

Ecological site R010XB045OR JD Clayey South 12-16 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.

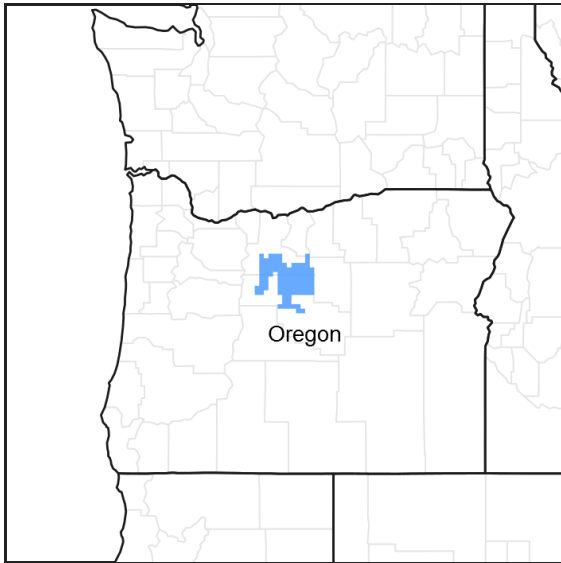


Figure 1. Mapped extent

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

R010XB027OR	JD Clayey 12-16 PZ JD Clayey 12-16" PZ
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on southerly exposures of terraces, tablelands, and upper canyons. Slopes range from 12 to 70%. Elevation varies from 2100 to 4000 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Plateau (3) Canyon
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Flooding frequency	None
Elevation	640–1,219 m
Slope	12–60%
Aspect	S, W

Climatic features

The annual precipitation ranges from 12 to 16 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 50 degrees F. Temperature extremes range from 100 to -10 degrees F. The frost-free period ranges from 90 to 150 days. The optimum period for plant growth is from April through June.

Table 3. Representative climatic features

Frost-free period (average)	150 days
Freeze-free period (average)	0 days
Precipitation total (average)	406 mm

Influencing water features

Soil features

The soils of this site are typically moderately deep to deep and well-drained. Typically the surface layer is a cobbly clay loam about 8 inches thick. The subsoil is a cobbly clay loam about 25 inches thick. Depth to bedrock or sediments is 30 to 60 inches. Permeability is slow. The available water holding capacity is about 4 to 6 inches. The potential for erosion is moderate to severe.

Table 4. Representative soil features

Surface texture	(1) Cobbly clay loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Slow
Soil depth	76–152 cm
Available water capacity (0-101.6cm)	10.16–15.24 cm

Ecological dynamics

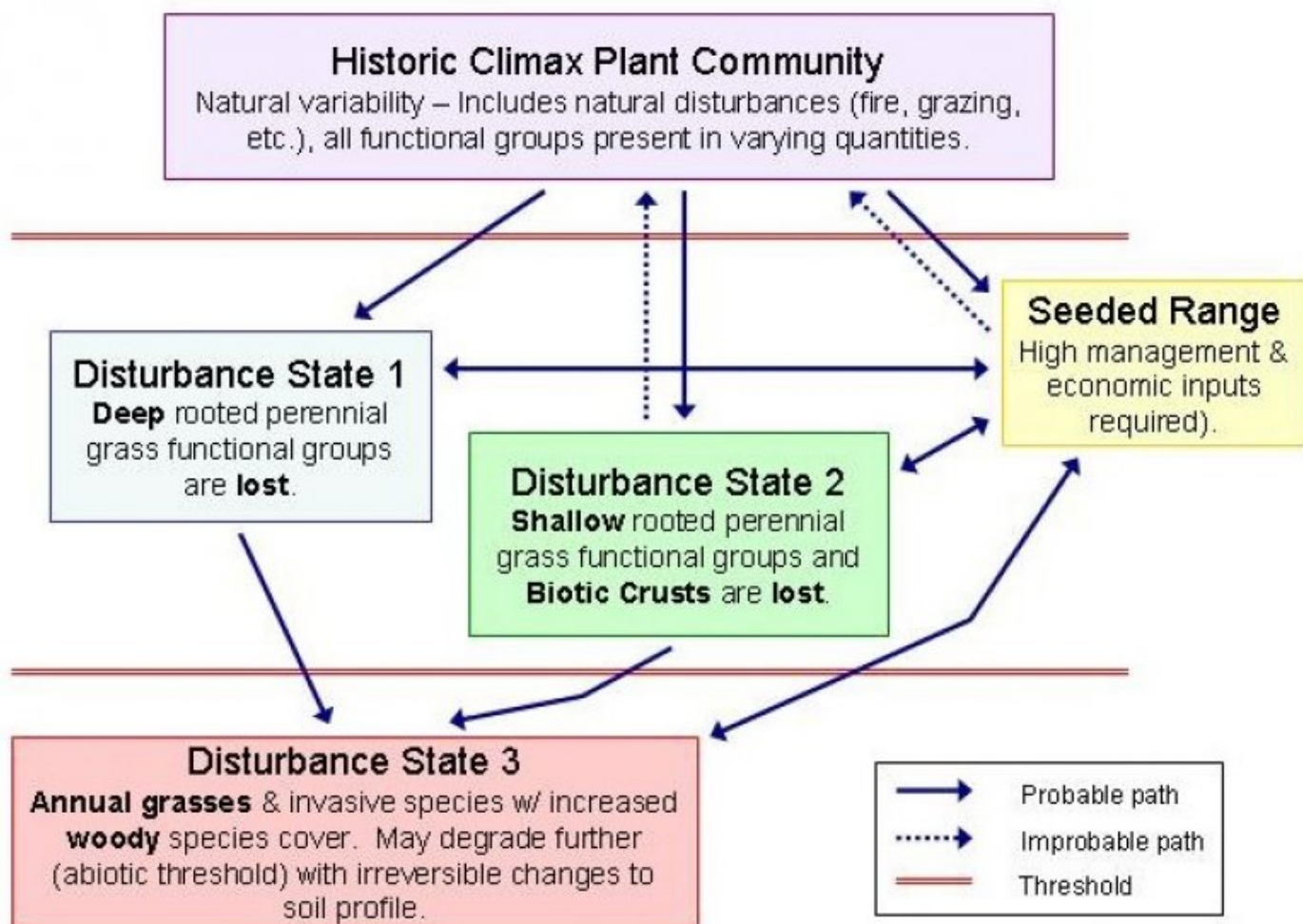
Range in Characteristics:

