

Ecological site R035XB273AZ Sandy Bottom 6-10" p.z. Perennial

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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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Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:** Rills are common within the annual floodplain due to frequent flooding. There are no rills on the floodplain step due to moderately rapid permeability and high canopy and ground cover.

- 2. Presence of water flow patterns:** Water flow patterns are common within the annual floodplain due to frequent flooding. There are no water flow patterns on the floodplain step due to moderately rapid permeability of the soils and high ground cover and low bare ground.

- 3. Number and height of erosional pedestals or terracettes:** Erosional pedestals may be frequent around woody vegetation within the annual floodplain due to frequent flooding. There may be occasional erosional pedestals within the floodplain step from past flood events, but these are not common due to the moderately rapid permeability of the soils and heavy cover by vegetation and litter.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 90-100% (no canopy or ground cover) in the annual floodplain and from 5-15% in the floodplain step.

- 5. Number of gullies and erosion associated with gullies:** None. The stream channels are only slightly entrenched, so the break between the annual floodplain and the floodplain step is usually subtle at best. There are no gullies within the floodplain step due to heavy ground cover by vegetation and litter.

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6. **Extent of wind scoured, blowouts and/or depositional areas:** The soils within the annual floodplain are vulnerable to wind erosion when dry. There is little to no wind erosion within the floodplain step due to heavy ground cover by vegetation and litter
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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous, fine woody and coarse woody litter will be transported throughout the site during periodic flood events, often forming litter dams within the annual floodplain and floodplain step.
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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 surface texture are sandy loams, ranging from sandy loam to fine sandy loam. Coarse fragments are not common. When well vegetated and not subjected to severe flood events, the soils have a low to moderate resistance to water erosion and a moderate to high resistance to wind erosion.
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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 mostly coarse granular to massive. The A-horizon is 2-6 inches thick. The color of the A-horizon shows moderate darkening over the subsurface soil horizons below it.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This site is characterized by an overstory of trees and an understory of relatively equal distribution of grasses and forbs. Biological crusts are scarce due to frequent flooding of the annual floodplain and heavy canopy cover on the floodplain step. Canopy cover in the annual floodplain ranges from 0-10%. Canopy cover in the floodplain step ranges from 70-90% (trees > grasses > forbs). Basal cover ranges 5-10% (predominantly grasses) for vascular plants and 0% for biological crust (moss > lichen > cyanobacteria). Within the annual floodplain and on the floodplain step, canopy and basal cover values may decrease for a few years after a significant flood event, but would return to pre-flood levels within a few years provided another flood event does not occur. This type of plant community is not effective at capturing and storing precipitation on the annual floodplain. It is highly effective at capturing and storing precipitation on the floodplain step.
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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. Most of the soils are not easily compacted. Many of the soils have a naturally granular structure.
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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: shrubs (including SAEX) >>
- Sub-dominant: trees
- Other:
- Additional: Floodplain step: trees >> shrubs (including SAEX) > colonizing grasses > cool season bunchgrasses > perennial forbs > annual forbs = annual grasses

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** All plant functional groups are adapted to survival in all but the most severe droughts. The shallow water table mitigates some of the effects of drought on the site. Severe winter droughts affect shrubs and trees the most. Severe summer droughts affect grasses the most.
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14. **Average percent litter cover (%) and depth (in):** Of the total litter amount, it would be expected that approximately 10-20% would be herbaceous litter and approximately 80-90% would be woodylitter on the annual floodplain, and approximately 70-90 would be herbaceous litter and approximately 10-30% would be wooy ltter on the floodplain step.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1000-1500 lbs/ac in drought years; 1500-2500 lbs/ac median years, 2500-3500 in wet years.
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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 bluegrass, ripgut brome, chatgrass and smooth barley are exotic grasses that have the potential to invade and dominate the site, especially after heavy grazing and/or disturbance. Black medic is an exotic forb hat has the potential to invade and dominate the site after heavy grazing and/or disturbance. Salt cedar and Russian olive are exotic trees and Russian knapweed is an exotic forb that have the potential to invade and dominate the site, with or without grazing.
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17. **Perennial plant reproductive capability:** All native plants to the site are adapted to the climate and are capable of producing seeds, stolons and/or rhizomes except during the most severe droughts.
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