MLRA 25 – Owyhee High Plateau (Utah portion)

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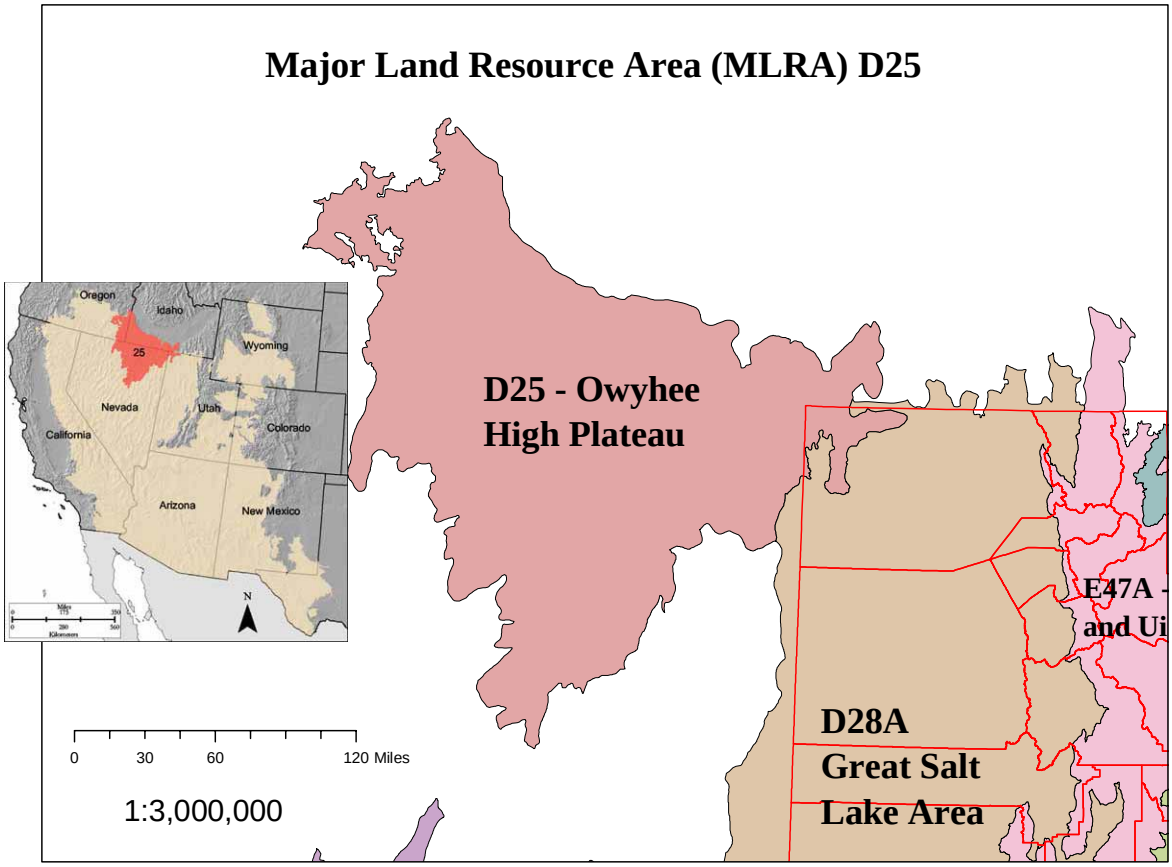
Ecological Zone	Upland	Mountain	High Mountain	Subalpine
Precipitation (inches)	12-17 inches	16-22 inches	16-22 inches	20-27 inches
Elevation	5,000 -7,000	6,000 – 8,600	8,000-9,000	9,000 - 9,300
Soil Moisture Regime	Typic Xeric	Typic Xeric	Typic Xeric	Udic
Soil Temp Regime	Mesic	Frigid	Cryic	Cryic
Freeze free Days	80-120	60 - 90	30 - 40	20 -35
Notes	Sagebrushes and browse 300 – 500 and 800 – 1000 lbs.ac	Mountain mahogany, Mountain big sagebrush 1,100-2,100 and 400-600 lbs/ac	Aspen, Mountain big sagebrush 2,400-2,500 lbs/ac	Subalpine Fir, Subalpine sagebrush
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.				



