # 21138 (+21147) LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Rural Protection -Forest Resource Lands - Mineral Resource Site (shoreline jurisdiction): - Rural Wooded - Rural Protection - Mineral Resource - Rural Residential Residential Vacant/Underutilized Parcels: 30%	**21138** **(21147)** Area: 9221 8130 Stream Miles: 43 37 Drains to Drift Cell #: N/A 23 Pasture: 0 4 Scrub/Shrub: 1372 442 Grassland: 654 231 Wetland: 360 390 Deciduous: 79 320 Evergreen: 5866 4970 Mixed: 560 1098 Total Forested: 6504 6386 70.5% 78.6% Total Impervious: 105 633 1.1% 7.8%	- DNR Green Mountain State Forest (partial: northern reach of river near Tahuya Lake outlet)	- Moderate Geologic Hazard (partial: near Tahuya Lake outlet) - Cat. 2, 1 CARA - Frequently Flooded Area entire - Wetlands - Streams (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- Stream modifications including the removal of numerous logjams and beaver dams occurred in the Tahuya River watershed in the 1960s. - Wetlands adjacent to northern tributary of the mainstem Tahuya (also connected to headwaters of Big Beef Creek) have been modified due to residental development. Potential modifications include wetland drainage, channelization and vegetation clearing. - Port of Bremerton - KPUD Hidden Homestead water service area; private wells

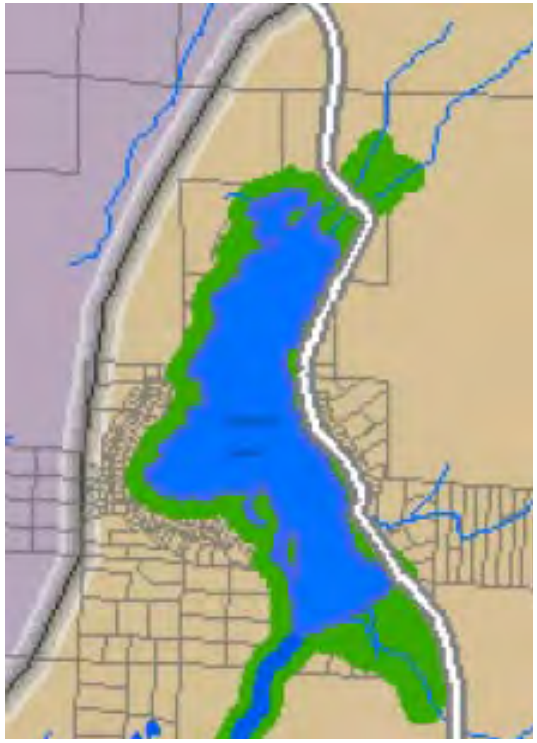
TAHUYA RIVER AND FLOODPLAIN PSNERP WATERSHED # 21138 (+21147) **RECOMMENDATIONS**	**JURISDICTION MAP**
- In order to mitigate for high stream temperatures: protect riparian forest buffers and restore where necessary: and do not construct shallow man-made lakes (Kuttel, 2003). - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.7 Lake Tahuya

LAKE TAHUYA PSNERP WATERSHED 21138 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High/ Moderate-High Impairment: Low/ Moderate Synthesis: Protection1/ Protection 2-Restoration **Surface Storage:** Importance: Moderate-High/ High Impairment: Low/ Moderate-High Synthesis: Protection 2/ Restoration 1 **Groundwater Recharge:** Importance: Moderate-High/ Moderate-High Impairment: Low/ Moderate Synthesis: Protection 2/ Protection 2-Restoration **Groundwater Discharge:** Importance: Moderate-High/ Moderate-High Impairment: Low/Moderate-High Synthesis: Protection 2/ Restoration 2X **Water Flow Synthesis:** Importance: Moderate-High/ Moderate-High Impairment: Low/ Moderate Synthesis: Protection 2/ Protection 2-Restoration	- 150 acre lake	- 2009: Met the E.Coli standard - Classified as 'meso-eutrophic' (algae growth, moderate plant and animal growth) - 305(b): Total Phosphorus (1), Invasive Exotic Species (4c)	- Soils: Till - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that extensive logged areas exist outside of the shoreline jurisdiction.

LAKE TAHUYA PSNERP WATERSHED 21138 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Steelhead (1)	- Wood Duck - Osprey (1) - Mountain Quail - Mountain Quail - Bald Eagle (1) - Mink	- None/ Unknown	- Area of Ecological Significance (north shore and southern adjoining wetland) - Category A Refugia

LAKE TAHUYA PSNERP WATERSHED 21138 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Rural Protection -Forest Resource Lands -Mineral Resource Site (shoreline jurisdiction): - Mineral Resource - Rural Residential - Rural Wooded Residential Vacant/Underutilized Parcels: 26%	**21138** Area: 9221 Stream Miles: 43 Drains to Drift Cell #: N/A Pasture: 0 Pasture: 0 Grassland: 654 Grassland: 654 Deciduous: 79 Evergreen: 5866 Mixed: 560 Total Forested: 6504 70.50% Total Impervious: 105 1.10%	- None	- Moderate Geologic Hazard (west shore) - Cat. 1, 2 CARA - Frequently Flooded Area (north, east and partial west shores) - Wetlands - Streams (Type-F) - Lake (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- More concentrated residential development on west shore of Tahuya Lake, compared with east shore. - Aerial review shows numerous private docks along west and east shores (approximately 70 docks) - Community Park swimming beach on the est. shore - Port of Bremerton - Tahuya Lake Community Club water service area - The lake was previously a wetland modified by an outlet control structure in order to support shoreline development. - Roads that intersect jurisdiction: Gold Creek Rd. NW; Kingsway NW; Rhododendron Way NW; Tahuyeh Pl. NW; Island Dr. NW; W. Camp Sundown Rd.

LAKE TAHUYA PSNERP WATERSHED 21138 RECOMMENDATIONS	JURISDICTION MAP
- Correcting limited use of upstream spawning and rearing habitat due to altered hydrologic regime from outlet control structure (May and Peterson, 2003). - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

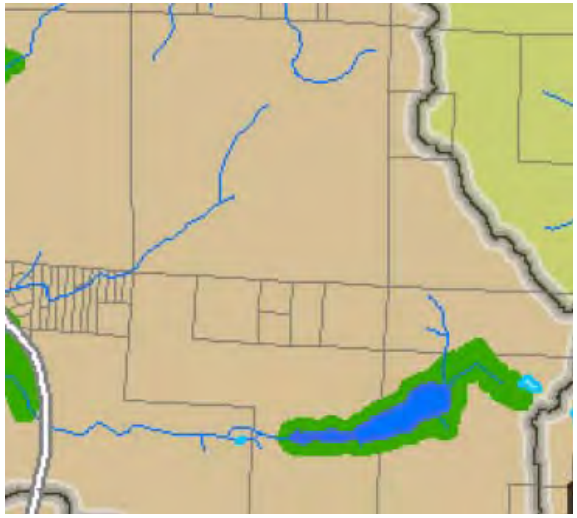
3.6.2.8 Tin Mine Lake

Tin Mine Lake PSNERP WATERSHED # 21138 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High Impairment: Low Synthesis: Protection 1 **Surface Storage:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Groundwater Recharge:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Groundwater Discharge:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Water Flow Synthesis:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2	- Wide range in monitored flows indicate that drainage is driven by surface runoff (Michaud and Britton, 2005). - 2004 Wet Season flow: min: 94.93 cfs, max: 99.14 cfs, 97.04 cfs (geometric mean value); Dry season flow: min: 3.90 cfs, max: 4.81 cfs, 4.33 cfs (GMV) (Michaud and Britton, 2005) (monitoring completed outside of shoreline jurisdiction) - No recent flow records over multiple years. Many of the smaller tributaries dry up in early summer and in dry winter spells (Kuttel, 2003).	- 2009: Statistical stationary trends for long term and short term (3 years) trends for fecal coliform bacteria (for mainstem) - DOE: DO(5), FCB(2), pH(2) (for mainstem) - DOE 303(d) listed for DO - There have been periods of low dissolved oxygen in this stream, which may be due to low summer flow conditions and the river's headwaters in Lake Tahuya, naturally lowering dissolved oxygen due to low water circulation and increased temperatures. - The Skokomish Tribe recorded water temperatures downstream of Lake Tahuya in 1996 (summer). 'High' temperatures recorded; for ex., Temperatures exceeded 16.3 °C on 43 of 50 days. (Kuttel, 2003) - Temperatures in exceedance of water quality standards on 2 or 4 dry season samplings.	- Soils: Peat - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that logged areas exist outside of the shoreline jurisdiction.

