USDA Natural Resources Conservation Service

Ecological site R021XY402OR
ROCKY RIDGES 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

R021XY210OR	**LOAMY 14-18 PZ**
R021XY214OR	**CLAYPAN 14-18 PZ**
R021XY308OR	**SOUTH SLOPES 14-18 PZ**
R021XY310OR	**SHALLOW NORTH 14-18 PZ**
R021XY312OR	**NORTH SLOPES 14-18 PZ**

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on all aspects of mountain ridges and sideslopes. Slopes range form 0 to 70%. Elevations range from 4200 to 6000 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope (2) Ridge
Elevation	1,280–1,829 m
Slope	0–70%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation is typically 14 to 20 inches, most of which occurs in the form of snow during the months of October through April. The soil temperature regime is frigid with the mean annual air temperature of about 45 degrees F. Temperature extremes range from 90 to -30 degrees F. The frost free period is 20 to 70 days. The optimum period for plant growth is from early May through mid-July.

Table 3. Representative climatic features

Frost-free period (average)	70 days
Freeze-free period (average)	0 days
Precipitation total (average)	508 mm

Influencing water features

Soil features

The soils of this site are loamy, well drained and shallow to bedrock. The soils are typically associated with rock outcrops. Permeability is moderate. The available water holding capacity is about 1 to 3 inches. Runoff is medium to rapid. Erosion hazard by water is high.

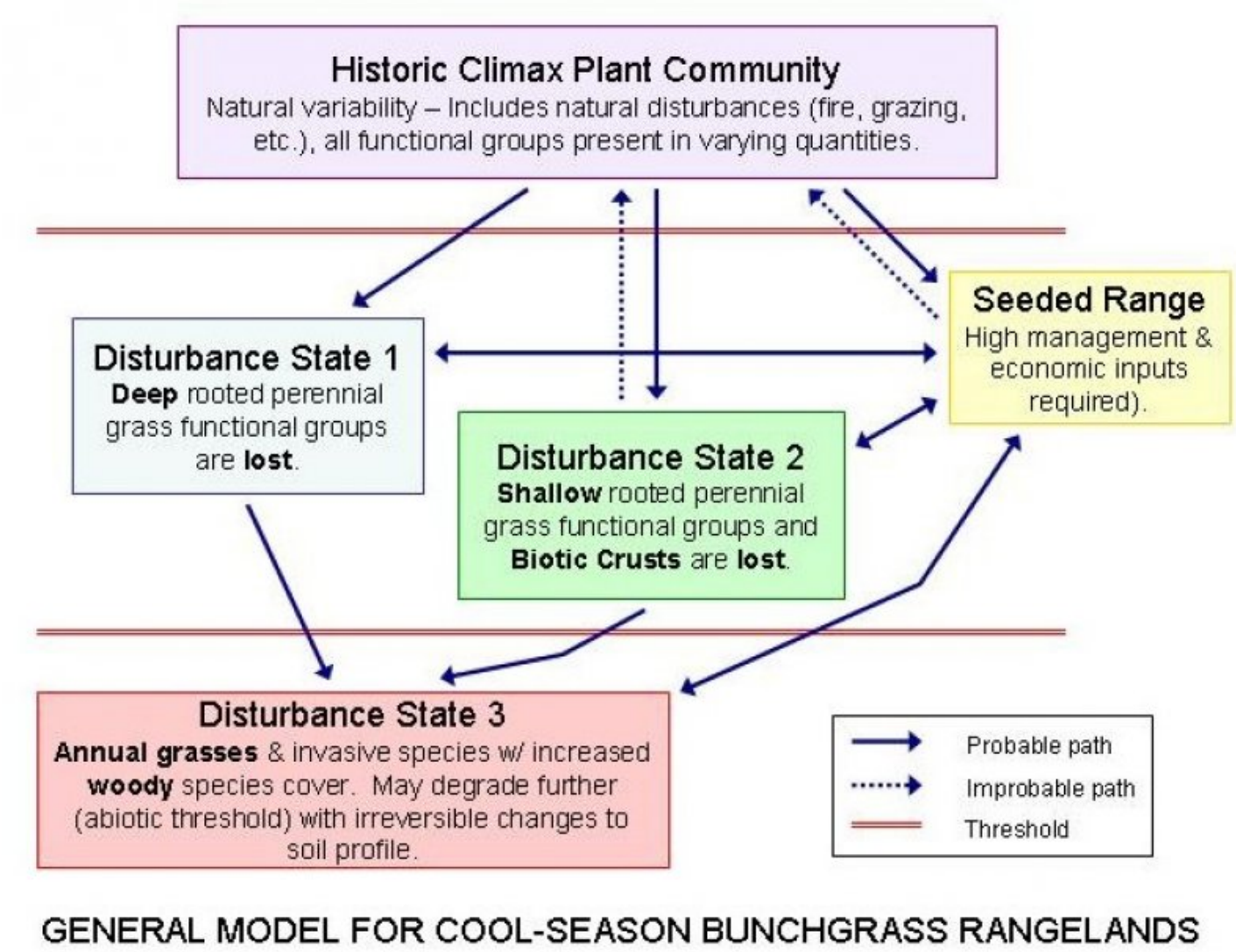
Table 4. Representative soil features

Surface texture	(1) Loam
Permeability class	Moderate
Available water capacity (0-101.6cm)	2.54–7.62 cm

Ecological dynamics

Variablity in the plant composition and production results from variation in soil depth. Where soils are most shallow, plant production decreases and grasses tend to dominate in the understory. As soils deepen, big sagebrush and snowberry increase.
If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases and big sagebrush increases. With prolonged abuse, lupine and other unpalatable forbs will increase. This site is likely to be invaded by lambsquarter and bull thistle. With heavy grazing pressure, seedling mortality of curlleaf mahogany is high and the stand will become even-aged and decadent.

