

CHAPTER 11.

SHORELINE ANALYSIS SUMMARY

Chapter 11 is in development and will be completed for the Final Draft of this report. The following discussion should be considered a framework for subsequent evaluations.

11.1 Shoreline Analysis

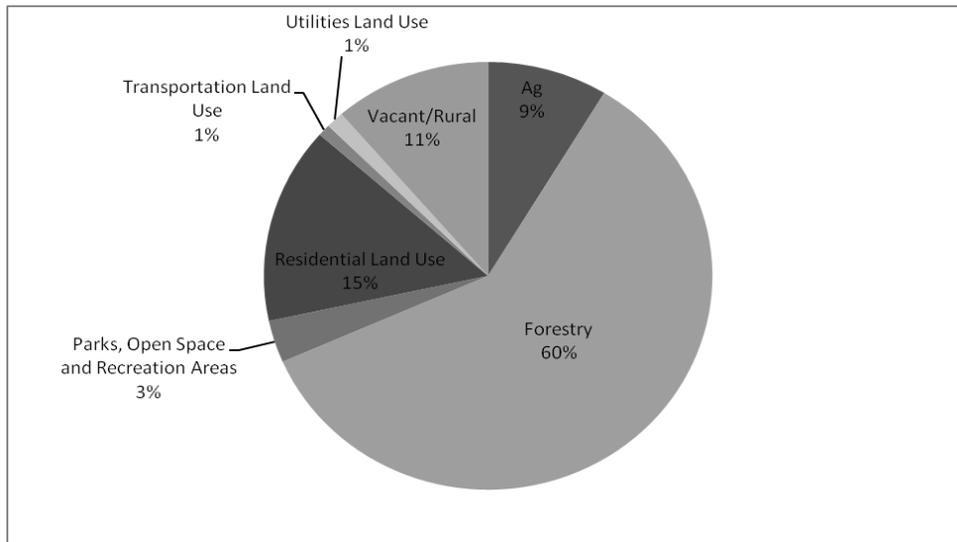
This inventory and analysis for Mason County, Washington covers 217 linear miles of marine shoreline, 343 miles of river and 149 miles of lake shore for a total of 709 miles considered “shorelines of the state.” Of this total, 36 percent is considered “shorelines of statewide significance.” Marine waters of Hood Canal and South Puget Sound, along with portions of the Skokomish River and Lake Cushman are shorelines of statewide significance.

11.2 Key Impairments

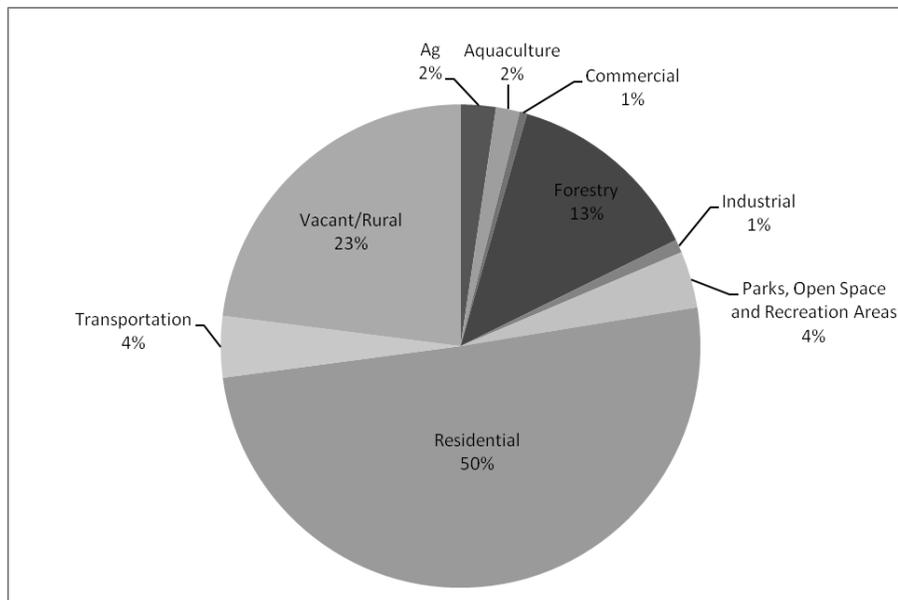
The key impairments for shorelines in Mason County have been identified by others and have been noted through the development of the inventory and characterization report. Countywide, impairments to shorelines include degradation to water quality from non-point sources, urban runoff, and septic systems. Sedimentation, temperature exceedances, and other water quality problems have been caused by upstream timber harvest and culverts on forest roads, infrastructure such as highways and railroads crossing shorelines. Hydrologic functions have been affected, including limiting of tidal action in estuaries by the placement of structures in the water such as docks, bulkheads, and riprap .

