

Ecological site group DX035X01EESG03

Green River Desert - Outcrops and Slopes

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Key Characteristics

- Green River Desert
- Outcrops and Slopes

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Physiography

This group occurs on talus slopes, escarpments, landslides, steep hillslopes, steep mountain slopes, and ledges. Run off is medium to very high (due to the steep slopes). Slopes typically range from 50-80%. Flatter slopes may occur in some locations. Elevations ranges from 3700-7500 ft.

Climate

The climate is characterized by hot summers and cool to warm winters. Large fluctuations in daily temperatures are common. Mean annual high temperatures range from 59-75 degrees Fahrenheit and mean annual low temperatures range from 33-47 degrees Fahrenheit. Approximately 77 percent of the precipitation occurs as rain from March through October. On the average, February, May, and June are the driest months and August, September, and October are the wettest months. Runoff is high because of steepness of slopes, which makes this group have a wide range in effective precipitation.

Soil features

The characteristic soils in this group range from moderately deep to very deep and are well drained. They formed in colluvium and residuum derived mainly from sandstone and shale. Soils are cobbly to extremely bouldery on the surface and throughout the profile. The water supplying capacity is 1.2 to 4.8 inches. Average annual soil loss in potential is approximately 2 to 3 tons/acre. Soil surface fragments range from 0-56%. Soil temperature and moisture regimes are mesic and aridic (torric) respectively. Soils are nonsaline to very slightly saline.

Vegetation dynamics

This ecological site group occurs over a wide range of country. It is found on steep talus slopes on many landforms throughout Major Land Resource Area (MLRA) D35—The Colorado Plateau. A wide array of natural factors affect the vegetative composition of these sites including latitude, elevation, aspect, precipitation (including run-on moisture), soil texture and depth, and the percent of coarse fragments found within the soil profile.

The more moist, generally higher elevation, areas have a scattered overstory of Utah juniper with small amount of two-needle pinyon. A wide array of shrubs including Mormon tea, blackbrush, spiny hopsage, and Mexican cliffrose dominate the shrub layer. A well developed grass layer is often present with Indian ricegrass, salina wildrye and James galleta occurring most often. Vegetative variation appears to be a natural part of this ecological site group. Each plant community evaluated has a unique combination of species present based on its specific natural environment.

The drier, usually lower elevation, areas have little or no Utah juniper or two-needle pinyon. Primary shrubs include blackbrush, shadscale, castle valley saltbush and Mormon tea. Herbaceous species are rare with minor amounts of

Indian ricegrass and James galleta usually present. On sandy soils, spike and mesa dropseed may be present. Wide species variation appears to be a natural part of this ecological site group.

Livestock grazing is very limited because of its steep slopes and rough topography. Some use was observed, however, where roads or trails crossed the landforms. Heavy wildlife browsing by deer and rabbits was observed at several locations.

Widespread fire is not an influencing factor on this community due to natural fire barriers in the form of bedrock and outcrops. Minor fire impact has been observed, however, from lightning caused spot fires which are small in nature but that can cause the sites understory to shift from one dominated by shrubs to one with a more herbaceous aspect.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XY018UT–Talus Slope (Blackbrush-Shadscale)

