

Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin

MLRA Explorer Custom Report

A - Northwestern Forest, Forage, and Specialty Crop Region
4A - Sitka Spruce Belt

MLRA 4A - Sitka Spruce Belt

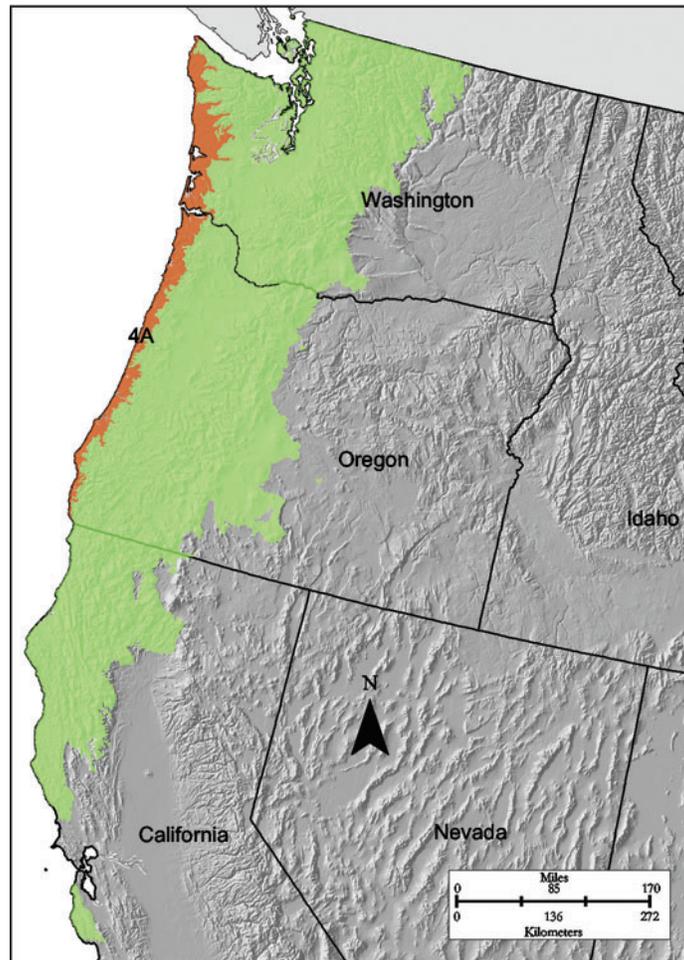


Figure 4A-1: Location of MLRA 4A in Land Resource Region A

Introduction

This area (shown in fig. 4A-1) is in Washington (55 percent) and Oregon (45 percent). It is along the Pacific Ocean coast. This long, narrow MLRA makes up about 5,305 square miles (13,740 square kilometers). The major towns in Washington are Aberdeen, Hoquiam, and Forks. The towns of Astoria, Tillamook, and Coos Bay, Oregon, are in the southern part of the MLRA. U.S. Highway 101 follows the coastline in the southern half of the area. Part of the Olympic National Park is in the northwest corner of the area, and many Washington and Oregon State parks are along the coast. The MLRA includes parts of the Siuslaw and Siskiyou National Forests in Oregon. Part of the Olympic National Forest is in the far northeast end of the area. The Quinalt, Quileute, Ozette, Hoh, and Makah Indian Reservations are in the northern part of the area.

Physiography

All of this area is within the Pacific Border Province of the Pacific Mountain System. Three different physiographic sections occurring in this area are, from north to south, the Olympic Mountains Section, the Oregon Coast Range Section, and the Klamath Mountains Section. Even though all of these sections are named after mountain ranges, there are actually no mountains within this coastal area.

In Washington, elevation ranges from sea level to a maximum of 1,800 feet (550 meters) inland. A cliff 50 to 200 feet (15 to 60 meters) high forms most of the western edge of the part of this MLRA in Washington. Most of this part of the MLRA has an elevation of 50 to 300 feet (15 to 90 meters). From the edge of the cliff, the land slopes up onto glacial drift deposits, marine terraces, or young, continental sedimentary rocks in the northern portion. In the southwest corner of Washington, the land slopes from the edge of the cliff up onto alluvial or marine terraces or flood plains and beach dunes. The MLRA is very hilly away from the coast.

The Oregon portion of this MLRA is similar to the portion in Washington. A rugged cliff 50 to 250 feet (15 to 75 meters) high forms most of the western edge of the part of this MLRA in Oregon, and elevations reach 1,800 feet (550 meters) inland on the area's eastern boundary. The coastal area around the mouth of the Columbia River and the flood plains along the major rivers near the coast are flat, but inland areas are very hilly. Marine terraces are common along the coast, and the coast consists of numerous bays, coves, headlands, and estuaries. The coast is eroding. Isolated rocks and small islands are directly offshore.

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Oregon-Washington Coastal (1710), 89 percent; Lower Columbia (1708), 7 percent; and Puget Sound (1711), 4 percent. The area is highly dissected by numerous perennial rivers and creeks. The Columbia River discharges into the Pacific Ocean in the middle of this MLRA.

