

Ecological site R010XA016ID Quaking Aspen 20+ PZ POTR5

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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)	
Contact for lead author	
Date	04/28/2024
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:** do not occur on this site.

- 2. Presence of water flow patterns:** are rare on the site. Where they do occur they are typically at the base of the snow drifts that are commonly found just above the aspen clone.

- 3. Number and height of erosional pedestals or terracettes:** do not occur on the site

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** data is not available. On sites in mid-seral status bare ground may range from 2-10 percent. Immediately following a fire bare ground may range from 20-40 percent. Following leaf-drop in the fall, bare ground approaches zero percent.

- 5. Number of gullies and erosion associated with gullies:** do not occur on this site.

- 6. Extent of wind scoured, blowouts and/or depositional areas:** does not occur on the site

7. **Amount of litter movement (describe size and distance expected to travel):** fine litter may move up to one foot on the steeper slopes. Coarse litter generally does not move.
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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):** values should range from 4 to 6 but needs to be tested.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** the A or A1 horizon is typically 2 to 15 inches thick.
Structure ranges from moderate fine and medium granular to weak medium subangular blocky. Soil organic matter (SOM) ranges from 2 to 6 percent.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** the aspen overstory intercepts raindrops and reduces compaction. Deep rooted perennial grasses, forbs and shrubs slow run-off and 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):** not present.
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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: Trees are >> perennial grasses > forbs >shrubs.
- Sub-dominant:
- Other:
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** some mortality can occur in the shrub and herbaceous layers as tree canopy closes. Decadence and mortality of aspen can occur with age, disease, and beaver activity. Aspen mortality can also occur from invasion of Douglas fir, which ultimately over-tops the aspen.
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14. **Average percent litter cover (%) and depth (in):** additional litter cover data is needed but is expected to be ___percent to a depth of 0.5-1.5 inches at the end of the growing season. Litter cover may be 90-100 percent following leaf-drop of aspen.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** is 6000 pounds per acre (6666Kg/ha) in a year with normal precipitation and temperatures. Perennial grasses and sedges produce 5 percent of the total production, forbs 3 percent, shrubs 2 percent and trees 90 percent.

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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: include whitetop, leafy spurge, dock, Canadian thistle, perennial pepperweed, and teasel. Other invasive species may include meadow foxtail, redtop, and Kentucky bluegrass. Most invasive species are present on the site following a fire. Since many of them are shade intolerant, they decline as the canopy closes.
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17. **Perennial plant reproductive capability:** all functional groups have the potential to reproduce in most years. Aspen reproduction is primarily vegetative. If regeneration is to occur from seedlings, bare mineral soil must be present.
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