Tin Mine Lake PSNERP WATERSHED # 21138 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
		- Nutrient levels were recorded as consistently low. - Total suspended solids within moderate range (Michaud and Britton, 2005).	

Tin Mine Lake PSNERP WATERSHED # 21138 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Coho - Chinook (1) - Pink (1) - Chum - Steelhead (1) - Cutthroat	- Wood Duck - Osprey (2) - Mountain Quail - Great Blue Heron (2) - Bald Eagle (1) - Mink	- Unknown	- Area of Ecological Significance - Category A Refugia

Tin Mine Lake PSNERP WATERSHED # 21138 **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Rural Protection - Forest Resource Lands - Mineral Resource Site (shoreline jurisdiction): - Forest Resource Lands Residential Vacant/Underutilized Parcels: 0%	**21138** Area: 9221 Stream Miles: 43 Drains to Drift Cell #: N/A Pasture: 0 Scrub/Shrub: 1372 Grassland: 654 Wetland: 360 Deciduous: 79 Evergreen: 5866 Mixed: 560 Total Forested: 6504 70.50% Total Impervious 1.10% s: 105	- DNR Green Mountain State Forest (entire)	- Moderate Geologic Hazard (entire) - Cat. 2 CARA - Wetlands - Streams (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- Port of Bremerton - Forest road access (for non-motorized use) through the DNR Green Mountain State Forest - Roads that intersect jurisdiction: Rock Quarry Rd. NW

Tin Mine Lake PSNERP WATERSHED # 21138 **RECOMMENDATIONS**	**JURISDICTION MAP**
- In order to mitigate for high stream temperatures: protect riparian forest buffers and restore where necessary: and do not construct shallow man-made lakes (Kuttel, 2003) - Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.9 Morgan Marsh

MORGAN MARSH PSNERP WATERSHED # 21138 (+21147)PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High/ Moderate-High Impairment: Moderate/Low Synthesis: Protection 1-Restoration/ Protection 2 **Surface Storage:** Importance: High/ High Impairment: Moderate/ Moderate Synthesis: Protection 1-Restoration/ Protection 1-Restoration **Groundwater Recharge:** Importance: High/ Moderate Impairment: Moderate/ Low Synthesis: Protection1-Restoration/ Protection 2 **Groundwater Discharge:** Importance: High/ Moderate Impairment: High/ Moderate Synthesis: Protection 3-Restoration/ Protection 1-Restoration **Water Flow Synthesis:** Importance: High/ Moderate-High Impairment: Moderate/ Low Synthesis: Protection 1-Restoration/ Protection 2	- None	- None	- Woody debris abundant in the lower portion of Morgan Marsh Outlet Creek (Kuttel, 2003). - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that extensive logged areas exist outside of/adjacent to the shoreline jurisdiction, and smaller areas within shoreline jurisdiction area. - Soils: Peat

MORGAN MARSH PSNERP WATERSHED # 21138 (+21147) BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known**	**Non-regulatory**
- Coho	- Wood Duck - Osprey (2) - Mountain Quail - Great Blue Heron (2) - Bald Eagle (1) - Mink	>Unknown	>Area of Ecological Significance >Category A Refugia

MORGAN MARSH PSNERP WATERSHED # 21138 (+21147) **LAND USE (BUILD ENVIRONMENT)**				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): >Rural Wooded >Rural Residential >Rural Protection >Forest Resource Lands >Mineral Resource Site (shoreline jurisdiction): >Rural Wooded >Rural Residential Residential Vacant/Underutilized Parcels: 7%	**21138** **(21147)** Area: 9221 8130 Stream Miles: 43 37 Drains to Drift Cell #: N/A 23 Pasture: 0 4 Scrub/Shrub: 1372 442 Grassland: 654 231 Wetland: 360 390 Deciduous: 79 320 Evergreen: 5866 4970 Mixed: 560 1098 Total Forested: 6504 6386 70.5% 78.6% Total Impervious: 105 633 1.1% 7.8%	- Hood Canal Salmon Sanctuary (around southern portion of marsh), multi-agency	- Moderate Geologic Hazard (southwest and northeast borders of wetland) - Cat. 1, 2 CARA - Wetlands - Streams (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- Northern end of shoreline jurisdiction area impacted by residential development. - Port of Bremerton - Roads that intersect jurisdiction: Lost Hwy W.; W. Morgan marsh Ln.; Winter Green Ln. - Private wells

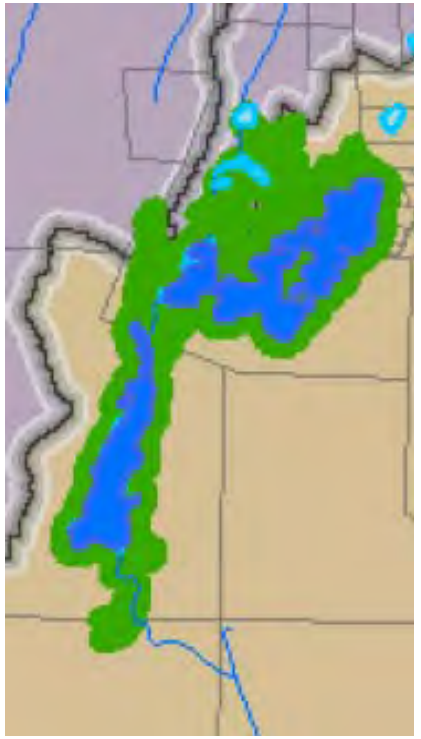
MORGAN MARSH PSNERP WATERSHED # 21138 (+21147) RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management: • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.10 Hintzville Beaver Ponds Wetland

HINTZVILLE BEAVER PONDS WETLAND PSNERP WATERSHED # 21138 (+21142, 21145) PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed)	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: High/ Moderate-High Impairment: Moderate/ Low Synthesis: Protection 1-Restoration/ Protection 2 **Surface Storage:** Importance: High/ High Impairment: Moderate/ Moderate Synthesis: Protection 1-Restoration **Groundwater Recharge:** Importance: High/ Moderate Impairment: Low/ Low Synthesis: Protection 1/ Protection 2 / Protection 1-Restoration **Groundwater Discharge:** Importance: High/ Moderate Impairment: Low/ Moderate Synthesis: Protection 1 / Protection 3-Restoration **Water Flow Synthesis:** Importance: High/ Moderate-High Impairment: Moderate/ Low Synthesis: Protection 1-Restoration/ Protection 2	- None	- None	- Soils: Till - Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that logged areas exist outside of/adjacent to the shoreline jurisdiction.

