Ecological site R010XB048OR
JD Loamy South 12-16 PZ

Accessed: 07/27/2024

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.

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 rolling uplands. Slopes range from 12 to 90 percent. Elevation varies from 2700 to 4000 feet.

Table 2. Representative physiographic features

Landforms	(1) Slump
Flooding frequency	None
Ponding frequency	None
Elevation	2,700–4,000 ft
Slope	12–90%
Water table depth	72 in
Aspect	S, SW, W

Climatic features

Elevation and aspect affect precipitation and the relative effectiveness of the precipitation and temperatures. Temperature changes can occur rapidly. In addition, the topography also results in localized cold air drainages, along with occasional cold air entrapment and inversions in the valleys.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	160 days
Precipitation total (average)	16 in

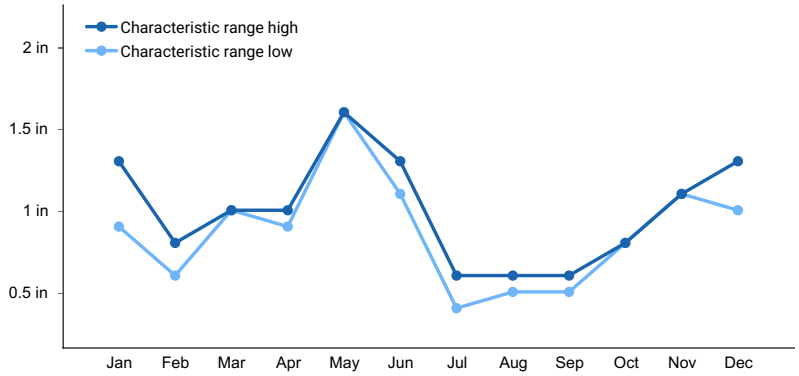


Figure 1. Monthly precipitation range

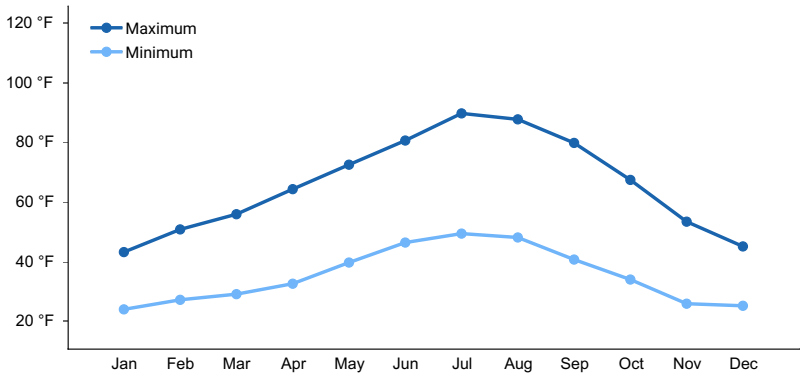


Figure 2. Monthly average minimum and maximum temperature

Influencing water features

Soil features

Soils on this site consist of very deep, well drained soils that formed in colluvium weathered from fractured, exfoliated Basalts.

