Ecological site R007XY013OR
Sandy Loam
8-10 PZ

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General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Associated sites

R007XY011OR	**Sands 8-10 PZ** Sands 8-10" PZ
R007XY012OR	**Sandy 8-10 PZ** Sandy 8-10" PZ
R007XY014OR	**Loamy 8-10 PZ** Loamy 8-10" PZ

Similar sites

R007XY014OR	**Loamy 8-10 PZ** Loamy 8-10" PZ (finer surface texture)
R007XY012OR	**Sandy 8-10 PZ** Sandy 8-10" PZ (coarser surface texture)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on nearly level to gently sloping terraces and terrace fronts. Slopes commonly range from 5-12%, but in extremes range from 0-20%.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Alluvial fan
Flooding frequency	None
Elevation	120 – 340 m
Slope	0 – 20 %
Water table depth	150 cm
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 10 inches which occurs mostly as rain during the months of November through April. The average annual air temperature is 53 degrees F with extremes ranging from 115 degrees F to -10 degrees F. The frost-free period ranges from 180 to 215 days and the optimum period fro plant growth is from mid-March to mid-June.

Table 3 Representative climatic features

Frost-free period (average)	220 days
Freeze-free period (average)	
Precipitation total (average)	250 mm

Influencing water features

Soil features

The soils of this site are moderately deep to very deep, well drained and formed in wind deposited loess over alluvium or lacustrine sediments. Soil surface textures are fine sandy loam about 5 to 10 inches thick over very fine sandy loam or silt loam subsoils. Gravels may be present in the subsoils. The available water holding capacity ranges fro 4 to 10 inches for the profile. Permeability is moderately rapid to the substratum and moderately rapid in the substratum. Soil reaction is neutral in the surface layer and and mildly to moderately alkaline in the subsoil. Runoff is slow and the erosion hazard is slight for water and moderate for wind.

Table 4. Representative soil features

Surface texture	(1) Sandy loam (2) Silt loam
Family particle size	(1) Loamy

Drainage class	Well drained
Permeability class	Moderately rapid
Available water capacity (0-101.6cm)	10.16 – 25.4 cm

Ecological dynamics

Any disturbance that reduces plant cover will expose the soils of this site to wind erosion. Uncontrolled wind erosion will result in blow-out depressions and the deposition of coarse fragments will form drifts, hummocks, and dunes downwind. If heavy grazing causes site deterioration, needle and thread and bluebunch wheatgrass will decline. Cheatgrass, mustards, china lettuce, and tarweed will invade the site. Frequent fire may cause an increase in rabbltbrush.

Variability in plant composition on this site results from variations in soil surface textures. Fine textured surfaces favor the establishment of bluebunch wheatgrass. Coarse textured surfaces will encourage a higher proportion of needleandthread.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	**Dominant deep rooted perennial grasses**			224-336	
	needle and thread	HECO26	*Hesperostipa comata*	224-336	–
2	**Sub-dominant deep rooted perennial grasses**			84-196	
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	84-196	–
3	**Dominant shallow rooted perennial grasses**			28-84	
	Sandberg bluegrass	POSE	*Poa secunda*	28-84	–
5	**Other perennial grasses**			6-11	
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	0-6	–
	squirreltail	ELEL5	*Elymus elymoides*	0-6	–
Forb					
7	**Dominant aperennial forbs**			11-34	
	desertparsley	LOMAT	*Lomatium*	6-17	–
	phlox	PHLOX	*Phlox*	6-17	–
8	**Sub-dominant perennial forbs**			6-11	
	balsamroot	BALSA	*Balsamorhiza*	6-11	–
9	**Other perennial forbs**			6-11	
	common yarrow	ACMI2	*Achillea millefolium*	0-6	–
	pussytoes	ANTEN	*Antennaria*	0-6	–
	milkvetch	ASTRA	*Astragalus*	0-6	–
	naked mariposa lily	CANU2	*Calochortus nudus*	0-6	–
	lupine	LUPIN	*Lupinus*	0-6	–
Shrub/Vine					

11	**Dominant evergreen shrubs**			6-17	
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	6-17	–
15	**Other shrubs**			6-17	
	Wyoming big sagebrush	ARTRW8	*Artemisia tridentata ssp. wyomingensis*	0-6	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	0-6	–
	green rabbitbrush	ERTE18	*Ericameria teretifolia*	0-6	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	0-6	–

Animal community

Native Wildlife Associated with the Climax Community: This site provides nestimg cover for long-billed curlew; and food and cover for mule deer, pronghorn antelope, songbirds, small mammals, and their associated predators. Wildlife: The scarcity of water is the limiting factor in the use of this site by wildlife. When located near dependable water sources and irrigated croplands, this site is used extensively by ring-necked pheasants. Livestock Grazing: This site is suited to fall, winter, and spring grazing by livestock in a grazing system that provides spring deferment in two of three years.

Hydrological functions

The soils of this site have high intake rates and low runoff potential. The hydrologic soil groups are B and C.

Other information

Caution must be exercised in any vegetative manipulation or excavation work to prevent soil erosion by wind.

Contributors

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Approval

Kirt Walstad, 2/06/2025

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:** None, slight sheet & rill erosion hazard

2. **Presence of water flow patterns:** None

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 2-10%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to few; moderate to severe wind erosion hazard

7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Slightly to moderately resistant to erosion; aggregate stability = 3-4

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderately deep to very deep fine sandy loam surface textures; low OM (1-2%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (30-50%) and gentle (5-12%) slopes should reduce rainfall impact and overland flow; slightly increased flow possible on steeper slopes (up to 20%)

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None

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: Needle and thread > bluebunch wheatgrass > sandberg bluegrass > dominant forbs > basin big sagebrush >= other shrubs >other grasses >= other forbs

    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):** **Normal decadence and mortality expected**

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14. **Average percent litter cover (%) and depth (in):** **In areas with adequate plant cover**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** **Favorable: 800, Normal: 500, Unfavorable: 300 lbs/acre/year at high RSI (HCPC)**

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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:** **Rabbirbrush, sage brush and broom snakeweed may increase and reduce cover of herbaceous plants. Cheatgrass and annual forbs invade sites that have lost shallow rooted perennial grass functional groups**

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17. **Perennial plant reproductive capability:** **All should be capable of reproducing annually**
