

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

MLRA Explorer Custom Report

D - Western Range and Irrigated Region
29 - Southern Nevada Basin and Range

MLRA 29 - Southern Nevada Basin and Range



Figure 29-1: Location of MLRA 29 in Land Resource Region D

Introduction

This area (shown in fig. 29-1) is in Nevada (73 percent), California (25 percent), and Utah (2 percent). It makes up about 26,295 square miles (68,140 square kilometers). The towns of Lone Pine, California, and Tonopah, Nevada, are in this MLRA. U.S. Highways 6, 95, and 395 cross the area. Numerous national forests occur in the area, including the San Bernardino, Angeles, Sequoia, Inyo, Humboldt-Toiyabe, and Dixie National Forests. Many wilderness study areas and wildlife refuges are in this MLRA. Portions of Death Valley National Monument, the Nuclear Regulatory Commission's Nevada Test Site, the Hawthorne Ammunition Depot, and the Nellis Air Force Range in Nevada and the China Lake Naval Weapons Center in California also are in this MLRA. The northeast part of the Paiute Indian Reservation and the southern third of the Walker River Indian Reservation are in the part of this MLRA in Nevada, and the Lone Pine, Fort Independence, and Big Pine Indian Reservations are in the part in California.

Physiography

This area is in the Great Basin Section of the Basin and Range Province of the Intermontane Plateaus. Owens Valley and Death Valley in California mark the farthest western extent of the Great Basin Section in the Basin and Range Province. This MLRA is an area of broad, nearly level, aggraded desert basins and valleys between a series of mountain ranges trending north to south. The basins are bordered by sloping fans and terraces. The mountains are uplifted fault blocks with steep side slopes. They are not well dissected because of a low amount of rainfall in the MLRA. Most of the valleys in this MLRA are closed basins containing sinks or playa lakes. Elevation ranges from 1,950 to 5,600 feet (595 to 1,705 meters) in the valleys. On some high mountain peaks, it is more than 9,400 feet (2,865 meters).

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Central Nevada Desert Basins (1606), 58 percent; Northern Mojave-Mono Lake (1809), 28 percent; Lower Colorado-Lake Mead (1501), 11 percent; Central Lahontan (1605), 2 percent; and Tulare-Buena Vista Lakes (1803), 1 percent. The Owens River and Owens Lake occur in this MLRA. Intermittent and ephemeral streams in Nevada typically end in dry playa lakes.

Geology

The mountains in this area are dominated by Pliocene and Miocene andesite and basalt rocks. Paleozoic and Precambrian carbonate rocks are prominent in the mountains. Scattered outcrops of older Tertiary intrusives and very young tuffaceous sediments (Pliocene and Miocene) are in the western and eastern thirds of this MLRA. The valleys consist mostly of alluvial fill, but playa deposits are at the lowest elevations in the closed basins. The alluvial valley fill consists of cobbles, gravel, and coarse sand near the mountains in the apex of the alluvial fans. Sands, silts, and clays are on the distal ends of the fans.

Climate

The average annual precipitation is 3 to 12 inches (75 to 305 millimeters) in most of this area. It ranges from 12 to 29 inches (305 to 735 millimeters), however, on the higher mountain slopes. Most of the rainfall occurs as high-intensity, convective thunderstorms during the growing season. Summers are dry, but sporadic storms are common in July and August. The average annual temperature is 28 to 72 degrees F (-2 to 22 degrees C), decreasing with elevation. The freeze-free period averages 205 days and ranges from 80 to 335 days, decreasing in length with elevation.

