USDA Natural Resources
Conservation Service

Ecological site R030XB076NV
SHALLOW GRAVELLY SLOPE 6-8 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.

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Date	05/05/2017
Approved by	Sarah Quistberg
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills are none to rare, and may be evident in areas recently subject to intense summer rainfall and on steeper slopes

2. **Presence of water flow patterns:** Water flow patterns none to rare and may be evident in areas recently subject to intense summer rainfall and on steeper slopes. These are short (<1m) and not connected.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are none.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground to 0-10% depending on amount of surface rock fragments.

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):** Fine litter (foliage from grasses and annual & perennial forbs) expected to move distance of slope length during intense summer convection storms or rapid snowmelt events. Persistent litter (large woody material) will remain in place except during rainfall events.

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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 stability values should be 3 to 6 on most soil textures found on this site. (To be field tested.)

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface structure is typically weak medium sized subangular blocky. Dry soil surface colors are dull yellowish browns and are typified by an ochric epipedon. Soil surface thickness is typically less than 10 cm with less 1 percent organic matter.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Shrub cover protects bare ground from splash erosion while blackbrush structure does little to protect soil from sheet erosion. Shrub interception reduces runoff. In addition to shrub stem flow, annual plant species in the shrub interspaces as well as heavy armoring by surface fragments may increase 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. Subsoil horizons with massive structure are not 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: Mojave Desert shrubs

    Sub-dominant:

    Other: annual grasses >> perennial grasses > 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):** Dead branches within individual shrubs common; annual species standing dead is also common and can make up as much as 15% of the litter.

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14. **Average percent litter cover (%) and depth (in):** Between plant interspaces (10-20%) and depth (<¼-inch).

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual production should be expected to fluctuate greatly due to both spatial and temporal climatic variability. Mean annual precipitation from year to year can be as high as 20 inches or as low as 3 inches with spatial variability being nearly as drastic. Approximately one third of the years between 1981-2010 received precipitation amounts below the drought level. Production values are estimated assuming that ideal climatic conditions have led to

healthy plant production. Production across the range of this site can vary from 250 to 500 lbs/acre with 375 lb/acre being a representative value.

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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:** Potential invaders on this site include red brome and red-stem filaree.

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17. **Perennial plant reproductive capability:** All functional groups should reproduce in average and above average growing season years. Little growth or reproduction occurs in extreme or extended drought periods.
