Ecoregions Legend; Biotic Systems

Ecoregions *(Map on previous pages)*

Ecoregions, or ecological regions, denote areas of general similarity in ecosystems and in the type, quality and quantity of environmental resources. They serve as a useful spatial framework for individuals who research, assess, manage and monitor ecosystems and ecosystem components. A four-level scale is used to describe ecoregions at varying degrees of detail. The most general classification, level I, divides North America into 15 ecological regions, with level II splitting the continent into 51 regions. At level III, the continental U.S. contains 98 regions. The 10 that appear in Oregon are listed below. Level IV ecoregions are a further refinement of level III. Sixty-three level IV regions are shown on the ecoregions map.

Specialists delineate ecological regions after carefully analyzing the patterns and interplay of geography and other natural phenomena. They then define areas that share similar combinations of elements. The subjects of such an analysis include an area's geology, landforms, soils, land use, vegetation, climate, wildlife and hydrology. Ecoregions reflect an ecosystem's capacities and potentials as well as its range of likely responses to human disturbance. State agencies use the ecoregion framework as a tool in efforts to establish water quality standards and goals for managing non-point source pollution. These regions provide a kind of biological lingua franca that is critical for developing coordinated management strategies for federal and state agencies that have different responsibilities for the same geographic areas.

Oregon's ecosystems are shaped to a large degree by the position of major landforms. Ecoregions mapped in Oregon generally reflect moisture availability at various elevation levels. The Coast Range (1) and the Cascades (4) greatly reduce the effects of marine weather systems to create dry conditions in Eastern Oregon. Due to this rain shadow effect, the western Blue Mountains (11) are relatively dry; however, the northeast part of this ecoregion contains higher elevation areas of moist forest where the mountains lie in the path of the marine weather coming through the Columbia River Gorge. Southeastern Oregon contains a portion of the Northern Basin and Range (80) which is characterized by rolling sagebrush plains, fault block mountains and internally drained rain-holding basins. Geology is especially important to ecoregion character in some areas of the state. For example, Coast Range streams in volcanic areas are less prone to and recover more easily from disruption compared to streams in sedimentary areas, where bank erosion and sedimentation are long-term management concerns. Familiarity with ecoregion character, both past and present, and knowledge of ecoregion response to management activities are key factors in mounting major environmental initiatives such as salmon and watershed restoration efforts.

Legend

1 Coast Range

The low mountains of the Coast Range are covered by highly productive, rain-drenched coniferous forests. Sitka spruce forests originally dominated the fog-shrouded Coast, while a mosaic of western red cedar, western hemlock and Douglas-fir blanketed inland areas. Today Douglas-fir plantations are prevalent on the intensively logged and managed landscape.

3 Willamette Valley

Rolling prairies, deciduous–coniferous forests and extensive wetlands characterized the pre-settlement landscape of this broad lowland valley. The Willamette Valley is distinguished from the adjacent Coast Range and Cascades by lower precipitation, less relief and a different mosaic of vegetation. Landforms consist of terraces and floodplains that are interlaced with and surrounded by rolling hills. Productive soils and a temperate climate make it one of the most important agricultural areas in Oregon.

4 Cascades

This mountainous ecoregion is underlain by Cenozoic volcanics, and has been affected by alpine glaciations. It is characterized by steep ridges and river valleys in the west, a high plateau in the east and both active and dormant volcanoes. Its moist, temperate climate supports an extensive and highly productive coniferous forest. Subalpine meadows occur at high elevations.

9 Eastern Cascades Slopes and Foothills

In the rain shadow of the Cascade Mountains, this ecoregion's climate exhibits greater temperature extremes and less precipitation than ecoregions to the west. Open forests of ponderosa pine and some lodgepole pine distinguish this region from the higher ecoregions to the west where hemlock and fir forests are common, and the lower, drier ecoregions to the east where shrubs and grasslands are predominant. The vegetation is adapted to the prevailing dry, continental climate and is highly susceptible to wildfire. Volcanic cones and buttes are common in much of the region.

10 Columbia Plateau

This is an arid sagebrush steppe and grassland, surrounded on all sides by moister, predominantly forested, mountainous ecological regions. This region is underlain by lava rock up to two miles thick. Particularly in the region's eastern portion, where precipitation is greater, deep wind-deposited loess soils have been extensively cultivated for wheat.

11 Blue Mountains

This ecoregion is a complex of mountain ranges that are lower and much more open than the neighboring Cascades and northern Rocky Mountains. Like the Cascades but unlike the northern Rockies, the Blue Mountains ecoregion is mostly volcanic in origin. Only its highest ranges, particularly the Wallowa and Elkhorn Mountains, consist of intrusive rocks that rise above the dissected lava surface of the region. Much of this ecoregion is grazed by cattle, unlike the Cascades and northern Rockies.

12 Snake River Plain

This portion of the Basin and Range area is considerably lower and less rugged than surrounding ecoregions. Mostly because of water that is available for irrigation a large percentage of the alluvial valleys bordering the Snake River is used for agriculture. Cattle feedlots and dairy operations are also common in the river plain. Except for the scattered barren lava fields, the remainder of the plains and low hills in the ecoregion have sagebrush steppe natural vegetation and are used for cattle grazing.

13 Central Basin and Range

The Central Basin and Range is composed of north–south-trending fault block ranges and intervening, drier basins. In the higher mountains, woodland, mountain brush and scattered open forest are found. Lower elevation basins, slopes and alluvial fans are either shrub- and grass-covered, shrub-covered, or barren. The potential natural vegetation is, in order of decreasing elevation and ruggedness: scattered western spruce–fir forest, juniper woodland, Great Basin sagebrush and saltbush–greasewood. The region is internally drained by ephemeral streams and once contained ancient Lake Lahontan. In general, the Central Basin and Range is warmer and drier than the Northern Basin and Range and has more shrubland and less grassland than the Snake River Plain. Soils in this region grade upslope from mesic Aridisols to frigid Mollisols (see Soil Suborders, pages 150–151). The land is primarily used for grazing.

78 Klamath Mountains

The Klamath Mountain ecoregion is physically and biologically diverse. Highly dissected, folded mountains, foothills, terraces and floodplains occur and are underlain by igneous, sedimentary and some metamorphic rock. The mild, sub-humid climate of the Klamath Mountains is characterized by a lengthy summer drought. It supports a mix of Northern Californian and Pacific Northwest conifers.

80 Northern Basin and Range

This ecoregion consists of dissected lava plains, rolling hills, alluvial fans, valleys and scattered mountains. Mountains are less common in the west than in the east. Overall, it is higher and cooler than the Snake River Plain, it is drier and more suited to agriculture than the Columbia Plateau and it has fewer ranges than the Central Basin and Range. Sagebrush steppe is extensive. Juniper-dominated woodland occurs on rugged, stony uplands. Much of this region is used as rangeland. Generally all but the eastern third of the Oregon part of this ecoregion is internally drained.