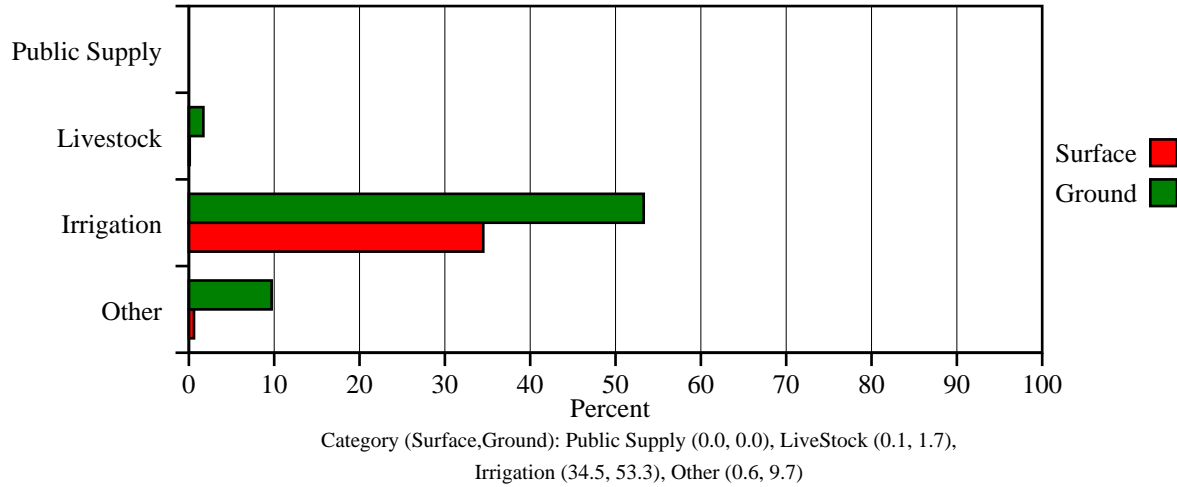
Water

The total withdrawals average 220 million gallons per day (815 million liters per day). About 65 percent is from ground water sources, and 35 percent is from surface water sources. Precipitation is sparse. Most of the streams are small and intermittent and depend on sources in the higher mountains. The surface water from the mountains is generally of good quality, and its use is not limited near the mountains. The quality of this water is naturally degraded by dissolved salts picked up as streams cross areas of valley fill to their terminus in a playa lake. Irrigation return flows raise the levels of dissolved salts and suspended sediments in some streams, causing some contamination. Historically, the Owens River flowed into Owens Lake in this MLRA. Today, most of the Owens River is diverted into the Haiwee Reservoir, bypassing Owens Lake, and then is diverted into the Los Angeles Aqueduct for use as drinking water in southern California coastal cities.

Ground water in this area is scarce but is being rapidly developed. Most of the ground water in California is controlled by Los Angeles and is not available for local use. Shallow wells in the basin and valley fill aquifers provide almost all of the ground water used in this area. This shallow ground water generally contains less than 1,000 parts per million (milligrams per liter) total dissolved solids. On the alluvial fan deposits near the mountains, where the valley fill aquifers are recharged, ground water is much lower in dissolved salts (typically less than 500 parts per million). The ground water becomes almost saline near the playa lakes far away from the recharge zone.

A volcanic rock aquifer is in the south-central part of this area. It is used very little, and no data about quality of the water are available. The carbonate rocks in this area also are considered to be aquifers. Use of these aquifers is limited. Water from the carbonate rocks is suitable for most uses and is considered to be hard or very hard. The concentrations of total dissolved solids are generally less than the Nevada drinking water standard of 1,000 parts per million (milligrams per liter).

MLRA 29 Water Use by Category



Soils

The dominant soil orders in this MLRA are Aridisols and Entisols. Mollisols also are important in the mountainous areas. The soils in the area dominantly have a mesic soil temperature regime, an aridic or xeric soil moisture regime, and mixed mineralogy. They generally are very shallow to very deep, well drained or somewhat excessively drained, and loamy-skeletal or sandy-skeletal. Haplargids formed in alluvium on alluvial fans and fan piedmonts (Ardivey and Unsel series) and in residuum and colluvium on hills, mountains, and plateaus (Downeyville, Gabbvally, and Stewval series). Haplocalcids (Candelaria series) formed in alluvium on ballenas and fan piedmonts. Haplocambids (Koyen series) formed in alluvium on fan piedmonts and alluvial fans. Argidurids (Handpah and Zadvar series) and Haplodurids (Ursine series) formed in alluvium on fan piedmonts and fan remnants. Torriorthents formed in residuum and colluvium on hills and mountains (Blacktop, Kyler, and Pintwater series) and in alluvium on alluvial flats, fans, and fan piedmonts (Gynelle and Wardenot series). Torrifluvents (Cirac series) formed in alluvium on alluvial flats and fans. Shallow Argixerolls formed in residuum and colluvium on hills and mountains (Bellehelen series).

Biology

This area supports desert shrub vegetation. The major vegetation consists of saltbush and greasewood. Shadscale is widespread. It is associated with bud sagebrush, Bailey greasewood (in the west), gray molly kochia, spiny hopsage, wolfberry, ephedra, dalea, fourwing saltbush, winterfat, horsebrush, galleta, and Indian ricegrass. On the warmer sites, shadscale is associated with white bursage, spiny menodora, Joshua-tree, and blackbrush. Black greasewood is dominant on low-lying saline-alkali soils. In areas of higher precipitation, big sagebrush and black sagebrush are common and are associated with Indian ricegrass and galleta. Pinyon-juniper woodland is prevalent in the mountains. Associated plants include black sagebrush, big sagebrush, blackbrush, bitterbrush, cliffrose, and other shrubs and a variety of grasses and forbs.

Some of the major wildlife species in this area are mule deer, coyote, kit fox, bobcat, jackrabbit, cottontail, kangaroo rat, snakes, lizards, golden eagle, hawks, and chukar. The species of fish in the area include brook trout, brown trout, and bass.

Land Use

Nearly all of this area is federally owned land, much of which is used for training and testing purposes by the Armed Forces and the Nuclear Regulatory Commission. Less than 1 percent of the area, mostly in the valleys, is irrigated. Much of the irrigated acreage is used for hay and grain for livestock. High mountain areas consist of pinyon-juniper woodland. Native grasses and shrubs in areas of rangeland are grazed by livestock.

The major soil resource concerns in this area are control of wind erosion and reduction of the content of salts and sodium in the soils. Management concerns include proper use of rangeland, erosion control, and efficient use of the scarce water supplies.

Conservation practices on cropland generally include irrigation water management and toxic salt reduction. Also, windbreaks and crop residue management reduce the hazard of wind erosion and increase the available water capacity of the soils. Development of watering facilities and prescribed grazing are important practices on rangeland.

MLRA 29 Land Use by Category

