USDA Natural Resources Conservation Service

Ecological site R007XY012OR
Sandy 8-10 PZ

Accessed: 05/13/2024

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.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R007XY011OR	**Sands 8-10 PZ** Sands 8-10" PZ
R007XY013OR	**Sandy Loam 8-10 PZ** Sandy Loam 8-10" PZ
R007XY014OR	**Loamy 8-10 PZ** Loamy 8-10" PZ

Similar sites

R007XY011OR	**Sands 8-10 PZ** Sands 8-10" PZ (higher in coarse material)
R007XY013OR	**Sandy Loam 8-10 PZ** Sandy Loam 8-10" PZ (higher in fine material)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	Not specified

Physiographic features

This site occurs on level to gently sloping terraces. The relief is level to slightly rolling. Slopes commonly range from 0-5% and occasionally up to 12%.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Alluvial fan
Flooding frequency	None
Elevation	91–305 m
Slope	0–5%
Water table depth	152 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 mean annual air temperature is about 53 degrees F and extremes range from 115 degrees F to -10 degrees F. The frost-free period ranges from 180 to 215 days and the optimum period for plant growth is from mid-March to mid-June.

Table 3. Representative climatic features

Frost-free period (average)	215 days
Freeze-free period (average)	0 days
Precipitation total (average)	254 mm

Influencing water features

Soil features

The soils of this site are moderately deep to very deep. They are excessively drained mixed sands. Surface textures are loamy fine sands ranging from 4 to 8 inches thick over loamy fine sand, to coarse sand subsoils. Alluvium, lacustrine sediments, or basalt form the substratum. The available water capacity ranges fro 2 to 9 inches for the profile depending on the texture of the underlying material. Permeability is rapid. Wind erosion hazard is severe. The soils are neutral in reaction.

Table 4. Representative soil features

Surface texture	(1) Loamy fine sand (2) Sand
Family particle size	(1) Sandy
Permeability class	Rapid
Available water capacity (0-101.6cm)	5.08–22.86 cm

