

Ecological site R010XA001OR

Loamy 8-10 PZ

Accessed: 04/29/2024

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.



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

R010XA002OR	Juniper Shrubby Pumice Hills 8-10 PZ
R010XA007OR	Juniper Pumice South 9-12 PZ
R010XA083OR	Juniper Shrubby North 9-12 PZ

Similar sites

R010XA018OR	Juniper Shrubby Loam 10-12 PZ
R010XA019OR	Shrubby Loam 8-12 PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> ssp. <i>tridentata</i>
Herbaceous	(1) <i>Pseudoroegneria spicata</i> ssp. <i>spicata</i> (2) <i>Poa sandbergii</i>

Physiographic features

This site occurs on plateaus, ridgetops and gently sloping areas.

Table 2. Representative physiographic features

Landforms	(1) Plateau (2) Ridge
Elevation	305–914 m
Slope	0–15%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 8 to 10 inches which occurs mainly between the months of October and June, mostly in the form of rain. The soil temperature regime is mesic. The average annual air temperature is 49 degrees F. with extreme temperatures ranging from -26 to 104 degrees F. The frost free period is 90 to 140 days. The optimum period for plant growth is from mid-March through June.

Table 3. Representative climatic features

Frost-free period (average)	140 days
Freeze-free period (average)	0 days
Precipitation total (average)	254 mm

Influencing water features

Soil features

The soils of this site are shallow to moderately deep and well drained. They have loam or sandy loam surface textures and subsoils that range from sandy loam to clay. They are generally formed in colluvium and/or semi-consolidated sediments with additions of ash. Permeability is moderate and the available water holding capacity is 3 to 6 inches for the profile. The potential for wind erosion is high.

Table 4. Representative soil features

Surface texture	(1) Loam (2) Sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	51–102 cm
Available water capacity (0-101.6cm)	7.62–15.24 cm