25—Owyhee High Plateau

This area is in Nevada (52 percent),Idaho (29 percent), Oregon (16 percent), and Utah (3 percent). It makes up about 28,930 square miles (74,960 square kilometers). The city of Elko, Nevada, which is along Interstate
80, occurs in this MLRA. The Humboldt-Toiyabe and Sawtooth National Forests and numerous wilderness study areas also occur in this MLRA. Most of the wilderness study areas are in the high desert canyon lands of southern Idaho. The Duck Valley, South Fork, Ruby Valley, and Te-Moak Indian Reservations are in this area.

Physiography

All of this area lies within the Intermontane Plateaus. The southern half is in the Great Basin Section of the Basin and Range Province. This part of the MLRA is characterized by isolated, uplifted fault-block mountain ranges separated by narrow, aggraded desert plains. This geologically older terrain has been dissected by numerous streams draining to the Humboldt River. The northern half of the area lies within the Columbia Plateaus Province. This part of the MLRA forms the southern boundary of the extensive Columbia Plateau basalt flows. Most of the northern half is in the Payette Section, but the northeast corner is in the Snake River Plain Section. Deep, narrow canyons draining into the Snake River have been incised into this broad basalt plain. Elevation ranges from 3,000 to 7,550 feet (915 to 2,300 meters) on rolling plateaus and in gently sloping basins. It is more than 9,840 feet (3,000 meters) on some steep mountains. The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Middle Snake (1705), 49 percent; Black Rock Desert-Humboldt
(1604), 28 percent; Upper Snake (1704), 15 percent; Great Salt Lake (1602), 5 percent; and Central Nevada Desert Basins (1606), 3 percent. The Humboldt River, route of a major western pioneer trail, crosses the southern half of this area. Reaches of the Owyhee River in this area have been designated as National Wild and Scenic Rivers.

Geology

The dominant rock types in the area are volcanic. They include andesite, basalt, and rhyolite. In the north and west
parts of the area, Miocene volcanic rocks dominate and Cretaceous granitic rocks occur in the mountains. A Mesozoic igneous and metamorphic rock complex dominates the south and east parts of the area. Upper and Lower Paleozoic sediments, including extensive limestone deposits, occur in the mountains. Only a few narrow valleys occur in this area (2 to 3 percent of the land area). Alluvial fan and basin fill sediments occur in the valleys.

Climate

The average annual precipitation in most of this area is 7 to 16 inches (180 to 405 millimeters), but it can exceed 50 inches per year (1,270 millimeters) in the mountains. The amount of precipitation is lowest in the eastern part of the area and increases with elevation. Rainfall occurs in spring and sporadically in summer. Precipitation occurs mainly as snow in winter. The precipitation is distributed fairly evenly throughout fall, winter, and spring. The amount of precipitation is lowest from midsummer to early autumn. The average annual temperature is 35 to 53 degrees F (2 to 12 degrees C). The frost-free period averages 130 days and ranges from 65 to 190 days, decreasing in length with elevation. It is typically less than 70 days in the mountains.

Water

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

Public supply—surface water, 0.1%; ground water, 0.1%
Livestock—surface water, 0.2%; ground water, 4.8%
Irrigation—surface water, 49.8%; ground water, 35.5%
Other—surface water, 3.3%; ground water, 6.3%

The total withdrawals average 570 million gallons per day (2,155 million liters per day). About 47 percent is from ground water sources, and 53 percent is from surface water sources. The supply of water from

precipitation and streamflow is small and unreliable, except along the Owyhee, Bruneau, and Humboldt Rivers. Streamflow depends largely on accumulated snow in the mountains. Surface water from mountain runoff is generally of excellent quality and is suitable for all uses. Precipitation is adequate for dryfarming in a few areas of deep soils in Idaho. The basin fill sediments in the narrow alluvial valleys between the mountain ranges provide some ground water for irrigation. The alluvial deposits along the large streams have the most ground water. Based on measurements of water quality in similar deposits in adjacent areas, the basin fill deposits probably contain moderately hard water with a concentration of less than 400 parts per million (milligrams per liter) total dissolved solids. The carbonate rocks in this area are considered to be aquifers, but they are little used. The water in this aquifer is suitable for almost all uses. The concentrations of total dissolved solids are less than the Nevada drinking water standard of 1,000 parts per million (milligrams per liter). Springs are common along the edges of the limestone outcrops.