Variability in site productivity results from changes in soil depth. An increase in soil depth particularly on foot slopes will favor an increase in production. Western juniper may increase in the absence of fire.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, bluebunch wheatgrass decreases while Sandberg bluegrass, broom snakeweed, and western juniper increase. Bluebunch wheatgrass is the preferred species during the late spring, summer, and fall. With further deterioration, annuals invade and bare interspaces increase. Under deteriorated conditions excessive erosion 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 bluebunch wheatgrass. Sandberg bluegrass and antelope bitterbrush are common in the stand. Vegetative composition of the community is approximately 90 percent grasses, 5 percent forbs, and 5 percent shrubs. Approximate ground cover is 50-60 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	995	1170	1345
Forb	67	108	148
Shrub/Vine	40	74	108
Tree	13	20	27
Total	1115	1372	1628

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	Perennial, deep-rooted, dominant			942–1211	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	942–1211	–
4	Perennial, shallow-rooted, sub-dominant			27–67	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	27–67	–
5	Other perennial grasses, all			27–67	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	0–22	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–22	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–22	–
Forb					
7	Perennial, all, dominant			54–108	
	milkvetch	ASTRA	<i>Astragalus</i>	13–27	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	13–27	–
	desertparsley	LOMAT	<i>Lomatium</i>	13–27	–
	lupine	LUPIN	<i>Lupinus</i>	13–27	–
9	Other perennial forbs, all			13–40	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–7	–
	agoseris	AGOSE	<i>Agoseris</i>	0–7	–
	hawksbeard	CREPI	<i>Crepis</i>	0–7	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–7	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–7	–
	phlox	PHLOX	<i>Phlox</i>	0–7	–
Shrub/Vine					
11	Perennial, evergreen, dominant			13–40	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	13–40	–
15	Other perennial shrubs, all			27–67	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	0–22	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–22	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–22	–
Tree					
16	Perennial, evergreen, dominant			13–27	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	13–27	–

Animal community

Livestock Grazing:

This site is suited to use by cattle, sheep, and horses in the spring, summer, and fall under a planned grazing system. Use should be postponed until the soils are firm enough to avoid trampling damage and soil compaction.

Native Wildlife Associated with the Potential Climax Community:

Mule deer

Rodents
Hawks
Songbirds
Elk

The southerly aspect of this site offers warm temperatures and early spring growth that attracts several grazing and browsing forms of wildlife and gallinaceous birds in winter and spring. It provides valuable spring forage for elk and deer.

Hydrological functions

The soils are in hydrologic groups C and D. The soils of this site have moderately high to high runoff potential.

Wood products

This site is susceptible to increase in western juniper. Where this has occurred, the site will yield fence posts, firewood, and specialty products.

Other information

Increase in western juniper and the subsequent competition for moisture will lead to a reduction of available forage. Overgrazing can easily reduce ground cover and accelerate soil loss. Improving infiltration and permeability, and reducing runoff should be the immediate goal of juniper or brush control.

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 and Bruce Frannsen
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Date	08/06/2012
Approved by	Bob Gillaspay
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None, moderate sheet & rill erosion hazard (severe on steeper slopes)

2. **Presence of water flow patterns:** None (few on steeper slopes)

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):** 10-30%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, moderate 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):** Moderate resistance to erosion: aggregate stability = 3-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
Moderately deep to deep, well drained clay loams, silty clay loams, or very stony clay loams: moderate OM (2-4%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (50-60%) and gentle to very steep slopes (12-70%) moderately limit rainfall impact and overland flow

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: Bluebunch wheatgrass > other grasses > forbs > shrubs

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):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1400, Normal: 1200, Unfavorable: 800 lbs/acre/year st 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:** 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
