

Ecological site R010XC056OR SR Terrace Escarpment 9-12 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.



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

R010XC020OR	SR Loamy 9-12 PZ Loamy 9-12" PZ
R010XC021OR	SR Clayey 9-12 PZ Clayey 9-12" PZ
R010XC043OR	SR South 9-12 PZ Clayey South 9-12" PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Purshia tridentata</i> (2) <i>Artemisia tridentata ssp. tridentata</i>
Herbaceous	(1) <i>Hesperostipa comata</i> (2) <i>Achnatherum</i>

Physiographic features

This site occurs on moderately steep to steep south exposures of terraces. Slopes range from 12 to 80%. Elevations range from 2000 to 3500 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace
Elevation	2,000–3,500 ft
Slope	12–80%
Aspect	S

Climatic features

The annual precipitation ranges from 9 to 12 inches, most of which occurs in the form of snow during the months of November through March. Localized, occasionally severe, convectional storms occur during the summer. The soil temperature regime is mesic with a mean annual air temperature of about 52 degrees F. Temperature extremes range from 100 to -20 degrees F. The frost free period ranges from 120 to 160 days. The optimum period for plant growth is from April through May.

Table 3. Representative climatic features

Frost-free period (average)	160 days
Freeze-free period (average)	0 days
Precipitation total (average)	12 in

Influencing water features

Soil features

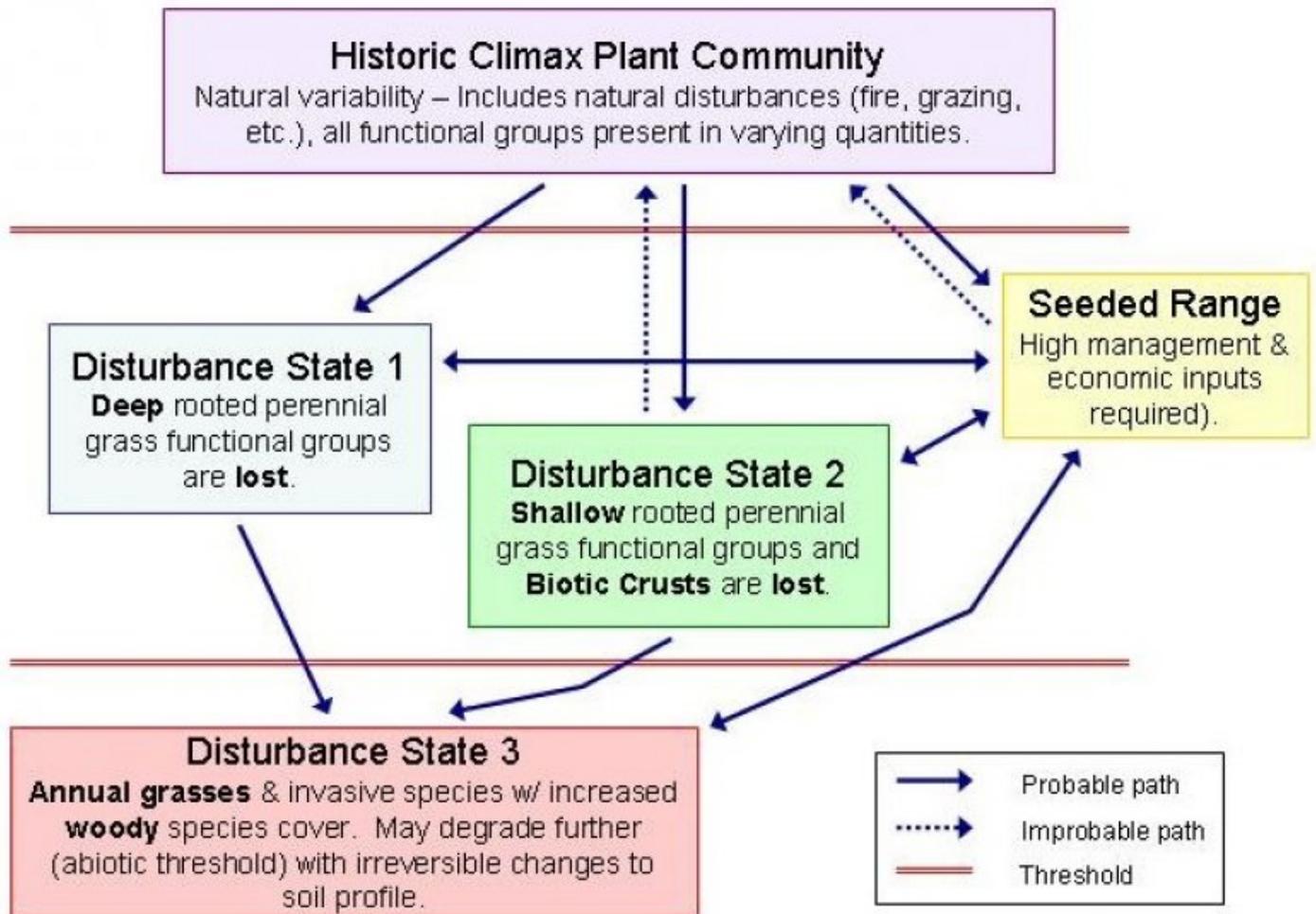
The soils of this site are typically shallow to deep on south aspects of old terraces. They are highly eroded. As they are in unstable positions they have little structural development. Texture is variable, ranging from loamy to silty. Depth to lacustrine or alluvial sediment ranges from 8 inches to over 60 inches. Permeability is slow. The available water holding capacity is about 2 to 6 inches for the profile. The potential for erosion is severe.