HINTZVILLE BEAVER PONDS WETLAND PSNERP WATERSHED # 21138 (+21142, 21145) BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Wood Duck - Osprey (2) - Mountain Quail - Bald Eagle (1) - Mink - Great Blue Heron (2)	- Unknown	- Area of Ecological Significance - Category A Refugia

HINTZVILLE BEAVER PONDS WETLAND PSNERP WATERSHED # 21138 (+21142, 21145) LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded - Rural Residential - Rural Protection - Forest Resource Lands - Mineral Resource Site (shoreline jurisdiction): - Rural Wooded - Rural Residential Residential Vacant/Underutilized Parcels: 25%	**21138** / **21142** / **21145** Area: 9221 / 3983 / 3824 Stream Miles: 43 / 25 / 22 Drains to Drift Cell #: N/A / 33 / 28 Pasture: 0 / 5 / 0 Scrub/Shrub: 1372 / 861 / 325 Grassland: 654 / 169 / 41 Wetland: 360 / 143 / 129 Evergreen: 5866 / 2370 / 2650 Deciduous: 79 / 128 / 137 Mixed: 560 / 260 / 410 Total Forested: 6504 / 2759 / 3197 70.5% / 69.3% / 83.6% Total Impervious: 105 / 31 / 130 1.1% / 0.8% / 3.4%	- None	- Moderate Geologic Hazard (northeast border of wetland) - Cat. 1 CARA - Wetlands - Streams (Type-F) - Class 1 and 2 Wildlife Habitat Conservation Areas	- Port of Bremerton - Roads that intersect jurisdiction: W Winter Green Ln. - Private wells

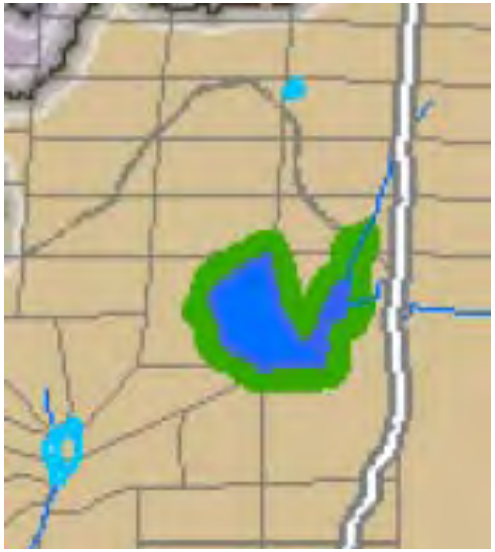
HINTZVILLE BEAVER PONDS WETLAND PSNERP WATERSHED # 21138 (+21142, 21145) RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

3.6.2.11 Dewatto Wetland

DEWATTO WETLAND PSNERP WATERSHED #21140 PHYSICAL ENVIRONMENT			
Water Flow Processes		**Water Quality**	**Riparian Habitat**
Landscape (Watershed	**Site (Shoreline Jurisdiction)**	**Kitsap County Health District**	**Vegetation, LWD, Soils, etc.**
Delivery: Importance: Moderate-High Impairment: Moderate Synthesis: Protection 2-Restoration **Surface Storage:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Groundwater Recharge:** Importance: Moderate Impairment: Low Synthesis: Protection 3 **Groundwater Discharge:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2 **Water Flow Synthesis:** Importance: Moderate-High Impairment: Low Synthesis: Protection 2	- None	- None	- Logging has been the dominant land use in the watershed, currently and historically (Kuttel, 2003). State forest and private lands are managed for timber production. Aerial review shows that logged areas exist outside of/adjacent to the shoreline jurisdiction. - Soils: Till - Riparian corridors are generally in natural condition in the watershed. Although cumulative effects of forestry and WDFW 'stream cleaning' efforts have likely had an impact on LWD recruitment and forest maturity (May and Peterson, 2003)

DEWATTO WETLAND PSNERP WATERSHED #21140 BIOLOGICAL RESOURCES			
Salmonids	**Species**	**Noxious/Invasive Species**	**Other Designations**
Known Present	**Known Present**	**Known Present**	**Non-regulatory**
- Unknown	- Unknown	- Unknown	- Area of Ecological Significance - Category A Refugia

DEWATTO WETLAND PSNERP WATERSHED #21140 LAND USE (BUILD ENVIRONMENT)				
Land Use	**Watershed Land Cover**	**Publicly Owned Lands**	**Critical Areas**	**Modifications & Utilities**
Comprehensive Plan Designations	**PSNERP (Watersheds)**		**Regulated**	**Shoreline Jurisdiction Only**
Landscape (watershed): - Rural Wooded Site (shoreline jurisdiction): - Rural Wooded Residential Vacant/Underutilized Parcels: 0%	**21140** Area: 2588 Stream Miles: 13 Drains to Drift Cell #: NA Pasture: 0 Scrub/Shrub: 471 Grassland: 281 Wetland: 77 Deciduous: 2 Evergreen: 1639 Mixed: 83 Total Forested: 1724 66.60% Total Impervious: 19 0.07%	- None	- Moderate Geological Hazard - Wetlands - Cat. 2 CARA - Streams (Type-N)	- Port of Bremerton

RECOMMENDATIONS	JURISDICTION MAP
- Water Flow Management : • Delivery: For new development, protect forest cover through clustering of structures, roads, utilities and limit clearing to approximately 35% of a site • Storage: Protect and maintain existing condition by preventing development in floodplains or depressional wetlands and limit sediment transport into depressional wetlands by maintaining adequate buffers • Groundwater Recharge: Locate higher-intensity development in areas with lower permeability. Otherwise, select land use activities that minimize the use of impervious surfaces. This includes agriculture and clustered low-density residential development. • Groundwater Discharge: Protect and maintain discharge areas by preventing development that will permanently alter natural discharge patterns (impervious structures and surfaces). Other uses such as agriculture should avoid use of ditches in discharge zones.	

4 RECOMMENDATIONS AND MANAGEMENT OPTIONS

"This chapter provides tables for both marine and freshwater shorelines, which describe options for managing areas of shoreline based on its recommendations identified in the Characterization Marine and Freshwater tables in Chapter 3. The management options for the marine shoreline were taken from *Protecting Nearshore Habitat and Functions in Puget Sound: An Interim Guide* (Enviro Vision, 2007). The management 0ptions for the freshwater shoreline were taken from *Land Use Planning for Salmon, Steelhead and Trout* (Knight, 2009) and from the Limiting Factors Analysis (Kuttel, 2003). Many of the management options may be considered for more than one recommendation. Most of these management options apply to the watershed scale.Some options apply to a more regional scale , such as, public education , publicoutreach and incentives, and should also be considered for each recommendation.

