Ecological site group DX035X01EESG02
Green River Desert - Bottoms and Flats - run in

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Key Characteristics

- Green River Desert
- Bottoms and Flats
- Extra water is from run-in or local water table

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 site occurs on alluvial valleys, alluvial fans, flood plains, valleys, stream terraces, and valley flats. It typicallyoccurs on run-in sites that receive extra moisture from surrounding uplands, and may have a seasonally high water table within 72 inches of the soil surface. Run off is typically low. Slopes range from 0-8% and elevations are generally 4000-6600 ft.

Climate

The climate is characterized by hot summers and cool to warm winters, which can be slightly modified by local topographic conditions, such as aspect. Large fluctuations in daily temperatures are common. Mean annual high temperatures range from 63-71 degrees Fahrenheit and mean annual low temperatures range from 32-40 degrees Fahrenheit. Approximately 70-75% occurs as rain from March through October. On the average, April, May, and June are the driest months and August through October are the wettest months. Precipitation is extremely variable from month to month and from year to year but averages between 7-12 inches a year. Much of the summer precipitation occurs as convection thunderstorms. This is a run-in site that receives additional moisture from surrounding sites. Rare to occasional flooding occurs from April to September.

Soil features

The soils are very deep and moderately well to somewhat excessively well drained. Surface and subsurface textures can range from clay loams to sands. Typically soil surface fragments range from 0-8%. The soil temperature is regime mesic. The soil moisture regime is typically aridic (torric), but can be aridic ustic. Surface and subsurface textures range from silty loams and clays to sand. When a seasonally high water table and high salt content is present, high production of halophytic plants is possible. When this group is dominated by greasewood, soil salinities are high. When dominated by grasses, soil salinities are lower. Sandy soils in this group are generally less saline than the more loamy soils.

Vegetation dynamics

This group was historically dominated by shrubs, greasewood on the loamy sites and fourwing saltbush on sandy soils, and a diverse perennial understory, including seepweed, pale evening primrose, Indian ricegrass, Sporobolus spp, and James' galleta. The historic fire return interval is presumed to be about 35-100 years (Anderson 2004). Shrubs and native grasses would have resprouted within one year following fire and maintained dominance of the site. There is no evidence that prolonged drought would dramatically alter the species composition of the site in reference condition, although production is expected to be lower.
Today this site often burns less frequently due to fire suppression efforts and reduced fine fuel loads resulting from livestock grazing. In addition, excessive livestock grazing during the spring and summer can cause native grasses

and forbs to lose vigor or disappear from the community completely.
Cheatgrass and Russian thistle commonly establish on this site, and Tamarisk can become dominant when the site occurs near stream and drainage corridors. When the ecological processes are altered due to improper grazing, prolonged drought, altered fire regime, invasive species dominance, or other disturbances, alternative states can occur that differ from the historic reference state in both plant community structure and ecological function.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XY003UT–Alkali Bottom (Greasewood)
- R035XY009UT–Alkali Flat (Greasewood)
- R035XY015UT–Sandy Bottom

Stage

Provisional

Contributors

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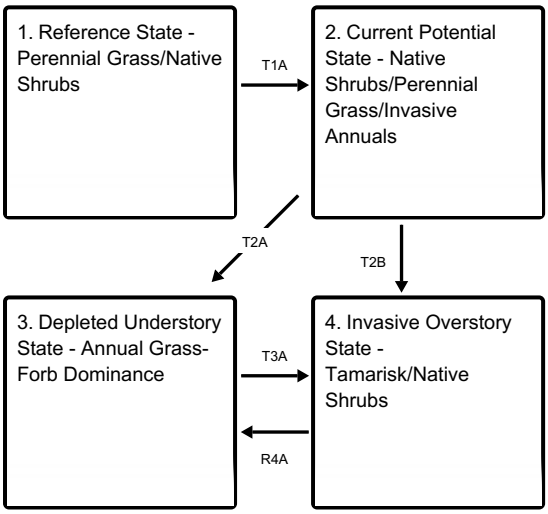
State and transition model

Ecosystem states



State 1
Reference State - Perennial Grass/Native Shrubs

This state us typically dominated by deep-rooted perennial warm and cool season grasses and grass-like plants and native shrubs; species dependent on soil texture, drainage, and salinity/sodicity. Typical shrubs are fourwing saltbush, basin big sagebrush, and black greasewood. Grass and grass-like species include Indian ricegrass, galleta, alkali sacaton, dropseed species and some sedges.

State 2
Current Potential State - Native Shrubs/Perennial Grass/Invasive Annuals

This state is similar to the reference state in composition and ecological function, but allows for non-native species

to be present.

State 3
Depleted Understory State - Annual Grass-Forb Dominance

The depleted understory state occurs when perennial grasses have been lost from the understory. Perennial forbs may also be reduced. Interspaces may be sparsely vegetated or dominated by Russian thistle or other annual invasive species.

State 4
Invasive Overstory State - Tamarisk/Native Shrubs

This state may occur on low stream terraces or when major disruptions to the channel hydrology occur. The stream provides a corridor for tamarisk invasion which spreads throughout the bottom, eventually dominating the site.

Transition T1A
State 1 to 2

Establishment and persistence of non-native species results in a transition from the reference state.

Transition T2A
State 2 to 3

This transition occurs when perennial grasses are reduced by improper grazing to the point that they can no longer self-propagate. Few remnant plants may still persist under shrubs, but re-establishment and dominance by perennial grasses will not occur following a fire, or with the removal of livestock grazing.

Transition T2B
State 2 to 4

This transition occurs on low stream terraces. The stream provides a corridor for tamarisk invasion, which spreads to low terraces dominated by native shrubs. Disturbances to to the hydrology of the stream channel or the adjacent uplands causing increased erosion and gullying may accelerate this process.

Transition T3A
State 3 to 4

This transition occurs on low stream terraces. The stream provides a corridor for tamarisk invasion, which spreads to low terraces dominated by native shrubs. Disturbances to to the hydrology of the stream channel or the adjacent uplands causing increased erosion and gullying may accelerate this process.

Restoration pathway R4A
State 4 to 3

This community pathway may occur with tamarisk control efforts, either mechanical or biological.

Citations