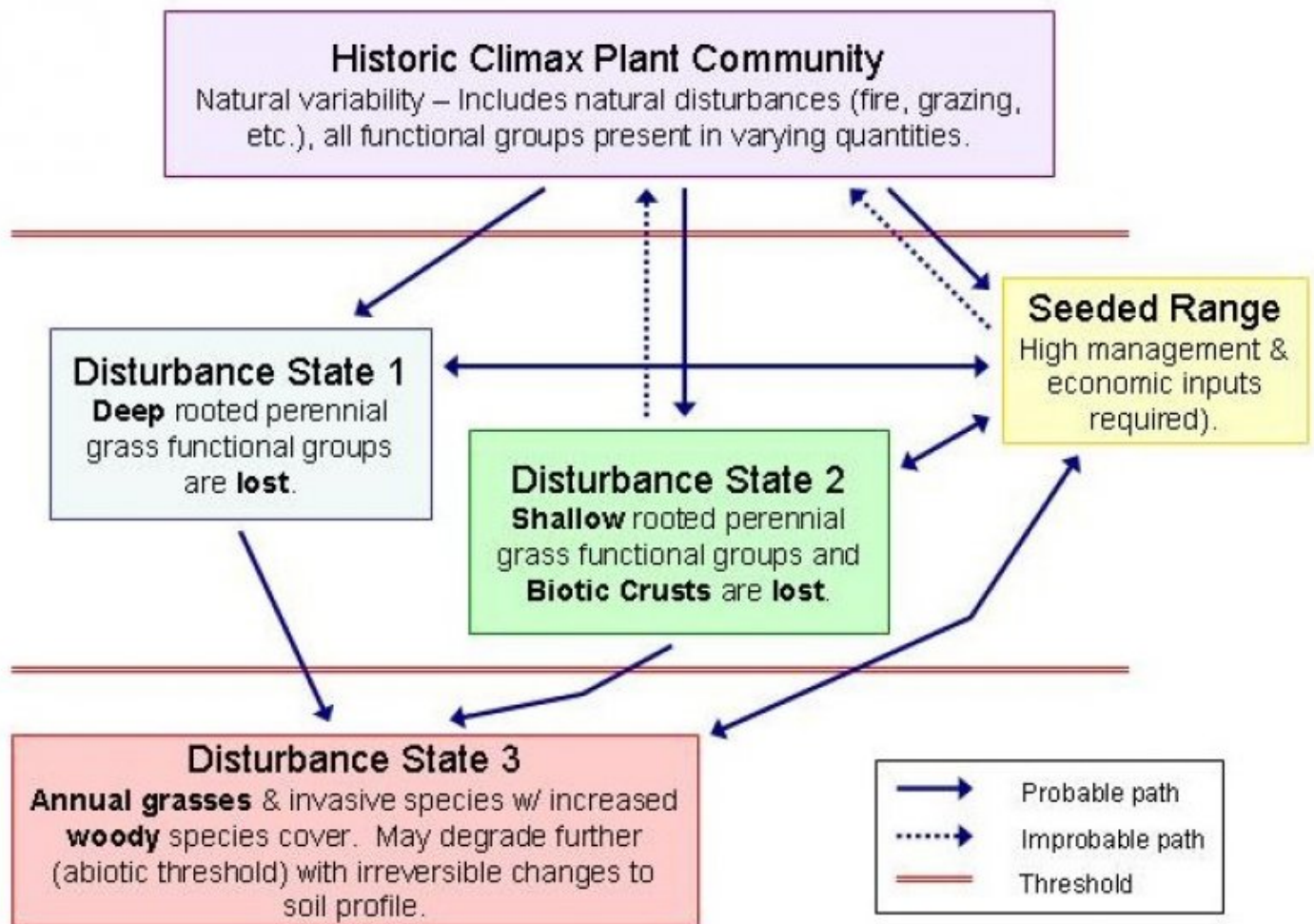
Ecological dynamics

Burning results in a decline or loss of big sagebrush, western juniper and bitterbrush, and is followed by increases in rabbitbrush and horsebrush.

Increasers and invaders include broom snakeweed, cheatgrass, annual fescue, filaree, bottlebrush squirreltail, mustard, and groundsmoke.

Idaho fescue and/or bitterbrush are greater in abundance than stated above when the soil is higher in sand content.

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 a sparse stand of western juniper and basin big sagebrush. Bluebunch wheatgrass and Sandberg bluegrass are prominent grasses on this site. Minor amounts of bitterbrush, Idaho fescue and Indian ricegrass may occur.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	696	807	918
Shrub/Vine	71	131	192
Forb	10	40	71
Tree	20	36	50
Total	797	1014	1231

Figure 4. Plant community growth curve (percent production by month).
 OR4001, B10A Mesic, Low Elev., N/A, Sandy, Good Condition. B10A Mesic,
 Low Elev., N/A, Sandy, Good Condition RPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	20	55	15	5	0	0	0	0	0

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	Dominant deep rooted perennial grasses			555–656	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	555–656	–
2	Sub-dominant deep rooted perennial grasses			40–111	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	10–50	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	10–20	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	10–20	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	10–20	–
3	Dominant shallow rooted perennial grasses			101–151	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	101–151	–
Forb					
9	Other perennial forbs			10–71	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–6	–
	agoseris	AGOSE	<i>Agoseris</i>	0–6	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–6	–
	Palouse milkvetch	ASAR7	<i>Astragalus arrectus</i>	0–6	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	0–6	–
	mariposa lily	CALOC	<i>Calochortus</i>	0–6	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	0–6	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–6	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–6	–
	snow buckwheat	ERNI2	<i>Eriogonum niveum</i>	0–6	–
	fernleaf biscuitroot	LODI	<i>Lomatium dissectum</i>	0–6	–
	lupine	LUPIN	<i>Lupinus</i>	0–6	–
	spreading phlox	PHDI3	<i>Phlox diffusa</i>	0–6	–
	yellow salsify	TRDU	<i>Tragopogon dubius</i>	0–6	–
Shrub/Vine					
11	Dominant evergreen shrubs			50–151	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	50–151	–
12	Sub-dominant evergreen shrubs			10–20	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	10–20	–
15	Other shrubs			10–20	
	slender buckwheat	ERMI4	<i>Eriogonum microthecum</i>	0–6	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–6	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–6	–
	spineless horsebrush	TECA2	<i>Tetradymia canescens</i>	0–6	–
Tree					
16	Dominant evergreen trees			20–50	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	20–50	–

Animal community

Mule deer use this site as winter range.

Hydrological functions

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

Wood products

Juniper firewood

Other products

Overgrazing reduces bluebunch wheatgrass and Idaho fescue, and encourages increases in sagebrush, rabbitbrush, Sandberg bluegrass, yarrow, milkvetch, fleabane, and hawksbeard.

Other information

Adapted species for range seedings include crested wheatgrass, Siberian wheatgrass, pubescent wheatgrass, tall wheatgrass, and Paiute orchardgrass.

Other references

This site also associated with B10B site Droughty North 9-12 PZ #010XB084OR

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	07/30/2012
Approved by	Bob Gillaspay
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None, slight sheet & rill erosion hazard
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2. **Presence of water flow patterns:** None
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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):** 5-10%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to some, Severe 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):**
Moderately deep to shallow, well drained loams and sandy loams; low OM (1-3%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (55-65%) and level to gently rolling slopes (2-15%) 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 > Sandberg bluegrass > Basin big sagebrush > forbs > Idaho fescue = Western Juniper > other grasses = Antelope bitterbrush = other 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):** In most areas

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1100, Normal: 900, Unfavorable: 700 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
