USDA Natural Resources
Conservation Service

Ecological site R035XB216AZ
Sandy Wash 6-10" p.z.

Accessed: 05/05/2024

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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Date	03/14/2011
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Very few expected. Some rill formation is possible due to loamy surface textures, moderate permeability, and occasional flooding.

2. **Presence of water flow patterns:** Few expected. No more than 3 or 4 on a 150 foot transect. Water flow patterns are common due to moderate permeability of the soils and occasional flooding. Water flow patterns should not be connected.

3. **Number and height of erosional pedestals or terracettes:** Very Few expected due to occasional flooding.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 20-40% on a 150 foot transect. This site should have a relatively low percentage of bare ground because it has the potential for high plant productivity.

5. **Number of gullies and erosion associated with gullies:** Few gullies may form due to the occasional flooding, but should be stable with vegetation and have no active signs of erosion.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Few scattered areas of sand deposition throughout the site; few to no wind-scoured areas and blowouts. Sedimentation is a natural process that occurs on this site when well vegetated with herbaceous cover.

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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter will travel a short distance and may be under shrub canopies; woody litter for the most part will either remain in place or travel a short distance downslope. If the site floods, there will be evidence of litter traveling large distances evidenced by swirls of herbaceous litter and woody litter far from its original source.

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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):** Soil surface textures range from sand to course sandy loam. Coarse fragments are not as common. When well vegetated and not subjected to severe flood events, soils have moderate resistance to water erosion and a moderate resistance to wind erosion. Stability ranges from 3 to 5 throughout the site.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Single grain, granular or platy surface structure, depending on the amount of organic matter binding the soil together; single grain if sand is covering the surface.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Areas with continuous native grass and shrubs can be expected to have low amounts of runoff with better infiltration; areas with dense shrubs can be expected to have moderate amounts of runoff and lower amounts or slower infiltration; bare ground and wind-scoured areas will have high amounts of runoff and slow to almost no infiltration.

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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):** No compaction layer, due to coarseness of the soils. There can be an occasional layer of stratafied finer textures below the surface horizons. These are not compaction layes.

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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: Cool season grasses > warm season grasses >

    Sub-dominant:

    Other: Large shrubs > Half shrubs > forbs

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** All plant functional groups are adapted to survival in all but the most severe droughts.

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14. **Average percent litter cover (%) and depth (in):** Mostly herbaceous litter with some woody litter. Litter amounts increase during the first few years of drought, then decrease in later years.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Expected production of 800 - 1000 pounds per acre in a average of year of precipitation.

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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:** Rubber rabbitbrush, camelthorn, Russian thistle, saltcedar (tamarisk) and Russian Olive.

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17. **Perennial plant reproductive capability:** All plants native to this site are adapted and are capable of producing seeds, stolons and rhizomes in all but the most severe drought.