4.1 Marine Shoreline

RECOMMENDATIONS	**MANAGEMENT OPTIONS** Suggested management options listed below are not intended to be all-inclusive. These listed management options may work within any of the "Recommendation" categories
PROTECT **(exclude disturbances)**	• Designate inventoried spawning areas as neutral or conservancy shorelines • Fund enforcement activities to ensure that critical areas are being protected effectively • Protect through acquisition and conservation easements • Provide protected shallow water migration corridors, especially between estuaries and marine waters through shoreline designations • Prohibit placing docks and piers in tidal flats because these locations require very long structures • Prohibit placement of overwater structures over marine vegetation • Prohibit buoys in areas with native marine vegetation and enforce compliance for permit requirement • Require site surveys of existing conditions including vegetation function analysis • Protect all native marine vegetation, including but not limited to kelp, eelgrass and wetland plants • Identify all marine vegetation within intertidal and subtidal zones and protect them through appropriate shoreline designation and SMP regulations

RECOMMENDATIONS	MANAGEMENT OPTIONS Suggested management options listed below are not intended to be all-inclusive. These listed management options may work within any of the "Recommendation" categories
PROTECT **(continued)**	• Identify marine riparian protection areas that support existing functions through no-touch buffers in undeveloped areas • Require enhancement and mitigation related to expansions or redevelopment of developed areas • Prohibit removal of LWD • Use the Low Impact Development (LID) approach and techniques to better manage stormwater for redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation. • Develop long range planning tools [such as the Shoreline Alternative Futures planning tool currently in development for Kitsap County] to manage potential cumulative impacts of shoreline development on a variety of parameters (herring spawning, eelgrass, navigation, etc.)
CONSERVE **(maintain the current level of biodiversity)**	• Avoid and minimize shoreline armoring projects and require geotechnical assessments, reviewed by a qualified third party, to evaluate problems and analyzed potential solutions, including the use of alternative designs • Minimize and avoid the footprint and number of pilings associated with overwater structures and do not allow the use of treated wood • Minimize displacement of beach area by pilings or other structures. Where such structures are unavoidably necessary, prohibit the use of treated wood in favor of concrete, steel or recycled plastic. • Avoid and minimize area disturbed during nearshore construction activities by establishing standards for equipment use within riparian areas, and require replacement of damaged vegetation with native species, including long term maintenance provisions • Avoid and minimize new over-water structures in areas inventoried as forage fish spawning • Avoid placing docks and piers in tidal flats because these locations require very long structures • Place structures to perpendicularly span the shoreline spawning habitat zone • Do not allow construction activity during egg deposition and incubation periods • Avoid placement of shoreline armor or other structures that may result in downcutting of the beach,

RECOMMENDATIONS	MANAGEMENT OPTIONS Suggested management options listed below are not intended to be all-inclusive. These listed management options may work within any of the "Recommendation" categories
CONSERVE **(continued)**	substrate change, or alteration of shoreline physical processes • Identify marine riparian protection areas that support existing functions through no-touch buffers in undeveloped areas • Require enhancement and mitigation related to expansions or redevelopment of developed areas • Require development of vegetation conservation plans, including replanting and maintenance standards focused on native species, for any project that impacts marine riparian vegetation • Prohibit placement of overwater structures over marine vegetation • Require survey of intertidal and shallow subtidal areas prior to permitting any structures or activities that could impact existing beds • Promote retaining marine riparian vegetation including large trees by requiring a vegetation conservation plan for activities impacting marine riparian vegetation • Require replacement of all native riparian or aquatic vegetation that is directly or indirectly lost through shoreline activities • Fund enforcement activities to ensure that critical areas are being protected effectively • Prohibit removal of LWD • Institute mitigation banking • Use the Low Impact Development (LID) approach and techniques to better manage stormwater for redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation. • Provide designated moorage buoys at all public facilities and install marker buoys showing boaters where eelgrass is located so they may avoid anchoring there.
RESTORE **(restore structure and functions of the sites to historical conditions)**	• Promote retention or establishment of marine riparian vegetation including large trees by requiring a vegetation conservation plan for activities impacting marine riparian vegetation • Protect marine riparian areas and require mitigation for lost habitat elements such as trees, logs and boulders • Promote/require over-water structure designs that result in improved light levels (minimize width, use

RECOMMENDATIONS	MANAGEMENT OPTIONS Suggested management options listed below are not intended to be all-inclusive. These listed management options may work within any of the "Recommendation" categories
RESTORE **(continued)**	grating, orient north-south to minimize shading resulting from new and rebuilt structures) • Prohibit grounding floats, rafts, docks and vessels • Require proposed bulkhead rebuild projects to evaluate the effectiveness of alternative designs (soft-shore approaches) as opposed to in-kind replacement • Develop incentive programs to encourage removing unnecessary shoreline armoring and use of soft-bank protection • Require replacement or mitigation for all riparian or aquatic vegetation directly or indirectly lost through shoreline activities • Promote mitigation (and mitigation banks) to address cumulative impacts and no net loss • Fund enforcement activities to ensure that critical areas are being protected effectively • Implement long-term monitoring of restoration/ mitigation projects using an adaptive management approach and implement an associated funding mechanism • Support the removal and control of noxious weeds • Use the Low Impact Development (LID) approach and techniques to better manage stormwater for redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation. • Develop a beach nourishment program to restore lost sediment supply to beaches and restore/maintain spawning area substrate.
ENHANCE **(improve the structure and functions of a site or landscape beyond current conditions)**	• Require proposed bulkhead rebuild projects to evaluate the effectiveness of alternative designs (soft-shore approaches) as opposed to in-kind replacement • Promote establishment of marine riparian vegetation including large trees by requiring a vegetation conservation plan for activities impacting marine riparian vegetation • Prohibit grounding of floats, docks, rafts and vessels • Promote/require over-water structure designs that result in improved light levels (minimize width, use grating, orient north-south to minimize shading resulting from new and rebuilt structures) • Require structure designs that minimize shading and disturbance of the substrate including from prop

RECOMMENDATIONS	MANAGEMENT OPTIONS Suggested management options listed below are not intended to be all-inclusive. These listed management options may work within any of the "Recommendation" categories
	wash • Require enhancement and mitigation related to expansions or redevelopment of developed areas • Use the Low Impact Development (LID) approach and techniques to better manage stormwater for redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation.
CREATE **(develop a habitat or function that did not formally exist at a site or landscape)**	• Promote establishment of marine riparian vegetation including large trees by requiring a vegetation conservation plan for activities impacting marine riparian vegetation • If tree removal is unavoidable, leave felled trees or create snags for wildlife habitat

* Management options are not exlusive to other "Recommendation" categories and should be utilized as options for consideration.(Refer to Appendix A & B).

4.2 Freshwater Shoreline

RECOMMENDATIONS	MANAGEMENT OPTIONS*
PROTECTION (high water process importance, low impairment areas) ▪ Extra care given to protecting/ maintaining watershed processes	▪ Protect prioritized upland habitats (within the shoreline jurisdiction) through acquisition and conservation easements ▪ Continued protection of critical areas within shoreline jurisdiction ▪ Fund enforcement activities to ensure that critical areas including freshwater shorelines are being protected effectively ▪ Increase opportunities for land exchanges that retain floodplain and delta habitats ▪ Protect riparian vegetation along streams, lakes, ponds and wetlands. Maintain mature riparian forest buffers, preferably composed of coniferous trees that provide large and long-lived woody debris. ▪ Protect wetlands and prohibit the filling of wetlands ▪ Protect natural streambank condition and functions, including vegetative cover, natural input of LWD and gravels, by enforcing riparian buffers and avoiding / prohibiting bank hardening

