

Ecological site R061XY029SD Stony Hills

Last updated: 7/17/2024
Accessed: 05/11/2025

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.

Author(s)/participant(s)	Stan Boltz
Contact for lead author	Stan Boltz, stanley.boltz@sd.usda.gov, 605-352-1236
Date	09/30/2009
Approved by	Suzanne Mayne-Kinney
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Slight to none, typically on steeper slopes and discontinuous.

- Presence of water flow patterns:** None, or barely visible and discontinuous with numerous debris dams when present.

- Number and height of erosional pedestals or terracettes:** Few pedestalled plants typically on steeper slopes. Terracettes not present.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is roughly 5 to 20 percent, and patches are less than 2 inches in diameter.

- Number of gullies and erosion associated with gullies:** Active gullies should not be present.

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

- Amount of litter movement (describe size and distance expected to travel):** Small size litter classes will generally

move short distances, some medium size class litter will move very short distances. Litter debris dams are occasionally present.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil aggregate stability ratings typically 5 to 6, normally 6. Surface organic matter adheres to the soil surface.
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is typically granular, and mollic (higher organic matter) colors of surface horizon about 2 to 4 inches deep. If conditions are other than this, refer to map unit component descriptions for component on which the site occurs.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Combination of shallow and deep rooted species (mid & tall rhizomatous and tufted perennial cool- and warm-season grasses) with fine and coarse roots positively influences infiltration.
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None.
-
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: Tall, warm-season grasses = mid, warm-season grasses >>
- Sub-dominant: Mid and tall cool-season bunchgrasses = wheatgrasses (mid, cool-season rhizomatous) >
- Other: Grass-like species = forbs = shrubs > trees
- Additional: Other grasses occur in other functional groups in minor amounts.
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very little evidence of decadence or mortality. Bunch grasses have strong, healthy centers and shrubs are vigorous.
-
14. **Average percent litter cover (%) and depth (in):** 55 to 65 percent plant litter cover, roughly 0.25 to 0.5 inch depth. Litter cover is in contact with soil surface.
-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Ranges from 1,800 to 3,400 pounds/acre. Reference value is 2,600 pounds/acre (air-dry weight basis).
-
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: Refer to State and Local Noxious Weed List.

17. **Perennial plant reproductive capability:** All species exhibit high vigor relative to climatic conditions. Do not rate based solely on seed production. Perennial grasses typically have vigorous rhizomes or tillers.
-