

Ecological site R010XB024OR

JD Warm Ashy Claypan 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

R010XB034OR	JD Loamy 9-12 PZ Loamy 10-12 PZ
R010XB064OR	JD North 9-12 PZ Droughty North 9-12" PZ

Similar sites

R023XY216OR	CLAYPAN 12-16 PZ Clayey 10-16 PZ
R023XY511OR	JUNIPER LAVA BENCHES 9-12 PZ Juniper Lava Benches

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on hills, ridge slopes, upland terraces, and small basins. Slopes typically range from 0-20 percent but some short slopes may reach 35 percent or more. Elevations range from 3,000 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Terrace (3) Ridge
Elevation	3,000–4,500 ft
Slope	0–20%
Water table depth	60 in
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation typically ranges from 10 to 12 inches, but reaches 15 in places. It occurs mainly between the months of October and June, mostly in the form of rain and snow. The soil temperature regime is mesic. The average annual air temperature is 48 degrees F with extreme temperatures ranging from -20 to 108 degrees F. The frost free period is 90 to 120 days. The optimum period for plant growth is late March through June.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	0 days
Precipitation total (average)	12 in

Influencing water features

Soil features

The soils of this site are very deep, well-drained, and have a medium textured surface. They are generally formed from loess over colluvium. Permeability is slow and the available water holding capacity (AWC) is 5.0 to 10.0 inches for the profile.

Table 4. Representative soil features

Drainage class	Well drained
Permeability class	Slow
Available water capacity (0-40in)	5–10 in

Ecological dynamics

Range in Characteristics:

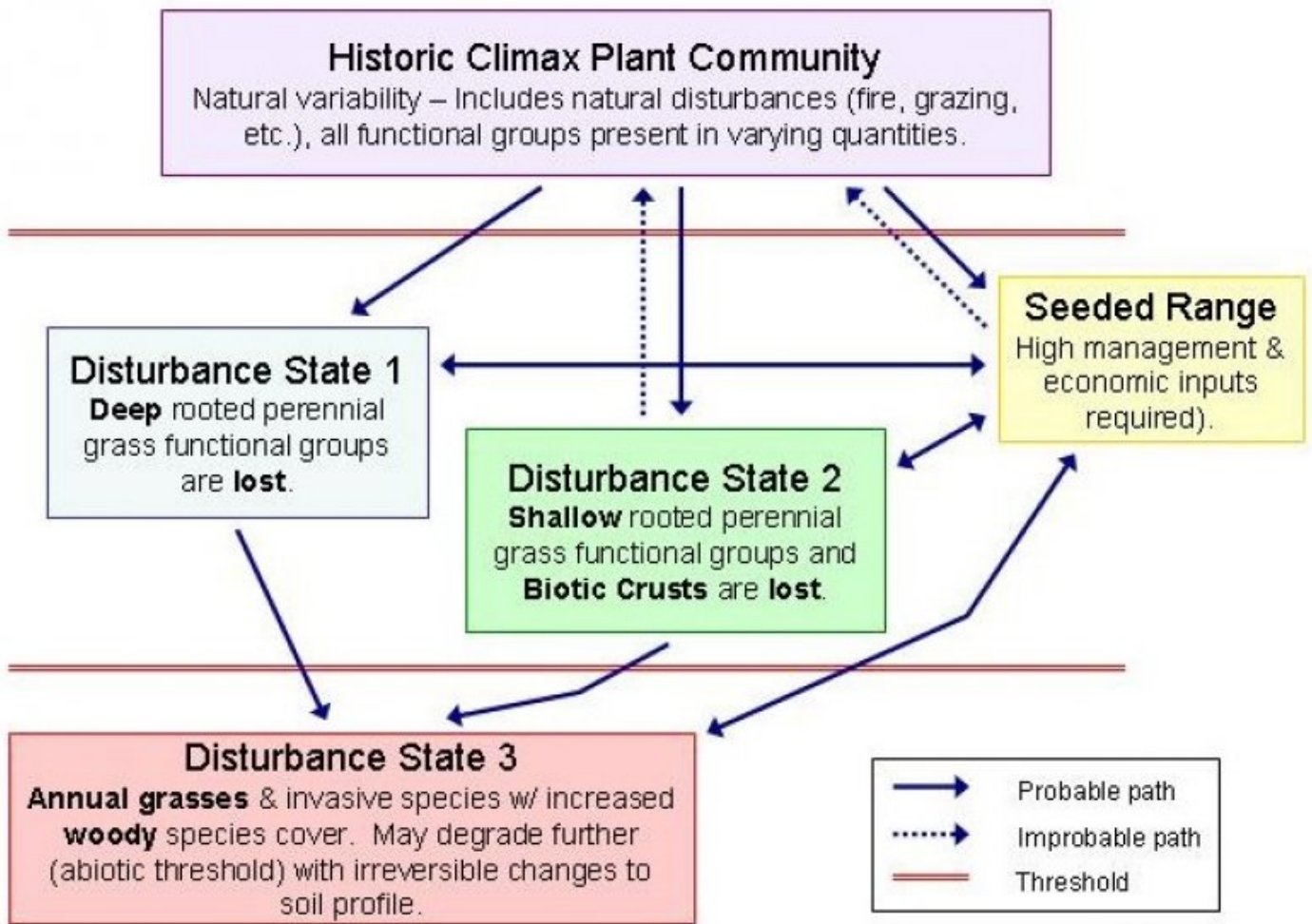
South aspects will have more bluebunch wheatgrass and less Idaho fescue than typical. North slopes will produce a higher percentage of Idaho fescue and less bluebunch wheatgrass.

