USDA Natural Resources
Conservation Service

Ecological site R035XF601AZ
Sedimentary Cliffs 13-17" p.z.

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

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Date	11/11/2006
Approved by	S. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills may becomon on talus slopes and other areas of soil accumulation due to runoff from adjacent rock outcrop, steep slopes, and loamy soil surface textures. Much of the soil surface on talus slops is armored with rock fragments.

2. **Presence of water flow patterns:** Water flow patterns are occasional, but may be common on talus slopes and other areas of soil accumulation due to runoff from adjacent rock outcrop and steep slopes, and loamy soil surface textures. hese patterns are usually short and discontinuous due to the frequency of rock fragments on the soil surface.

3. **Number and height of erosional pedestals or terracettes:** Pedestals and terracettes are occasioal but may be common on talus slopes and other areas of soil accumulation due to runoff from adjacent rock outcrop and steep slopes. Much of the soil surface on talus slopes is armored by rock fragments.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 5-10%. Areas with a greater cover of rock ragments and/or rock outcro will have less bare ground. Drought may cause an increase in bare ground. The soils have 4.4-8.4 inches of available wate capacty, so the potential to produce plant cover is low to moderate.

5. **Number of gullies and erosion associated with gullies:** None

6. **Extent of wind scoured, blowouts and/or depositional areas:** None

7. **Amount of litter movement (describe size and distance expected to travel):** Herbacious, fine woody and some coarse woody litter will be transported in water flow patterns. Most coarse woody litter will remain under shrub and tree canopies. There may be more litter movement in areas that are adjacent to large expanses of rock outcrop.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface textures are loam. All surfac horizons contain a significant amount of rock fragments (gravels and/or cobbles). Most soils have 40-70% cover of rock fragments (mostly gravels with some cobbles, bounders and stones). When well vegetated or covered with rock armor, the soils have a high resistance to both water and wind erosion. When well vegetated, these soils have a low to moderate resistance towater erosion depending upon the amount of rock fragment and vegetative cover.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is weak thin platy. The thickness of the A-horizon is 2-5 inches. The color is not significanty different than the subsurface soil horizons.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This site is characterized by trees, shrubs, grasses, then forbs, in descending order of dominance. Vegetative cover ranges from 10-30% (trees > rasses = shrubs > forbs). Basal cover ranges 0-3% (shrubs - grasses) for vascular plants and 0-10% for biological crust (cyanobacteria > lichen > moss). Both canopy and basal cover values decrease during a prolonged drought. This type of plant community is moderately effective at capturing and storing precipitation.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None. These soils are not naturally compacted, but the soil textures are fine enough that animal or human traffic could cause the formation of compaction layers within the soils. The soils have a naturally thin platy structure.

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant: trees >>

    Sub-dominant: shrubs > perennial bunchgrasses > perennial colonizing grasses > perennial forbs > nnual grasses > annual forbs

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or**

decadence): All plant functional groups are adapted to survival in all but the most severe droughts. Severe winter droughts affect shrubs and trees most. Severe summer droughts affect grasses the most.

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14. **Average percent litter cover (%) and depth (in):** Of the total litter amount, it would be expected that approximatel 55-75% would be herbaceous litter and approixmately 25-45% would be wody litter. Litter amounts increase during the first few years of drought and decrease in later years.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 100-200 lbs/ac dry years; 200-400 lbs/ac median years; 400-600 lbs/ac wet years

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Broom snakeweed, rubber rabbitbrush, prickly pear, Cutler"s jointfir are native to the site and have the potential to increase and dominate after heavy grazing. Cheatgrass is an exotic grass that has the potential to invade the site, with or without disturbance.

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17. **Perennial plant reproductive capability:** All plants native to the site are adapted to the climate and are capable of producing seeds, stolons and/or rhizomes except during the most severe drought.