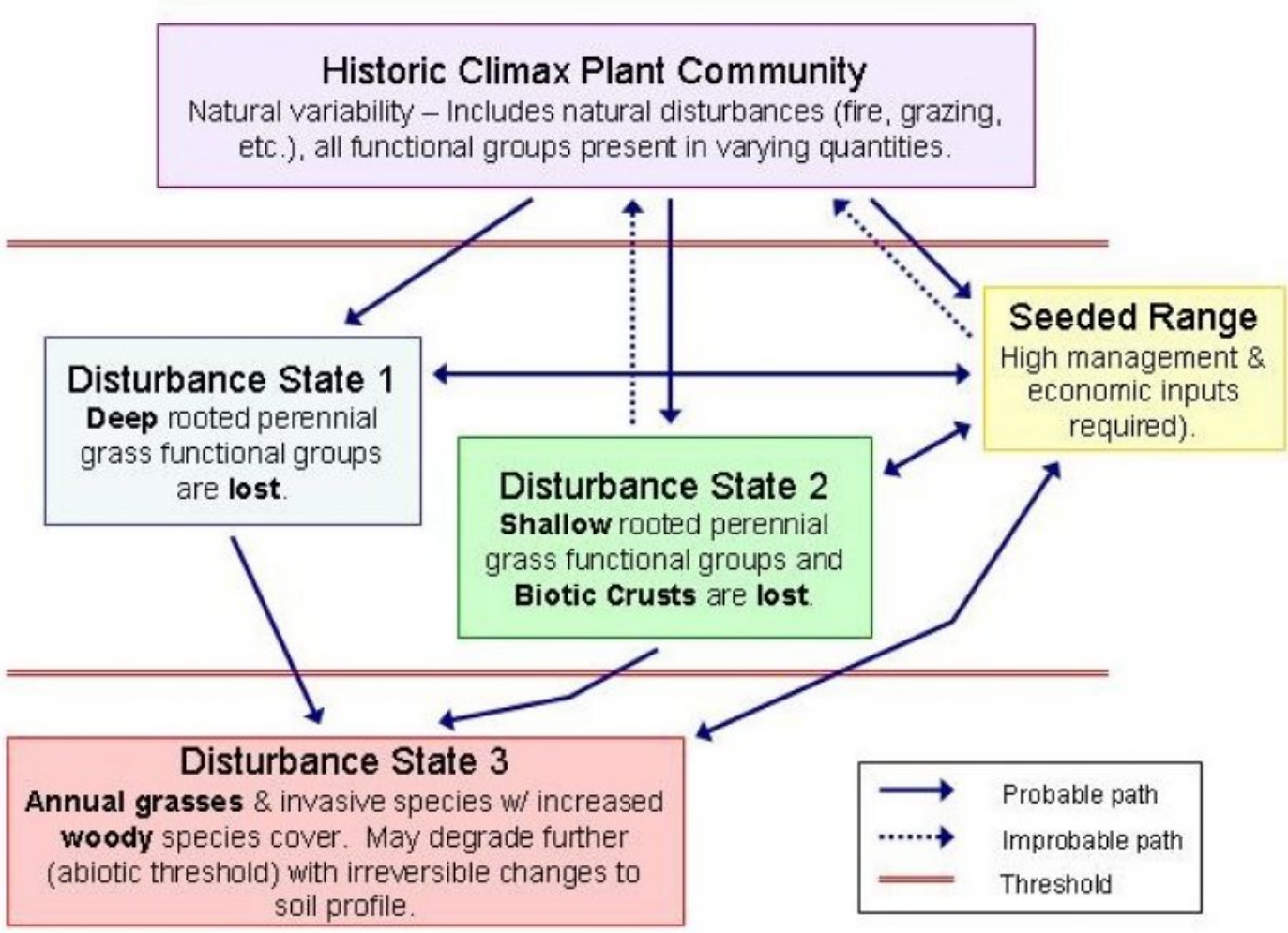
Ecological dynamics

The soils of this site are prone to erosion by wind. The loss of plant cover from frequent burning, severe grazing, off-road vehicle use, or other severe disturbance will result in severe wind erosion. If heavy grazing use causes site

deterioration, needle and thread will decrease. Scurfpea and prickly pear cactus will increase. Sandberg bluegrass and the cryptogramic crusts are readily removed leaving bare interspaces. Cheatgrass, filaree, and other annuals will invade. Diffuse knapweed, yellow-star thistle, and other noxious weeds are agressive invaders.

There is little variation in the characteristics of this site. The consistent loamy fine sand texture favors the establishment and dominance of needleandthread.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
HCPC: HECO26-POSE

Community 1.1
HCPC: HECO26-POSE

There is little variation in the characteristics of this site. The consistent loamy fine sand texture favors the establishment and dominance of needle and thread.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	516	628	740
Shrub/Vine	13	24	34
Forb	7	20	34
Total	**536**	**672**	**808**

Figure 4. Plant community growth curve (percent production by month). OR2261, B7 SANDS, GOOD CONDITION. RPC growth curve B7 SANDS, GOOD CONDITION.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	15	20	25	15	5	5	0	5	10	0	0

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	**Dominant deep rooted perennial grasses**			471–605	
	needle and thread	HECO26	*Hesperostipa comata*	471–605	–
2	**Sub-dominant deep rooted perennial grasses**			13–34	
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	13–34	–
4	**Sub-dominant shallow rooted perennial grasses**			13–67	
	Sandberg bluegrass	POSE	*Poa secunda*	13–67	–
5	**Other perennial grasses**			13–34	
	squirreltail	ELEL5	*Elymus elymoides*	0–13	–
	tufted wheatgrass	ELMA7	*Elymus macrourus*	0–13	–
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	0–13	–
Forb					
9	**Other perennial forbs**			7–34	
	common yarrow	ACMI2	*Achillea millefolium*	0–7	–
	pussytoes	ANTEN	*Antennaria*	0–7	–
	milkvetch	ASTRA	*Astragalus*	0–7	–
	Carey's balsamroot	BACA3	*Balsamorhiza careyana*	0–7	–
	hairy false goldenaster	HEVI4	*Heterotheca villosa*	0–7	–
	desertparsley	LOMAT	*Lomatium*	0–7	–
	pricklypear	OPUNT	*Opuntia*	0–7	–
	phlox	PHLOX	*Phlox*	0–7	–
	scurfpea	PSORA2	*Psoralidium*	0–7	–
Shrub/Vine					
15	**Other shrubs**			13–34	
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	0–13	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	0–13	–
	green rabbitbrush	ERTE18	*Ericameria teretifolia*	0–13	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	0–13	–
	spineless horsebrush	TECA2	*Tetradymia canescens*	0–13	–

Animal community

Native Wildlife Associated With the Climax Community:
This site provides cover for long-billed curlew; winter forage for mule deer and pronghorn antelope; and food and cover for rodents, songbirds and their associated predators.

Livestock Grazing:
This site is suited to winter grazing use by cattle in a grazing system that provides for deferment of needleandthread during the growing season.

Wildlife:
This site is commonly used in spring by long-billed curlew for nesting.

Hydrological functions

The soils of this site have rapid infiltration rates and low runoff potential. The hydrologic soil groups are A and B.

Other information

Caution must be exercised in seeding because the soils are droughty and subject to severe wind erosion.

Contributors

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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)	Jeff Repp
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Date	07/25/2012
Approved by	Bob Gillaspy
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:** Few

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):** 5-15%

5. **Number of gullies and erosion associated with gullies:** Few

6. **Extent of wind scoured, blowouts and/or depositional areas:** Few - should not be prevalent or extensive; 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 resistant to erosion; aggregate stability = 2-3

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderately deep to very deep loamy fine sand 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 (30-40%) and low (0-5%) slopes should reduce rainfall impact and overland flow; slightly increased flow possible on steeper slopes (up to 12%)

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 > sandberg bluegrass >= indian ricegrass >= other shrubs >= other grasses >= other forbs

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Normal decadence and mortality expected

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

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 900, Normal: 600, Unfavorable: 400 lbs/acre/year at high RSI (HCPC)

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:** Rabbitbrush, 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

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

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