USDA Natural Resources
Conservation Service

Ecological site VX161B01X001
Dry Ustic Isomesic Shrubland

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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

1. **Number and extent of rills:** None

2. **Presence of water flow patterns:** None

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):** 1 to 10% bare ground is expected.

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** Litter does not commonly move on this site, unless there is an rainfall event. If a heavy rainfall occurs, the smaller litter particles (eg, pukiawe and mamane leaves) may travel until they encounter a lava obstruction or rock outcrop.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** For the volcanic ash soils on this site, the stability values will range from 1 to 3.

   For the organic soils on this site (highly decomposed plant materials), the stability values will range from 2 to 4.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Variable.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** There is not an appreciable difference.

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: Dominant: Native shrubs = native cool-season bunchgrasses >> Sub-dominant: Native trees > native grass-likes.
    Other:
    Additional:

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality is not frequent in these long-lived plant communities. Decadence is surprisingly low in this harsh environment.

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):** Typical annual above-ground production is about 3200 lb/ac.

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: Invasion of alien grasses and vines are the biggest threat. Refer to Plant Community 3 Plant Species Composition table in the ESD for a list of those species.

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17. **Perennial plant reproductive capability:** Capacity to reproduce should not be reduced or impaired in the reference state.
