

Ecological site R021XY308OR **SOUTH SLOPES 14-18 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.

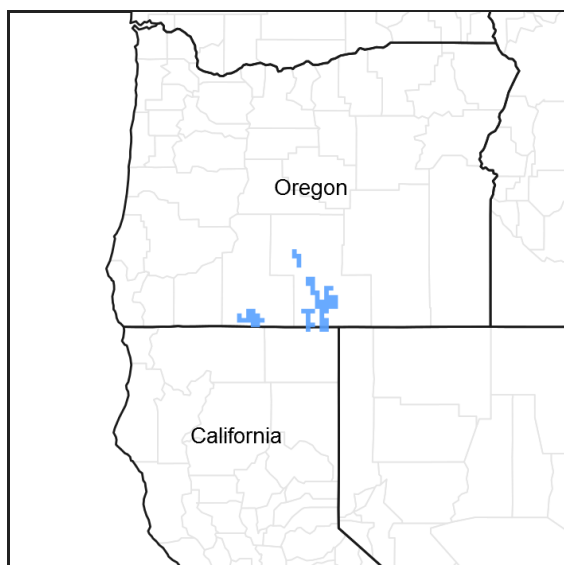


Figure 1. Mapped extent

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

R021XY210OR	LOAMY 14-18 PZ
R021XY214OR	CLAYPAN 14-18 PZ
R021XY216OR	STONY CLAYPAN 14-20 PZ
R021XY306OR	STONY CLAYPAN SOUTH 14-18 PZ

Similar sites

R021XY200OR	LOAMY 10-14 PZ Lower precipitation.
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on south exposures of mountain sideslopes. Slopes range from 15 to 70%, but slopes of 30 to 70% are most typical. Elevations range from 4400 to 6500 feet, but are typically above 4700 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountainside
Elevation	1,341–1,981 m
Slope	15–70%
Aspect	S

Climatic features

The annual precipitation ranges from 14 to 18 inches, most of which occurs in the form of snow during the months of October through April. Spring rains are common. The soil temperature regime is mesic to frigid. Temperature extremes range from 100 to -30 degrees F. The frost-free period ranges from 50 to 120 days. The optimum period for plant growth is from early April to early July.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	150 days
Precipitation total (average)	457 mm

Influencing water features

Soil features

The soils of this site are well drained, have a loamy surface texture, and contain 1 to 3 percent organic matter and over 35 percent rock fragments (primarily stones) in the surface. The soils lack root restrictive layers within the upper 10 inches or more of this soil surface. The subsoil textures and rock fragment content are variable. The soils range in depth from 10 to over 60 inches deep to bedrock. Runoff is medium to rapid. Erosion hazard by water is moderate to high.

