USDA Natural Resources
Conservation Service

Ecological site R030XD226CA
Alkaline Meadow

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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	Sarah Quistberg
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:** Generally none, however being on a playa, water flow patterns may exist after flash flood events or around areas where water enters the playa.

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):** Vegetation at this site can be patchy and sparse. Healthy stands of salt grass can have as little as 25% bare ground or as much as 50% bare ground. Areas between healthy stands of salt grass may have as much as 100% bare ground.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Sand is deposited among salt grass at the playa/dune interface. Salt crusts and dense salt grass cover prevent wind scoured areas and blowouts.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter that is not removed by wind and water is usually imbedded in salt crystal crust.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface stability values range from 0 to 6 but the majority of the soil surface at this site has soil surface stability values between 1 and 3. Salt crusts tend to be much stronger under salt grass. Areas with weak salt crusts can be single grained with a thin crust. Only some areas under saltgrass is strongly cemented.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is single grained to granular. Color can vary from white, when salt crusts develop, to brown, after salt crusts have dissolved. Surface horizons can be from 1 to 5 cm thick with very little to no organic matter.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Saltgrass traps eolian material which may remain free from the salt crusting processes and increase infiltration rates. Saltgrass may also slow water movement across the playa surface to increase infiltration. Despite the above, saltgrass also excretes excess salt and according to soil surface stability tests for this site, saltgrass has the potential to also decrease infiltration by creating a very strongly crusted soil surface.

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: Saltgrass

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Saltgrass is a warm-season, rhizomatous, native perennial grass. Mortality and decadence is not obvious. Saltgrass and its litter cover may inversely fluctuate in response to climatic conditions.

14. **Average percent litter cover (%) and depth (in):** The percent litter cover can range from 1-10%. Litter is often moved by wind and water and trapped by plants. Litter at this site does not accumulate and is often a single piece of plant material.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-**

production): Annual production can be from 130 to 325 lbs/acre. Vegetation at this site can be sparse and patchy and production is based on areas where a consistent patch of vegetation exists.

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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:** None.

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17. **Perennial plant reproductive capability:** Due to the harsh environment of this site, reproduction is likely dependent on clonal reproduction rather than seedling establishment. No inflorescence production has been observed at this site over the last several years.
