MLRA 34B – Warm Central Desertic Basins; Mountains; and Plateaus

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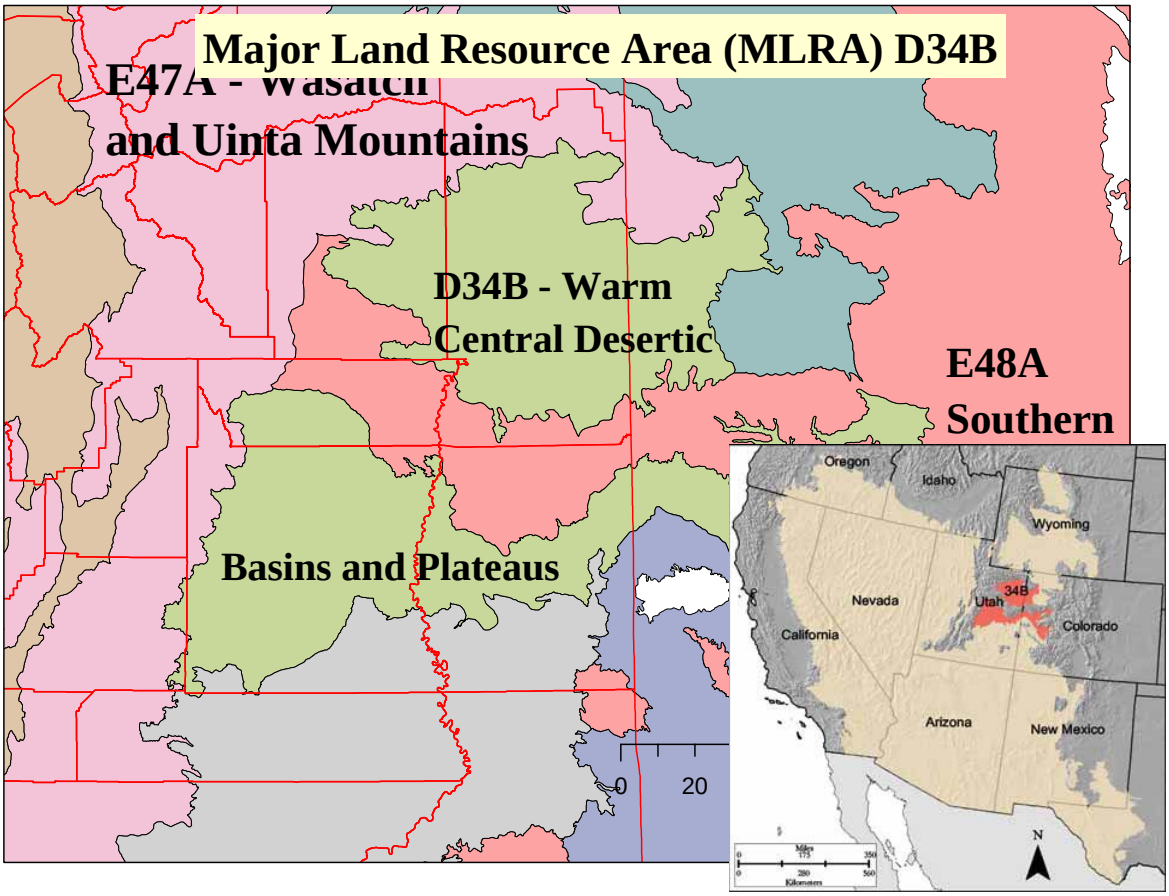
Ecological Zone	Desert	Semidesert*	Upland*	Mountain
Precipitation	4-8 inches	8 -12 inches	12-16 inches	
Elevation	4,600 -5,700	5,200 – 7,000	6,000 – 8,000	NONE
Soil Moisture Regime	Typic Ardic	Ustic Aridic	Aridic Ustic	
Soil Temp Regime	Mesic	Mesic	Mesic	
Freeze free Days	120-190	100-160	100-145	
Notes	Salt desert shrub 250 - 400 lbs/ac.	Wyoming big sage and juniper are typical. Pinyon is present, but rare 300 - 500 lbs/ac	Pinyon and Utah Juniper are present. Pinyon is typically more dominant 600 - 900 lbs/ac	

*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.



