



VEGETATION MAPPING

RESOURCE MONITORING BRIEF

National Park Service
U.S. Department of the Interior

North Coast and Cascades Network
Inventory & Monitoring Network



IMPORTANCE

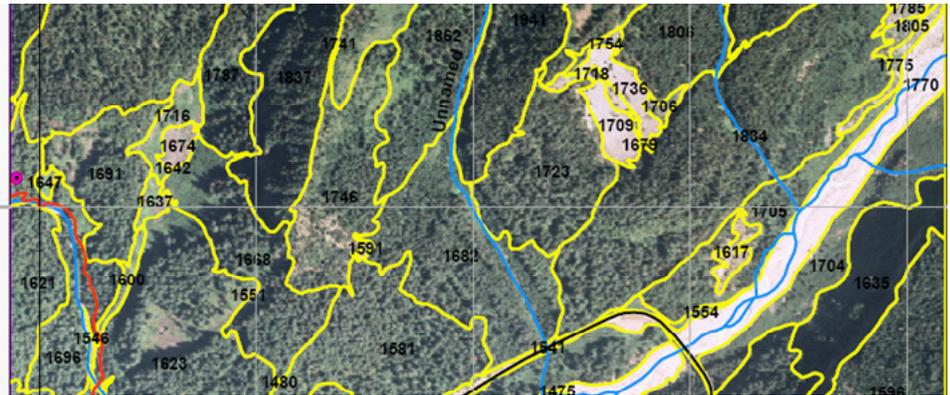
Mount Rainier National Park covers 235,625 acres and supports over 890 species of vascular plants. Majestic hemlock forests intermingle with trickling streams. Ancient firs watch over emerging ferns. Conserving the biodiversity in the park requires knowledge of the variety and extent of plant species and communities. Exotic species, insect outbreaks, and diseases present challenges to the resilience of Mount Rainier's ecosystems. To address these challenges, park managers rely on vegetation maps and inventories that help them evaluate changes in and better understand relationships between vegetation and wildlife, wildland fires, and other managed resources. The North Coast and Cascades Network (NCCN) is developing a vegetation map for Mount Rainier National Park and plans to create new vegetation maps for all NCCN parks within the next four to seven years to aid park managers document and preserve the diversity of all species, big and small, within the parks.

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MORA Vegetation Mapping Field Crew members sample the vegetation during summer 2008. Allen Nabors records their position using a hand-held GPS unit while Rebecca Peace selects a vegetation type using a field key.



An example of the vegetation polygons created using automated computer analysis techniques. The area shown in this example is just upstream from Longmire where the Paradise Road crosses the Nisqually River. Polygons are outlined in yellow and numbered, roads are shown in black, and rivers and streams in blue. In the final map, vegetation polygons classified with the same vegetation type will be merged.

VEGETATION MAPS

The National Park Service mapping program has established a set of standards for mapping which dictate the scale, resolution, accuracy and vegetation classification scheme to be used. Basic steps for creating the Mount Rainier vegetation map:

1. **Create polygons.** Draw boundaries around distinct vegetation types seen in aerial photographs or satellite imagery.
2. **Field sampling.** Visit selected sites identified in the mapping process and assign a vegetation type using a field key.
3. **Map classification.** Classify all sites using computer program that assigns vegetation types to all defined areas that share similar characteristics to those sampled in the field.
4. **Accuracy Assessment.** Evaluate the accuracy of each mapped vegetation class using field data held in reserve.

How are vegetation types assigned?

The NPS adopted the National Vegetation Classification System (NVC), a hierarchical system that uses both structural and floristic information, to define existing vegetation types. There are eight levels in the NVC hierarchy. The topmost levels are general and separate vegetation types based primarily on structure, specifically whether they are dominated by trees, shrubs, or herbaceous plants. The middle levels of the NVC hierarchy incorporate biogeographic range, climate, substrate and dominant or diagnostic species. The NPS selected the second-finest level, called the Alliance level, of the hierarchy as the target for vegetation mapping. Map users will find the vegetation Alliances on the maps intuitive because the dominant canopy vegetation determines the Alliance. For example, the Western Hemlock- Douglas-Fir Mesic Forest Alliance is found extensively at lower elevations at Mount Rainier. At slightly higher elevations, the Silver Fir-Subalpine Fir Alliance predominates. The lush and iconic subalpine meadows at Mount Rainier are typically the Showy-sedge-Sitka Valerian Meadow Alliance. These are just three examples from over 50 alliances that occur at Mount Rainier.

PROJECT STATUS

The vegetation mapping team created a draft map of vegetation polygons. During the summer of 2008, NPS field crews sampled nearly 800 of these sites in areas all over the park. Sampling focused on areas adjacent to trails and roads. Field work in 2009 will focus on sampling vegetation types that are not currently represented in the dataset. Following the field sampling in 2009, the cooperators will do a final computer classification and the final map will be available late in 2010.

Monitored at:

Mount Rainier National Park



The North Coast & Cascades Network