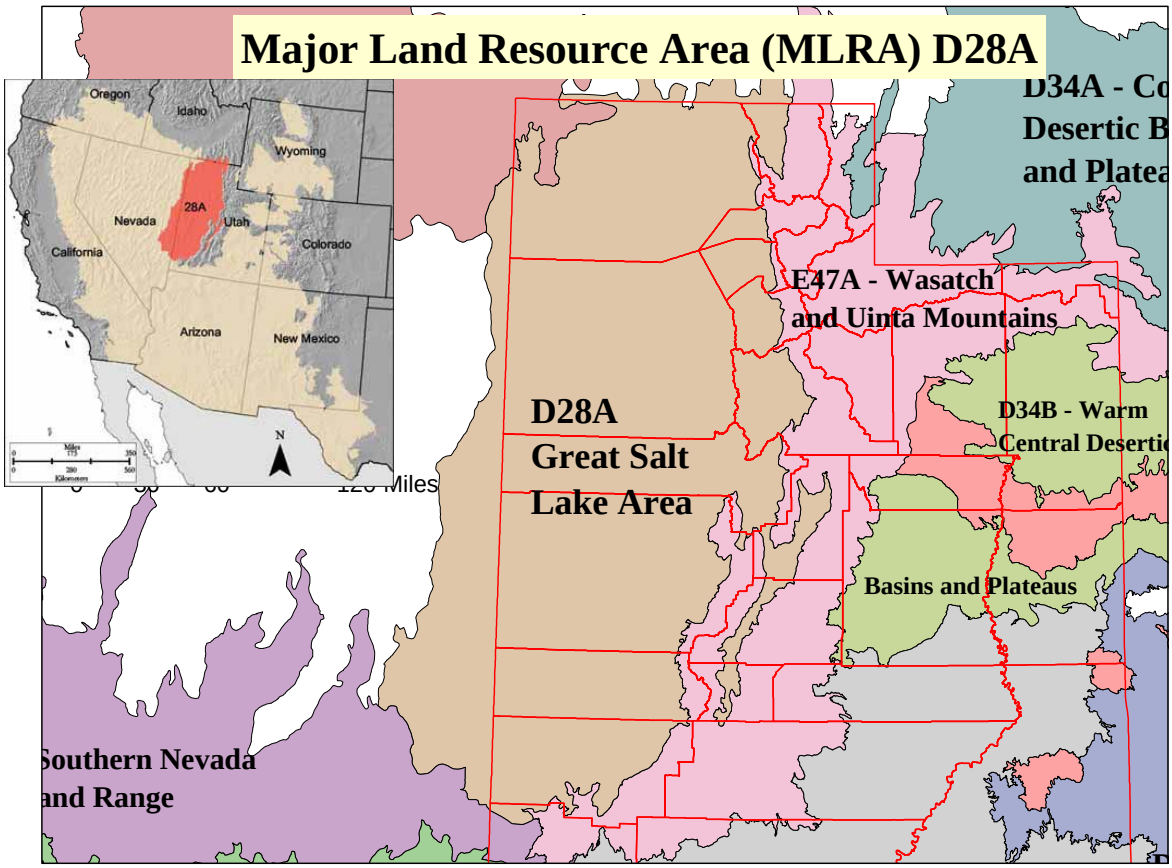
MLRA 28A - Great Salt Lake Area

MLRA 28A - Great Salt Lake Area

Ecological Zone	Desert	Semidesert	Upland*	Mountain*
Precipitation	0-8 inches	8-12 inches	12-16 inches	16-22 inches
Elevation	4,100-5,100	4,300-6,000	4,300-7,000	5,200-8,600
Soil Moisture Regime	Typic Ardic	Xeric Aridic	Typic Xeric	Typic Xeric
Soil Temp Regime	Mesic	Mesic	Mesic	Frigid
Freeze free Days	120-200	100-140	100-130	85-110
Notes	Salt desert shrub 250 -500 lbs/ac	Sagebrushes are typical. 500 – 800 lbs/ac	Pinyon and Utah juniper are present, Sagebrushes are typical 700 – 1,000 lbs.ac	Oak and Maple 2,000-2,300

*the aspect (north or south) can greatly influence site characteristics.

All values in this table are approximate and should be used as guidelines. Different combinations of temperature, precipitation and soil type can place an ecological site into different zones.