Table 4. Representative soil features

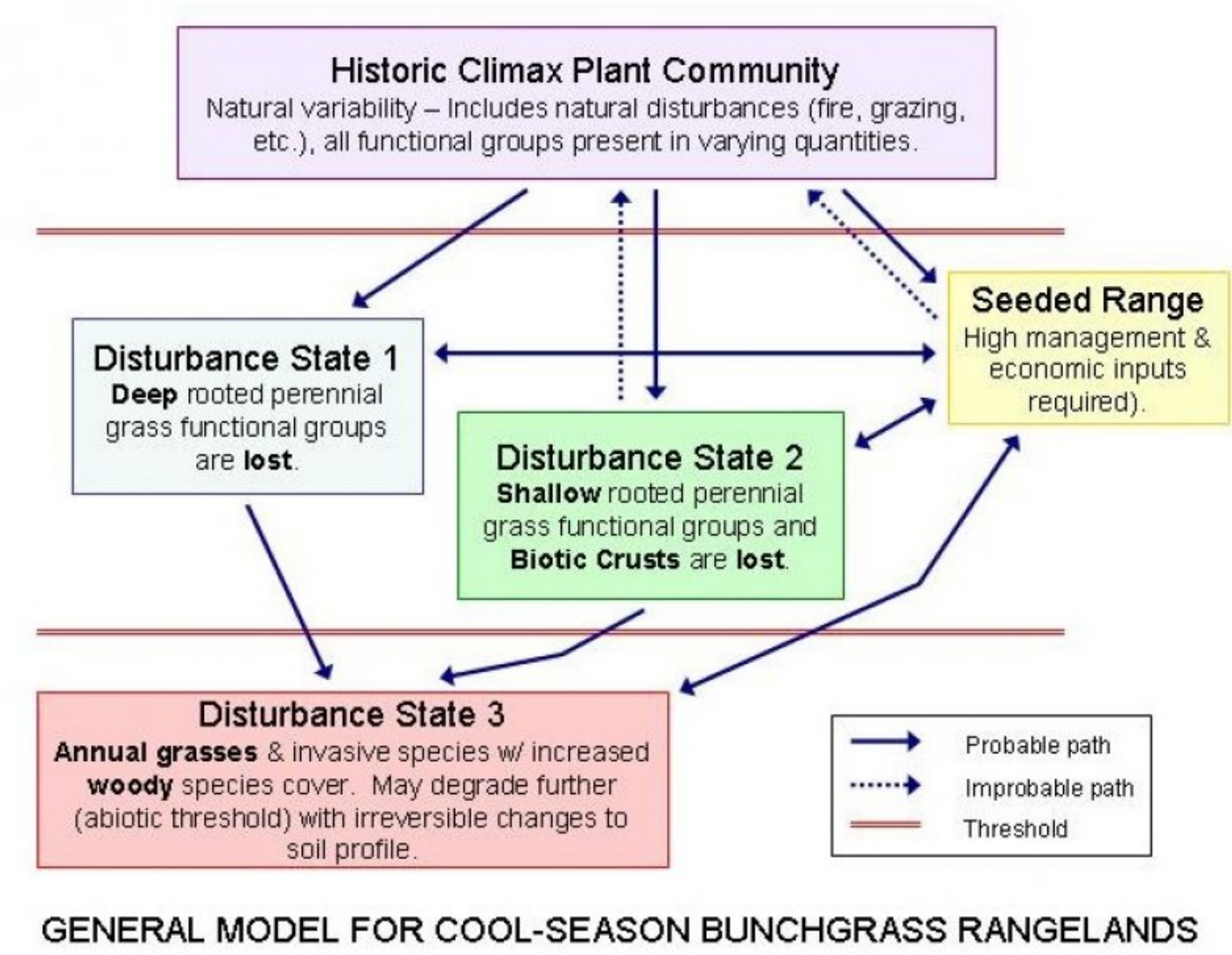
Surface texture	(1) Extremely cobbly sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately rapid
Soil depth	60 in
Surface fragment cover <=3"	10%
Surface fragment cover >3"	15%
Available water capacity (0-40in)	3–6.36 in
Calcium carbonate equivalent (0-40in)	0–8%
Electrical conductivity (0-40in)	0 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8.4

Subsurface fragment volume <=3" (Depth not specified)	60%
Subsurface fragment volume >3" (Depth not specified)	30%

Ecological dynamics

This site occurs on south-facing footslopes of cliffs and on sloping slump benches. Grasses dominate this plant community with forbs and shrubs making up a lesser component. Fluctuations in species composition and relative production may change from year to year dependent upon abnormal precipitation or other climatic factors. The two needlegrass species increase with coarse sandy surfaces. The interpretive plant community for this site is the Historic Climax Plant Community (HCPC).