RECOMMENDATIONS	MANAGEMENT OPTIONS*
	▪ Allow no new or expanded channel stabilization projects or other river control structures in the channel migration zone, unless protecting essential facilities or increasing habitat through bioengineered restoration ▪ Retain large woody debris in streams and maintain long-term recruitment of LWD from riparian zones ▪ Prohibit removal, relocation or modification of LWD in aquatic habitats and adjacent banks except when posing an immediate threat to public safety or critical facilities ▪ Minimize nutrient inputs to streams, lakes, ponds and wetlands from animal/ human wastes and fertilizer ▪ Restrict livestock access to streams to prevent streambank and vegetation degradation, and channel widening and increased channel temperatures ▪ Use transfer of development rights or other easement programs or incentives to encourage retention of appropriate agriculture, forestry and open space uses ▪ Adopt a Public Benefit Rating System (PBRS) Open Space Tax Program to allow property owners a tax incentive to protect critical salmonid habitat on their property ▪ Adopt a Conservation Futures (RCW 84.34.230) tax levy to secure funds for critical salmonid habitat
RESTORATION (high water process importance, higher impairment areas) **RESTORATION** (continued) ▪ Restoration of watershed processes should be high priority	▪ Require mitigation, including off-site and compensatory mitigation for activities impacting wetlands, floodplains and riparian areas ▪ Institute mitigation banking ▪ Implement long-term monitoring of restoration/ mitigation projects using an adaptive management approach and implement an associated funding mechanism ▪ Plan for and facilitate removal of artificial restrictions to natural channel migration, restoration of off-channel hydrological connections ▪ Revegetate degraded riparian buffers ▪ Restore natural streambank condition and functions, including vegetative cover, natural input of LWD and gravels ▪ Restore natural channel morphology ▪ Increase opportunities for land exchanges that restore floodplain and delta habitats ▪ Identify opportunities for and encourage restoration of side channel habitat for salmonids as mitigation for modifying existing floodplain structures where feasible ▪ Improve LWD abundance through proper riparian zone management ▪ Mitigate the movement or removal of LWD complexes posing a threat. Mitigation may include placing the wood back into the system where it does not pose an immediate hazard.

RECOMMENDATIONS	MANAGEMENT OPTIONS*
	▪ Correct fish passage barriers ▪ Coordinate restoration plans with salmonid recovery plans and other programs such as watershed management plans, water clean-up TMDLs, stormwater management programs. ▪ Support the removal and control of noxious weeds ▪ Use the Low Impact Development (LID) approach and techniques to better manage stormwater for redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation. ▪ Decommission roads that are not currently in use to reduce impervious surfaces ▪ Remove existing fill where feasible
CONSERVATION (lower water process importance, low impairment areas) ▪ Protect and maintain watershed processes **CONSERVATION** (continued)	▪ Continued protection of critical areas within shoreline jurisdiction ▪ Fund enforcement activities to ensure that critical areas including freshwater shorelines are being protected effectively ▪ Require mitigation, including off-site and compensatory mitigation for activities impacting wetlands, floodplains and riparian areas ▪ Institute mitigation banking ▪ Implement long-term monitoring of mitigation projects using an adaptive management approach and implement an associated funding mechanism ▪ Protect riparian vegetation ▪ Protect wetlands and prohibit the filling of wetlands ▪ Protect natural streambank condition and functions, including vegetative cover, natural input of LWD and gravels, by enforcing riparian buffers and avoiding / prohibiting bank hardening ▪ Allow no new or expanded channel stabilization projects or other river control structures in the channel migration zone, unless protecting essential facilities or increasing habitat through bioengineered restoration ▪ Retain large woody debris in streams and maintain long-term recruitment of LWD from riparian zones ▪ Prohibit removal, relocation or modification of LWD in aquatic habitats and adjacent banks except when posing an immediate threat to public safety or critical facilities ▪ Minimize nutrient inputs to streams, lakes, ponds and wetlands from animal/ human wastes and fertilizer ▪ Restrict livestock access to streams to prevent streambank and vegetation degradation, and channel widening and heating

RECOMMENDATIONS	MANAGEMENT OPTIONS*
	▪ Use the Low Impact Development (LID) approach and techniques to better manage stormwater for new development, redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation. ▪ Decommission roads that are not currently in use to reduce impervious surfaces ▪ Require temporary or permanent erosion and sedimentation controls to prevent the introduction of sediments or pollutants to water bodies or water courses ▪ Limit filling activities
LESS IMPACT TO PROCESSES (lower water process importance, higher impairment areas) ▪ Suitable for appropriate urban land uses	▪ Implement standard best management practices and LID to prevent further water quality, water quantity and environmental degradation ▪ Use the Low Impact Development (LID) approach and techniques to better manage stormwater for new development, redevelopment and retrofit projects. This includes: limit land clearing, retain and where necessary restore native vegetation and soils, minimize site disturbance and development footprints, limit impervious surfaces through use of permeable pavement and or other techniques, create graded swales and rain gardens to disperse and infiltrate stormwater runoff on site and utilize rainwater catchment for landscaping irrigation.

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5 PUBLIC ACCESS OPPORTUNITY AND SHORELINE USE ANALYSIS

5.1 Public Access Opportunity

Pursuant to WAC 173-26-221(4) and WAC 173-26-201 (3)(c)(vi), the Inventory and Characteriztion includes information regarding public access to shorelines, including physical access and views from parks, ports, right-of-ways, road-ends and utility corridors. Details are provided in the Marine and Freshwater Shoreline Summary Tables (Chapter 3). Relevnt, published plans for local and state parks, ports or community groups were reviewed and summarized in Appendix B, Summary Matrices of Port Districts, public Access and Parks Plans. Listed below are signficant facts and outcomes from the Kitsap County Parks (Kitsap County Comprehensive Plan and Parks, Recreation and Open Space (PROS) Plan):

- 29 of the 81 parks in Kitsap County Parks inventory are marine or fresh water access parks (6 fresh, 26 marine)
- Access to marine shoreline was in high demand (survey part of PROS)
- Policy to acquire and develop waterfront parks, including freshwater lakes and access to saltwater shoreline, park sites, access to public tidelands and underwater parks.
- Policy to provide, where feasible, access to the shoreline at existing undeveloped public Right-of-Ways leading to the water, provided that certain amenities are needed before ROWs may be developed into access (see Right of Way Ordinance below).
- Goal to have 10% of the saltwater shoreline available to the general public.
- 18.3 miles of saltwater shoreline available in 2000 (8%)
- A 4.6 mile deficit was still noted in 2006, with approximately .25 miles acquired since.
- Level of Service (LOS) as provided in the adopted 2006 Kitsap County Comprehensive Plan (Alternative 2) is at 106’ of shoreline per 1,000 popluation. The 2005 LOS was at 119’ per 1,000 population. Based on the 2025 population projections, the LOS will be at 89’ per 1,000 population.

Kitsap County currently utilized the Kitsap County Right-Of-Way Ordinance # 322-2004 to authorize proposals in right-of-ways involving trail development and public access.

A Category 5 Right of Way Permit has allowed for the use and development of unopened right-of-ways for soft-surface trails by organized, non-profit community groups. Kitsap County has waived the permit fees for such groups and has provided surveyed center lines. For trails, it has been agreed that the trail must be kept to one side of the ROW and that the trail be maintained by the community group. The applicant has also been required to notify and resolve any issues with adjacent property owners before the permit will be approved.

The results of a public access inventory of existing parks, port access, right-of-ways, road-ends and utility cooridors are provided in Map C.5, Existing and Possible Public access points and Public Parcels. To better evaluate the public access potenial of road-ends and ROWs, Kitsap County DCD has partnered with WSU Extension Kitsap's Beach Watcher program. Beach Watcher volunteers have bee scheduled to visit identified public access locations. The volunteers complete a brief survey regarding the potential of the site and photograph the location. The resulting information may then be compared to tideland ownership to help determine the type of access (physical, visual , water only) that the site would be best suited for in the future. The inventory will not be completed in time to be included in this report, but may be utilized by community groups in the future that wish to take advantage of the Kitsap County Right-of-Way Ordinance mentioned above.