Soils

The dominant soil orders in this MLRA are Aridisols 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 or smectitic mineralogy. They generally are well drained, clayey or loamy, and shallow or moderately deep. Haplodurids (Bioya and Coonskin series) formed in loess over alluvium on fan piedmonts and plateaus. Argidurids (Dacker, Bruncan, and Hunnton series) and some Durixerolls (Donna and Heckison series) formed in mixed loess and volcanic ash over alluvium on fan piedmonts and plateaus. Other Durixerolls (Stampede series) formed in alluvium on alluvial fans and fan piedmonts. Argidurids (Arbidge and Diawell series) formed in alluvium on fan piedmonts and stream terraces. Haplargids formed in residuum and colluvium on hills, mountain slopes, and plateaus (Vanwyper and Dougal series) and in alluvium on alluvial fans, ballenas, and plateaus (very deep Wieland and Owsel series). Some Argixerolls (shallow Cleavage, Gaib, and Ninemile series and moderately deep Quarz, Mulshoe, and Sumine series) formed in residuum and colluvium on hills, plateaus, and mountain slopes. Other Argixerolls (McIvey series) formed in alluvium or colluvium on fans, hills, and mountain slopes.

Biological Resources

This area supports Sagebrush Steppe vegetation characterized by big sagebrush or low sagebrush and by bluebunch wheatgrass, western wheatgrass, or Idaho fescue. Other important plants are Sandberg bluegrass, foxtail wheatgrass, penstemon, phlox, milkvetch, lupine, aster, and rabbitbrush. The high plateaus support juniper and curl-leaf mountain mahogany and an understory of dominantly snowberry and ceanothus. Conifers, aspen, and very large curl-leaf mountain mahogany are in the Owyhee, Ruby, and Jarbridge Mountains. The conifers include whitebark pine, Douglas-fir, limber pine, Engelmann spruce, subalpine fir, and bristlecone pine. Some of the major wildlife species in this area are mule deer, bighorn sheep, pronghorn, mountain lion, coyote, bobcat, badger, river otter, mink, weasel, golden eagle, red-tailed hawk, ferruginous hawk, Swainson’s hawk, northern harrier, prairie falcon, kestrel, great horned owl, short-eared owl, long-eared owl, burrowing owl, pheasant, sage grouse, chukar, gray partridge, and California quail. Reptiles and amphibians include western racer, gopher snake, western rattlesnake, sideblotched lizard, western toad, and spotted frog. The species of fish in the area include bull trout, red band trout, and rainbow trout.

Land Use

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

Cropland—private, 1%
Grassland—private, 22%; Federal, 73%
Forest—Federal, 2%
Water—private, 1%
Other—private, 1%

About three-fourths of this area is Federally owned. The rest is mainly in farms and ranches. Livestock production on rangeland is the main agricultural enterprise. A few areas in valleys are used for irrigated grain and forage for livestock. Small areas in Idaho are used for dry-farmed wheat. Open forests on mountain slopes at high elevations are grazed by livestock and wildlife. The major soil resource concerns include accelerated erosion, runoff, and sedimentation. Forest health and rangeland quality are additional concerns. Conservation practices on cropland generally include irrigation water management, pasture and hayland seeding, and weed control. The efficiency of irrigation water use can be improved by sprinkler systems and installation of gated pipe, field runoff management, and water source development. The plant species selected for seeding on pasture and hayland should be those that are suited to the various soil and environmental conditions. Weed control may include the removal of noxious and invasive plants followed by seeding with adapted forage species. Forest health can be enhanced by practices that include thinning, site preparation, forest stand improvement, and properly located and constructed forest roads and landings. Rangeland quality can be maintained or improved by developing livestock watering facilities, reseeding, prescribed burning, proper fencing, and weed control.