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
HCPC: PSSP6-ACTH7

Community 1.1
HCPC: PSSP6-ACTH7

This site is dominated by Bluebunch wheatgrass. Forbs and shrubs make up a minor component of this site.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	810	1080	1260
Shrub/Vine	45	60	70
Forb	45	60	70
Total	**900**	**1200**	**1400**

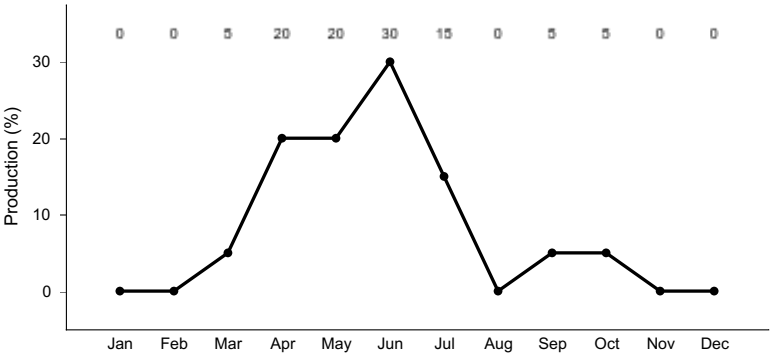


Figure 4. Plant community growth curve (percent production by month). OR4211, B10 JD Loamy South 12-16 A. JD Loamy South 12-16 A, JD Clayey South 12-16, JD Sh. Mtn. So. 12-16, JD Sh. So. 12-16, & JD Ashy So. 12-16 RPC Growth Curve.

State 2
State B: Disturbance (Western juniper/Broom snakeweed/Cheatgrass)

Community 2.1
State B: Disturbance (Western juniper/Broom snakeweed/Cheatgrass)

This site is dominated by Broom snakeweed. Bluebunch wheatgrass decreases and needlegrasses increase. Big sagebrush, Broom snakeweed, Rabbitbrush and Western juniper increase. With further deterioration cheatgrass, mustard and other annuals invade.

Table 6. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	360	480	600
Grass/Grasslike	180	240	300
Forb	60	80	100
Total	**600**	**800**	**1000**

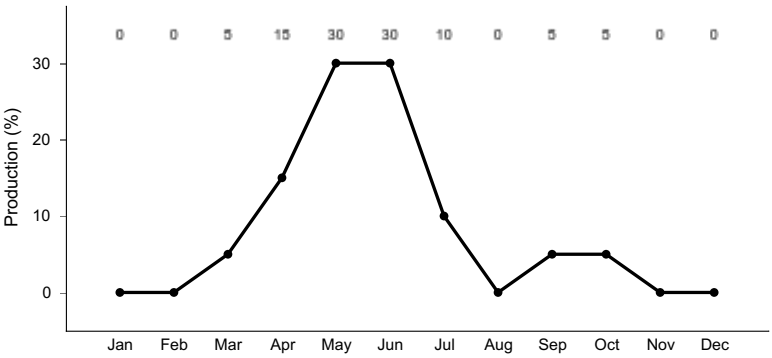


Figure 6. Plant community growth curve (percent production by month). OR4212, B10 JD Loamy South 12-16 B. Disturbance (JUOC/GUSA2/BRTE).

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1				25–50	
	sand dropseed	SPCR	*Sporobolus cryptandrus*	24–120	–
	Sandberg bluegrass	POSE	*Poa secunda*	12–30	–
2				900–150	
	bluebunch wheatgrass	PSSPS	*Pseudoroegneria spicata ssp. spicata*	720–960	–
	Thurber's needlegrass	ACTH7	*Achnatherum thurberianum*	120–360	–
	needle and thread	HECOC8	*Hesperostipa comata ssp. comata*	60–180	–
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	12–30	–
Forb					
3				50–100	
	common yarrow	ACMI2	*Achillea millefolium*	10–25	–
	milkvetch	ASTRA	*Astragalus*	10–25	–
	fleabane	ERIGE2	*Erigeron*	10–25	–
	buckwheat	ERIOG	*Eriogonum*	10–25	–
	desertparsley	LOMAT	*Lomatium*	10–25	–
	phacelia	PHACE	*Phacelia*	10–25	–
Shrub/Vine					
4				50–125	
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	12–30	–
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	12–30	–
	western juniper	JUOC	*Juniperus occidentalis*	10–25	–
	purple sage	SADOI	*Salvia dorrii ssp. dorrii var. incana*	10–25	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	10–25	–