28A—Great Salt Lake Area

This area is in Utah (82 percent), Nevada (16 percent), and Idaho (2 percent). It makes up about 36,775 square miles (95,300 square kilometers). Salt Lake City, Logan, Ogden, Provo, Richfield, and Cedar City, Utah, and Malad and Preston, Idaho, occur in this MLRA. Interstate 80 crosses the northern end of the MLRA, and Interstate 15 parallels the eastern border. Interstate 84 crosses the northern tip, and Interstate 70 ends at Interstate 15 in the south end of the MLRA. Several national forests occur in this MLRA, including the Caribou, Dixie, Wasatch, Humboldt-Toiyabe, and Fish Lake National Forests. The Deseret Test Center and the Desert Range Experiment Station, including the Biosphere Reserve, occur in this area. The Hill and Wendover
Air Force Ranges, the Tooele Military Depot, and the Dugway Proving Grounds also occur in this area. The Skull Valley Indian Reservation is in the area. The Bonneville Salt Flats Speedway, used by experimental cars for setting land speed records, also is in the area. The Golden Spike National Historic Site (joining point for the first transcontinental railroad) is in this MLRA.

Physiography

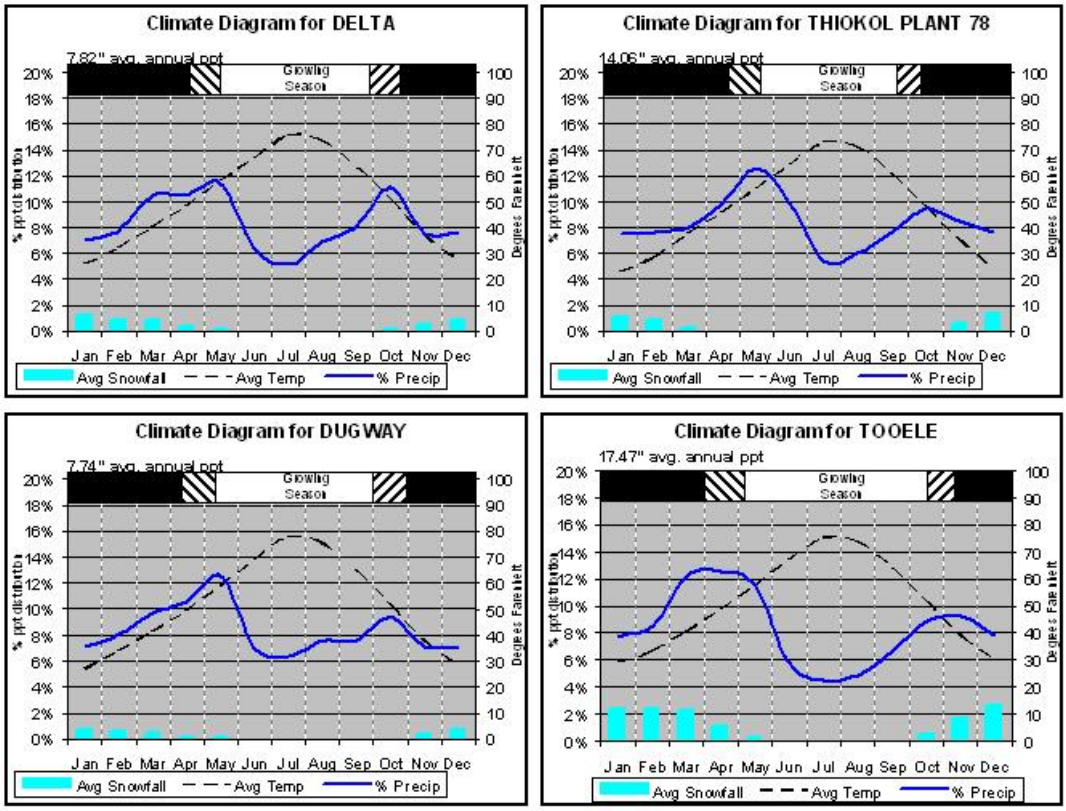
This area is the farthest eastern extent of the Great Basin Section of the Basin and Range Province of the Intermontane Plateaus. It is an area of nearly level basins between widely separated mountain ranges trending north to south. The basins are bordered by long, gently sloping alluvial fans. The mountains are uplifted fault blocks with steep side slopes. They are not well dissected because of low rainfall in the MLRA. A large salt desert playa is south and west of Great Salt Lake. Most of the valleys in this MLRA are closed basins containing
sinks or playa lakes. Elevation ranges from 3,950 to 6,560 feet(1,205 to 2,000 meters) in the basins and from 6,560 to 11,150 feet (2,000 to 3,400 meters) in the mountains. The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Great Salt Lake (1602), 58 percent; Escalante Desert-Sevier Lake (1603), 28 percent; Central Nevada Desert Basins (1606), 6 percent; Bear (1601), 5 percent; and Lower Colorado-Lake Mead (1501), 3 percent. The Jordan, Bear, and Weber Rivers, the main rivers in this area, all terminate in Great Salt Lake. The Sevier River is in the south half of the area. Numerous
creeks drain the Wasatch Mountain front directly east of Salt Lake City, and many terminate in Great Salt Lake directly west of Salt Lake City.