34B—Warm Central Desertic Basins and Plateaus

This area is in Utah (70 percent) and Colorado (30 percent). It makes up about 12,850 square miles (33,290 square kilometers). The cities of Vernal, Roosevelt, Price, and Duchesne, Utah, and Grand Junction, Delta, and Montrose, Colorado, occur in this MLRA. Interstate 40 bisects the northern part of the area, and Interstate 70 bisects the southern part. The Uintah and Ouray Indian Reservation and the western end of Dinosaur National Monument occur in this MLRA.

Physiography

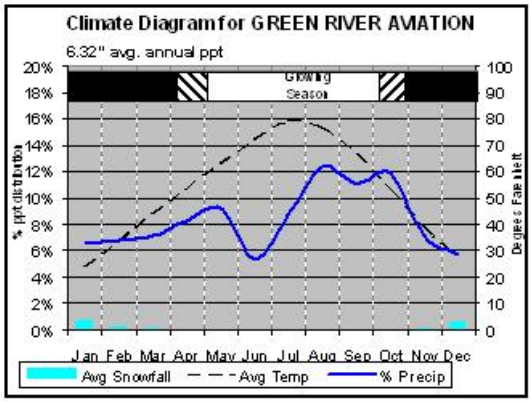
This area is in the Canyon Lands (60 percent) and Uinta Basin (35 percent) Sections of the Colorado Plateaus Province of the Intermontane Plateaus. A small part of the area is in the High Plateaus of Utah Section of the Colorado Plateaus Province of the Intermontane Plateaus. Another small part is in the Middle Rocky Mountains Province of the Rocky Mountain System. This MLRA consists of broad intermountain basins bounded by plateaus and steep escarpments. The northern part of the MLRA occurs in the Uinta Basin Section, which is bounded by the Uinta Mountains to the north, the Wasatch Range to the west, the Roan Plateau to the south, and the Rabbit
Hills to the east. The southern part of the MLRA occurs in the northern third of the Canyon Lands Section. This section is bounded by the Roan Plateau to the north, the Wasatch Plateau to the west, the southern end of the San Rafael Swell to the south, and the western slope of the Rocky Mountains to the east. Elevation ranges from 4,100 feet (1,250 meters) near Green River, Utah, to 7,500 feet (2,285 meters) at the base of the Wasatch Range and the Roan Plateau. The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Lower Green (1406), 51 percent; White-Yampa (1405), 18 percent; Colorado Headwaters (1401), 11 percent; Gunnison (1402), 9 percent; Upper Colorado-Dirty Devil (1407), 6 percent; and Upper Colorado-Dolores (1403), 5 percent. TheColorado, Green, Gunnison, Price, and Uncompahgre Rivers run through the southern part of this MLRA. The Duchesne, Green, Strawberry, and White Rivers run through the northern part.

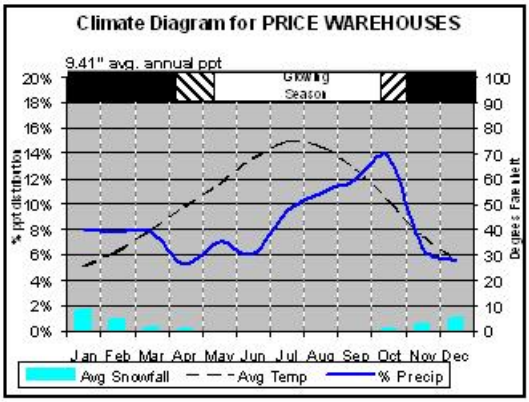
Geology

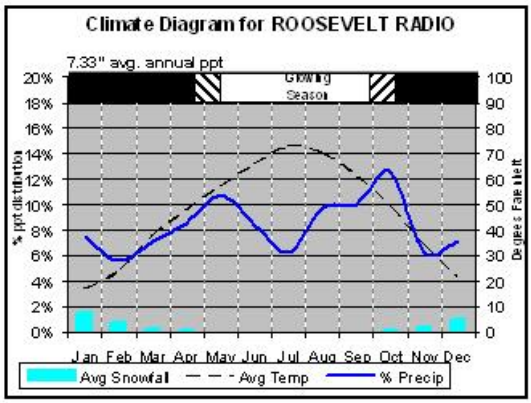
Most of this area is covered by residual basin-floor materials and materials washed in from the surrounding mountains and plateaus. Shale and sandstone are the dominant rock types. The Tertiary-age Green River, Uinta, and Duchesne Formations dominate the northern part of the MLRA. The southern part is dominated by Cretaceous-age materials with lesser amounts of Jurassic and Triassic materials. The dominant Cretaceous formations are Mancos Shale, Dakota Sandstone, and the members of the Mesa Verde Group. The dominant Jurassic formations are the Morrison, Entrada, and Navajo. The dominant Triassic formations are the Chinle and Moenkopi. Quaternary alluvial, eolian, and glacial deposits occur in both parts of the MLRA. Glacial deposits on outwash terraces occur primarily along the Uncompahgre and Gunnison Rivers in Colorado and on outwash terraces from the Uintah Mountains north of Duchesne, Utah. Permian Kaibab Limestone occurs on the crest of the San Rafael Swell, an Eocene anticline west of Green River, Utah, that is about 100 miles long north to south and about 40 miles wide. Tertiary-age granodiorite intrusives occur off the southwest tip of the San Rafael Swell.

