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

MLRA Explorer Custom Report

C - California Subtropical Fruit, Truck, and Specialty Crop Region
18 - Sierra Nevada Foothills

MLRA 18 - Sierra Nevada Foothills

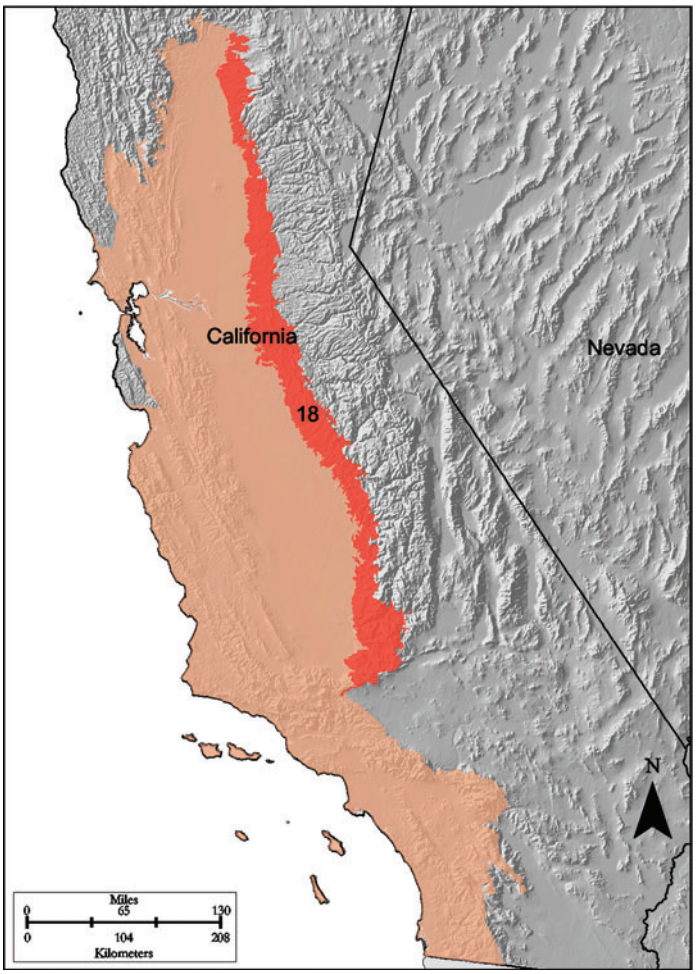


Figure 18-1: Location of MLRA 18 in Land Resource Region C

Introduction

This area is entirely in California (fig. 18-1). It makes up about 8,160 square miles (21,145 square kilometers). The towns of Auburn, Folsom, Cameron Park, Oroville, and Ione are in the north half of this area. The western edges of the Lassen, Plumas, Sierra, and Sequoia National Forests are in this MLRA. The Tule Indian Reservation is in the southern part of the area. California State Highway 49 traverses the middle third of this MLRA, and Interstate 80 crosses the midpoint.

Physiography

This area straddles the boundary between two physiographic provinces in the Pacific Mountain System. Most of the western half is in the California Trough Section of the Pacific Border Province. Most of the eastern half is in the Sierra Nevada Section of the Cascade-Sierra Mountains Province. The Sierra Nevada Mountains are a fault-block mountain range. The fault on the east side of the mountains created a steep face of alpine summits, but the west side has a more gentle slope from east to west. This MLRA is at the toe of that gentle east-west slope. It is an area of

rolling to steep dissected hills and low mountains. The stream valleys are narrow and fairly steep. Elevation generally ranges from 660 to 1,650 feet (200 to 505 meters), but it is 3,950 feet (1,205 meters) on some isolated mountain peaks.

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: San Joaquin (1804), 36 percent; Tulare-Buena Vista Lakes (1803), 35 percent; Sacramento (1802), 26 percent; and Northern Mojave-Mono Lake (1809), 3 percent. Many of the streams crossing this area were hydraulically mined for placer gold from 1849 to 1900. Some of the major streams draining the Sierra Nevada Mountains from north to south in the area include the Butte, Feather, Yuba, American, Cosumnes, Mokelumne, Tuolumne, San Joaquin, Kings, and Kern Rivers. Numerous Federal and State water project reservoirs are in this MLRA, including Lakes Oroville, Collins, Englebright, Camp Far West, Folsom, Comanche, Pardee, New Hogan, New Melones, Don Pedro, McClure, Millerton, Pine Flat, Kaweah, Success, and Isabella.

