

Cascade Head Experimental Forest

Domain name: PNW NEON – Domain 16

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Location: 45.07 N; -123.97 W

Ecological Themes: Climate; Land Use (land cover change); Invasives (plant, animal); Disturbance (coastal stability, flood, wind); Aquatic (stream, river, estuary, coastal).

Site History and Characteristics.

Encompasses headlands, an estuary, and inland areas with salt marsh, Sitka spruce/hemlock forest, and grassland vegetation characteristic of the Pacific Northwest coast and adjacent mountainous landscape. Federal land managed by USDA Forest Service, Pacific Northwest Research Station and Siuslaw National Forest. Cascade Head Experimental Forest was established in 1934 and was expanded to include a Research Natural Area and Scenic Research Area to total 6400 ha. Records from a NOAA weather station date from 1934 and long-term vegetation plots date from as early as 1935. The forest is a member of many existing research networks including Man and the Biosphere Reserves (MAB/UNESCO site since 1980), National Atmospheric Deposition Program (NADP), Organization of Biological Field Stations, and the Forest Service network of Experimental Forests and Ranges. Other collaborators include The Nature Conservancy, many state and federal agencies, and academic institutions.



Gradients and Themes. Cascade Head can be a very important national ecological observatory site at the edge of the continent for sampling air quality arriving from across the Pacific without interference of North American sources. The site anchors a strong east-west terrestrial environmental gradient to Andrews Forest in the Cascades and eastern Oregon; for 25 years this gradient has been used in the OTTER (Oregon Transect) and is now used for several vegetation, biogeochemistry, and decomposition studies. Land use issues include restoration of wetlands by breaching of dikes along the Salmon River estuary (studies underway on responses of vegetation and salmon rearing), restoration of grasslands as habitat for an endangered butterfly species, and increased visitor use related to population increase in nearby areas. Coastal stability issues include effects of windstorms on forests (documented with long-term plots), sensitivity to sea level change for configuration of the coast and estuary, the potential for tsunamis triggered by subduction zone earthquakes or other sources.

Existing facilities. Two Cascade Head buildings can accommodate 12 to 14 people overnight, but lacks laboratory facilities. The town of Lincoln City, OR, is 10 km away.