

Ecological site R015XF006CA Steep Clayey Hills

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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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| Approved by | |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

- Number and extent of rills:** No rills were noted on any sites.

- Presence of water flow patterns:** Water commonly flows downslope for a length of 200-500 feet.

- Number and height of erosional pedestals or terracettes:** No erosion pedestals or terracettes were noted.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 29 to 59 percent. Canopy gaps would be less than 8-10 inches in diameter but would increase in areas with disturbances from rodents or feral pig rooting and bedding activity.

- Number of gullies and erosion associated with gullies:** These soils may be found in association with gullies that are 4 to 6 feet deep at 500 to 1000 foot intervals.

- Extent of wind scoured, blowouts and/or depositional areas:** No wind scour or blowouts were noted.

- Amount of litter movement (describe size and distance expected to travel):** Very little if any litter movement was

noted.

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface is clay loam and clay with a medium blocky structure. When these soils are wet they are “plastic” or susceptible to deformation under stress and have a low resistance to disturbance (Virmani, Sarawat and Burford, 1982). This soil also has a high resilience when dry with some ability to recover when disturbed. Slow permeability and steep slopes also make this site susceptible to erosion if disturbed. Slumping was noted on steep slopes. Soil erosion hazard is severe to very severe.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Skyhigh: A--O to 2 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist, weak very fine and fine granular and subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; (2 to 6 inches thick). SOM: 2-5 percent
Sleeper: A1--0 to 4 inches; brown (7.5YR 5/2) loam, dark brown (7.5YR 3/2) moist; moderate fine, medium and coarse granular and moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; (4 to 8 inches thick.) SOM: 1-2 percent
Dibble: A1--0 to 2 inches; pale brown (10YR 6/3) silt loam, olive brown (2.5Y 4/4) moist; weak medium platy structure; very hard, friable, slightly sticky and slightly plastic; (1 to 4 inches thick) SOM: 2-5 percent
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Grass - 21%: Low grass cover on foot slopes increases soil loss from rainfall impact and grass cover helps lower runoff.
Trees - 21%: The presence of trees intercepts rainfall and stem flow and roots aid water infiltration.
Shrubs - 10 %: While shrubs aid infiltration, their low cover does not significantly contribute to overall infiltration and runoff.
Forbs – 48 %: Forbs help infiltration and slow runoff.
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Platy structure may be mistaken for compaction on this site.
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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: Forbs: TRLA16>>SANIC>MICA2>RAOR3>TRIFO>TOAR>TONO>COSPS

Sub-dominant: Grass: AVFA>VUMIM>POSE
Trees: QUDO>PISA2

Other: Shrubs: ARMA>>HEAR5>CEMOG

Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Grasses and forbs will show mortality and decadence beginning in late April or early May.

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Expected production is highly variable based on unfavorable normal or favorable year. Total production in a 50-60 percent of normal year ranges from 500 to 1700 pounds per acre.

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:** Medusahead

Barbed goatgrass

Italian thistle

17. **Perennial plant reproductive capability:** Minor amounts of native and non-native perennial grasses exist on the site including Melic spp. and Stipa spp.. Typically the native perennial grasses face strong competition from non-native grasses and forbs. Wet years with fall and winter rains tend to favor non-native grasses on well drained deep soils (Stromberg et al., 2007).
