USDA Natural Resources
Conservation Service

Ecological site R015XF004CA
Shallow Loamy Foothills

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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	09/25/2013
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Biomass

Indicators

1. **Number and extent of rills:** No rilling has been noted.

2. **Presence of water flow patterns:** Water flow patterns are typically downslope for 200-400 feet.

3. **Number and height of erosional pedestals or terracettes:** None.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10-20% bare ground

5. **Number of gullies and erosion associated with gullies:** No gullies noted.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Steep to very steep slope gradient. Not alot of litter movement noted.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil structure is weak and platy in the uppermost 1 inch. Soil is well drained, permeability is moderate, runoff is medium and erosion hazard is moderate.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A1--0 to 0.5 inches; pale brown (10YR 6/3) light clay loam, brown (10YR 4/3)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Grass is approximately 57 percent, forbs 24 percent, shrubs 7 percent and trees 10 percent.

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: Annual Grasses. AVFA>BRDI3>BRHO2>BRRU2
    Forbs: NAVAR>TONO>DAPU3>DICA14

    Sub-dominant: Trees. QUDO>PISA3

    Other: Shrubs. ARMA>CECU3

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality highest in grasses and forbs after May through June drought conditions.

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):** From Range sites: Low = 500
    Moderate = 850
    High= 1200

    Total production for an unfavorable, normal and favorable year are 540, 1,100 and 1,300 pounds per acre per year, respectively for data collected in a 80 percent of normal precipitation 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: Invasives such as medusahead and yellow star-thistle do not have the potential to become dominant on this site.

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17. **Perennial plant reproductive capability:** Small stands of California melic or purple needlegrass may be found on this site.