5.2 Shoreline Use Analysis

The Kitsap County shoreline use analysis consists of an evaluation of the more highly functioning drift cells (Borde et al, 2009 and Judd, 2009. 2010) and the more important watersheds of the shoreline jurisdictions (Stanley et al, 2010). To determine potential shoreline use conflicts, these areas were evaluated for marine and freshwater jurisdictions in conjunction with the following:

Existing (Updated 2009) Environmental Designations

Comprehensive Plan Designation/Zoning

Potentially Buildable Parcel Forecast (% parcels vacant/underutilized))

Port District, Marinas, Sub Area Plan and LAMIRDS

The information for the shoreline use analysis is provided in the following maps located in Appendix C:

- C.2 Current SMP Shoreline Environment Designations (1999, Updated 2009)
- C.3 Comprehensive Plan Land Use Designations
- C.4 Port Districts and Other Planning Areas
- C.28 Drift Cell Conditions and Waterflow Process Synthesis Areas
- C. 12 Vacant and Underutilized Parcels by Drift Cell and Freshwater Jurisdiction

Additional population and buildout projections by drift cell are provided in Appendix D and are summarized within the marine characterization tables by drift cell. The tables below identify potential shoreline use conflicts by marine and freshwater shoreline Characterization Areas. These tables may be supplemented by additional site specific, local information and from data from the Kitsap County's Land Information System Database. Examples of type of site-specific information includes but is not limited to: shoreline riparian buffer removal: known geohazards; docks, bulkhead, dredging permits and proposals; sea level rise modifications; flooding history and potential; and non-permitted shoreline modifications.

The index to the marine and freshwater tables is as follows:

Level of Drift Cell Disturbance		**Low**
		Medium
		High
Current SMP Environmental Designation		Natural
		Conservancy
		Rural
		Semi Rural
		Urban

5.2.1 North Puget Sound Characterization Area

NORTH PUGET SOUND MOST HIGHLY FUNCTIONING DRIFT CELL & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
78 ,98, 76, 97, 74, 72, 71, 110, 70, 118, 68, 65, 63, 111 (114 – Keyport Federal Facility)		No Watersheds rated for High Importance/Least Impaired

NORTH PUGET SOUND MARINE USE ANALYSIS								
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
78							Rural Residential	57%	Class 1 and 2 Habitat
98							Rural Residential, Rural Commercial, Public Facility	22% Residential; 2% Commercial	Marina; Class 1 and 2 Habitat
77							Rural Residential, Rural Wooded, Rural Protected, Public Facility	39%	Marina; Port of Eglon; Surf Smelt/Sand Lance; Class 1 and 2 Habitat
76							Rural Residential	32%	Class 1 Habitat
97							Rural Residential	45%	Port of Kingston; Surf Smelt/Sand Lance; Class 1 Habitat
74							Rural Residential, Urban Low Density Residential, Urban High-Intensity Commercial/Mixed Use	49% Residential; 16% Commercial	Port of Kingston; Kingston Urban Growth Area; Class 1 Habitat

NORTH PUGET SOUND MARINE USE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
72			Rural Residential, Urban Low Residential, Public Facility	19%	Port of Kingston; Kingston Urban Growth Area; Class1 Habitat; Surf Smelt/Sand Lance
71			Rural Residential	25%	Port of Kingston; Class 1 Habitat
110			Rural Residential, Rural Protection, Public Facility	21%	Port of Indianola; Class 1 and 2 Habitat; Surf Smelt/Sand Lance/ Herring
70			Rural Residential, Tribe	43%	Surf Smelt/Sand Lance/Herring; Area of Ecological Significance
118			Rural Residential	14%	Class 2 Habitat; Area of Ecological Significance
68			Rural Residential, City	14%	Port of Poulsbo; Surf Smelt/Sand Lance
65			Rural Residential	16%	Class 1 Habitat; Surf Smelt/Sand Lance; Area of Ecological Significance
63			Rural Protection	17%	Area of Ecological Significance
111			Rural Protection	30%	Class 1 Habitat; Area of Ecological Significance
117			Rural Protection	17%	Port of Keyport; Area of Ecological Significance
113			Rural Residential, Rural Protection, Military	25% Residential; 4% Commercial	Keyport LAMIRD; Class 1 Habitat; Surf Smelt/Sand Lance/Herring; Area of Ecological Significance

NORTH PUGET SOUND – FRESHWATER / WATERSHED USE ANALYSIS					
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/WaterUse or Designation**
Point No Point	YES	None	Rural Residential, Public Facility	13%	Class 1 and 2 Habitat
Doe-Kag-Wats	NO	None	Rural Residential, Tribe	17%	Port of Indianola, Port of Kingston, Class 1 Habitat

5.2.2 Central Puget Sound Characterization Area

CENTRAL PUGET SOUND MOST HIGHLY FUNCTIONING DRIFT CELL & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
92, 41, 89, 138, 38, 42, 89, 40, (48, 49 – City of Bremerton)		No Watersheds rated for High Importance/Least Impaired

CENTRAL PUGET SOUND – MARINE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
92			Rural Residential, Public Facility	33% Commercial	Port of Brownsville; Marina; Class 2 Habitat; Surf Smelt/Sand Lance/Herring
142			Rural Residential, Urban Low Residential	53% Residential; 12% Commercial	Port of Brownsville; Central Kitsap UGA; Class 1 and 2 Habitat
56			Urban Low Residential, Public Facility	9%	Port of Illahee; Port of Bremerton; Bremerton East UGA; Central Kitsap UGA; Marina; Class 1 Habitat; Surf Smelt/Sand Lance/Herring
107			Urban Low Residential	27%	East Bremerton UGA; Class 1 Habitat; Surf Smelt/Sand Lance
156			Urban High, Commercial Mixed-Use	36% Commercial	Port of Silverdale; Silverdale UGA; Class 1 Habitat; Area of Ecological Significance
152			Urban Low Residential,	11%	Port of Silverdale, Silverdale UGA; Marina; Surf

CENTRAL PUGET SOUND – MARINE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
			Commercial Mixed-Use, Public Facility	Residential; 7% Commercial	Smelt/Sand Lance/Herring; Area of Ecological Significance
138			Rural Residential	19%	Port of Bremerton
89			Rural Residential	5%	Port of Bremerton; Surf Smelt/Sand Lance
42			Urban Low Residential	25%	Port of Bremerton; West Bremerton UGA; Class 1 and 2 Habitat; Area of Ecological Significance
41			Urban Low Residential	22%	Port of Bremerton; West Bremerton UGA; Class 1 and 2 Habitat; Surf Smelt/Sand Lance; Area of Ecological Significance
40			Urban Low Residential	20%	Port of Bremerton; West Bremerton UGA: Class 1 and 2 Habitat; Surf Smelt/Sand Lance; Area of Ecological Significance
38			Urban Low Residential	25%	Port of Bremerton; West Bremerton UGA; Class 1 and 2 Habitat

CENTRAL PUGET SOUND – FRESHWATER / WATERSHED USE ANALYSIS					
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Island Lake	NO		Urban Low Residential, Rural Residential, Public Facility	46%	Port of Brownsville, Port of Silverdale, Silverdale UGA, Class 1 Habitat
Chico Creek Mainstem	NO		Rural Residential, Rural	20%	Port of Bremerton, Class 1

CENTRAL PUGET SOUND – FRESHWATER / WATERSHED USE ANALYSIS					
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
			Wooded, Public Facility, Rural Commercial, Industrial	Residential; 2% Commercial	and 2 Habitat
Wildcat Lake	NO		Rural Residential, Public Facility	14% Residential; 1% Commercial	Port of Bremerton, Class 1 Habitat
Chico Creek Wetland	NO		Rural Wooded	25%	Port of Bremerton, Class 2 Habitat
Kitsap Lake	NO		Urban Reserve, Mineral Resource	26%	Port of Bremerton, Class 1 Habitat

5.2.3 South Puget Sound Characterization Area

SOUTH PUGET SOUND MOST HIGHLY FUNCTIONING & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
133, 132,128, 1, 103, 105, 106, 126 (32, 31 – Federal Facility)		Coulter Creek