Table 8. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1				200–250	
	cheatgrass	BRTE	*Bromus tectorum*	180–200	–
	Sandberg bluegrass	POSE	*Poa secunda*	70–100	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	50–80	–
2				200–300	
	Thurber's needlegrass	ACTH7	*Achnatherum thurberianum*	210–300	–
	needle and thread	HECOC8	*Hesperostipa comata ssp. comata*	100–150	–
	bluebunch wheatgrass	PSSPS	*Pseudoroegneria spicata ssp. spicata*	60–100	–
Forb					
3				20–60	
	mustard	BRASS2	*Brassica*	10–25	–
Shrub/Vine					
4				150–250	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	60–100	–
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	60–100	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	40–80	–
	western juniper	JUOC	*Juniperus occidentalis*	40–80	–
	purple sage	SADOI	*Salvia dorrii ssp. dorrii var. incana*	20–40	–

Animal community

Grazing- Livestock grazing is suitable for this site as long as management objectives include the improvement or maintenance of this site. It is easy to overuse this site and cause a shift in vegetation that is difficult to change. This site has the potential to produce a large amount of high quality forage. Management should be aimed at harvesting the forage as quickly as possible, letting the site recover from the grazing event prior to fall dormancy. Initial stocking rates will be determined with the landowner or decisionmaker. They will be based on past use histories and type and condition of the vegetation. Calculations used to determine an initial starting stocking rate will be based on forage preference ratings.
Wildlife- The main wildlife species of concern on this site are large herbivores. These are mule deer and elk. These wildlife species can possibly overuse this site before the time cattle or sheep are planned to be grazed. Being an open grassland, this site is home to a variety of small herbivores, birds, and their associated predators. This site is mainly a foraging area for the larger wildlife. No threatened or endangered wildlife species rely on this site for any of thier habitat requirements.

Hydrological functions

The site has a high potential in low seral condition to produce significant run-off to receiving waters. The hydrology of this site is characterized by high intensity thunderstorms during the summer months and by low intensity frontal storms during the winter.

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 control.

Type locality

Location 1: Grant County, OR	
Township/Range/Section	T11S R26E S9
Latitude	44° 37′ 50″
Longitude	119° 36′ 16″
General legal description	Approximately 9 miles south of Kimberly or about 6.5 miles north of the junciton of Highways 19 and 26 along the eastern edge of Devils Gulch; 1700 feet east and 2300 feet south of the NW corner of section 9(SE1/4 NW 1/4), T11S, R26E

Other references

Soil Conservation Service, Relative Forage Preference of Plants for Grazing Use by Season, Range Technical Note No.16, 1982
Western Regional Climate Center, NOAA, National Weather Service, Portland, OR.
web site- http://nimbo.wrh.noaa.gov/Portland/climate.html
Natural Vegetation of Oregon and Washington, Jerry F. Franklin and C.T. Dyrness.
The Ecological Provinces of Oregon, E. William Anderson, Michael M. Borman, and William C. Krueger

Contributors

Ed Petersen, Rangeland Management Specialist, John Day Field Office And Alan Bahn, Rangeland Management Specialist, Baker City Field Office

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 Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to some on steeper slopes, significant sheet & rill erosion hazard

---

2. **Presence of water flow patterns:** None to some 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):** 10-20%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to some, 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):** Slightly resistant to erosion: aggregate stability = 2-4

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very deep, well drained extremely cobbly sandy loams: 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 (50-60%) and gentle to extreme slopes (12-90%) moderately to slightly 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 > Thurber needlegrass > other grasses > shrubs > 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):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1400, Normal: 1200, Unfavorable: 900 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:** 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