

Describing Indicators of Rangeland Health Evaluation Form – Page 1

Evaluation area name or ID:	Date:
Management unit:	State:
Office:	

Observer(s):

Quantitative Methods	Sample Size
Cover: <input type="checkbox"/> Line-Point Intercept <input type="checkbox"/> Step-Point Intercept <input type="checkbox"/> Cover Stick <input type="checkbox"/> Other:	
Gap Measurements: <input type="checkbox"/> Canopy Gap Intercept <input type="checkbox"/> Basal Gap Intercept <input type="checkbox"/> Other:	
Annual Production: <input type="checkbox"/> Double Sampling <input type="checkbox"/> Total Harvest <input type="checkbox"/> Weight Units <input type="checkbox"/> Ocular Estimate	

Instructions: For each criterion listed under each indicator, circle the description that best matches observations within the evaluation area. Complete specified fields for quantitative indicator values and soil observations. Record additional observations for each indicator (suggested items are listed in parentheses) in each notes field. Additional instructions are provided in italics.

1. Rills

Number	Numerous (> 20/0.4 ha plot)	Moderate (11–20/0.4 ha plot)	Few (5–10/0.4 ha plot)	Very few (< 5/0.4 ha plot)	No rills
Length, width, and depth	Very long (> 5 m); may be wide and deep	Long (2–5 m); may be wide and deep	Moderate length (0.5–2m); may be moderately wide and deep	Minimal length (0.25–0.5 m), width, and depth	
Distribution	In both exposed and vegetated areas	Mostly in exposed and occasionally vegetated areas	Mostly in exposed and rarely in vegetated areas	Only in exposed areas	

Notes (average length, width, and depth; association with slope, bare areas, recent weather and disturbance): Photos taken

2. Water Flow Patterns

Extent	Extensive (> 50% of area)	Widespread (25–50% of area)	Common (10–25% of area)	Infrequent (< 10% of area)	No water flow patterns
Size	Very Long (> 15 m) and wide	Long (6–15 m) and wide	Moderately long (1.5–6 m)	Short (< 1.5 m)	
Erosional/Depositional areas	Widespread	Common	Minor	Few	
Connectivity	Frequent	Occasional	Infrequent	Rare	

Notes (number per unit area; length and width; association with slope, bare areas, recent weather, and disturbance): Photos taken

3. Pedestals and/or Terracettes

Extent of pedestals	Extensive	Widespread	Common	Uncommon	No pedestals
Root exposure	Frequent	Common	Occasional	Rare	
Extent of terracettes	Widespread	Common	Uncommon	Scarce	No terracettes

Notes (number per unit; association with slope, bare areas, recent weather, and disturbance): Photos taken

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4. Bare Ground

Bare ground (percent)	_____ %				
Bare ground patch diameter	Very large (> 2 m)	Large (1–2 m)	Moderate (0.25–1 m)	Small (0.1–0.25 cm)	Very small (< 0.1 m)
Bare ground patch connectivity	Frequent	Occasional	Infrequent	Rare	Never
Proportion of gaps in each size class (recommended)	Canopy Gaps: > 200 cm: _____% 101–200 cm: _____% 51–100 cm: _____% 25–50 cm: _____%				
	Basal Gaps > 200 cm: _____% 101–200 cm: _____% 51–200 cm: _____% 25–50 cm: _____%				
Notes (connectivity, patch size; association with slope, bare areas, recent weather, and disturbance):					Photos taken <input type="checkbox"/>

5. Gullies

Depth and/or width	Substantial	Moderate	Slight	Minimal	No gullies
Perennial vegetation on banks and bottom	Sporadic or none	Intermittent	Occasional	Mostly vegetated	
Annual vegetation on banks and bottom	Sporadic or none	Intermittent	Occasional	Mostly vegetated	
Nickpoints	Numerous	Common	Occasional	Few	
Bank and bottom erosion and/or downcutting	Substantial	Moderate	Slight	Minimal	
Number of gullies in evaluation area:			Number of headcuts in evaluation area:		
Notes (headcuts outside of evaluation area; association with slope, bare areas, recent weather, and disturbance):					Photos taken <input type="checkbox"/>

6. Wind-Scoured and Depositional Areas

Extent of wind-scoured areas	Extensive (> 50% of area)	Common (26–50% of area)	Occasional (10–25% of area)	Infrequent & few (< 10% of area)	No wind-scoured areas
Connectivity of wind-scoured areas	Frequent	Occasional	Infrequent	Rare or never	
Size of depositional areas	Substantial	Moderate	Minor	Minimal or trace	No deposition
Notes (proportion of site affected; deposition source; association with bare areas, depth or size of depositional areas, recent weather, and disturbance.):					Photos taken <input type="checkbox"/>