SOUTH PUGET SOUND – MARINE USE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
34			Urban High-Intensity Commercial/Mixed Use, Urban Industrial	27% Residential; 14% Commercial	Gorst UGA, Port of Bremerton, Surf Smelt/Sand Lance, Class 1 and 2 Habitat
33			Rural Residential, Public Facility	13%	Port of Waterman, Class 1 and 2 Habitat, Area of Ecological Significance
132			Military, Manchester LAMIRD	50%	Port of Manchester, Manchester LAMIRD, US NAVY
83			Rural Residential, Manchester LAMIRD, Rural Protection	13%	Port of Manchester (+boat launch), Manchester LAMIRD, Herring
81			Rural Residential, Public Facility	20%	Port of Bremerton, WA Ferry, Class 1 Habitat, Surf Smelt/Sand Lance
127			Rural Residential, Rural Protection, Public Facility	36%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance

SOUTH PUGET SOUND – MARINE USE ANALYSIS									
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
1							Rural Residential, Rural Protection	35%	Port of Bremerton, Class 1 and 2 Habitat
103							Rural Residential	0%	Blake Island State Park, Area of Ecological Significance, Class 1 Habitat, Surf Smelt/Sand Lance
104							Rural Residential	0%	Blake Island State Park, jetty and marina, Area of Ecological Significance, Class 1 Habitat
105							Rural Residential	0%	Blake Island State Park, Area of Ecological Significance, Class 1 Habitat
106							Rural Residential	0%	Blake Island State Park, Area of Ecological Significance, Class 1 Habitat
126							Rural Residential	0%	Blake Island State Park, Area of Ecological Significance, Class 1 Habitat, Surf Smelt/Sand Lance
133							Public Facility	0%	Manchester State Park, Federal Facility, Aquaculture
128							Rural Protection	37%	Port of Bremerton

SOUTH PUGET SOUND – FRESHWATER / WATERSHED USE ANALYSIS									
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Gorst Creek	NO						Urban High-Intensity Commercial/Mixed Use, Urban Reserve, Urban Low Residential	14% Residential; 45% Commercial	Port of Bremerton, Gorst UGA, Class 1 and 2 Habitat
Blackjack Creek	NO						Urban High-Intensity Commercial/Mixed Use, Urban Low Residential, Rural Protection, Rural Residential	43% Residential; 3% Commercial	Port of Bremerton, Port Orchard UGA, Class 1 and 2 Habitat
Square Lake	NO						Rural Residential, Rural Protection	14%	Port of Bremerton, Class 1 and 2 Habitat
Curley Creek	NO						Rural Protection	37%	Port of Manchester, Class 1 and 2 Habitat
Long Lake	NO						Rural Residential, Rural Protection, Urban Low Residential, Public Facility	21%	Port of Bremerton, Port Orchard UGA, Class 1 and 2 Habitat
Mace Lake	NO						Rural Residential, Public Facility	21%	Port of Bremerton
Burley Creek	NO						Rural Protection, Rural Commercial, Rural Residential, Mineral Resource	28%	Port of Bremerton
Horseshoe Lake	NO						Rural Residential	25%	Port of Bremerton
Wicks Lake	NO						Rural Residential, Rural Wooded, Public Facility	0%	Port of Bremerton, Class 2 Habitat
Big Lake	NO						Urban Low Residential, Public Facility	25%	Port Orchard UGA, Class 1 and 2 Habitat

SOUTH PUGET SOUND – FRESHWATER / WATERSHED USE ANALYSIS									
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Oakridge Lake	NO						Rural Residential, Rural Wooded	21%	Port of Bremerton, Class 1 and 2 Habitat
Sunnyslope Wetland	NO						Rural Wooded	22%	Port of Bremerton, Class 1 and 2 Habitat
Carney Lake	NO						Rural Residential, Rural Wooded	32%	Port of Bremerton, Class 1 and 2 Habitat
Wye Lake	NO						Rural Residential	22%	Port of Bremerton, Class 1 and 2 Habitat
Fern Lake	NO						Public Facility	0%	Port of Bremerton, Class 1 and 2 Habitat
Coulter Creek	YES						Rural Wooded	0%	Port of Bremerton, Class 1 and 2 Habitat

5.2.4 North Hood Canal Characterization Area

NORTH HOOD CANAL MOST HIGHLY FUNCTIONING DRIFT CELLS & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
DC-2, DC-3, DC-7, DC-8, DC-9, DC-11, DC-DC-14, DC-20 (DC-18, DC-19- Bangor Federal Facility)		Foulweather Bluff Preserve,

NORTH HOOD CANAL – MARINE USE ANALYIS								
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
DC-2							Rural Residential	23%	Class 1 Habitat
DC-3							Rural Residential	18%	Class 1 and 2 Habitat, Surf Smelt/Sand Lance/Herring
DC-7							Rural Residential, Tribe	13%	Port of Eglon, Class 1 Habitat, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-8							Rural Residential, Tribe	18%	Port of Eglon, Class 1 and 2 Habitat, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-9							Rural Residential, Rural Wooded	24%	Port of Kingston, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-11							Rural Protections, Rural Wooded	19%	Class 1 and 2 Habitat, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-12							Rural Wooded, Port	0%	Class 1 and 2 Habitat, Surf Smelt/Sand Lance/Herring,

NORTH HOOD CANAL – MARINE USE ANALYIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
			Gamble LAMIRD		Area of Ecological Significance
DC-14			Rural Residential, Public Facility	10%	Class 1 Habitat, Surf Smelt/Sand Lance/Herring
DC-15			Rural Residential, Public Facility	12%	Surf Smelt/Sand Lance/Herring
DC-20			Rural Residential	11%	85% of Drift Cell on Federal Facility, Class 1 and 2 Habitat, Surf Smelt/Sand Lance, Area of Ecological Significance
DC-21			Rural Protection, Rural Residential	3%	Port of Silverdale Class 1 and 2 Habitat, Surf Smelt/Sand Lance

NORTH HOOD CANAL – FRESHWATER / WATERSHED USE ANALYSIS					
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Miller Lake	NO		Rural Wooded	0%	Port of Kingston, Class 2 Habitat

5.2.5 Central Hood Canal Characterization Area

CENTRAL HOOD CANAL MOST HIGHLY FUNCTIONING & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
DC-25, DC-26, DC-27, DC-28, DC-29, DC-31, DC-33, DC-34, DC-35, DC-36		Lower Big Beef, Lake Symmington, Upper Big Beef, Big Anderson Creek

CENTRAL HOOD CANAL – MARINE USE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
DC-22			Rural Protection	21%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance
DC-23			Rural Protection, Public Facility	22%	Port of Bremerton, Class 1
DC-24			Rural Residential, Rural Protection	18%	Port of Bremerton, Class 1 and 2, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-25			Rural Protection, Public Facility	21%	Port of Bremerton, Class 1 Habitat, Herring, Area of Ecological Significance
DC-26			Rural Residential	18%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-27			Rural Wooded, Rural Residential, Public Facility	14%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-28			Rural Residential	46%	Port of Bremerton, Class 1 Habitat, Herring, Area of Ecological Significance
DC-29			Rural Residential	28%	Port of Bremerton, Class 1 Habitat, Herring, Area of Ecological