Geology

Most of this area has alluvial valley fill and playa lakebed deposits at the surface. Great Salt Lake is all that remains of glacial Lake Bonneville, which covered this area during the most recent ice age. A level line on some mountain slopes indicates the former extent of this glacial lake. The uplifted mountains have exposed some Precambrian rocks at their margins. Most of the mountains in the interior of this area consist of tilted blocks of marine sediments from Cambrian to Mississippian age. There are no rocks representing the Mesozoic era in this area. Scattered outcrops of Tertiary continental sediments and volcanic rocks are throughout the area. These units are concentrated on the east and west edges of the area. The Tertiary intrusives are the dominant rock types at
the southern end of the MLRA.

Climate

The average annual precipitation is 5 to 12 inches (125 to 305 millimeters) in the valleys and is as much as 49 inches (1,245 millimeters) in the mountains. Most of the rainfall occurs as high-intensity, convective thunderstorms during the growing season. The driest period is from midsummer to early autumn. Precipitation in winter typically occurs as snow. The average annual temperature is 39 to 53 degrees F (4 to 12
degrees C). The frost-free period averages 165 days and ranges from 110 to 215 days, decreasing in length with elevation.



Water

Following are the estimated withdrawals of freshwater by use in this MLRA:

Public supply—surface water, 5.5%; ground water, 8.5%
Livestock—surface water, 1.2%; ground water, 0.8%
Irrigation—surface water, 65.3%; ground water, 14.5%
Other—surface water, 1.0%; ground water, 3.2%

The total withdrawals average 3,575 million gallons per day (13,530 million liters per day). About 27 percent is from ground water sources, and 73 percent is from surface water sources. Water is scarce. For the most part, streams are small and intermittent and depend on sources in the higher mountains.Reservoirs are used to store water in the mountains east of this
area for irrigation in the flatter areas of this MLRA. As an example, the Sevier River, in the southern part of this area, is the most heavily used river in the United States. Almost 99 percent of its total flow is used before it reaches its terminus in the mostly dry Sevier Lake. The surface water from the mountains is of good quality, and its use generally is not limited. Irrigation return flows raise the levels of dissolved salts and suspended sediments, causing some contamination. Both surface water and ground water are used for irrigation. Use of deep wells is limited by a high cost. 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. Along the northeastern border of this area, near the Wasatch Front where the alluvial aquifers are recharged, ground water is much lower in dissolved salts (typically less than 250 parts per million) and is a primary source of drinking water for the populated areas all along the Wasatch Front. The ground water becomes almost saline near the playa lakes west of the recharge zone. A basin fill deposit near Sevier Lake contains high levels of arsenic.

Soils

The dominant soil orders in the MLRA are Aridisols, Entisols, and Mollisols. The soils in the area dominantly have a mesic or frigid soil temperature regime, an aridic or xeric soil moisture regime, and mixed mineralogy. They generally are well drained or somewhat excessively drained, loamy or loamyskeletal, and very deep.
Calcixerolls formed in alluvium on alluvial fan remnants and lake terraces (Abela series) and in alluvium and lacustrine sediments on lake terraces (Collinston series). Moderately deep Haploxerolls (Middle series) formed in residuum on mountain slopes. Deep and very deep Haploxerolls (Ririe and Rexburg series) formed in loess and silty alluvium on fans, terraces, foothills, and basalt plains. Shallow Haploxerolls (Hymas series) to very deep Haploxerolls (Hondoho series) formed in colluvium and residuum derived from limestone on mountains and foothills. Torriorthents formed in alluvium on alluvial fans and beach plains (Cliffdown series) and in alluvium mixed with lacustrine sediments on alluvial flats and fans, lake terraces, and lake plains (Timpie and Tooele series). Poorly drained Aquisalids (Saltair series) formed in alluvium and lacustrine sediments on lake plains and basin floors. Torripsamments (Yenrab series) formed in sandy eolian material on dunes. Haplocalcids formed in residuum on hills and mountains (shallow Amtoft series); in alluvium and colluvium on alluvial fans, terraces, and hills (Hiko Peak series); in mixed alluvium and lacustrine sediments on alluvial fans, terraces; and lake plains (Taylorsflat series); and in lacustrine sediments on lake terraces (Thiokol series). Natrargids (Skumpah series) formed in alluvium on alluvial fans and flats.