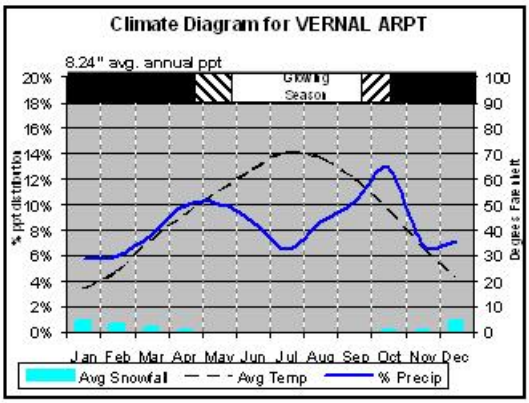
Climate

The average annual precipitation ranges from 6 to 24 inches (150 to 610 millimeters) in the 6- to 10-inch (150- to 255- millimeter) precipitation zone covering most of this MLRA. Much of the precipitation occurs as high-intensity, convective thunderstorms during the period July through September. May and June are usually the drier months. The northern part of the MLRA receives more precipitation as snow during winter than the southern part. The average annual temperature ranges from 41 to 54 degrees F (5 to 12 degrees C). The frost-free period averages 170 days and ranges from 110 to 235 days.









Water

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

Public supply—surface water, 4.0%; ground water, 0.3%
Livestock—surface water, 0.7%; ground water, 0.0%
Irrigation—surface water, 85.1%; ground water, 8.7%
Other—surface water, 1.0%; ground water, 0.3%

The total withdrawals average 1,440 million gallons per day (5,450 million liters per day). About 9 percent is from ground water sources, and 91 percent is from surface water sources. Precipitation is sparse in this area. There is a significant area of irrigated hayland and cropland in the Duchesne, Price, and San Rafael basins in the part of this area in Utah. The surface water is of good quality and is pumped or diverted from the rivers for irrigation. Water-supply concerns in these basins include Native American water rights and coal and oil-shale development. The Upper Colorado, White, and Gunnison Rivers in Colorado are used to irrigate hay meadows, orchards, and cropland. The river water is generally of good quality, except for short reaches that are contaminated with trace elements and metals from mining and naturally occurring sources. Water rights, salinity control, and water transfers to the eastern side of the Continental Divide are water-supply concerns in Colorado. There are two sources of ground water in this MLRA. One is unconsolidated valley fill in the northern part of the area, and
the second is a sandstone aquifer in the southern part. Dakota Sandstone, the Morrison Formation, and Entrada Sandstone are the Colorado equivalent of the sandstone aquifer in Utah. Water from the unconsolidated valley fill aquifer is of good quality and is used for both public supply and irrigation. Water from the sandstone aquifer also is used for public supply and irrigation, but its quality varies considerably. The ground water near recharge zones has the best quality. Deeper water may be saline.

