USDA Natural Resources Conservation Service

Ecological site R012XY022ID
Shallow Breaks 8-13 PZ JUOS/ARNO4/PSSPS

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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.

Author(s)/participant(s)	
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Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills do not occur on this site.

2. **Presence of water flow patterns:** Water-flow patterns are not present on this site.

3. **Number and height of erosional pedestals or terracettes:** Erosional pedestals or terracettes do not occur on this site.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** More data is needed, but bare ground is estimated to be 20-30 percent of the area where soil is present.

5. **Number of gullies and erosion associated with gullies:** Gullies do not occur on this site.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind scoured, blowouts and/or depositional areas do not occur.

7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter in the interspaces may move 1-2 feet and usually moves into the fractures in the adjacent bedrock or accumulates above surface rock.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Values should range from 3 to 5 but need to be tested.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Structure ranges from weak thin platy to moderate thin platy. The A or A1 horizon is typically 2 to 4 inches thick. Soil organic matter (SOM) ranges from 0.5 to 1 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Bunchgrasses and perennial forbs slow run off and increase infiltration. The amount of stones and bedrock on or near the surface are the over-riding influence on infiltration.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compaction layer is not present.

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: Juniper>>

    Sub-dominant: Cool season grasses> shrubs>perennial forbs>shallow rooted bunchgrasses.

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Lightning strikes and wildfire are the primary cause of mortality in juniper. Shrubs and grasses decline in the plant community as juniper increases.

14. **Average percent litter cover (%) and depth (in):** Litter immediately beneath juniper can be greater than 4 inches and occupy 100 percent of the surface. Litter in the interspaces beyond the drip-line is usually <.1 inches and <5% cover.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual production is 450 pounds per acre (500 kilograms per hectare) 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:** Invasive species include cheatgrass and mustard.

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17. **Perennial plant reproductive capability:** All functional groups have the potential to reproduce in most years.