Geology

The portion of this MLRA in Washington consists primarily of glacial and alluvial sediments and some scattered areas of young Tertiary sedimentary rocks (siltstone). Glacial deposits are dominant in the northern half of the area, and alluvium and beach dune deposits are more prominent in the southern half of the part of the MLRA in Washington. A significant portion of the part of the MLRA in Oregon consists of marine and estuarine sediments and some minor sedimentary and volcanic rocks. At the far southern part of this area, near the Klamath Mountains, the sedimentary rocks are older and some have been metamorphosed.

Climate

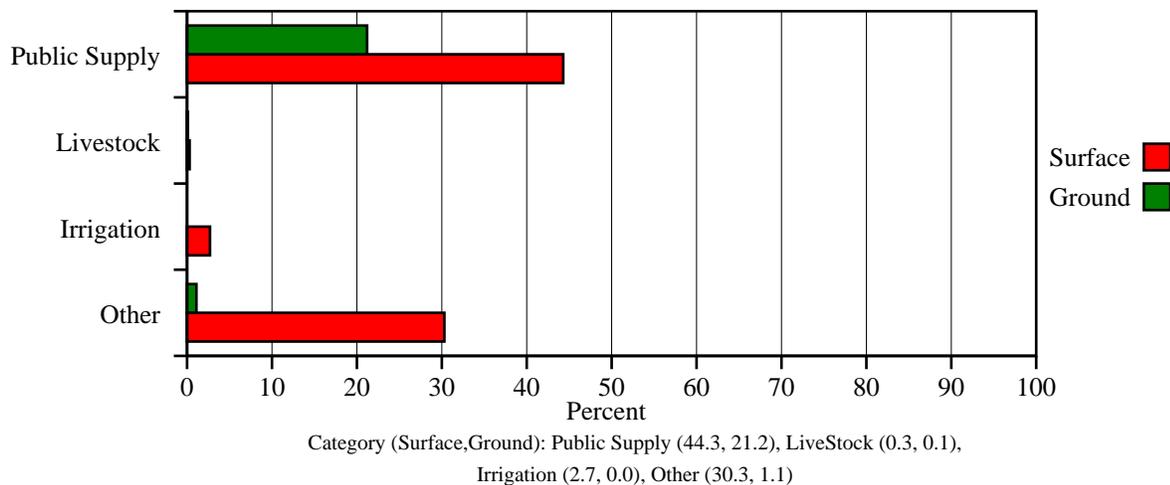
The average annual precipitation is 52 to 60 inches (1,320 to 1,525 millimeters) near the beach and up to 191 inches (4,850 millimeters) at the higher elevations on the inland edge of the MLRA. Most of the rainfall occurs as low-intensity, Pacific frontal storms. Precipitation is evenly distributed throughout fall, winter, and spring, but summers are cool and dry. Snowfall accumulation is rare on the ocean side of this area, but some snowfall occurs on the eastern boundary. This area lies within the coastal fog belt zone, and heavy fogs are common in summer. Supplemental moisture is provided by fog condensation. The average annual temperature is 45 to 55 degrees F (7 to 13 degrees C). The freeze-free period averages 290 days and ranges from 220 to 365 days in most of this area. The ocean influence on the western edge of this area increases the length of the freeze-free period, and the period is much shorter at the higher elevations on the eastern edge of the area.

Water

The total withdrawals average 56 million gallons per day (210 million liters per day). About 22 percent is from ground water sources, and 78 percent is from surface water sources. Abundant precipitation and many perennial streams provide enough water for most needs. Rainfall is the source of water for most crops, but some high-value crops are grown under irrigation on the coastal flats and on the flood plains a short distance inland from the mouths of the major rivers. The drier valleys depend on streamflow from the mountains. The surface water supply is often short in summer, and farms located far from streams may require supplemental ground water for irrigation. Surface water quality is generally good for all uses.

Ground water is plentiful in alluvial, glacial outwash, terrace, and beach dune deposits. It is soft water, and it generally meets drinking water standards, except for naturally occurring levels of iron and manganese in the northern part of the area.

MLRA 4A Water Use by Category



Soils

The dominant soil orders in the MLRA are Andisols, Inceptisols, Spodosols, and Entisols. The soils have either an isomesic or isofrigid soil temperature regime. They have a udic or perudic soil moisture regime. They are acid throughout; most are very strongly acid or strongly acid. The hilly to extremely steep uplands are dominated by Andisols and Inceptisols. These soils are shallow to very deep and are well drained. They have ferrihydritic or isotic mineralogy. Fulvudands (Solleks, Necanicum, Lytell, and Tolovana series) and Dystrudepts (Templeton series) dominate the uplands. The undulating to hilly marine and glacial outwash terraces are dominated by Andisols and Spodosols. These soils are shallow or moderately deep to cemented materials or are deep or very deep. They are poorly drained to well drained. They have ferrihydritic or isotic mineralogy. Fulvudands (Lint and Mopang series), Durudands (Hoko series), Placaquands (Halbert series), Haplorthods (Netarts and Yaquina series), and Duraquods (Depoe series) dominate the terraces. The soils on the nearly level flood plains and in the estuaries are primarily Entisols and Inceptisols with minor areas of Histosols. These soils are very deep and typically are very poorly drained or poorly drained. They have mixed mineralogy. Fluvaquents (Coquille and Ocosta series), Humaquepts (Brenner and Clatsop series), Udifluvents (Grehalem series), Dystrudepts (Nehalem series), and Haplohemists (Brallier series) dominate the flood plains and estuaries.