Soils

The dominant soil orders in this MLRA are Aridisols and Entisols. Mollisols occur at the higher elevations, particularly in the northern part of the MLRA. Some of the most extensive and representative great groups are Torriorthents (Chipeta, Persayo, Cadrina, Killpack, and Gerst series), Haplocalcids (Walknolls, Abracon, Avalon, and Shalako series), Haplocambids (Sagers and Begay series), Natrargids (Motto series), Argiustolls (Cortyzack series), Torrifluvents (Ravola series), and Haplustolls (Moonset series) The dominant soil temperature regime is mesic, and the dominant soil moisture regime is aridic. The soils receiving less than 10 inches (255 millimeters) of precipitation annually have an aridic soil moisture regime. The soils receiving 10 to 12 inches (255 to 305 millimeters) have an aridic soil moisture regime that borders on ustic. The soils receiving 12 to 16 inches (305 to 405 millimeters) generally have a mesic moisture regime but in some areas have an ustic regime that borders on aridic. Some soils with a frigid soil temperature regime and an ustic soil moisture regime occur at the highest elevations in the northern part of the MLRA. The dominant soil mineralogy is mixed. The soils that formed in material weathered from Mancos shale tend to have active or semiactive clay activity classes. Most of the soils formed in slope alluvium or residuum derived from shale or sandstone. Soils that formed in alluvium occur near the major waterways, and soils that formed in colluvium occur generally on slopes of more than 35 percent. Many of the soils are shallow or moderately deep to shale or sandstone bedrock. Most are well drained. Most are calcareous. The soils at the lower elevations generally have significant amounts of calcium carbonate, salts, and gypsum.

Biological Resources

This area has three major land resource units. These are the desert-salt desert zone, the semi-desert zone, and the upland foothill zone. The largest and most dominant unit is the desert-salt desert zone. This zone occurs at the lower elevations receiving less than 10 inches of annual precipitation (255 millimeters). The representative vegetation includes Castlevalley saltbush, Gardner's saltbush, mat saltbush, greasewood, shadscale, bud sagebrush, winterfat, Indian ricegrass, salina wildrye, and galleta. Cottonwood and willows grow along riparian zones. The semi-desert zone occurs as a narrow 10- to 12-inch (255- to 305-millimeter) precipitation band. This zone has two vegetative subzones. The more extensive subzone includes Wyoming big sagebrush, black sagebrush, shadscale, fourwing saltbush, Mormon tea, Indian ricegrass, and galleta. The other subzone occurs mostly in the area of the San Rafael Swell in Utah. This subzone is similar to the other subzone but lacks Wyoming big sagebrush and has more Utah juniper trees. Wyoming big sagebrush and pinyon pine may occur but only as a few widely scattered plants. The upland-foothill zone occurs as a 12- to 16-inch (305- to 405-millimeter) precipitation band. Utah juniper and pinyon pine forests dominant this zone. The representative vegetation includes Utah juniper, pinyon pine, Wyoming big sagebrush, black sagebrush, prairie junegrass, muttongrass, and needleandthread. Gambel oak, Utah serviceberry, antelope bitterbrush, mountain mahogany, and bluebunch wheatgrass grow at the higher elevations. Some of the major wildlife species in this MLRA are coyote, kit fox, white-tailed prairie dog, white-tailed jackrabbit, pronghorn, mule deer, elk, American kestrel, sage grouse, turkey vulture, screech owl, mourning dove, pinon jay, common raven, sage sparrow, bald eagle, golden eagle, western rattlesnake, bullsnake, fence lizard, sagebrush lizard, Colorado pike minnow, razorback sucker, bonytail, and humpback chub.

Land Use

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

Cropland—private, 1%
Grassland—private, 21%; Federal, 74%
Forest—Federal, 1%
Urban development—private, 1%
Other—private, 1%; Federal, 1%

About three-fourths of this area is Federally owned. Most of the area is used for recreation or livestock grazing. Different types of surface or sprinkler irrigation are used in many of the valleys. The major crops grown throughout the area are silage corn, grain corn, alfalfa, and small grains. Cantaloupe and melons are

grown near Green River, Utah, and lettuce, onions, dry beans, peppers and other small vegetable crops are grown in the Grand Valley and Uncompahgre areas. Many tracts of rangeland and cropland have been, and are continuing to be,
subdivided for community development. The major soil resource concerns are salinity, leaching of selenium and salts into surface and ground water supplies, irrigation-induced erosion, and subsidence resulting from gypsum dissolution. Wind erosion is a hazard on light textured soils during periods when annual crops are grown and during periods of plant germination. It also is a hazard in areas of saltdesert shrub communities. The main management concerns on rangeland are wind erosion, gully erosion, invasive species, and declining rangeland health. The main management concerns in cultivated areas include salinization, declining water tables, and inadequate supplies of irrigation water. Conservation practices on rangeland generally include erosion control, fencing, development of watering facilities, brush management, rangeland seeding, and proper grazing management. Conservation practices on cropland include improvement of the efficiency of irrigation systems, irrigation water management, and crop residue management. Conservation practices on hayland and pasture include improvement of the efficiency of irrigation systems, irrigation water management, and forage harvest management.