USDA Natural Resources
Conservation Service

Ecological site R035XC307AZ
Clay Loam Upland 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)	Dan Carroll
Contact for lead author	State Rangeland Management Specialist - NRCS State Office - Phoenix, AZ
Date	08/27/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to very few. A few rills may form on the steeper slopes.

2. **Presence of water flow patterns:** Some water flow patterns can be present. They should be short and discontinuous and most will be associated with steeper slopes.

3. **Number and height of erosional pedestals or terracettes:** Some pedestals and terracettes may be apparent near long lived perennial plants that are associated with water flow patterns

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** The average available water capacity is a moderate 7.5 inches gives the site the ability to produce a moderate amount of plant cover. Bare ground will be <50%.

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous and fine woody litter will be transported in water flow pathways during storm events. Coarse woody litter will stay in place and most litter stays under the canopies of shrubs and trees.

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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 are gravelly sandy loam, very gravelly loam, sandy clay loam, silty clay loam and clay loam. These soils have a water erosion hazard of slight or moderate. There is high resistance to wind erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The top soil horizon is 2” to 4” in depth. The structure is weak fine granular to moderate thin platy. Color is variable depending on parent material. There are some soils with gravelly surface textures.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** A fairly even distribution of grasses with scattered shrubs and a minor component of forbs make this site moderately effective at capturing and storing precipitation.

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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. The platy structure of some soils surface horizon might falsely appear to be a compaction layer.

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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: Large shrubs > half shrubs

    Other: Forbs > trees > cacti

    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 survive in all years except during the most severe droughts. Severe winter droughts affect shrubs, trees and cool season grasses the most. Severe summer droughts affect warm season grasses the most.

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14. **Average percent litter cover (%) and depth (in):** This site is dominated by herbaceous litter with some woody litter present. Litter amounts increase in the first years of drought and decrease in the later years of a drought.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** The median annual production for a year with average precipitation for this site ranges from 550 to 650 pounds per acre.

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:** With heavy grazing use shrubs will increase (snakeweed, rabbitbrush, fourwing saltbush and Wyoming big sagebrush). That heavy use can open up the site to juniper trees moving in. Common non-native plant species that invade and can have a significant impact on the site are cheatgrass and Russian thistle. There may be other annual forbs that become present on this site (ex. Goosefoot).

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