

Ecological site group DX035X01DESG07

Henry Mtns-Deep Rocky Soils-low elevation

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Key Characteristics

- Henry Mountains
- Deep Rocky Soils
- Low elevation MAST>54 degrees F

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 ecological site typically occurs on alluvial fans, structural benches, stream terraces and escarpments. Slope and aspect will have a moderate influence the vegetative floristics of this ecological site. Runoff is highly variable and can range from low to high. Flooding and ponding do not occur or are very rare due to local landscape positions and the dry nature of the ecosystem. Slopes generally range from 2% to 50%. Elevations range from 4400 to 6000 feet.

Climate

The climate is characterized by hot summers and cool to warm winters. Large fluctuations in daily temperatures are common. The mean annual high temperature is 70 degrees Fahrenheit and the mean annual low temperature is 39 degrees Fahrenheit. Approximately 75% of the precipitation occurs as rain from March through October. On the average, February, June, and July are the driest months and March, April, and August through October are the wettest months. Precipitation is extremely variable from month to month and from year to year but averages between 8 and 13 inches per year. Much of the summer precipitation occurs as convection thunderstorms.

Soil features

This site occurs on deep soils. The dry surface layer color is typically reddish brown to brown and surface textures range from gravelly and cobbly loams to very cobbly fine sandy loams. These soils are well developed, well drained, and have low to moderate water holding capacities. Soil temperature regime is mesic and moisture regime is ustic aridic (torric). Erosion potential of soils on reference state sites typically depends on surface rock fragments. Sites with greater than 50% rock fragments have lower wind and water erosion potentials than sites with less than 50% surface rock fragments. Biological crust cover is characterized as crustless with the possible occurrence of light cyanobacteria and/or isolated lichen and moss pinnacles.

Vegetation dynamics

In its reference condition, blackbrush typically forms the dominant visual aspect. Mormon tea, Fourwing saltbush and winterfat commonly occur. Indian ricegrass and James galleta are the major herbaceous species. Utah juniper will invade this site if a seed source is available. Although some site's plant species composition is generally dominated by James' galleta and shadscale. Torrey's tea, snakeweed, prickly pear and yellow rabbitbrush are common shrubs, and Indian ricegrass blue grama, mesa dropseed, and sand dropseed are common grasses. This site developed under natural ecological conditions which included the natural influences of herbivory, fire, and climate.

Major Land Resource Area

Subclasses

- R035XY203UT–Semidesert Bouldery Fan (Blackbrush)
- R035XY242UT–Semidesert Gravelly Loam (Shadscale)
- R035XY243UT–Semidesert Stony Loam (Blackbrush)

Stage

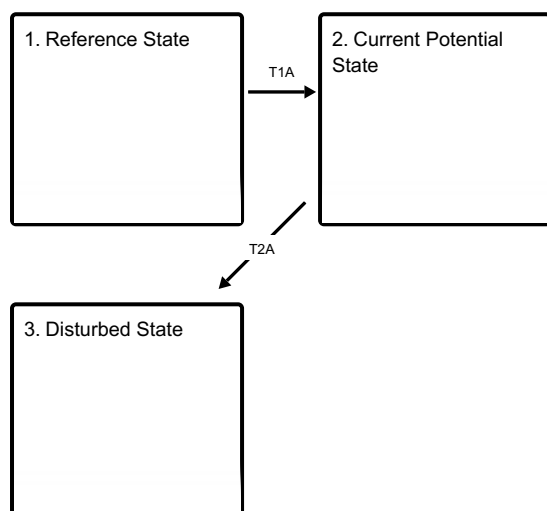
Provisional

Contributors

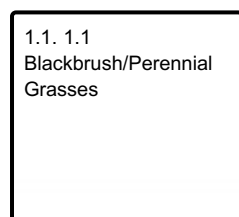
Victor Parslow, Keith Crossland

State and transition model

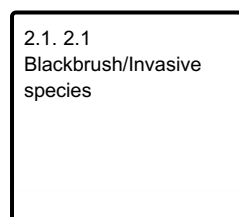
Ecosystem states



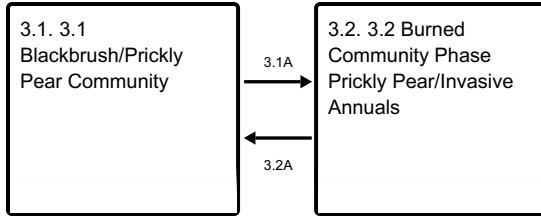
State 1 submodel, plant communities



State 2 submodel, plant communities



State 3 submodel, plant communities



State 1 Reference State

In the reference condition, blackbrush typically form the dominant visual aspect of this group. Other native shrubs may be present. The herbaceous understory is dominated by perennial grasses; typical species include Indian ricegrass, galleta, bush muhly, and black gramma.