Geology

The northernmost end of this area is underlain dominantly by volcanic mudflow and pyroclastic rocks of the Tuscan Formation, which was derived from the eruption of Cascade volcanoes during the Pliocene, roughly 3 to 4 million years ago. South of about Oroville, the foothills are underlain by Mesozoic-age, metamorphosed marine sedimentary and volcanic rocks emplaced as terranes when the subduction trench was located in the vicinity of the present-day Sierra Nevada Mountains. Discrete granitic plutons are intruded through the older Mesozoic metamorphics in the northern part of the area, and a thin band of Tertiary sedimentary formations is exposed along the eastern edge from the Cosumnes River south. From around Merced southward, the foothills are underlain dominantly by Mesozoic granites of the Sierra Nevada Batholith, with local exposures of gabbro, metavolcanics, and other metamorphics. Tertiary sedimentary formations and Quaternary alluvial terrace deposits extend westward from the granitics in the vicinity of Bakersfield.

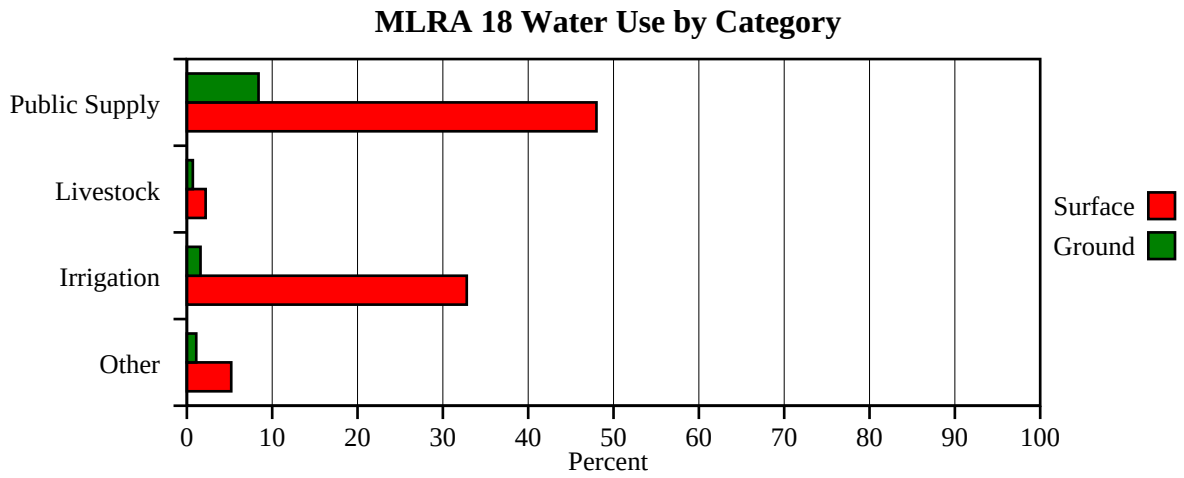
Climate

The average annual precipitation is 18 to 45 inches (455 to 1,145 millimeters) in most of this area. It increases from south to north and with elevation. It is as little as 8 inches (205 millimeters) in the extreme southern end of the area and as much as 68 inches (1,725 millimeters) in the extreme northern end. Summers are hot and dry, and winters are cool and moist. Most of the rainfall occurs as Pacific frontal storms during the period October to May. The average annual temperature is 47 to 67 degrees F (8 to 20 degrees C). The freeze-free period averages 275 days and ranges from 180 to 365 days, decreasing in length from south to north and with elevation.

Water

The total withdrawals average 120 million gallons per day (455 million liters per day). About 12 percent is from ground water sources, and 88 percent is from surface water sources. The moderate rainfall and intermittent streamflow are the major water sources. Numerous stock ponds are throughout the area, but little has been done to construct small reservoirs for irrigation. The major reservoirs in this area store water for use outside the area. The surface water generally is of very good quality and is suitable for almost all uses with little to no treatment.

Ground water supplies are small and mostly untapped. Some water can be obtained from joints and fractures in the volcanic rocks in the northeast corner of the area. No data are available on the quality of this ground water. Shallow wells can be developed in the alluvial deposits along the major streams crossing the area. This ground water is similar to the surface water and is suitable for almost all uses with minimal treatment. Some ground water can be obtained from wells in the alluvium and older sediments along the western edge of this area on the fringes of the Central Valley. This water is hard but is of good quality. It generally has a median level of total dissolved solids of about 200 parts per million (milligrams per liter).



