USDA Natural Resources
Conservation Service

Ecological site R028AY131UT
Desert Salty Silt (Pickleweed)

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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:** Very minor rill development should be apparent in reference community under normal conditions. A slight increase may be observed following significant storm or snow melt events. Any rills should be short (< 1') and spaced 2' – 4'. The very few rills will run from the soil mounds comprising this site onto the interspaced playas and will travel in random directions. Evidence of rills will slowly decrease in the months following major weather events. Rills development may also be slightly more pronounced on the edges of this site where run-off onto the playa occurs.

2. **Presence of water flow patterns:** Flow patterns are confined to the playa interspaces within this site, which will also often have standing water after storm events. Playa flow patterns are normally <25 feet long, flow around pickleweed mounds, and are typically spaced 12 to 15 feet apart.

3. **Number and height of erosional pedestals or terracettes:** Very slight evidence of pedestals or terracettes caused by accelerated water erosion may be evident in the reference community. 1 – 2 inches of depositional mounding within Pickleweed clumps is normal and may not be water erosion caused.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 50% - 60% in the reference community.

5. **Number of gullies and erosion associated with gullies:** Developed gully channels are a normal component of this site. Gullies associated with reference areas will typically have stable, partially vegetated sides and bottoms with no

evidence of head-cutting. Some evidence of disturbance may be apparent following significant weather events or when gullies convey runoff from higher elevation rocky or naturally eroding areas

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6. **Extent of wind scoured, blowouts and/or depositional areas:** No evidence of wind generated soil movement is present in reference communities. Wind caused blowouts are also not present. Slight depositional mounding within Saltgrass patches and under pickleweed canopies is a normal characteristic of this site.

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7. **Amount of litter movement (describe size and distance expected to travel):** Most litter resides in place within grass patches or under plant canopies. Some movement of the finest material (< 1/8" or less) may move (1' – 2') in the direction of prevailing winds or down slope if being transported by water. Little accumulation is observed behind obstructions.

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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):** This site should have a soil stability rating of 3 to 4 under plant canopies and 2 to 3 in interspaces. Surface textures are typically silts containing no coarse fragments.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface is 1 inch deep and structure is weak, thick platy. The A-horizon color is very light colored. Where surface soil is lost, increased clay and silt percentages are common in the remaining soil material.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The presence of healthy Utah Pickleweed/ foxtail barley patches in the reference community provides for the best infiltration and least runoff from storm events and snow melt. As perennial vegetation decreases and bare ground increases, runoff increases and soil loss is accelerated.

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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. Soils are deep to very deep. Increases in clay or silt content in subsoil layers could be mistaken for compaction.

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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: Utah pickleweed > Foxtail barley.

    Sub-dominant: Red pickleweed > saltgrass > meadow barley.

    Other: Dominance by average annual production: Non-sprouting perennial forbs > Cool season perennial grasses > other perennial and annual native forbs. Biological soil crust is variable in its expression where present on this site and is measured as a component of ground cover.

    Additional: Perennial and annual forbs can be expected to vary widely in their expression in the plant community based upon departures from average growing conditions. Functional/structural groups may appropriately contain non-native species if their ecological function is the same as the native species in the reference state.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** All age classes of perennial grasses and forbs should be present on an average to above average precipitation year with age class expression likely subdued during below average years, or on sites with high (usually greater than 65%) similarity index (late seral to historic climax). In general, a mix of age classes may be expected with some dead and decadent plants present.

14. **Average percent litter cover (%) and depth (in):** Litter amount will vary based on pickleweed mound size and long-term weather patterns.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 150-250 #/acre on an average 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:** Cheatgrass, Russian thistle, halogeton, kochia.

17. **Perennial plant reproductive capability:** All perennial plants should have the ability to reproduce sexually or asexually in most years, except in drought years.