Table 4. Representative soil features

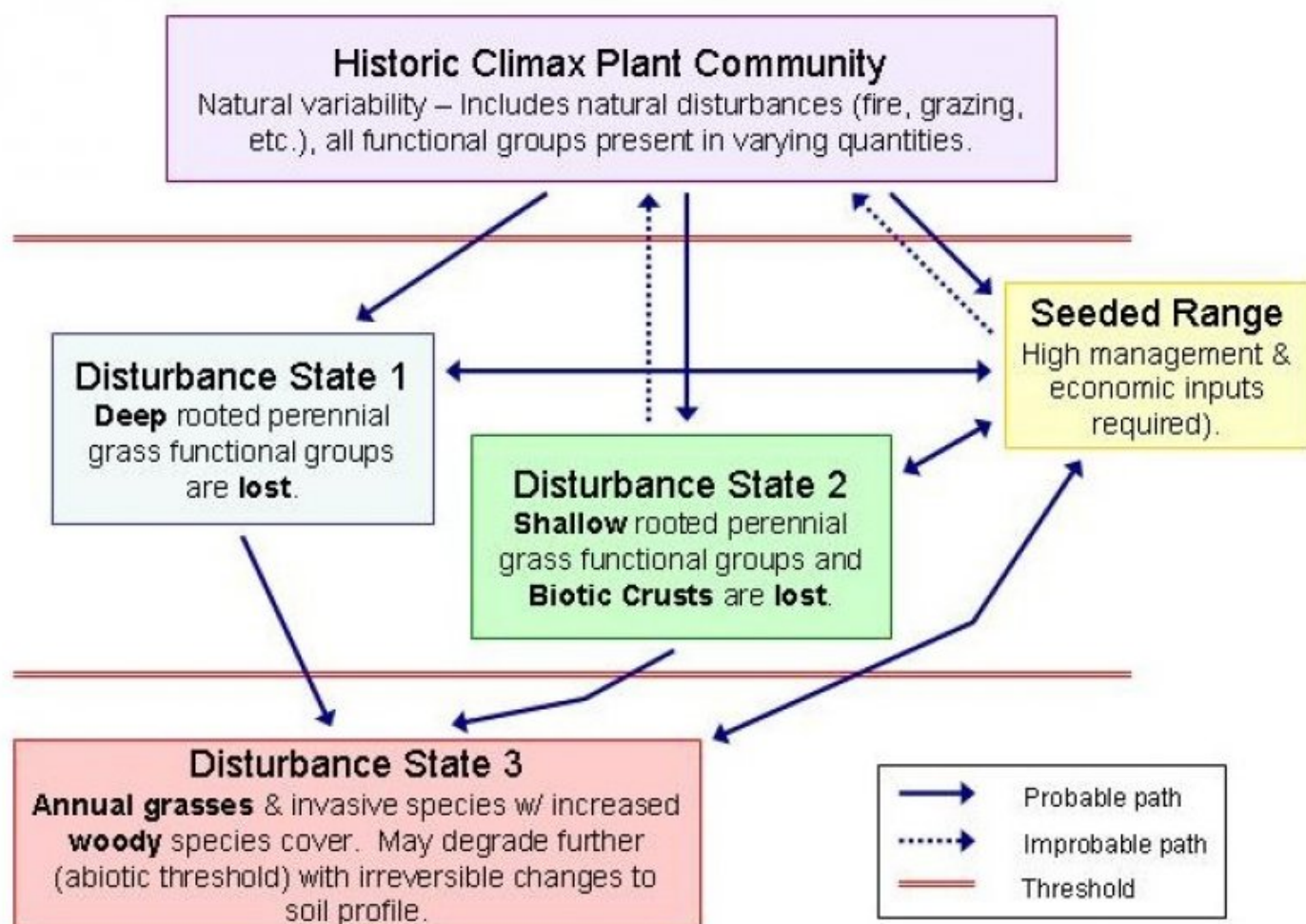
Surface texture	(1) Loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	25–152 cm
Surface fragment cover >3"	35%
Available water capacity (0-101.6cm)	0 cm
Calcium carbonate equivalent (0-101.6cm)	0%
Electrical conductivity (0-101.6cm)	0 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	7

Ecological dynamics

Bluebunch wheatgrass is the dominant grass, however Thurber needlegrass is more prevalent at lower elevation and precipitation ranges of this site. Idaho fescue, mountain brome, oniongrass and big bluegrass increase in the plant community with an increase in elevation and higher annual precipitation.

If the condition of the site deteriorates as a result of overgrazing, mountain big sagebrush increases and will become dominant with rabbitbrush and arrowleaf balsamroot. Cheatgrass and western juniper are likely to invade this site. In the absence of fire, western juniper may establish and increase on the site.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC, PSSP6/ARTRV-PUTR2

Community 1.1

HCPC, PSSP6/ARTRV-PUTR2

The potential native plant community is dominated by bluebunch wheatgrass and Idaho fescue although mountain big sagebrush and antelope bitterbrush may be prevalent enough to dominate the aspect. Vegetative composition of the community is approximately 70% grasses, 10% forbs, and 20% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	504	742	979
Shrub/Vine	91	197	303
Forb	50	106	161
Tree	20	61	101
Total	665	1106	1544

