USDA Natural Resources
Conservation Service

Ecological site R035XC312AZ
Loamy Wash 10-14" p.z.

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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.

Author(s)/participant(s)	Kenneth Gishi
Contact for lead author	State Rangeland Management Specialist - NRCS State Office - Phoenix, AZ
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Approved by	Steve Barker
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Some minor rill formation is possible due to loamy textures, moderate permeability and occasional flooding. Rills present should be widely spaced and not connected.

2. **Presence of water flow patterns:** A few are expected due to the site's position on the landscape. This site receives run-on moisture and is subject to occasional flooding. Flow patterns are usually sinuous and fairly long (>12 feet).

3. **Number and height of erosional pedestals or terracettes:** Some pedestals and terracettes are present, but should be minor and stable. No roots should be exposed around pedestals. Terracettes should be associated with litter and plant debris.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 15 – 35 percent.

5. **Number of gullies and erosion associated with gullies:** Few expected. Due to occasional flooding and extra run-on moisture a few gullies can form in areas where water flow is concentrated from adjacent uplands. There should be no active erosion and the site should have vegetation stabilizing the gully.

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Due to occasional water disturbance or the surface, herbaceous and woody litter movement is common.

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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):** The expected soil stability rating under plant canopies is 4 to 5 and a rating in the interspaces of 3 to 4. The surface textures are sandy loam to silt loam. When well vegetated and with adequate litter cover these soils have moderate resistance to erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface thickness ranges from 2-5". Soil structure can be either granular or platy. Colors are reddish brown.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This site is characterized by a dominance of grasses with some shrubs and a few forbs. The distribution of herbaceous cover helps minimizes erosion and aids in reducing surface flow to allow for 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):** None. Some soils might have subsurface horizon structure of subangular blocky or platy structure. These are not compacted layers.

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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 colonizing grasses > Warm season bunch grasses > Cool season bunch grasses >

    Sub-dominant: Warm season colonizing grasses > Shrubs

    Other: Perennial forbs > Half-shrubs > Annual 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 plants functional groups are adapted to survival in all but the most severe droughts. Severe winter droughts affect shrubs the most. Severe summer droughts affect grasses the most.

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14. **Average percent litter cover (%) and depth (in):** Litter cover is mostly fines with depths usually less than ½". Litter depths will be the greatest under canopies.

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

production): Average annual production on this site is expected to be 1100 to 1300 lbs/ac. in a year of average annual 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:** Broom snakeweed, rubber rabbitbrush and big sagebrush are all native to the site, but have the potential to increase and co-dominate the site after disturbance. Tamarisk, cheatgrass and Russian thistle are non-native species that have potential to invade the site.

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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.