Stage

Provisional

Contributors

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State and transition model

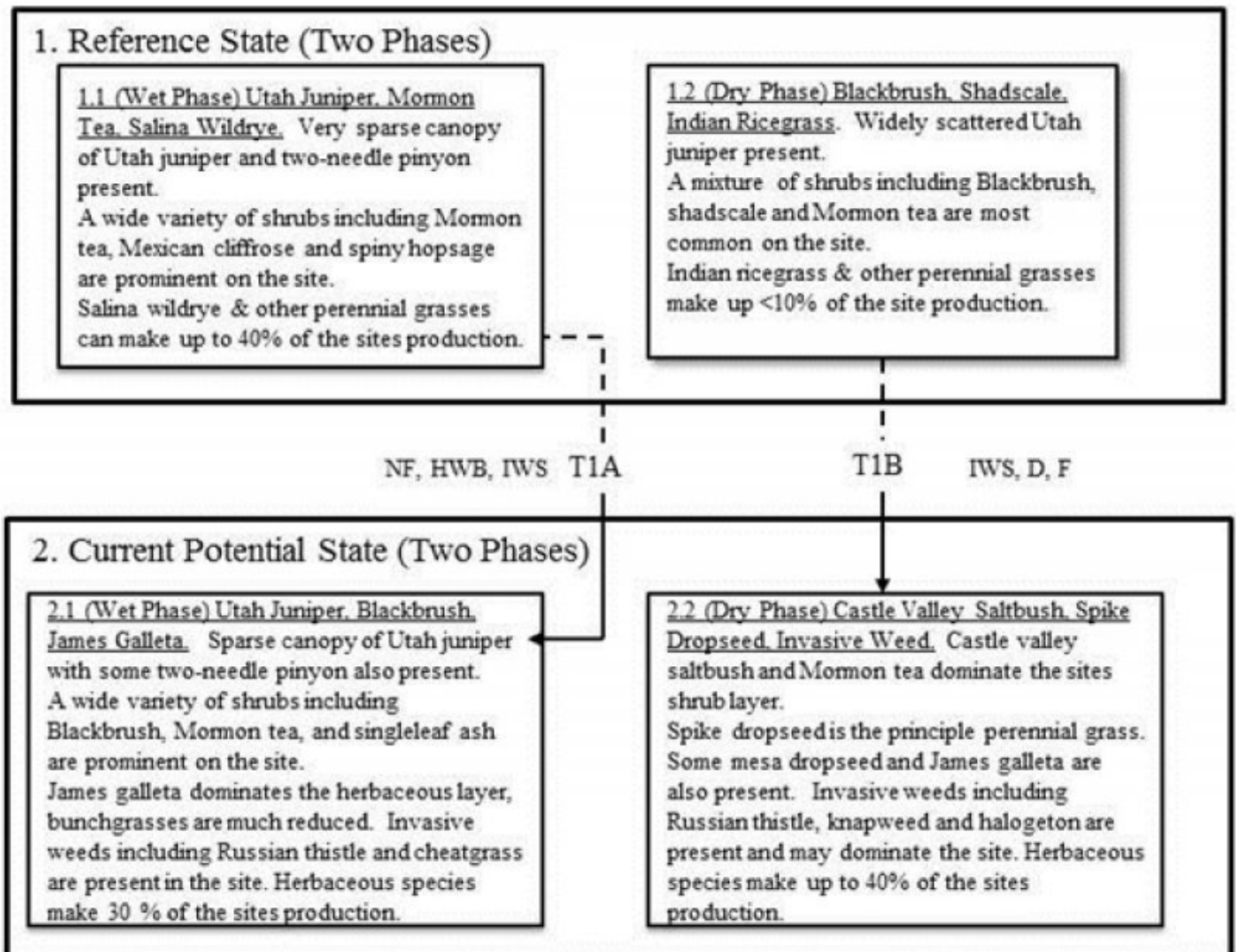
State and Transition Model

State: Utah

Site Type: Rangeland

MLRA: D-35- Colorado Plateau

R035XY018UT – Talus Slope (Blackbrush, Mormon Tea, Gardner Saltbush).



Legend:

D = Drought.

HWB= Heavy Wildlife Browsing.

IWS = Invasive Weed Source.

F = Fire.

NF = No Fire.

State 1

Reference State

This Reference State describes the various biotic communities that are expected to be found on this ecological site under natural conditions. Two distinct phases are present and are described below as Wet and Dry Phases. The Wet Phase has a scattered overstory of Utah juniper with small amount of two-needle pinyon. A wide array of shrubs including Mormon tea, blackbrush, spiny hopsage, and Mexican cliffrose dominate the shrub layer. A well developed grass layer is often present with Indian ricegrass, salina wildrye and James galleta occurring most often. This phase nearly always has a north, northeast or east aspect. It is normally at higher elevations and found in higher precipitation zones or where additional run-on moisture occurs. Its soils typically have higher Available Water

Holding Capacity's (AWC) and often have fewer coarse fragments found within the soil profile. The Dry Phase has little or no Utah juniper or two-needle pinyon present. Primary shrubs include blackbrush, shadscale, Castle Valley saltbush and Mormon tea. Herbaceous species are rare with minor amounts of Indian ricegrass and James galleta usually present. On more sandy soils, spike and mesa dropseed may be present. This phase typically has a south, southwest or west aspect. It is normally at lower elevations and found in lower precipitation zones where little or on additional run-on moisture occurs. Its soils typically have lower Available Water Holding Capacity's (AWC) and often have large amounts of coarse fragments within the soil profile. The reference state is self-sustaining and resistant to change due to good natural resilience to its natural disturbances. The primary natural disturbance mechanisms are wildlife population densities which can affect the shrub layer composition and weather fluctuations.

