

## Ecological site R052XN169MT Subirrigated (Sb) 10-14" p.z.

Last updated: 1/24/2024  
Accessed: 05/06/2024

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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)	Siddoway/Bandy
Contact for lead author	Great Falls Area Office, Great Falls, MT Reference site used? No
Date	04/19/2005
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- 1. Number and extent of rills:** Slopes on this site are between 0 – 2% and with 99 - 100% of the soil surface well-covered there are no rills even with the most extreme convection storms.

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- 2. Presence of water flow patterns:** Due to the soil surface being well covered and minimal slope there is no evidence of past or current soil deposition or erosion for this site.

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- 3. Number and height of erosional pedestals or terracettes:** Wind and water erosion will not be evident on this site, so pedestals and terracettes will not be present.

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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 should be less than 1% on this site.

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- 5. Number of gullies and erosion associated with gullies:** Gully erosion will not be evident on this site.

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- 6. Extent of wind scoured, blowouts and/or depositional areas:** Appearance or evidence of these erosional features or

the landscape would not be present on this site.

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7. **Amount of litter movement (describe size and distance expected to travel):** Because there is little bare ground, litter movement will be minimal at most. Because the site is dominated by taller bunchgrasses, rhizomatous grasses and sedges, litter size will reflect the height and diameter of the reproductive culms and leaves of these grasses as well as the lesser dominate mid-size grasses.

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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):** Resistance to erosion will be high with soil stability values of 6; rare areas of bare soil on this site may have values less than 6 if not under plant canopy.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is granular; A horizon depth is 4 – 12”.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Dominance of taller, deep rooted bunchgrasses and sedges will maximize infiltration and minimize runoff throughout the site.

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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):** Will not be present generally, but there may be areas that have “healed” from former bison trails and wallows as well as more current livestock trails and resting areas which could have a compaction layer below the soil surface.

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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:

Sub-dominant:

Other:

Additional: Cool season rhizomatous grasses (Reedgrasses, Slender/Bearded wheatgrass) > cool season taller grasses (Tufted hairgrass) = warm season rhizomatous grasses (Prairie cordgrass) > cool season sedges/rushes (Nebraska sedge/Baltic rush) > perennial forbs > shrubs = warm season grass (Mat muhly). With less mineral soil and more coarse material in the profile, willows can dominate this site.

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Will be low for all functional groups in a given year.

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14. **Average percent litter cover (%) and depth ( in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 3500 - 5000 #/acre. This would be the expected production for the reference state during adequate moisture years. 4000 pounds would be the expected production in a 12 inch precipitation zone.

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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:** Kentucky and/or Canada bluegrass, redtop, timothy, smooth brome, a variety of annual or biennial weedy forbs, Rocky mountain iris, Potentilla spp., leafy spurge, houndstongue, various thistle spp.

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17. **Perennial plant reproductive capability:** During most years bunchgrasses and sedges will generally produce seeds, however the cool and warm season rhizomatous grasses may not necessarily produce seed even with the adequate moisture.

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