USDA Natural Resources
Conservation Service

Ecological site VX157X01X001
Torric Naturalized Grassland

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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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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:** No erosional pedestals or terracettes are present on this site, regardless of wet or dry season.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground should never exceed 5% in any season.

5. **Number of gullies and erosion associated with gullies:** No gullies or erosion associated with gullies are be present on this site.

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

7. **Amount of litter movement (describe size and distance expected to travel):** No litter movement is expected, regardless of the season.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Values ranging from 2 to 4 are common.

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

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Warm season perennial mid-height bunchgrass changes to invasive shrubs (lantana and haole-koa). This change will reduce the infiltration and increase the runoff.

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: Naturalized, warm season, mid-height perennial bunchgrasses >>

Sub-dominant: Naturalized, warm season, non-leguminous forbs =

Other: Naturalized, leguminous shrubs/trees.

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality is very low.

    Decadence of herbaceous plants is common due to drought, high evapotranspiration rates, ocean salt-spray, and prolific winds that are common on the site.

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14. **Average percent litter cover (%) and depth (in):** Litter cover above 25% can maintain site stability and function, provided that plant gap does not exceed an average of 1.5-feet and annual production remains in the expected range.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2000 pounds per acre.

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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:** Prosopis pallida (kiawe); Leucaena leucocephala (haole-koa); Acacia farnesiana (klu); Lantana camara (lantana); Waltheria indica (uhaloa); Chamaecrista nictitans (Japanese tea).

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