USDA Natural Resources
Conservation Service

Ecological site R035XB255AZ
Sandstone Rockland 6-10" p.z.

Accessed: 05/12/2025

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)	Kenneth Gishi
Contact for lead author	State Rangeland Management Specialist, NRCS-Arizona State Office
Date	07/30/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None expected, a few, short (less than 3 feet) can form on steeper slopes. There may a slight increase of rills following intense storm events.

2. **Presence of water flow patterns:** Very rare due to high amount of rock and bare ground cover.

3. **Number and height of erosional pedestals or terracettes:** Rare. However, in areas of sufficient plant cover small pedastals of 1 inch are expected around long-lived shrubs.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground can range from 5 – 25 percent. Do not count intact biological crust as bare ground.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Uncommon, but some active deposition around long-lived shrubs is normal.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement is fairly common, especially fines litter (<1/8" in diameter). Fine litter can move up to 3 feet across the site. Litter will accumulate around plant bases, soil depressions or rock obstructions.

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** The site is expected to have an average stability rating of 2-3.

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface horizon depth will range from 2-4 inches with a single grain; loose structure. Surface textures will range from sand to loamy sand with color depending on parent material. Use specific soil survey information for supplemental information to this indicator.

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Site is dominated by a shrub canopy with a lower canopy of perennial grasses and forbs, followed by annuals. Shrubs and perennial grasses provide site protection by capturing and slowing runoff to promote infiltration.

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None, soils are normally very shallow to bedrock.

---

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: Low Shrubs > Perennial Grasses > Large Shrubs

    Sub-dominant: Perennial Forbs > Annuals > Biological Soil Crust

    Other: Small Trees

    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 the shrubs the most. Severe summer droughts affect grasses the most.

---

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):** 75 – 125 lbs/ac expected in a normal year.

---

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: Plants native to site, but that can and do increase on the site include broom snakeweed, Fendler's threeawn and Greene rabbitbrush. Non-natives that can invade the site with or without disturbance include cheatgrass, red brome and prickly Russian thistle.

---

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 droughts.