Characteristics and indicators. Reference State: Natural plant communities as influenced by latitude, elevation, aspect, precipitation (including run-on moisture), soil texture and depth, and the percent of coarse fragments found within the soil profile. Indicators: These communities are highly variable with a wide array of species present specific of the physical site conditions.

Resilience management. Feedbacks: Natural fluctuations in weather patterns that allow for native species to be self-sustaining and prevent the establishment of invasive species. At-risk Community Phase: All communities are at risk when native plants are stressed and conditions are created that may allow invasive plants to establish. Trigger: The establishment of invasive plant species.

Community 1.1 (Wet Phase) Utah Juniper/Mormon Tea/Salina Wildrye.

This wet phase of this ecological site is characterized by a sparse overstory of old Utah juniper with minor amounts of two-needle pinyon also present. A shrub layer dominates the site with Mormon tea, blackbrush, spiny hopsage and Mexican cliffrose occurring most often. A wide array of other shrubs may also present. A well developed herbaceous layer is present with Indian ricegrass, salina wildrye and James galleta occurring most often. Other commonly occurring herbaceous species include needle-and-thread and princes plume.

Community 1.2 (Dry Phase) Blackbrush/Shadscale/Indian Ricegrass

This dry phase of this ecological site is characterized by a shrub layer dominated by blackbrush and shadscale. Minor amounts of other shrubs including Mormon tea may also present. The herbaceous layer is very sparse with Indian ricegrass and James galleta occurring most often. Other herbaceous species may include needle-and-thread and princes plume.

State 2 Current Potential State.

This Current Potential State describes the various biotic communities that are expected to be found on this ecological site under current conditions. Two distinct phases are present and are described below as Wet and Dry Phases. Both phases now contain invasive species with Russian thistle, various mustard species and knapweed occurring most often. The Wet Phase has a scattered overstory of Utah juniper with small amount of two-needle pinyon. A wide array of shrubs including Mormon tea, blackbrush, spiny hopsage, and Mexican cliffrose dominate the shrub layer. A well developed grass layer is often present with Indian ricegrass, salina wildrye and James galleta occurring most often. Russian thistle and annual mustard are common invasive species. This phase nearly always has a north, northeast or east aspect. It is normally at higher elevations and found in higher precipitation zones or where additional run-on moisture occurs. Its soils typically have higher Available Water Holding Capacity's (AWC) and often have fewer coarse fragments found within the soil profile. The Dry Phase has little or no Utah juniper or two-needle pinyon present. Primary shrubs include blackbrush, shadscale, Castle Valley saltbush and Mormon tea. Herbaceous species are rare with minor amounts of Indian ricegrass and James galleta usually present. On more sandy soils, spike and mesa dropseed may be present. Russian thistle and knapweed are commonly occurring invasive species. This phase typically has a south, southwest or west aspect. It is normally at lower elevations and found in lower precipitation zones where little or on additional run-on moisture occurs. Its soils typically have lower Available Water Holding Capacity's (AWC) and often have large amounts of coarse fragments within the soil profile.

Community 2.1 (Wet Phase) Utah Juniper/Blackbrush/James Galleta.

This wet phase of this ecological site is characterized by a sparse overstory of old Utah juniper with minor amounts of two-needle pinyon also present. A shrub layer dominates the site with blackbrush, Mormon tea and singleleaf ash occurring most often. A wide array of other shrubs may also present. A well developed herbaceous layer is present with James galleta and Indian ricegrass occurring most often. Other commonly occurring herbaceous species include needle-and-thread and princes plume. Invasive annuals including Russian thistle and annual mustards are often present on the site.

Community 2.2 (Dry Phase) Castle Valley Saltbush/Spike Dropseed/Invasive Weed.

This dry phase of this ecological site is characterized by a shrub layer dominated by Castle Valley saltbush, Mormon tea and shadscale. Minor amounts of other shrubs including blackbrush may also present. The herbaceous layer is very sparse with Spike dropseed and Indian ricegrass occurring most often. Other herbaceous species may include Mesa dropseed, James galleta and princes plume. Invasive species including knapweed, halogeton and Russian thistle are present and may dominate the site.

Transition T1A T2A State 1 to 2

T1A - This transitional pathway occurs when any combination of heavy wildlife browsing and long periods without fire allow invasive species to occupy the site. Invasive species, however, appear to travel along road corridors and will invade adjacent sites even with healthy plant populations present. T2A - This transitional pathway occurs when any combination of heavy wildlife browsing recent fire reduce blackbrush and other fire sensitive species allow invasive species to occupy the site. Invasive species, however, appear to travel along road corridors and will invade adjacent sites even with healthy plant populations present.

Citations