CENTRAL HOOD CANAL – MARINE USE ANALYSIS					
Drift Cell #	**Level of Drift Cell Disturbance**	**Current SMP Environmental Designation**	**Comprehensive Plan Designation**	**% Parcels in Drift Cell which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
					Significance
DC-30		Rural Residential, Rural Protection, Rural Wooded, Public Facility	65%	Port of Bremerton, Class 1 and 2, Surf Smelt/Sand Lance/Herring, Area of Ecological Significance
DC-31		Rural Residential, Rural Wooded	46%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance, Area of Ecological Significance
DC-32		Rural Residential, Rural Wooded	45%	Port of Bremerton, Class 1 Habitat, Surf Smelt/Sand Lance, Area of Ecological Significance
DC-33		Rural Residential, Rural Wooded	67%	Port of Bremerton
DC-34		Rural Residential, Rural Wooded	34%	Port of Bremerton, Surf Smelt/Sand Lance, Area of Ecological Significance
DC-35		Rural Wooded	44%	Port of Bremerton, Area of Ecological Significance
DC-36		Rural Wooded	47%	Port of Bremerton, Class 1 Habitat, Area of Ecological Significance

CENTRAL HOOD CANAL – FRESHWATER / WATERSHED USE ANALYSIS												
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**									**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Lower Big Beef Creek	YES										Rural Protection, Rural Residential, Rural Wooded, Public Facility, Mineral Resources	42%	Port of Bremerton, Class 1 and 2 Habitat
Lake Symington	YES											17%	Port of Bremerton, Class 1 and 2 Habitat

5.2.6 South Hood Canal Characterization Area

SOUTH HOOD CANAL MOST HIGHLY FUNCTIONING DRIFT CELLS & IMPORTANT WATERSHED SHORELINE		
MARINE - DRIFTCELL		**FRESHWATER - WATERSHED**
There are not marine drift cells within Kitsap County in the South Hood Canal Characterization Area.		Union River, Mission River and Lake, Panther Lake, Tahuya River, Tahuya Lake, E. Tahuya River (Tin Mine Lake), Morgan Marsh, Hintzville Beaver Pond, Little Dewatto Wetlands

SOUTH HOOD CANAL – FRESHWATER /WATERSHED USED ANALYSIS									
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
Lider Lake	NO						Rural Residential, Rural Protection	47%	Port of Bremerton
Union River	YES						Rural Protection, Public Facility, Mineral Resource	22%	Port of Bremerton, Class 1 Habitat
Tiger Lake	NO						Rural Residential	23%	Port of Bremerton
Mission Lake and Associated Wetland	YES						Rural Residential, Rural Wooded	24%	Port of Bremerton
Panther Lake	YES						Rural Residential	18%	Port of Bremerton, Class 1 and 2 Habitat
Tahuya River	YES						Rural Residential, Rural Protection, Rural Wooded, Mineral	30%	Port of Bremerton, Class 1 and 2 Habitat

SOUTH HOOD CANAL – FRESHWATER /WATERSHED USED ANALYSIS									
Name	**High Importance / Least Impaired**	**Current SMP Environmental Designation**					**Comprehensive Plan Designation**	**% Parcels in Jurisdiction which are Vacant or Underutilized**	**Other Land/Water Use or Designation**
							Resources		
Tahuya Lake	YES						Rural Residential, Rural Wooded, Mineral Resources	26%	Port of Bremerton, Class 1 and 2 Habitat
Tin Mine Lake	YES						Forest Resource	0%	Port of Bremerton, Class 1 and 2 Habitat
Morgan Marsh	YES						Rural Residential, Rural Wooded	7%	Port of Bremerton, Class 1 and 2 Habitat
Hintzville Beaver Ponds	YES						Rural Residential, Rural Wooded	25%	Port of Bremerton, Class 1 and 2 Habitat
Dewatto Wetland	YES						Rural Wooded	0%	Port of Bremerton

6 CHARACTERIZATION DATA GAPS

The Inventory and Characterization includes the most current, complete,accurate and available environmental, scientific and technical information related to Kitsap County's marine and freshwater shoreline ecosystems. After review of the draft report, staff and technical experts have identified certain areas where additional information if available would encourage more effective shoreline management within Kitsap County pursuant to WAC 173-26-201.3.c.(viii).

Comprehensive Mapping of Feeder Bluff Locations:

The absence of coastal geomorphic mapping in Kitsap County represents a gap in the mapping of specific local nearshore conditions. Much of the sediment found on Puget Sound beaches (~90%) is derived from eroding coastal bluffs, commonly referred to as *feeder bluffs* . (Andrea MacLennan, Coastal Geologic Services, personal communication, October, 2010). The conservation and restoration of these sediment sources are ashoreline ecological functions to be managed for No Net Loss (as required by WAC 173-26-210). Further , feeder bluffs have been identified as a high priority by several agencies and organizations (Puget Sound Partnership, Puget Sound Nearshore Ecosystem Restoration Project (PSNERP) among many others). Mapping and analysis of current and historic sediment sources/feeder bluffs can provide a measure of key nearshore processes; sediment supply, transport and accretion/deposition. These large scale processes influence the health of nearshore systems and provide ecosystem structure, supporting many habitat functions upon which the nearshore food web depends. Mapping and analytical results can improve permit review efficiency, without requiring site verification, as well as inform planners, resource managers, and restoration/conservation practitioners. The data can also be used to better understand where differing hazards associated with sea level rise and climate change are likely to occur.

High Resolution, Comprehensive Stream Location Mapping:

Current stream maps (Washington DNR, 2007) are often too generalized and do not provide adequate resolution and must be used with field verification, particularly when working at the parcel level. Some efforts are underway by the Wild Fish Conservancy with the West Sound Lead Entity to map and "type" streams in East Kitsap and North Pierce Counties with great detail. This level of information is currently finished for the Miller Bay area, but has yet to be decided where the next round of effort will be applied. It has been suggested that streams under SMP jurisdiction be given consideration during the selection process.

Freshwater habitat assessments available to Kitsap County are over seven years old. Changes have occurred in the landscape within that time, though it can not always be determined how or where. In order to be more accurate for specific reaches of streams, more needs to be known about vegetation, sediment loads,overall habitat and fish use.

Updated Fish Passage Barrier Map:

Several sources of fish passage barrier data exists from different agencies, with different dates and different levels of completeness. An updated, prioritized list of fish passage barriers is needed. This list should be a "living" document , updated by both salmon recovery agencies and public works.

High Resolution Local Marine Vegetation Survey:

While some information exists from the Washington Department of Ecology and the Department of Natural Resources, neither source provides high enough resolution to support permit decisionmaking as a primary souirce. A local baseline survey at appropriate resolution would provide decision makers with a more efficient means to determine site specific impacts of certain development actions without having to visit the site. A comprehensive survey at appropriate resolution would provide relevant information on the health and abundance of important marine vegetation species such as eelgrass. A more detailed marine vegetation survey would also assist in the County's on-going monitoring of No Net Loss.

A Shoreline Permit Tracking System:

A shoreline permit tracking system within the Kitsap County Land Information System (LIS) will help in tracking No Net Loss indicators for future SMP updates. Currently, permit exemptions are not tracked. Establishing a method for tracking this type of information will lessen the need to start from scratch on a new Nearshore Inventory during the next SMP Update. The information needed to describe permited activity could include the number, type and size of newly permitted shoreline modifications or activities and new or expanded shoreline uses, as well as documentation of projects that receive a shoreline permit exemption. The County will determine a final list of No Net Loss indicators to track as the SMP Update progresses.

A List or Map of Locally Targeted Habitats and Species, as outlined in KCC Title 19.300.310 (3)(2-3).

Wildlife Habitat Conservation Areas should include federal, state and *local* habitats and species which, if altered, "may reduce the likelihood that the species will maintain and reproduce over the long term". Currently, the habitats and species data utilized under this code are *federal and state listed* or *monitored*. Looking into additional habitats and species of local importance will enrich this database and our understanding of local habitat functions.