Biological Resources

This area supports desert shrub, Sagebrush Semidesert, and woodland vegetation. In areas where the average annual precipitation is less than about 200 millimeters, the soils support shadscale, winterfat, black sagebrush, and associated grasses, such as Indian ricegrass and squirreltail. Greasewood and Nuttall saltbush grow on soils having a high content of salts or sodium. In areas where the average annual precipitation is 200 to 300 millimeters, the soils support big sagebrush, shadscale, winterfat, and associated grasses, such as bluebunch
wheatgrass, Indian ricegrass, and bluegrasses. In areas where the average annual precipitation is more than 300 millimeters, the soils support Utah juniper, singleleaf pinyon, big sagebrush, bluebunch wheatgrass, bluegrasses, and needleandthread. A large, nearly barren area west of Great Salt Lake has a very sparse cover of pickleweed, sapphire eriastrum, seepweed, and greasewood. Some of the major wildlife species in this area are mule deer,
jackrabbit, cottontail, Cooper’s hawk, American kestrel, redtailed hawk, prairie falcon, rough-legged hawk, Swainson’s hawk, and chukar. Brine shrimp occur in Great Salt Lake and warm-water species of fish occur in other freshwater lakes in the valleys. Mountain streams in the Wasatch Mountains are inhabited by trout.

Land Use

Following are the various kinds of land use in this MLRA:

Cropland—private, 6%
Grassland—private, 21%; Federal, 44%
Forest—private, 2%; Federal, 12%
Urban development—private, 2%
Water—private, 7%; Federal, 2%
Other—private, 4%

About three-fifths of this area is Federally owned land, large tracts of which are used for training and testing purposes by the Armed Forces and the Nuclear Regulatory Commission. A large area west and southwest of Great Salt Lake is a salty playa. The rest of the area is in farms and ranches. Livestock production on rangeland is a principal agricultural enterprise in the west. The production of desert shrubs and grasses is very low. In most of the area, the extent of the livestock industry is determined largely by the amount of hay, pasture, and grain that
can be produced under irrigation from limited water supplies. About 5 percent of the area is irrigated cropland or hayland used for alfalfa, small grain (wheat, barley, oats, and triticale), Austrian winter peas, corn for grain or silage, potatoes, vegetables (onions, pumpkins, sweet corn, peas, and squash), and fruits (apples, peaches, pears, apricots, and cherries). A small portion of the irrigated land is used for pasture.

About 5 percent is used for production of dryland winter wheat and safflowers. The management concerns on rangeland include forage
production and the efficient use of range vegetation. The rangeland in the area is increasingly impacted by invasive nonnative plants. The management concerns on dry-farmed cropland include productivity, wind erosion, water erosion, moisture management, and weed control. The management concerns on irrigated cropland and hayland include productivity, the efficient use of limited water supplies, control of irrigation induced erosion, and nutrient and pest management. Soil tilth, compaction, and maintenance of the content of organic matter in the soils are additional concerns on irrigated and dry-farmed cropland. The management concerns on irrigated pasture include productivity, proper grazing use, efficient use of limited water supplies, nutrient management, and weed control. Conservation practices on rangeland generally include brush management, rangeland seeding, prescribed grazing, fencing, development of watering facilities, and erosion control. Conservation practices on dry-farmed cropland generally include terraces, sediment-control basins, summer fallow tillage, crop residue management, pest management, and nutrient management. Conservation practices on irrigated cropland and hayland include irrigation system improvement, irrigation water management, no-till hayland planting, forage harvest management, nutrient management, windbreaks, and pest management. Conservation practices on irrigated pasture generally include irrigation system improvement, irrigation water management, pasture planting, development of watering facilities, fencing, prescribed grazing, nutrient management, and pest management.