State and transition model



State 1
HCPC, FEID/CELE3-ARTRV

Community 1.1
HCPC, FEID/CELE3-ARTRV

The potential native plant community is dominated by curlleaf mountain mahogany with an understory of mountain big sagebrush, snowberry, and Idaho fescue. Vegetative composition is approximately 50% grasses, 5% forbs and 45% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	471	600	729
Shrub/Vine	258	454	650
Forb	56	90	123
Tree	45	78	112
Total	**830**	**1222**	**1614**

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**			448–673	
	Idaho fescue	FEID	*Festuca idahoensis*	448–673	–
5	**Other perennial grasses**			22–56	
	western needlegrass	ACOC3	*Achnatherum occidentale*	0–6	–
	mountain brome	BRMA4	*Bromus marginatus*	0–6	–
	Ross' sedge	CARO5	*Carex rossii*	0–6	–
	squirreltail	ELEL5	*Elymus elymoides*	0–6	–
	prairie Junegrass	KOMA	*Koeleria macrantha*	0–6	–
	basin wildrye	LECI4	*Leymus cinereus*	0–6	–
	oniongrass	MEBU	*Melica bulbosa*	0–6	–
	Cusick's bluegrass	POCU3	*Poa cusickii*	0–6	–
Forb					
7	**Dominant perennial forbs**			45–90	
	agoseris	AGOSE	*Agoseris*	11–22	–
	arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata*	11–22	–
	tapertip hawksbeard	CRAC2	*Crepis acuminata*	11–22	–
	lupine	LUPIN	*Lupinus*	11–22	–
9	**Other perennial forbs**			11–34	
	western hound's tongue	CYOC	*Cynoglossum occidentale*	0–6	–
	sulphur-flower buckwheat	ERUM	*Eriogonum umbellatum*	0–6	–
	phacelia	PHACE	*Phacelia*	0–6	–
	ragwort	SENEC	*Senecio*	0–6	–
Shrub/Vine					
11	**Dominant evergreen shrubs**			22–112	
	mountain big sagebrush	ARTRV	*Artemisia tridentata ssp. vaseyana*	22–112	–
13	**Dominant deciduous (or 1/2 shrubs) shrubs**			191–426	
	curl-leaf mountain mahogany	CELE3	*Cercocarpus ledifolius*	168–336	–
	common snowberry	SYAL	*Symphoricarpos albus*	22–90	–
14	**Sub-dominant deciduous (or 1/2 shrubs) shrubs**			22–56	
	green rabbitbrush	ERTE18	*Ericameria teretifolia*	22–56	–
15	**Other shrubs**			22–56	
	chokecherry	PRVI	*Prunus virginiana*	0–6	–
	currant	RIBES	*Ribes*	0–6	–
Tree					
16	**Dominant evergreen trees**			45–112	
	western juniper	JUOC	*Juniperus occidentalis*	22–56	–
	ponderosa pine	PIPO	*Pinus ponderosa*	22–56	–

Animal community

This site offers food and cover to mule deer throughout the year. Sage grouse use this site extensively for food and cover.

Hydrological functions

The hydrologic soil group is D.

Wood products

A few scattered juniper and ponderosa pine provide a source of posts, poles, firewood, shade and diversity. Curlleaf mountain mahogany is a valuable novelty wood.

Other products

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

Other information

Steep slopes and rock outcrops limit access by livestock and seedign equipment.

Type locality

Location 1: Klamath County, OR	
Township/Range/Section	T39S R13E S20
General legal description	Along Gerber road at edge of Langell Valley Rim T39S, R13E, Sec 20
Location 2: Klamath County, OR	
Township/Range/Section	T38S R11E S24
General legal description	Lower end of Rocky Canyon on Keno Springs road T38S, R11E, Sec 24 (E 1/2).

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	09/05/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Some, significant sheet & rill erosion hazard

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2. **Presence of water flow patterns:** None to many on steeper slopes (up to 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):** 10-20%

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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 - slight wind erosion hazard

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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 to slightly resistant to erosion: aggregate stability = 3-5

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Shallow, well drained loams, gravelly loams, and stony loams; associated with rock outcrops: Low OM (<1%)

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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 (45-55%) and gentle to very steep slopes (0-70%) effectively to moderately limit rainfall impact and overland flow; infiltration is moderate

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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: Idaho fescue > Curlleaf maountain mahogany > Mountain big sagebrush > dominant shrubs > forbs > other grasses = other shrubs > Western Juniper

    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: 1200, Normal: 1000, Unfavorable: 800 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 on the deeper soils. 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