

# **ECOLOGICAL CLASSIFICATION HCP PROJECT AREA WASHINGTON STATE**

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## EXECUTIVE SUMMARY

An ecological classification was conducted for Plum Creek Timber Company's Habitat Conservation Plan (HCP) Project area. The project area encompasses 418,859 acres in part of the Cascades Mountain Range known as the "I-90 Corridor". The ecological classification provides a framework and descriptive attributes for a Habitat Conservation Plan (HCP) that is being developed by Plum Creek Timber for the same area. The ecological classification will be refined and expanded based on results of ongoing Watershed Analyses for specific basins in the HCP Project area.

The approach to the ecological classification was to assemble existing information from numerous sources into a hierarchical classification. The hierarchical classification distinguishes areas of distinctive ecological potential. The classification facilitates analysis of the project area from several different perspectives. Hierarchical levels are:

**Ecoregion:** Areas of distinctive land-surface form, potential natural vegetation, land-use and soil (Omernik 1987); identified from small scale (1:2,500,000) maps, they may contain few to many geologic districts.

**Geologic District:** Areas of distinctive parent materials that differ from surrounding districts in structure, degree of weathering, dominant size-fractions of weathering products and water-handling characteristics (e.g., porosity, permeability, runoff potential); includes both uplands and bottom-lands; it may contain one to several landtype associations. Six geologic districts identified in the HCP Project Area: 1) Sandstone; 2) Basalt; 3) Andesite; 4) Mixed Volcanic; 5) Granite; and 6) Metamorphic.

**Landtype Association:** Some part (or all) of a geologic district that is distinguished by a dominant geomorphic mechanism (e.g., glacial, fluvial, alluvial, lacustrine) and/or the degree to which this mechanism has been effective in shaping the landscape; includes both uplands and bottom-lands; it contains several different landtypes. The HCP Project area was first divided into two geomorphic classes: 1) Fluvial Lands; and 2) Glacial Lands. Combining geomorphic classes with geologic districts resulted in 11 Landtype Associations.

**Landtype:** A portion of a landtype association distinguished by form and position; it corresponds with associations of soils and plant communities; streams and riparian habitat are contained within the **valley bottom landtype**, which may include few to several valley-bottom types. Only a single, continuous polygon of the valley-bottom landtype was delineated in the HCP project area.

**Valley-Bottom Type (VBT):** A subset of the valley-bottom landtype distinguished by form, structure and the manner in which water and sediment move through the system; they are generally distributed in a predictable manner along the elevational gradient of watersheds; examples of VBTs in a glacial landtype association include glacial basins (zone of erosion), glacial trains (zone of transport) and out-wash valleys (zone of deposition); VBTs in Fluvial Lands include cascade, fluvial basin, V-erosional canyon and V-depositional canyon. Combining VBTs with Landtype associations resulted in 30 VBTs.

Existing information that was used to characterize classes of the hierarchical classification included:

- 1) slope, aspect, elevation and topography (from USGS, 1:24,000 scale Digital Elevation Models);
- 2) precipitation (from Precipitation Frequency Atlas of the Western States);
- 3) parent rocks (from 1:100,000 scale, digital geologic maps);
- 4) soil orders, soil subgroups, soil series, mass-wasting potential and soil erosion potential (from a digital soil map prepared by the Washington State Division of Natural Resources);
- 5) stream length, order and gradient (from 1:100,000 scale DLGs and 1:24,000 scale Digital Elevation Models);
- and 6) vegetation information compiled from Plum Creek, USFS and City of Tacoma data bases.