

Ecological site R021XY206OR

DEEP LOAMY 10-14 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

R021XY204OR	SHALLOW STONY 10-20 PZ
R021XY300OR	SOUTH SLOPES 10-14 PZ
R021XY302OR	NORTH SLOPE 10-14 PZ

Similar sites

R021XY200OR	LOAMY 10-14 PZ Thinner surface
R021XY210OR	LOAMY 14-18 PZ Thinner surface

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on terraces and alluvial fans. Slopes range from 0 to 35 percent, but typically are less than 15 percent.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Alluvial fan
Elevation	1,250–1,524 m
Slope	0–35%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 10 to 14 inches, most of which occurs in the form of snow during the months of October through April. The soil temperature regime is mesic with the mean annual air temperature of about 47 degrees F. Temperature extremes range from 100 to -30 degrees F. The frost free period ranges from 70 to 120 days. The optimum period for plant growth is from mid-April to late June.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	0 days
Precipitation total (average)	356 mm

Influencing water features

Soil features

The soils of this site are deep and well drained. Typically the surface layer is loam and the subsoil is loam or clay loam. Organic matter content is over 1% in the upper 20 inches. Permeability is moderate to moderately slow. The available water holding capacity is 8 to 12 inches. Runoff is slow to medium. Erosion hazard by water is slight to moderate.

Table 4. Representative soil features

Surface texture	(1) Loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately slow to moderate
Soil depth	152 cm
Available water capacity (0-101.6cm)	20.32–30.48 cm