Response to Disturbance and Invader Species:

Burning decreases juniper, low sagebrush, bitterbrush, and Idaho fescue. Overgrazing results in a decrease in Idaho fescue and an increase in Sandberg Bluegrass. Further deterioration will result in an increase of squirreltail,

California brome, cheatgrass, pepperweed, collinsia, low larkspur, and deathcamas.

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 western juniper, low sagebrush, and Idaho fescue. Bluebunch wheatgrass and Sandberg bluegrass are common along with a variety of forbs such as fleabane, lupine, pussytoes, yarrow, aster, and spreading phlox. Bitterbrush is usually present. Vegetative composition is approximately 75 percent grasses, 5 percent forbs, and 20 percent shrubs/trees. Total foliar cover is about 70 percent, of which 10 percent is tree cover, 10 percent is shrub cover, and 50 percent is grass/forb cover.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	282	440	594
Shrub/Vine	72	110	150
Forb	24	42	60
Tree	18	25	30
Total	396	617	834

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, deep-rooted, dominant			240–480	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	180–300	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	60–180	–
2	Perennial, deep-rooted, sub-dominant			6–12	
	sedge	CAREX	<i>Carex</i>	6–12	–
4	Perennial, shallow-rooted, sub-dominant			36–102	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	30–90	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	6–12	–
Forb					
7	Perennial, all, dominant			18–36	
	fleabane	ERIGE2	<i>Erigeron</i>	6–12	–
	lupine	LUPIN	<i>Lupinus</i>	6–12	–
	spreading phlox	PHDI3	<i>Phlox diffusa</i>	6–12	–
9	Other annual forbs, all			6–24	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–5	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–5	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–5	–
	aster	EUCEP2	<i>Eucephalus</i>	0–5	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–5	–
Shrub/Vine					
11	Perennial, evergreen, dominant			60–90	
	little sagebrush	ARAR8	<i>Artemisia arbuscula</i>	60–90	–
12	Perennial, evergreen, sub-dominant			12–60	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata ssp. vaseyana</i>	6–30	–
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	6–30	–
Tree					
16	Perennial, evergreen, dominant			18–30	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	18–30	–

Animal community

Livestock Grazing:

The key forage species is Idaho fescue. Use should be postponed until the soils are firm enough to avoid trampling damage and soil compaction.

Native Wildlife Associated with the Climax Community:

Mule deer
Coyotes
Rabbits
Rodents

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

Hydrological functions

The soils of this site have low infiltration rates and high runoff potential.

Wood products

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

Other information

For range seedings, recommended species include crested wheatgrass, pubescent wheatgrass, sear bluebunch wheatgrass, tall wheatgrass, and sheep fescue. 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 and 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
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, slight to moderate sheet & rill erosion hazard

2. **Presence of water flow patterns:** None

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:** None

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, slight 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 = 3-5

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very deep, well drained silt 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 (60-70%) and gentle slopes (0-20%) 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: Idaho fescue > Bluebunch wheatgrass > Low sagebrush > other grasses > other 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: 800, 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:** 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
