

Ecological site R021XY210OR
LOAMY
14-18 PZ

Accessed: 08/10/2026

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.

Associated sites

R021XY308OR	SOUTH SLOPES 14-18 PZ South Slopes 14-18" PZ
R021XY312OR	NORTH SLOPES 14-18 PZ North Slopes 14-18" PZ
R021XY410OR	DEEP LOAMY 16-20 PZ Deep Loamy 14-18" PZ

Similar sites

R021XY410OR	DEEP LOAMY 16-20 PZ Deep Loamy 14-18" PZ (thicker surface)
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs predominately on terraces in Goose Lake Valley. Slopes range from 0 to 30%. Elevations range from 4000 to 6000 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace
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Elevation	1,220 – 1,830 m
Slope	0 – 30 %
Aspect	Aspect is not a significant factor

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 May. The soil temperature regime is mesic. Temperature extremes range from 90 to -30 degrees F. The frost free period ranges from 70 to 140 days. The optimum period for plant growth is from mid-April through late June.

Table 3 Representative climatic features

Frost-free period (average)	140 days
Freeze-free period (average)	0 days
Precipitation total (average)	460 mm

Influencing water features

Soil features

The soils of this site are very deep and well drained. The subsoil is loamy to clayey and may contain up to 35% coarse fragments. Permeability is moderate to moderately slow. The available water holding capacity is about 6 to 8 inches. The erosion hazard for water is slight to moderately severe.

Table 4. Representative soil features

Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately slow to moderate
Available water capacity (0-101.6cm)	15.24 – 20.32 cm
Subsurface fragment volume <=3" (Depth not specified)	0 – 40 %

Ecological dynamics

This site is typically dominated by Idaho fescue, particularly at the upper end of the precipitation range and bluebunch wheatgrass may increase in proportion on the drier end of the range or where gravels increase in the soil.

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue and bluebunch wheatgrass decrease in the stand to be replaced by needlegrass and Sandberg bluegrass. If deterioration continues, shrubs such as big sagebrush and rabbitbrush will dominate the stand. In the absence of periodic fire, western juniper will invade the site.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	Dominant deep rooted perennial grasses			538-874	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	404-673	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	135-202	–
2	Sub-dominant deep rooted perennial grasses			54-135	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	27-67	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	27-67	–
4	Sub-dominant shallow rooted perennial grasses			40-81	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	40-81	–
5	Other perennial grasses			27-67	
	western needlegrass	ACOC3	<i>Achnatherum occidentale</i>	0-6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0-6	–
Forb					
7	Dominant perennial forbs			54-108	
	milkvetch	ASTRA	<i>Astragalus</i>	13-27	–
	desertparsley	LOMAT	<i>Lomatium</i>	13-27	–
	lupine	LUPIN	<i>Lupinus</i>	13-27	–
	phlox	PHLOX	<i>Phlox</i>	13-27	–
9	Other perennial forbs			13-67	
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	0-6	–
	fleabane	ERIGE2	<i>Erigeron</i>	0-6	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0-6	–
	flax	LINUM	<i>Linum</i>	0-6	–
	woolly plantain	PLPA2	<i>Plantago patagonica</i>	0-6	–
Shrub/Vine					
12	Sub-dominant evergreen shrubs			27-67	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata ssp. vaseyana</i>	27-67	–
13	Dominant deciduous (or 1/2shrubs) shrubs			135-202	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	135-202	–
15	Other shrubs			13-67	
	Saskatoon serviceberry	AMAL2	<i>Amelanchier alnifolia</i>	0-6	–
	Klamath plum	PRSU2	<i>Prunus subcordata</i>	0-6	–
	chokecherry	PRVI	<i>Prunus virginiana</i>	0-6	–
	wax currant	RICE	<i>Ribes cereum</i>	0-6	–

	rose	ROSA5	<i>Rosa</i>	0-6	–
	mountain snowberry	SYOR2	<i>Symphoricarpos oreophilus</i>	0-6	–
	horsebrush	TETRA3	<i>Tetradymia</i>	0-6	–

Animal community

This site provides forage for deer, sage grouse and pronghorn antelope and cover for various bird species.

Hydrological functions

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

Recreational uses

This site provides opportunity for observing and hunting mule deer, pronghorn antelope and various game birds.

Other products

This site is suited to livestock grazing in late spring, summer and fall under a planned grazing system.

Type locality

Location 1: Klamath County, OR	
Township/Range/Section	T38S R12E S23
General legal description	Keno Springs Ranch NE of Bonanza: T38S, R12E, Sec 23
Location 2: Klamath County, OR	
Township/Range/Section	T36S R12E S22
General legal description	Southwest edge of Beatty: T36S, R12E, Sec 22 (NE)
Location 3: Lake County, OR	
Township/Range/Section	T39S R19E S28
General legal description	Western side of Goose Lake Valley on many high terraces such as T39S, R19E, Sec 28 (SE), Sec 22 (NE, NE, NE).

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
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Date	08/21/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills: None, slight to moderately severe sheet & rill erosion hazard

2. Presence of water flow patterns: None to few in interspaces

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

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 = 4-5

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Deep and very deep, well drained loams and sandy loams (containing up to 35% coarse fragments): Moderate OM (1-3%)

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff: High amount of plant cover (70-90%) and rock fragments and moderate slopes (0-30%) effectively limit rainfall impact and overland flow; infiltration is moderate to moderately slow

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 = Antelope bitterbrush > dominant grasses > Mountain big sagebrush = dominant forbs = other grasses > other forbs = 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):

15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):
Favorable: 1500, 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: 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
