

Ecological site R010XB019OR JD Gumbo 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.

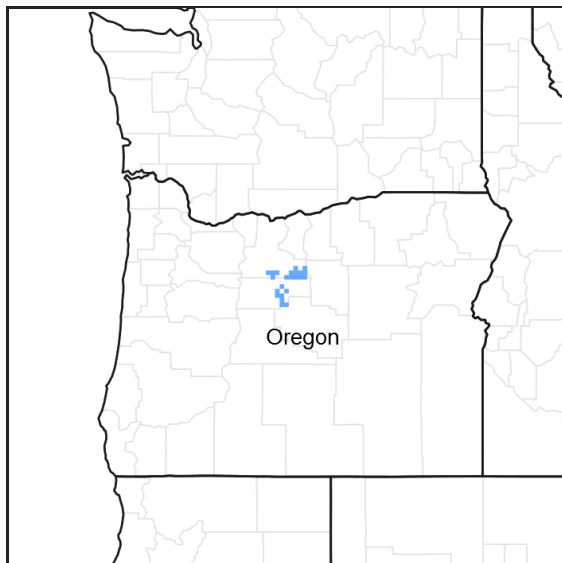


Figure 1. Mapped extent

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

R010XB022OR	JD Clayey 9-12 PZ JD Clayey 9-12" PZ
R010XB041OR	JD Clayey South 9-12 PZ JD Clayey South 9-12" PZ
R010XB051OR	JD Shallow South 9-12 PZ JD Shallow South 9-12" PZ
R010XY005OR	Loamy Bottom JD Clayey, mesic, 1500#/acre normal

Similar sites

R010XC018OR	SR Adobeland 9-12 PZ
R010XB022OR	JD Clayey 9-12 PZ This site does not occur on vertisols.
R010XY005OR	Loamy Bottom JD Clayey, mesic, 1500#/acre normal

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) <i>Pseudoroegneria spicata</i> (2) <i>Leymus cinereus</i>

Physiographic features

This site occurs in ancient sediments on low terraces and rolling hills. Slopes range from 2 to 20 percent. Elevations range from 1,300 to 3,400 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Hill
Elevation	1,300–3,400 ft
Slope	2–20%
Water table depth	60 in
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 9 to 12 inches, most of which occurs in the form of rain during the months of November through April. Localized, occasionally severe, convectional storms occur during the summer. The soil temperature regime is mesic with a mean annual air temperature of 54 degrees in F. Temperature extremes range from 105 to +10 degrees F. The frost-free period ranges from 120 to 160 days. The optimum period for plant growth is from April through June.

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 deep clays over lacustrine sediments or bedrock. Typically both the surface and subsoil layers are clays with high shrink-swell potential. Soil churning is prevalent. Depth to bedrock or sediments is usually greater than 60 inches. Permeability is very slow. The available water holding capacity is about 6 to 8 inches for the profile. The potential for erosion is moderate to severe.

Table 4. Representative soil features

Surface texture	(1) Clay
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Very slow
Soil depth	60 in

Available water capacity (0-40in)	6-8 in
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Ecological dynamics

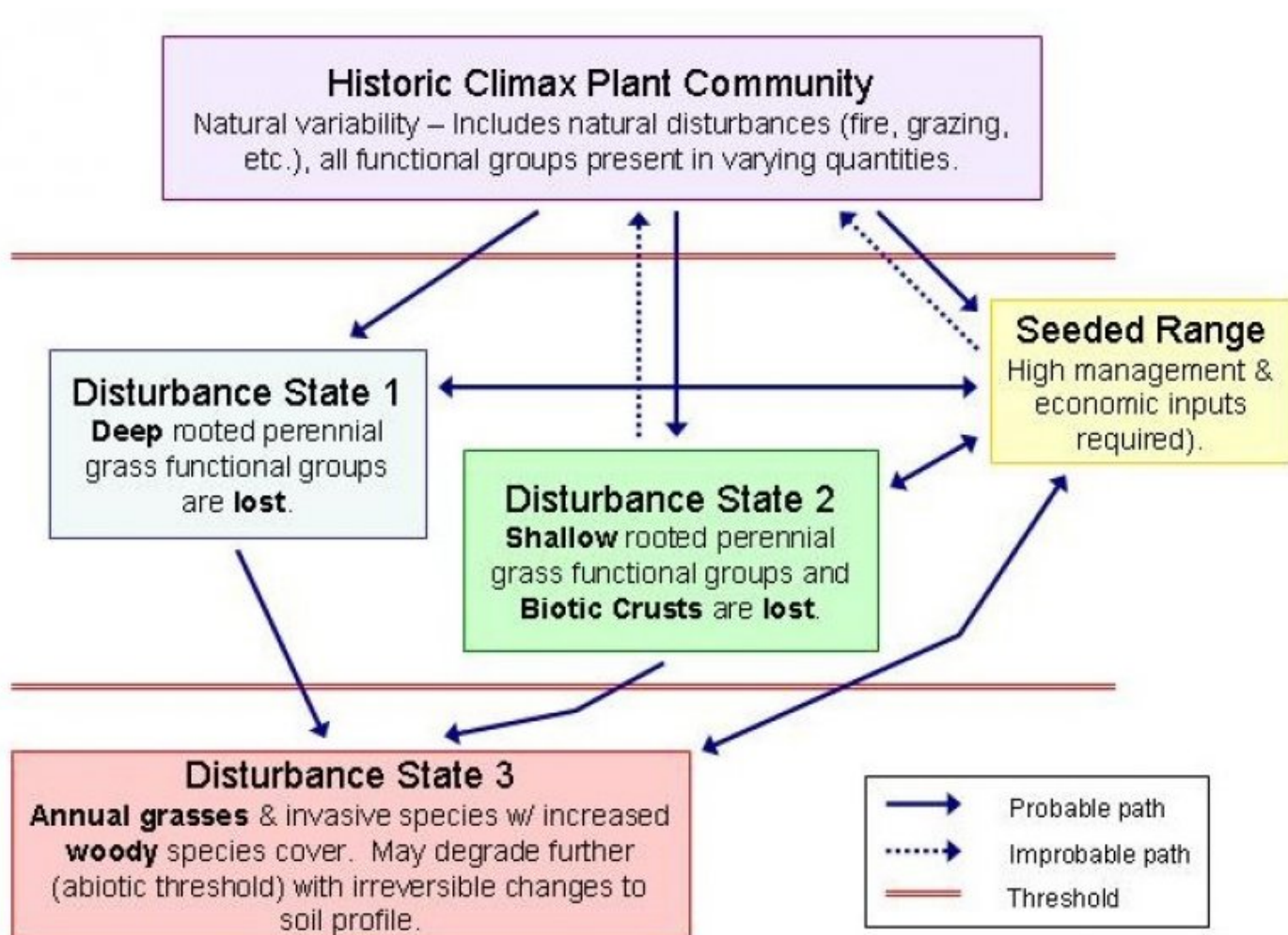
Range In Characteristics:

As a fire influenced site, basin wildrye will increase with periodic fire. Idaho fescue will increase in proportion on more northerly aspects. Bluebunch wheatgrass and Thurber needlegrass will increase on more southerly aspects.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, bluebunch wheatgrass and basin wildrye will decrease. Bluebunch wheatgrass and basin wildrye are the preferred species during the spring. With the increase in bare soil interspaces, annuals may invade. However, a dense annual stand does not form. Under deteriorated conditions, 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
Reference State

Community 1.1

Reference Plant Community

The potential native plant community is dominated by bluebunch wheatgrass and basin wildrye. Sandberg bluegrass, basin big sagebrush, Idaho fescue and Thurber needlegrass 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 60-70 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	810	1080	1350
Shrub/Vine	45	60	75
Forb	45	60	75
Total	900	1200	1500

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial, moderately deep rooted bunchgrass			600–840	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	600–840	–
2	Perennial, deep-rooted bunchgrass			240–480	
	basin wildrye	LECI4	<i>Leymus cinereus</i>	240–480	–
3	Perennial, moderately deep-rooted bunchgrass			24–84	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	12–36	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	12–24	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	0–24	–
4	Perennial, shallow-rooted bunchgrass			12–60	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	12–60	–
Forb					
7	Perennial Forb			36–72	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	12–24	–
	desertparsley	LOMAT	<i>Lomatium</i>	12–24	–
	lupine	LUPIN	<i>Lupinus</i>	12–24	–
9	Other perennial forbs			12–36	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–12	–
	onion	ALLIU	<i>Allium</i>	0–12	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–12	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–12	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	0–12	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–12	–
	phlox	PHLOX	<i>Phlox</i>	0–12	–
	deathcamas	ZIGAD	<i>Zigadenus</i>	0–12	–
Shrub/Vine					
11	Evergreen Shrub			24–60	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	12–36	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	12–24	–
13	Deciduous Shrub			12–24	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	12–24	–
15	Other shrubs			24–60	
	little sagebrush	ARAR8	<i>Artemisia arbuscula</i>	0–24	–
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata ssp. wyomingensis</i>	0–24	–
	rabbitbrush	CHRY9	<i>Chrysothamnus</i>	0–24	–
Tree					
16	Evergreen Tree			0–24	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	0–24	–

Animal community

Livestock grazing:

This site is suited to use by cattle, sheep, and horses in most seasons 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
Hawks
Rodents
Songbirds

This site offers cover and food for mule deer, rodents, and a variety of birds and their associated predators. It is an important wintering area for mule deer.

Hydrological functions

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

Wood products

Where juniper is present it may be a source of firewood, fence posts, and specialty wood.

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
Contact for lead author	State Rangeland Management Specialist for NRCS - Oregon
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 to some, Moderate to 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:** Some to many on shallow rooted perennial grasses and

some shrubs

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:** 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):** Moderately resistant to erosion; aggregate stability = 4-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep, well drained and moderately well drained clays with high shrink-swell potential and revalent soil churning: moderate OM (2-4%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (65-75%) and gentle slopes (0-12%) effectively 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 > Basin wildrye > other dominant grasses > dominant shrubs > forbs > other shrubs > Western Juniper

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: 1800, Normal: 1500, Unfavorable: 1000 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:** Perennial brush species will increase with deterioration of plant community. Western Juniper readily increases on 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