11.3 Key Shoreline Use Issues

Existing land uses in freshwater shoreline planning areas are predominantly in forestry. Residential, vacant, and agriculture land uses make up most of the remaining area. Residential land uses are concentrated around lakes and typically have individual docks/piers.

Figure 11-1. Freshwater Shoreline Land Uses

Existing land uses in the marine environment are predominantly residential. Vacant and forestry land uses are also common. Docks/piers are scattered throughout the marine environment with private marinas concentrated along Hood Canal.

Figure 11-2. Marine Shoreline Land Uses

11.3.1 Potential Use Conflicts

Conflicts exist in Mason County between agricultural uses, other adjacent uses and protection of shoreline ecological functions. Many of these can be addressed through improved management practices. Water quality degradation due to excess nutrients entering streams and rivers is one conflict typically associated with agricultural uses. Sources of nutrients are livestock waste and fertilizers. Other sources include failing or malfunctioning septic systems, stormwater runoff from roads, residential areas, and commercial areas.

The long-term maintenance of timber harvest roads and culvert crossings has an effect on downstream waters and water quality in shorelines of the state. Timber harvest roads can contribute sediment to downstream waters and can be associated with landslides, erosion and slope failures. Decommissioning forest roads when under-utilized is one way to restore upper watershed processes and reduce sediment loading to improve water quality.

Aquaculture, particularly shellfish growing and harvesting, is considered a preferred use under the SMA as a water-dependent use. Any use or activity that degrades water quality or alters substrates in the nearshore has potential to impact native shellfish stocks and commercial aquaculture. In addition to shoreline uses potentially affecting aquaculture adversely, commercial shellfish harvesting itself can potentially impact adjacent shoreline uses. Intertidal aquaculture operations can potentially create use conflict between shellfish farming and public access in the shoreline. There is also growing public and scientific interest in the Puget Sound region in the possible ecological effects of expanding aquaculture operations, specifically geoduck aquaculture.

Development of overwater structures such as piers, docks, covered moorage, floating homes, mooring buoys, marinas, shipyards and terminals, boat lifts, and boat ramps has the potential for conflicts with other shoreline uses. Large concentrations of piers and docks can create conflicts with other uses by limiting potential for recreation and restoration and potentially interfering with navigation. Marinas with covered moorage also may have impact on shoreline views of adjacent shoreline users.

Residential development near the shoreline is an example of another potential conflict. Residential development can result in nutrient- and bacteria-enriched runoff from yards and gardens, pet waste, and malfunctioning or poorly-maintained septic systems. Residential homeowners may remove shoreline vegetation to enhance views, build docks, piers, and other structures as described above, and use chemicals such as pesticides in the shoreline area. These uses can result in

degraded water quality, increased concentrations of chemicals in sediments and fish, and can contribute to invasive levels of aquatic weeds.

11.4 Park and Public Access Opportunities

Many of the shorelines within Mason County have at least limited public access. Marine shorelines are generally accessible through the Washington State Parks or local parks and/or informal access to tidelands and beaches from public roads. Most shoreline lakes, although fully developed in private residential structures, are accessible through a WDFW boat launch.

11.5 Restoration Opportunities

Restoration is currently underway in Mason County through a variety of organizations including the Squaxin Island Tribe, Skokomish Tribe, Mason Conservation District, Hood Canal Coordinating Council, Hood Canal Salmon Enhancement Group, South Puget Sound Salmon Enhancement Group, PSNERP and others. Restoration opportunities within the County include those projects identified on the PSNERP Habitat Work Schedule 2011 and by other salmon recovery groups. Restoration opportunities summarized in this report also include restoration actions noted during development of this shoreline analysis. Preservation and protection measures are described along with restoring degraded shoreline functions where impacted. The prioritization of restoration opportunities and more detailed analysis of these will be accomplished in the Mason County Shoreline Restoration Plan, a component of the SMP update to be developed in 2012.