Biology

This area is highly diverse in flora and fauna. Its eastward extent is coincident with the extent of plant communities dominated by Sitka spruce. The uplands are dominated by a dense overstory of Sitka spruce, western hemlock, western red cedar, red alder, and Douglas-fir. Their understory is dominated by salal, western swordfern, huckleberry, and oxalis. The terraces have shore pine as a dominant overstory species in addition to the species on uplands. The flood plains and estuaries are dominated by saltgrass, skunk cabbage, tussock and other sedges, and reeds. During periods of low tide, large nonvegetated mudflats are exposed in the coastal bays.

Some of the major wildlife species in this area are black bear, Roosevelt elk, black-tailed deer, coyote, fox, bobcat, beaver, otter, raccoon, skunk, muskrat, opossum, rabbit, squirrel, mink, wood rat, bald eagle, osprey, crow, ruffed grouse, blue grouse, raven, merganser, kingfisher, band-tailed pigeon, and the endangered spotted owl and marbled murrelet. Salamanders, newts, and slugs are common in the decomposing forest litter. The tidal estuaries are habitat for clams, crabs, and salmonids. The species of fish in the area include salmon, steelhead trout, white sturgeon, Columbia River smelt, and cutthroat trout. The rivers and bays in this area are important spawning grounds and habitat for steelhead, salmon, and cutthroat trout.

Land Use

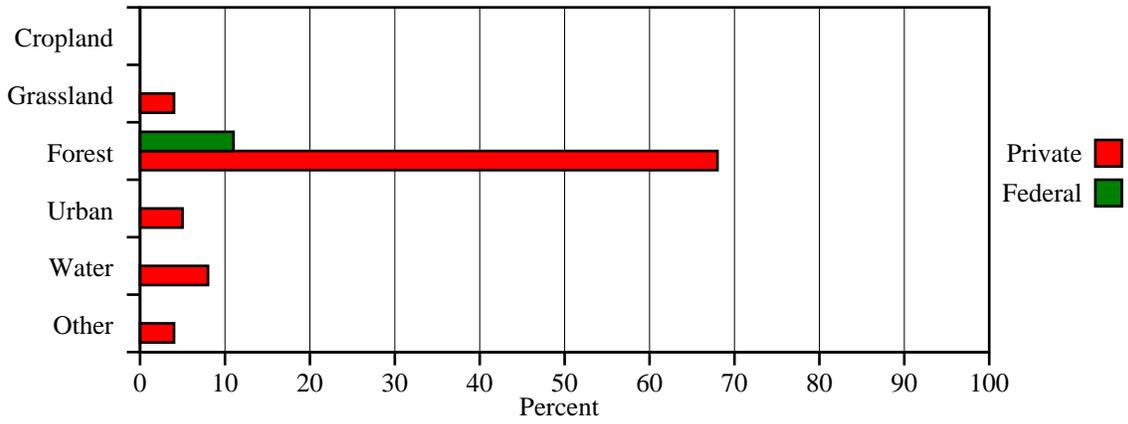
Most of this area consists of privately owned farms, ranches, or forests. Lumbering is the major industry. A small acreage in the area is grassland used for grazing. Less than 1 percent of the area is cultivated land, which is used mainly for forage and grain for dairy cattle. Although the freeze-free period is long, the area lacks the heat units necessary for the maturation of most crops. Vegetables and fruits (apples) are grown in areas where the soils and climate are favorable. Specialty crops, such as cranberries and lily bulbs, also are grown in the area.

The major soil resource concerns are water erosion and its subsequent deposition of sediment into the rivers and creeks. Soils in basins and on flood plains are susceptible to flooding, deposition of sediments, and local streambank cutting. The hazard of erosion is moderate on terraces and coastal benches. Erosion can be severe if the vegetative cover on the upland soils is removed by logging, fire, overgrazing, or cultivation. Landslides in the uplands are a source of sediment.

Conservation practices on forestland generally include forest site preparation, forest stand improvement, and forest trails and landings. These practices help to control surface compaction, the erosion caused by concentrated flow, and sediment delivery to streams. Maintaining a vegetative cover or forest litter over the mineral soil surface helps to control runoff and erosion.

Conservation practices on cropland are nutrient management and measures that reduce the hazard of erosion.

MLRA 4A Land Use by Category



Category (Private,Federal): Cropland (0.0, 0.0), Grassland (4.0, 0.0), Forest (68.0, 11.0),
Urban (5.0, 0.0), Water (8.0, 0.0), Other (4.0, 0.0)