

Ecological site R021XY505OR
JUNIPER CLAYPAN
12-16 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.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on rock benches, plateaus, and tablelands. Slopes range from 1 to 15%. Elevations typically range from 4300 to 5200 feet.

Table 2. Representative physiographic features

Landforms	(1) Plateau
Elevation	1,280 – 1,520 m
Slope	0 – 10 %
Water table depth	150 cm
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation is typically 11-14 inches. It occurs mainly between the months of November and June as both rain and snow. The soil temperature regime is drigid. The average annual air temperature is 43-45 degrees F with extreme temperatures ranging from 85 to -30 degrees F. The frost free period is 20 to 50 days. The optimum period for plant growth is from May through July.

Table 3 Representative climatic features

Frost-free period (average)	50 days
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Freeze-free period (average)	80 days
Precipitation total (average)	410 mm

Influencing water features

Soil features

The soils of this site range from moderate to deep, they are well drained and have loamy surface textures and clayey subsoils. They have very cobbly surfaces. Soils are formed by weathering of residual parent materials including tuff, breccia or basalt. Permeability is slow and the available water holding capacity is 3 to 5 inches for the profile. The potential for water erosion is low.

Table 4. Representative soil features

Surface texture	(1) Very stony clay loam (2) Very cobbly loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Slow
Soil depth	30 – 80 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	7.62 – 12.7 cm
Calcium carbonate equivalent (0-101.6cm)	Not specified
Electrical conductivity (0-101.6cm)	Not specified

Sodium adsorption ratio (0-101.6cm)	Not specified
Soil reaction (1:1 water) (0-101.6cm)	10 – 7.8
Subsurface fragment volume <=3" (Depth not specified)	Not specified
Subsurface fragment volume >3" (Depth not specified)	Not specified

Ecological dynamics

The potential plant community is dominated by open stands of western juniper (>5 mature juniper/AC). Juniper reproduction is sparse. Low sagebrush is prominent with bitterbrush and buckwheat. Few other shrubs occur except as inclusions. Idaho fescue dominates the understory, but Sandberg bluegrass and bluebunch wheatgrass are important secondary species. Onespoke oatgrass is more common in low moist areas of the stand or in light swales. Small amounts of squirreltail and junegrass are present. Some of the common forbs include scab balsamroot, fleabane, phlox, yarrow, lomatium, agoseris, lupine, onion, yampa and pussytoes. The interpretative plant community for this site is the Historic Climax Plant Community (HCPC).

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 (%)
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Table 6. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	Dominant deep rooted perennial grasses			359-628	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	269-359	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	90-269	–
2	Sub-dominant deep rooted perennial grasses			18-72	
	squirreltail	ELEL5	<i>Elymus elymoides</i>	9-27	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	9-18	–
4	Sub-dominant shallow rooted perennial grasses			54-135	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	45-90	–
	onespoke danthonia	DAUN	<i>Danthonia unispicata</i>	9-45	–
5	Other perennial grasses			9-18	
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	9-18	–

Forb				
9	Other perennial forbs			9-45
	common yarrow	ACMI2	Achillea millefolium	0-6
	agoseris	AGOSE	Agoseris	0-6
	milkvetch	ASTRA	Astragalus	0-6
	serrate balsamroot	BASE2	Balsamorhiza serrata	0-6
	Indian paintbrush	CASTI2	Castilleja	0-6
	tapertip hawksbeard	CRAC2	Crepis acuminata	0-6
	fleabane	ERIGE2	Erigeron	0-6
	buckwheat	ERIOG	Eriogonum	0-6
	western stoneseed	LIRU4	Lithospermum ruderales	0-6
	lupine	LUPIN	Lupinus	0-6
	yampah	PERID	Perideridia	0-6
	phacelia	PHACE	Phacelia	0-6
Shrub/Vine				
11	Dominant evergreen shrubs			45-90
	little sagebrush	ARAR8	Artemisia arbuscula	45-90
12	Sub-dominant evergreen shrubs			18-27
	slender buckwheat	ERMI4	Eriogonum microthecum	18-27
13	Dominant deciduous (or 1/2 shrubs) shrubs			45-90
	antelope bitterbrush	PUTR2	Purshia tridentata	45-90
Tree				
16	Dominant evergreen trees			45-90
	western juniper	JUOC	Juniperus occidentalis	45-90

Animal community

Wildlife- This site provides nesting and feeding cover to a variety of wildlife species. It is particularly important in fall and winter for deer which feed heavily on the bitterbrush. Use should be managed in such a manner as to maintain or improve conditions for wildlife populations. Grazing- This site is suited to use under a planned grazing system by cattle in the late spring, summer or fall. Care should be taken to avoid use until soils are sufficiently dry and stable to reduce the impacts of trampling and root reserves have been established. Excessive early use or season long use, are the primary factors in the deterioration of this site.

Wood products

This site has limited potential for fence posts and firewood, although collection is generally unfeasible.

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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Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	09/05/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills: None, slight 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

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values): Moderatley resistant to erosion: aggregate stability = 3-5

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Shallow to moderately deep, well drained stony to cobbly loams and clay loams; Low OM (1%)

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff: Moderate vegetative cover (50-70%) and gentle slopes (1-10%) effectively limit rainfall impact and overland flow; infiltration is 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 > Low sagebrush > Western Juniper = Antelope bitterbrush = Sandberg bluegrass > other grasses > shrubby buckwheat > 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

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: 1000, Normal: 800, Unfavorable: 500 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