Restoration in the County's shorelines includes programmatic and specific actions such as:

Restore forested riparian areas and native vegetation in shoreline.

Native trees, shrubs and groundcover within the shoreline jurisdiction provide shade, organic nutrients, habitat structure, and improve water quality for stormwater runoff by capturing pollutants. Maintaining and conserving vegetation in the shoreline is a specific requirement of the 2003 Shoreline Guidelines. Restoring forested riparian areas adds trees and native shrubs to areas that are currently maintained as lawn, are developed in impervious surfaces, or are un-vegetated.

Remove invasive plants from riparian areas to restore ecological functions.

Removal of non-native invasive plants (which replace native species over time) is another habitat restoration opportunity. Countywide, there are problems with scots broom, knotweed, blackberry and noxious weeds within the riparian areas. This is an issue more within freshwater shore lands versus along the marine shores. Mason Conservation District has an existing program dedicated to the removal of invasive and noxious weeds which supports this goal.

Conserve existing forested riparian areas and native vegetation in shoreline.

According to data provided by PNPTC, over 45 percent of the County's freshwater shorelines are currently forested. Conserving vegetation, particularly trees and forest cover, during future development of the shorelines is a key element of the protection of ecological functions.

Remove hardened armoring and replace with soft-shore stabilization.

One of the requirements of the shoreline guidelines is to demonstrate a preference for soft-shore stabilization over hard armoring of the shoreline. Mason County has 63 linear miles of existing hard armoring on its marine shorelines, which could be replaced over-time with softer stabilization measures.

11.6 Management Recommendations

Development within the shorelines of Mason County will continue and therefore impacts must be addressed as development occurs. The shorelines are highly valuable assets to the County both for resource industries, particularly shellfish harvest and aquaculture, as well as recreational and citizen enjoyment. Nearly half of the shoreline residents in Mason County are thought to be seasonal, residing only during the summer vacation months.

Several management recommendations have come to light as a result of this shoreline inventory and analysis. These recommendations are generally broad and programmatic:

- Address point sources and non-point sources of pollutant loading to freshwater and marine shorelines. Remove pollutant sources to improve water quality and protect shellfish growing, recreational uses, and other primary water uses within Mason County. This includes continuing and/or strengthened support of Mason County's On Site Sewage System Management Program, the Comprehensive Stormwater Management Plan and support for established

Shellfish Protection Zones, among other programs to protect water quality and habitat.

- Continue to address water allocation and consumptive uses to improve in-stream flows and maintain salmonid habitat. This is an important issue specifically for Skookum Creek, John's Creek and Skokomish River and its tributaries.
- Upstream logging and timber harvest have caused downstream issues with temperature exceedances and sedimentation. Continue to work with US Forest Service, Simpson, Green Diamond and other timber companies to address culvert crossings on logging roads and restoration of harvested lands so that these impacts may be minimized over time.
- Strengthen implementation of Integrated Vegetation Management Programs in selected watersheds to improve lake water quality.

11.7 Use of the Shoreline Inventory and Analysis Report

The shoreline inventory and characterization report and map folio are the foundation for the update to Mason County's SMP. Based on the findings of this report, the relationships between ecological processes, shoreline functions, and the built environment can be better understood to assist in the development of goals and policies for shoreline management measures to protect and restore shoreline functions, encourage public access and promote water dependent uses.

Next, this report will be used to inform the development and assignment of appropriate shoreline environment designations. Using the results of the shoreline analysis, Mason County will move forward to determine shoreline environment designations that are compatible with the existing condition, ecological function, character and vision for the shoreline reaches. The shoreline environment designations will serve as the framework for development of the implementing regulations for the SMP.

Additionally, the report establishes a baseline of existing conditions for shorelines in the county and identifies restoration and public access opportunities. As Mason County updates its SMP, the County will need to demonstrate "no net loss" of ecological functions over time from this baseline of existing conditions. The restoration opportunities identified in this report will also assist in the preparation of a county-wide restoration plan, a separate document to be prepared in subsequent phases of the SMP update process.