

Executive Summary

The report in your hands addresses a pressing need. It is a first approximation of the most important places for conserving native species and ecosystems in the most highly developed region of the Pacific Northwest: the fertile lowlands of Oregon's Willamette Valley, Washington's Puget Trough, British Columbia's Georgia Basin, and the nearshore marine waters of Puget Sound and the Strait of Georgia. These extraordinary places are all part of a common [ecoregion](#) and share similar climate, geology, history, landforms, and native species.

Resources for conservation in this ecoregion are limited, urban areas are expanding, and an extraordinary heritage of native species and ecosystems is at risk. This assessment is intended to help conservation agencies, planners and organizations direct their resources to the most important places for supporting the ecoregion's biodiversity. It describes a [portfolio](#) of [priority conservation areas](#) that are of exceptional biological value and are the most likely places for conservation to succeed based on their current condition, land use and other factors.

Assessment Methods

The Nature Conservancy, the Nature Conservancy of Canada, and the Washington Department of Fish and Wildlife are the primary partners in this assessment. The Oregon State Natural Heritage Information Center, the Natural Heritage and Nearshore Habitat programs of the Washington Department of Natural Resources, and the British Columbia Conservation Data Centre are major contributors of technical expertise and data. We also benefited from the participation of many other scientists and conservation experts as team members and expert reviewers.

Five expert technical teams collaborated on a series of analyses based on methods developed by The Nature Conservancy and other scientists. Three teams covered the terrestrial environment's plants, animals and ecological systems. A fourth assessed the nearshore marine environment within the Puget Sound and Georgia Strait. A fifth team studied the ecoregion's freshwater systems.

Salmon were not addressed in this assessment. Government and other organizations are developing salmon conservation strategies based on analyses which this assessment cannot replace. However, this report should provide a helpful context for those planning for the conservation of salmon or any other [focal group](#).

Each team began by selecting the species, communities and ecological systems that would serve as the conservation [targets](#), i.e., the elements biodiversity that should be included in priority conservation areas. This resulted in the selection of 833 targets, including 422 terrestrial species targets, 68 nearshore marine species targets, 36 freshwater species targets, 90 rare plant community types and 217 [coarse filter](#) system targets. These system targets are the major habitat types that make up the terrestrial, freshwater and nearshore marine environments. They are used as targets based on the hypothesis that by ensuring their full representation in the portfolio, the majority of species in the ecoregion—including the vast number of poorly studied or unknown species—will also be included. In this way the coarse filter system targets serve as a substitute or surrogate in the face of inadequate data for many species.

For each of these 833 targets, all available records of location and status in the ecoregion were gathered and reviewed. [Goals](#) were then set for each target to serve as instructions or benchmarks for the identification of the portfolio of priority conservation areas. These goals described how many populations (for species targets) or how much area (for system targets) the portfolio should include to represent each target, and how those target occurrences should be distributed across the ecoregion to ensure good representation of genetic diversity and hedge against local extirpations.

A computer program, [SITES](#), was used to select the optimal portfolio of sites, i.e., that set of sites which met the goals for the most targets at the lowest [cost](#). Cost was minimized by selecting the most compact set of sites in areas rated as most suitable for long-term conservation. Suitability was described by an index, that was developed by the team, of existing land use and impacts. The SITES program then compared each part of the ecoregion against all others and analyzed millions of possible portfolios to select the most efficient alternative.

The technical teams then worked with the SITES program results to refine the portfolio. The work of the terrestrial, nearshore marine and freshwater teams was combined. The terrestrial portfolio became the foundation of the combined portfolio. Marine sites were added, with an emphasis on capturing those places where high-priority terrestrial and marine areas are ecologically connected. Because the freshwater analysis completed to date is in a preliminary state, freshwater results were used only where they clearly added to a defined terrestrial or marine site, again seeking to capture those places where these systems are ecologically connected.

Results

The final portfolio includes 372 priority conservation areas with a combined area of 1,264,000 hectares (ha) (3,122,080 acres [ac]), representing 23 percent of the ecoregion's total area. Thirty-nine [shoreline segments](#) totaling 89 kilometers (km) (55 miles [mi]) are also included. The portfolio includes the last places where many of the ecoregion's most imperiled species occur and the last, large expanses of relatively intact natural habitat. The sites included here are those regarded as having the highest likelihood of successful conservation according to the suitability factors utilized in the assessment.

Eighty percent of the land in this portfolio is privately owned. A wide range of federal, tribal, state, provincial and local government lands make up the remainder. The state of Washington is the largest landowner among these, with 92,000 ha (227,240 ac). Less than 1% is owned by non-profit conservation groups such as The Nature Conservancy. Approximately 6% of this portfolio lies within areas already designated for biodiversity conservation. A large proportion of the portfolio is currently managed for timber production. Ownership was not summarized for nearshore marine sites.

While conservation of these priority areas is vitally important for the biodiversity of this ecoregion, the portfolio is not sufficient to sustain all the native species that survive in the ecoregion today. First, it does not include full treatment of freshwater species and ecosystems, and its marine analysis does not include deepwater environments. Second, over half the targets selected for this assessment have been reduced to such small remnants that their long term survival in this ecoregion may be in question. In some cases, this reflects an incomplete survey of the ecoregion, but for the vast majority, it reflects the widespread loss of historic habitat and the highly altered nature of that which remains.

Using the Assessment

The Willamette Valley-Puget Trough-Georgia Basin Ecoregional Assessment is a resource for planners and others interested in the status or conservation of the biological diversity of this ecoregion. This assessment has no regulatory authority; it is simply a guide for prioritizing work on the conservation of habitats that support the ecoregion's extraordinary biological diversity.

We encourage users of this assessment to treat it as a first approximation, and to share any suggestions for improvement of future editions with the authors. The authors will review the use of the assessment and feedback received from users to determine the timing and focus of future editions.

Users are advised to be aware of the large scale at which this assessment was prepared. The portfolio does not include some sites that are locally significant for biodiversity conservation, such as small wetlands and small, high-quality patches of common habitat types. Mapped site boundaries are approximate and may include areas that are unsuitable for conservation mixed in with highly suitable areas. We expect that local planners equipped with more complete information and higher resolution data will develop refined boundaries for these sites.

There are large gaps in our knowledge of nature and these are reflected in this assessment. In particular, the marine and freshwater elements of this assessment do not provide a full picture of conservation priorities in these environments.

The assessment report and the final product data behind it are available to all interested parties. The assessment provides information for decision-makers who wish to ensure a future for the natural systems and species that have attracted us here and that will be treasured by those who follow. The Nature Conservancy, the Nature Conservancy of Canada, and the Washington Department of Fish and Wildlife will use its results and those of similar assessments for other northwest ecoregions to guide their prioritization of projects and funding. Governments, land trusts, and others are encouraged to use the assessment as a supplementary resource to other planning information.

As home to nearly three-quarters of the people of British Columbia, Washington, and Oregon, the Willamette Valley-Puget Trough-Georgia Basin ecoregion has given so much to our history and is especially critical to our future. Its natural richness is the foundation for our growth.