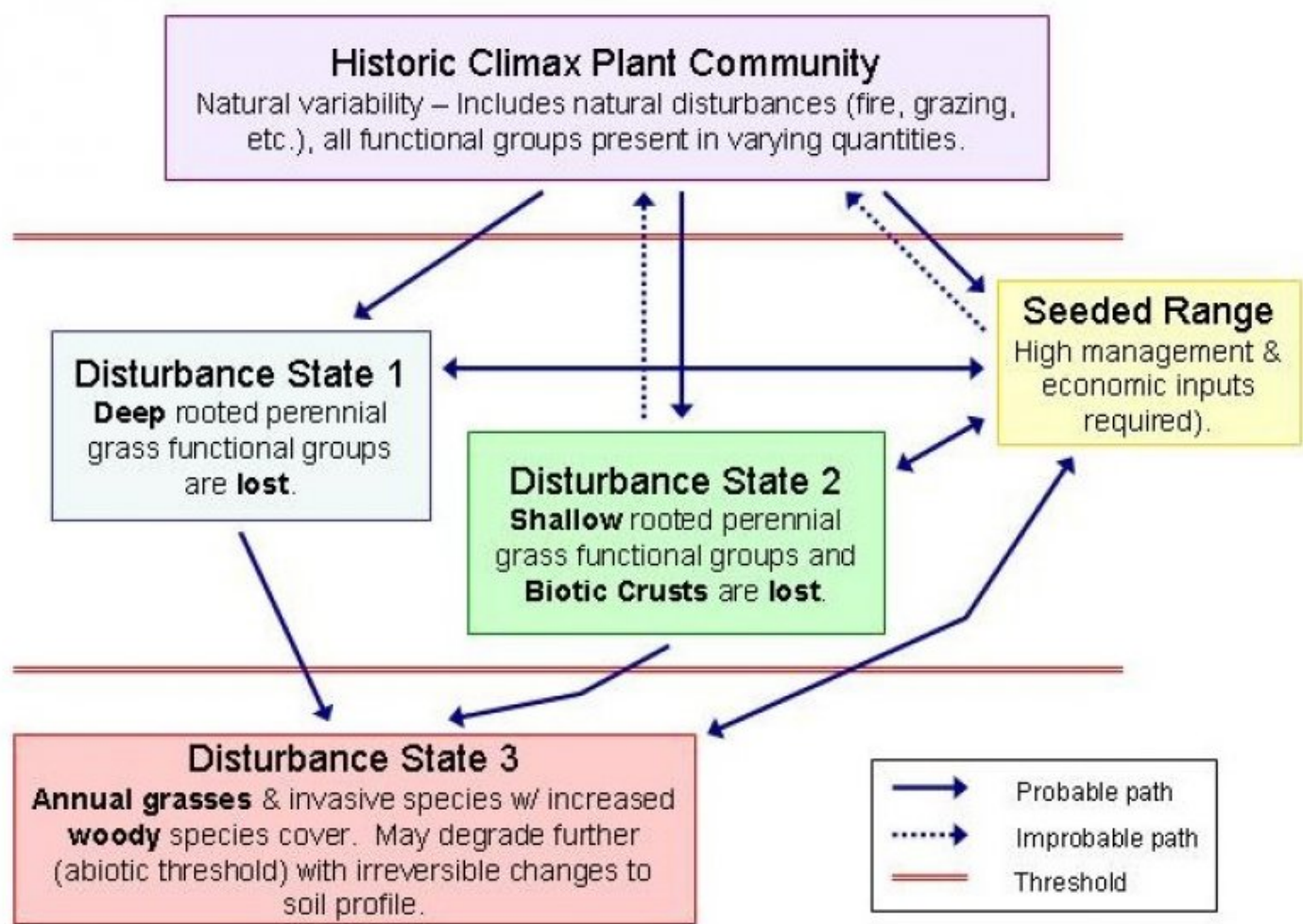
Ecological dynamics

If the condition of the site deteriorates as a result of overgrazing, big sagebrush, horseshoe, and rabbitbrush will become dominant on the site. Bitterbrush, bluebunch wheatgrass and Idaho fescue will decrease. Sandberg bluegrass, squirreltail and unpalatable forbs will increase in the understory. Cheatgrass and annual forbs will invade the site. Juniper may invade from adjoining sites.

This site is typically dominated by bluebunch wheatgrass. Basin wildrye and Idaho fescue are common. On steep

slopes that tend toward a northerly exposure, Idaho fescue may increase.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1
HCPC, PSSP6-LECI4/PUTR2-ARTRT

Community 1.1
HCPC, PSSP6-LECI4/PUTR2-ARTRT

The potential native plant community is dominated by bluebunch wheatgrass. Basin wildrye is prominent. Idaho fescue and Canby bluegrass are common. Antelope bitterbrush dominates the aspect and basin big sagebrush occurs. 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	874	1152	1429
Shrub/Vine	219	319	420
Forb	101	177	252
Total	1194	1648	2101

Figure 4. Plant community growth curve (percent production by month).
OR5511, D21 Low Elev., NA, Good Condition. RPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	15	30	50	5	0	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			673–1009	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	420–588	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	252–420	–
2	Sub-dominant deep rooted perennial grasses			84–168	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	84–168	–
4	Sub-dominant shallow rooted perennial grasses			84–168	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	84–168	–
5	Other perennial grasses			34–84	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	0–6	–
	sedge	CAREX	<i>Carex</i>	0–6	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–6	–
Forb					
7	Dominant perennial forbs			84–168	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	17–34	–
	agoseris	AGOSE	<i>Agoseris</i>	17–34	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	17–34	–
	fewflower pea	LAPA5	<i>Lathyrus pauciflorus</i>	17–34	–
	lupine	LUPIN	<i>Lupinus</i>	17–34	–
9	Other perennial forbs			17–84	
	mariposa lily	CALOC	<i>Calochortus</i>	0–6	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–6	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	0–6	–
	Scouler's woollyweed	HISC2	<i>Hieracium scouleri</i>	0–6	–
	nineleaf biscuitroot	LOTR2	<i>Lomatium triternatum</i>	0–6	–
Shrub/Vine					
12	Sub-dominant evergreen shrubs			34–84	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	34–84	–
13	Dominant deciduous (or 1/2 shrubs) shrubs			168–252	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	168–252	–
15	Other shrubs			17–84	
	Saskatoon serviceberry	AMAL2	<i>Amelanchier alnifolia</i>	0–6	–
	green rabbitbrush	ERTE18	<i>Ericameria teretifolia</i>	0–6	–
	Klamath plum	PRSU2	<i>Prunus subcordata</i>	0–6	–
	wax currant	RICE	<i>Ribes cereum</i>	0–6	–
	littleleaf horsebrush	TEGL	<i>Tetradymia glabrata</i>	0–6	–

Animal community

This site offers forage for pronghorn antelope and mule deer and limited cover for various bird species.

Hydrological functions

The soils are in hydrologic group B.

Other products

This site is suited to livestock grazing during spring and fall under a planned grazing system.

Contributors

Barrett, Carlson
E Ersch (OSU)
K.Kennedy

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	08/21/2012
Approved by	Bob Gillaspy
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):** 5-10%

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
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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):** Slightly to moderately resistant to erosion: aggregate stability = 4-5
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep, well drained loams, fine sandy loams, and silt loams: Moderate to high OM (3-5%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (60-70%) limits rainfall impact and overland flow (slightly higher hazard on steeper slopes (to 35%))
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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 > Basin wildrye > Antelope bitterbrush > other grasses > forbs > Basin big sagebrush > 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
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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: 2000, Normal: 1500, Unfavorable: 900 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
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