Figure 4. Plant community growth curve (percent production by month).
OR5554, D21 Mid Elev., South, Good Condition. HCPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	10	45	40	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			404–605	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	404–605	–
2	Sub-dominant deep rooted perennial grasses			30–121	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	20–101	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	10–20	–
4	Sub-dominant shallow rooted perennial grasses			50–101	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	50–101	–
5	Other perennial grasses			20–151	
	Lemmon's needlegrass	ACLE8	<i>Achnatherum lemmonii</i>	0–6	–
	western needlegrass	ACOC3	<i>Achnatherum occidentale</i>	0–6	–
	mountain brome	BRMA4	<i>Bromus marginatus</i>	0–6	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–6	–
	oniongrass	MEBU	<i>Melica bulbosa</i>	0–6	–
	Cusick's bluegrass	POCU3	<i>Poa cusickii</i>	0–6	–
Forb					
7	Dominant perennial forbs			17–50	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	20–50	–
8	Sub-dominant perennial forbs			20–61	
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	10–30	–
	lupine	LUPIN	<i>Lupinus</i>	10–30	–
9	Other perennial forbs			10–50	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–6	–
	pussytoes	ANTEN	<i>Antennaria</i>	0–6	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–6	–
	naked mariposa lily	CANU2	<i>Calochortus nudus</i>	0–6	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–6	–

	buckwheat	ERIOG	<i>Eriogonum</i>	0–6	–
	oneflower helianthella	HEUN	<i>Helianthella uniflora</i>	0–6	–
	desertparsley	LOMAT	<i>Lomatium</i>	0–6	–
	phacelia	PHACE	<i>Phacelia</i>	0–6	–
	phlox	PHLOX	<i>Phlox</i>	0–6	–
	goatsbeard	TRAGO	<i>Tragopogon</i>	0–6	–
	woolly mule-ears	WYMO	<i>Wyethia mollis</i>	0–6	–
Shrub/Vine					
11	Dominant evergreen shrubs			50–101	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	50–101	–
13	Dominant deciduous (or 1/2 shrubs) shrubs			20–101	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	20–101	–
15	Other shrubs			20–101	
	Saskatoon serviceberry	AMAL2	<i>Amelanchier alnifolia</i>	0–6	–
	little sagebrush	ARAR8	<i>Artemisia arbuscula</i>	0–6	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	0–6	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–6	–
	wild crab apple	PERA4	<i>Peraphyllum ramosissimum</i>	0–6	–
	Klamath plum	PRSU2	<i>Prunus subcordata</i>	0–6	–
	currant	RIBES	<i>Ribes</i>	0–6	–
	wax currant	RICE	<i>Ribes cereum</i>	0–6	–
	spineless horsebrush	TECA2	<i>Tetradymia canescens</i>	0–6	–
Tree					
16	Dominant evergreen trees			20–101	
	western juniper	JUOC	<i>Juniperus occidentalis</i>	20–101	–

Animal community

Wildlife- Heavily utilized winter and spring range of bighorn sheep. Preferred habitat of chukar.

Hydrological functions

The soils are in hydrologic groups B, C and D.

Recreational uses

The diversity of vegetation and native wildlife associated with this site provide many opportunities of enjoyment for recreationists, photographers and hunters.

Wood products

Where western juniper occurs, this site yeields fence posts, firewood and specialty products.

Other products

Livestock grazing- This site is suitable for livestock grazing use in spring, summer and fall. At slopes greater than 50%, cattle use will be reduced.

Other information

Increase in western juniper and the subsequent competition for moisture will lead to a reduction of soil cover and accelerated soil loss. Improving infiltration and permeability, and reducing runoff should be the immediate goal of juniper 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
Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	08/22/2012
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:** Some in interspaces on steeper slopes (15-70%)

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3. **Number and height of erosional pedestals or terracettes:** None

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-15%

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None, slight wind erosion hazard

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement

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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 = 4-6
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Shallow to deep, well drained stony loams (35+% surface rock fragments): Moderate OM (1-3%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate vegetative cover (40-60%) reduces potential excess run off on all but steepest slopes (15-70%); infiltration is moderately slow
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None
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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 > Mountain big sagebrush > Idaho fescue = Antelope bitterbrush > dominant forbs > other shrubs > other 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
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14. **Average percent litter cover (%) and depth (in):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1200, Normal: 900, Unfavorable: 600 lbs/acre/year at high RSI (HCPC)
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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 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