7. Litter Movement

Distance of fine litter movement	Very long (> 6 m)	Long (3–6 m)	Moderate (1.5–3 m)	Short (0.6–1.5 m)	None or very short (< 0.6 m)
Distance of large litter movement	Long (> 3 m)	Moderate (1.5–3 m)	Short (0.6–1.5 m)	Very short (< 0.6 m)	None
Size of litter accumulations	Substantial	Moderate	Small	Minimal	None
Notes (proportion of litter moved; association with slope, bare areas, recent weather, and disturbance):					Photos taken <input type="checkbox"/>

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8. Soil Surface Resistance to Erosion

Soil Stability Values/ # of samples: Perennial Plant Canopy Average: _____ Samples: _____ Interspace Average: _____ Samples: _____

Notes (association of high or low stability values with soil crusts, bare areas, recent weather, and disturbance): Photos taken

9. Soil Surface Loss and Degradation

Dig at least two soil pits, one under a typical perennial plant or plant patch, and one in interspace; take a photo of the top 35 cm of each pit and complete the table to the right. Subsurface soil color is recorded at 10 cm below the bottom of the surface (A) horizon, or 35 cm below the soil surface if the bottom of the surface horizon cannot be identified.

Criteria	Plant canopy	Interspace
Depth of surface (A) horizon <input type="checkbox"/> in <input type="checkbox"/> cm		
Color of surface (A) horizon (moist)		
Soil surface structure	Type	
	Size	
	Grade	
Subsurface soil color (moist)		
Depth of subsurface color <input type="checkbox"/> in <input type="checkbox"/> cm		

Notes (describe any buried surface horizon; proportion of area affected by soil loss or deposition; association with slope, bare areas, recent weather, and disturbance): Photos taken

10. Effects of Plant Community Composition and Distribution on Infiltration

List the dominant and subdominant FS groups and indicate their distribution in the evaluation area, and any optional indicators.

Functional/ Structural Group	Distribution			Optional Indicators			
	Scattered	Clumped	Even	Basal cover (%)	Average height <input type="checkbox"/> in <input type="checkbox"/> cm	Dominant growth form	Other:

Notes (vegetation age classes; association with slope, bare areas, recent weather, and disturbance): Photos taken

11. Compaction Layer

Distribution	Extensive	Widespread	Moderately widespread	Not widespread	No compaction layer present
Development (thickness and density)	Strong	Moderate to strong	Moderate	Weak	

Notes (extent, distribution, thickness, density, evidence of restricted roots (i.e., lateral roots) or water infiltration; association with bare areas and disturbance; describe any soil layer that could be mistaken for a compaction layer such as petrocalcic, caliche, or durpian and note that it was not included in the description of the compaction layer): Photos taken

12. Functional/Structural Groups

Complete and attach Functional/Structural Groups Worksheet

Notes (Vegetation ages classes; association with slope, bare areas, recent weather, and disturbance): Photos taken

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13. Dead or Dying Plants or Plant Parts

List FS groups with occasional to extensive dead or dying plants or plant parts; indicate extent, patch size, and suspected cause.

Extent (all perennials)	Extensive (> 51%)	Widespread (26–50%)	Moderate (11–25%)	Occasional (2–10%)	None or rare (≤ 1%)	
Functional/Structural Group	Extent within each affected FS group				Patch Size	Suspected cause
	Extensive (> 51%)	Widespread (26–50%)	Moderate (11–25%)	Occasional (2–10%)		

Notes (affected species; proportion of dead plant parts from LPI; association with recent weather and disturbance): _____ Photos taken

14. Litter Cover and Depth

Total litter cover (%) _____ Woody litter cover (%) _____ Herbaceous litter cover (%) _____
 Average litter depth under canopy: _____ Average litter depth in interspaces: _____ in cm

Notes (litter source(s); association with plant canopy, bare areas, recent weather, and disturbance): _____ Photos taken

15. Annual Production

Annual production: _____ pounds/acre kg/hectare Growing conditions: Favorable Normal Unfavorable

Notes (annual production source(s); association with recent weather and disturbance): _____ Photos taken

16. Invasive Plants

List each species that may be invasive, and indicate its distribution or abundance, and cover, if measured.

Species	Dominant	Common	Scattered	Uncommon	Cover (%)

Notes (evidence of biological control agents; size/age classes of perennial invasives; distribution in evaluation area; association with bare areas, recent weather, and disturbance): _____ Photos taken

17. Vigor with an Emphasis on Reproductive Capability of Perennial Plants

List each dominant, subdominant, and minor functional/structural group that shows reduced vigor and/or reproductive capability and indicate the degree of reduction for each, and percent of the group affected.

Functional/Structural Group	Vigor reduced:				Reproductive capability reduced:				Percent affected
	Extremely	Greatly	Moderately	Slightly	Extremely	Greatly	Moderately	Slightly	

Notes (affected species; association with recent weather and disturbance; observed vigor indicators such as color, size, height, leader length, inflorescences, seed production, basal diameter): _____ Photos taken