Category (Surface,Ground): Public Supply (48.0, 8.4), LiveStock (2.2, 0.7), Irrigation (32.8, 1.6), Other (5.2, 1.1)

Soils

The dominant soil orders in the MLRA are Alfisols, Entisols, Inceptisols, and Mollisols. The soils in the area dominantly have a thermic soil temperature regime, a xeric soil moisture regime, and mixed mineralogy. They generally are very shallow to deep, well drained or somewhat excessively drained, and loamy. Haploxeralfs (Ahwahnee, Auberry, Blasingame, Coarsegold, and Sobrante series), Xerorthents (Cieneba series), Haploxerepts (Auburn, Toomes, and Vista series), Argixerolls (Arujo and Supan series), and Haploxerolls (Pentz and Walong series) formed in residuum on mountains, foothills, and footslopes.

Biology

This area supports naturalized annual grasses, shrubs, and trees. Soft chess, wild oats, filaree, burclover, ripgut brome, and foxtail fescue are the dominant species on grassland. Some areas have an overstory of blue oak and foothill pine occurring as scattered individual trees to very dense stands. Scrub live oak is an important component in the overstory. Chamise, manzanita, wedgeleaf ceanothus, yerba santa, and poison oak are dominant on brushland. Scattered stands of ponderosa pine, mixed with manzanita and black oak, are at the higher elevations.

Some of the major wildlife species in this area are black-tailed deer, mountain lion, coyote, gray fox, raccoon, porcupine, skunk, jackrabbit, ground squirrel, pocket gopher, brown rat, field mouse, valley quail, band-tailed pigeon, red-headed woodpecker, mourning dove, mallard, cinnamon teal, wood duck, and rattlesnake. The species of fish in the area include black bass, bluegill, crappie, trout, salmon, steelhead, and catfish.

Land Use

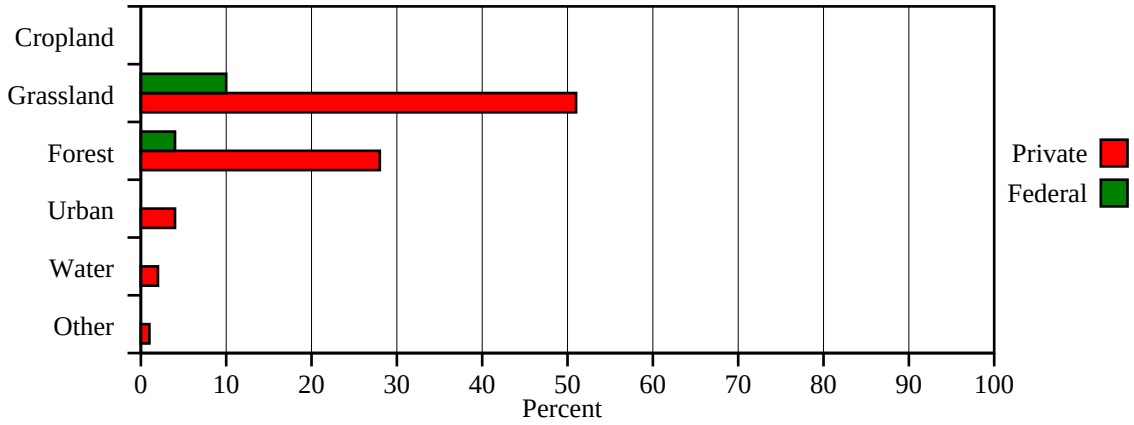
Production of livestock on rangeland is the main enterprise in this area. A significant acreage is brushland or openland hardwood forest. A small acreage is cropland. In the past most of the cropland in the area was used for dry-farmed grain, but more and more small tracts are now used for nuts, grapes, and other kinds of fruit grown under sprinkler, micro, and drip irrigation systems.

The major soil resource concerns are erosion, maintenance of the content of organic matter in the soils, water quality, and low infiltration rates resulting from hydrophobic soils. The hazard of erosion is moderate or severe if the plant cover is removed by overgrazing, cultivation, or fire. If the surface is unprotected in winter, the hazard of sheet and gully erosion is severe on the sloping soils on terraces and benches and on upland soils.

The conservation practices that are important on cropland include crop residue management, cover crops, and irrigation water management. Prescribed grazing, fencing, and stock water development are the most important practices on rangeland and other grazing land.

The conservation practices that are important in developing urban land include controlling erosion on and around sites for houses and roads. The important erosion-control practices are methods of phasing construction that maintain as much of the native vegetation as possible, mulch and geotextile erosion blankets, a temporary cover of vegetation, and sediment-control systems, including sediment-debris basins and traps, silt fences, fiber rolls, and straw wattles.

MLRA 18 Land Use by Category



Category (Private,Federal): Cropland (0.0, 0.0), Grassland (51.0, 10.0), Forest (28.0, 4.0), Urban (4.0, 0.0), Water (2.0, 0.0), Other (1.0, 0.0)