

Ecological site R069XY032CO Sandy Salt Flat

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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	Kirt Walstad
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 where vegetation is continuous. Slick spots (high sodium areas) can pond water and concentrate overland flow. Flow paths should be short in length and disconnected with numerous debris dams or vegetative barriers.

3. **Number and height of erosional pedestals or terracettes:** None to slight depending on flow coming from slick spots. Pedestalled plants caused by wind erosion are minor. Terracettes are nonexistent.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground amounts to 3-5 percent or less. Bare areas can range from 3-5 inches around bunch grasses and up to 12-18 inches when slick spots exist. Bare ground includes slick spots, which are inherent to this site. Extended drought may cause bare ground to increase up to 10-15 percent (includes slick spots).

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Some minor wind scouring may occur on this site. An

increase in wind erosion can occur with disturbances such as wildfire, extended drought, and rodent activity.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter should be uniformly distributed with very little movement.
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Stability class rating is anticipated to be 3-4 under canopy and 2-3 on slick spots. On-site verification is needed.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** SOM ranges from 1-3 percent. Soils are very deep well drained. Significant salinity and sodic levels are present in the subsoil. A-horizon color is grayish brown at 0-6 inches in depth. Structure is weak fine granular.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Raindrop impact is reduced by the diverse grass, forb, shrub functional/structural groups and root structure. This slows overland flow and provides increased time for infiltration to occur. Extended drought, wildfire or both may reduce basal density, canopy cover, and litter amounts (primarily from tall, warm-season bunch and rhizomatous grasses), resulting in decreased infiltration and increased runoff on steep slopes following intense rainfall events.
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None
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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: Warm-season mid bunchgrass = warm-season tall bunchgrass >
- Sub-dominant: Warm-season short bunchgrass > cool-season mid rhizomatous > cool-season mid bunchgrass = shrubs >
- Other: Forbs > warm-season mid rhizomatous > grasslike > warm-season shortgrass rhizomatous
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal. Slight mortality and decadence can be observed on warm-season bunch grasses during and following drought.
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14. **Average percent litter cover (%) and depth (in):** Litter cover during and following extended drought ranges from 20-30 percent.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 700 lbs./ac. during low precipitation years; 1300 lbs./ac. average precipitation years; 2000 lbs./ac. high precipitation years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 400–700 lbs./ac.
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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:** Invasive plants should not occur in reference plant community. Rocky Mountain beeplant, Russian thistle, kochia or other non-native alkali tolerant species may invade following extended drought or fire assuming a seed source is available.
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17. **Perennial plant reproductive capability:** The only limitations are weather related, wildfire, and natural disease that reduces reproductive capability.
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