Community 1.1 1.1 Blackbrush/Perennial Grasses

This community phase is characterized by a shrub layer dominated by blackbrush. Mormon tea and four-wing saltbush are other common shrubs. Commonly occurring grasses include Indian ricegrass, black gramma, bush mulhy, and James galleta. Other perennial grasses, shrubs, and forbs are also often present. Bare ground is variable depending on surface rock fragments and biological crust cover, which is also variable. Biological crusts can vary from sites dominated by light cyanobacteria in the plant interspaces, with occasional moss and lichen pinnacles under shrub canopies, to those dominated by lichen and moss pinnacles as well as cyanobacteria in the site interspaces. Under natural disturbances such as drought or heavy continuous grazing, less palatable shrubs such as green rabbitbrush or broom snakeweed may increase. Indian ricegrass is reduced.

State 2 Current Potential State

This state typically has a shrub layer dominated by blackbrush. Mormon tea and four-wing saltbush are other common shrub species. Perennial grasses including Indian ricegrass, James galleta, needle-and-thread and other palatable grasses and forbs are much reduced in the community. Non-native species including cheatgrass, Russian thistle, redstem storksbill, various mustard species and other non-native species are now present on the site and under certain circumstances, may visually dominate the sites aspect. Utah juniper will readily invade this site if a seed source is available.

Community 2.1 2.1 Blackbrush/Invasive species

This community phase is characterized by a shrub layer dominated by blackbrush. Mormon tea and four-wing saltbush are other common shrubs. Less palatable shrubs such as snakeweed and green rabbitbrush may be increasing. Palatable perennial grasses including Indian ricegrass, James galleta and needle-and-thread are much reduced or missing. Invasive annuals including Russian thistle, cheatgrass, and various mustard species are now present in the community and may be increasing. Utah juniper may be beginning to invading the site if a seed source is available.

State 3 Disturbed State

The Disturbed State has undergone significant changes. These changes have included recent reoccurring fire and long term overuse by livestock and/or wildlife. These disturbances have resulted in new community phases that may have permanently altered the sites original perennial vegetation. Some burned sites appear to be locked into a very short burn-cycle of approximately 5 to 15 years keeping them in a continuous herbaceous state. Prickly pear cactus and various invasive weed species dominate the sites understory.

Community 3.1

3.1 Blackbrush/Prickly Pear Community

This community phase is characterized by a shrub layer dominated by blackbrush and prickly pear cactus. Mormon tea and four-wing saltbush are other common shrubs. Less palatable shrubs such as snakeweed and green rabbitbrush may be increasing. Palatable perennial grasses including Indian ricegrass, James galleta and needle-and-thread are much reduced or missing. Invasive annuals including Russian thistle, cheatgrass, and various mustard species are now present in the community and may be increasing. Utah juniper has invaded the site and may dominate the woody layer.

Community 3.2

3.2 Burned Community Phase Prickly Pear/Invasive Annuals

This community phase is characterized by an altered fire cycle. Re-burn periods may be as short as 5 to 10 years. Species damaged by fire are mostly missing. Fire tolerant perennial grasses including purple threeawn and needle-and-thread may be present in small amounts. Invasive annuals including cheatgrass, Russian thistle and various mustards species may dominate the site. Prickly pear cactus has increased significantly.

Pathway 3.1A

Community 3.1 to 3.2

This pathway describes the effects of long term drought when combined with fire on highly disturbed sites.

Pathway 3.2A

Community 3.2 to 3.1

This pathway describes the effects of periods with on fire on highly disturbed sites during wet weather cycles.

Transition T1A

State 1 to 2

This transitional pathway describes the affects of long term drought that may not allow for sufficient precipitation to support herbaceous species and/or long periods without fire. Heavy wildlife browsing can allow for non-palatable shrubs to increase. Heavy livestock grazing will reduce palatable herbaceous species. Invasive species may invade the site.

Transition T2A

State 2 to 3

This transitional pathway describes the effects periods of drought and poor livestock management with or without reoccurring fire.

Citations