

## **Ecological site R070AY007NM Malpais Upland**

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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:** None

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2. **Presence of water flow patterns:** Typically none. However with slopes over 15 percent, some minor evidence of water flow patterns less than 1 foot in length.

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3. **Number and height of erosional pedestals or terracettes:** None

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground 20-25 percent.

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

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Typically none. However with slopes over 15 percent, some minor (small fine) litter movement can occur within water flow patterns.
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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):** Stability class rating 4-5 is anticipated on soil within interspaces. These values will need to be verified at the reference site.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** SOM 1-3 percent (Apache) A1-0 to 3 inches; dark grayish brown (10YR 4/2) very stony loam, very dark grayish brown (10YR 3/2) moist, moderate, fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; 20 percent stones, 20 percent cobble, and 10 percent pebbles.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub functional/structural groups and diverse root structure/patterns reduce raindrop impact and slow overland flow, providing increased time for infiltration to occur. Extended drought reduces short and mid bunchgrasses causing decreased infiltration and increased runoff following intense storm events especially in bare patch areas if present.
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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
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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: Warm-Season Mid Bunchgrass=Warm-Season Short Bunchgrass>
- Sub-dominant: Warm-Season Tall Bunchgrass=Cool-Season Rhizomatous>Warm-Season Short Bunchgrass and Mid Bunchgrass
- Other: Cool-Season Grasses=Forbs=Shrubs
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal. Expect short/mid bunchgrasses mortality/decadence during or following drought.
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14. **Average percent litter cover (%) and depth ( in):** Litter amounts can be reduced during or following extended drought, wildfire can also lead to decreased litter amounts.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** (Low Production 650 pounds per acre) (Average RV Production 1,075 pounds per acre) (High Production

1,500 pounds per acre) Production can be reduced following extended drought or the first growing season following wildfire.

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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: Invasive plants should not occur in reference plant community. However, cheatgrass, Russian thistle, kochia, and other non-native annuals may invade following extended drought if a seed source is available. Blue grama and sage species are major native (non-invasive) increasers on this site.
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17. **Perennial plant reproductive capability:** All plants should be vigorous, healthy and reproductive depending on disturbances i.e. drought. Plants should have numerous seedheads, vegetative tillers, etc. The only limitations are weather, wildfire, and natural disease that may temporarily reduce reproductive capability.
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