Ecological dynamics

Antelope bitterbrush, basin big sagebrush and rabbitbrush increase on coarse textured soils or where surface stones are present.

If the condition of the site deteriorates as a result of overgrazing, needleandthread and Thurber needlegrass decrease while annuals invade and bare ground rapidly increases. Needlegrasses and bitterbrush are the preferred species during the winter and spring. With further deterioration, bitterbrush decreases. Excessive erosion in the bare soil interspaces markedly reduces the site productivity and contributes to downstream sedimentation.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

The potential native plant community is dominated by antelope bitterbrush and needleandthread. Basin big sagebrush, rabbitbrush and Thurber needlegrass are prominent in the stand. Vegetative composition of the community is approximately 30% grasses, 10% forbs, and 60% shrubs.

Table 4. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	376	480	584
Grass/Grasslike	168	280	392
Forb	40	72	104
Total	584	832	1080

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant, deep-rooted, perennial grasses			120–280	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	80–160	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	40–120	–
2	Sub-dominant, deep-rooted, perennial grasses			32–72	
	basin wildrye	LECI4	<i>Leymus cinereus</i>	16–40	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	8–16	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	8–16	–
4	Sub-dominant, shallow-rooted, perennial grasses			16–40	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	16–40	–
Forb					
7	All dominant, perennial forbs			24–40	
	buckwheat	ERIOG	<i>Eriogonum</i>	24–40	–
8	All sub-dominant, perennial forbs			8–24	
	Toano milkvetch	ASTO2	<i>Astragalus toanus</i>	8–24	–
9	All other perennial forbs			8–40	
	milkvetch	ASTRA	<i>Astragalus</i>	2–8	–
	Douglas' dustymaiden	CHDO	<i>Chaenactis douglasii</i>	2–8	–
	woolly sunflower	ERiop2	<i>Eriophyllum</i>	2–8	–
	phlox	PHLOX	<i>Phlox</i>	2–8	–
	princesplume	STANL	<i>Stanleya</i>	2–8	–
Shrub/Vine					
11	Dominant, evergreen, perennial shrubs			280–360	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	280–360	–
12	Sub-dominant, evergreen, perennial shrubs			80–184	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	40–80	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	24–64	–
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	16–40	–
15	All other perennial shrubs			16–40	
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	5–13	–
	peraphyllum	PERAP	<i>Peraphyllum</i>	5–13	–
	horsebrush	TETRA3	<i>Tetradymia</i>	5–13	–

Animal community

This site provides limited food and cover for mule deer during winter months.

Mule deer
Rodents
Antelope
Hawks
Songbirds

Hydrological functions

The soils are in hydrologic group D. The soils of this site have high runoff potential.

Other products

This site is not suited for use by livestock due to highly unstable soil and steep slopes.

Other information

This site is not conducive to improvement measures due to limited soil development and droughty conditions.

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	08/07/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to some, severe sheet & rill erosion hazard
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2. **Presence of water flow patterns:** None to some
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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):** 10-35%
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5. **Number of gullies and erosion associated with gullies:** None
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None, moderate wind erosion hazard
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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):** Moderately resistant to erosion: aggregate stability = 3-5
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Shallow to deep highly eroded loamy to silty soils (8-60 inches thick): Moderate OM (2-4%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Low ground cover (10-30%) and gentle to steep slopes (12-80%) slightly limit rainfall impact and overland flow
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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
-
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: Antelope bitterbrush > Needle and thread > Thurber needlegrass > other shrubs > other grasses > 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):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1000, Normal: 800, Unfavorable: 500 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:** Perennial brush species will increase with deterioration of plant community. Western Juniper readily invades the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional

groups.

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