USDA Natural Resources Conservation Service

Ecological site R010XA014OR
Juniper Cinder Hills 10-12 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

R010XA009OR	**Juniper Shrubby Pumice Flat 10-12 PZ**

Similar sites

R010XA007OR	**Juniper Pumice South 9-12 PZ**

Table 1. Dominant plant species

Tree	(1) *Juniperus occidentalis*
Shrub	(1) *Artemisia tridentata var. wyomingensis*
Herbaceous	(1) *Pseudoroegneria spicata ssp. spicata*

Physiographic features

This site occurs on cinder buttes and ridges on all aspects.

Table 2. Representative physiographic features

Landforms	(1) Butte

Elevation	2,500–3,000 ft
Slope	0–50%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 10 to 12 inches which occurs mainly between the months of November and June in the form of rain and snow. The soil temperature regime is mesic. The average annual air temperature is 47 degrees F. with extreme temperatures ranging from -20 to 100 degrees F. The frost free period is 60 to 90 days. The optimum period for plant growth is from April through June.

Table 3. Representative climatic features

Frost-free period (average)	90 days
Freeze-free period (average)	0 days
Precipitation total (average)	12 in

Influencing water features

Soil features

The soils of this site are very deep and some what excessively drained. Scoriaceous cinders occur at a depth of 10 to 20 inches. They are generally formed in volcanic ash over cinders. Permeability is moderately rapid and the available water holding capacity is 2 to 4 inches for the profile. The potential for water or wind erosion is high.

Table 4. Representative soil features

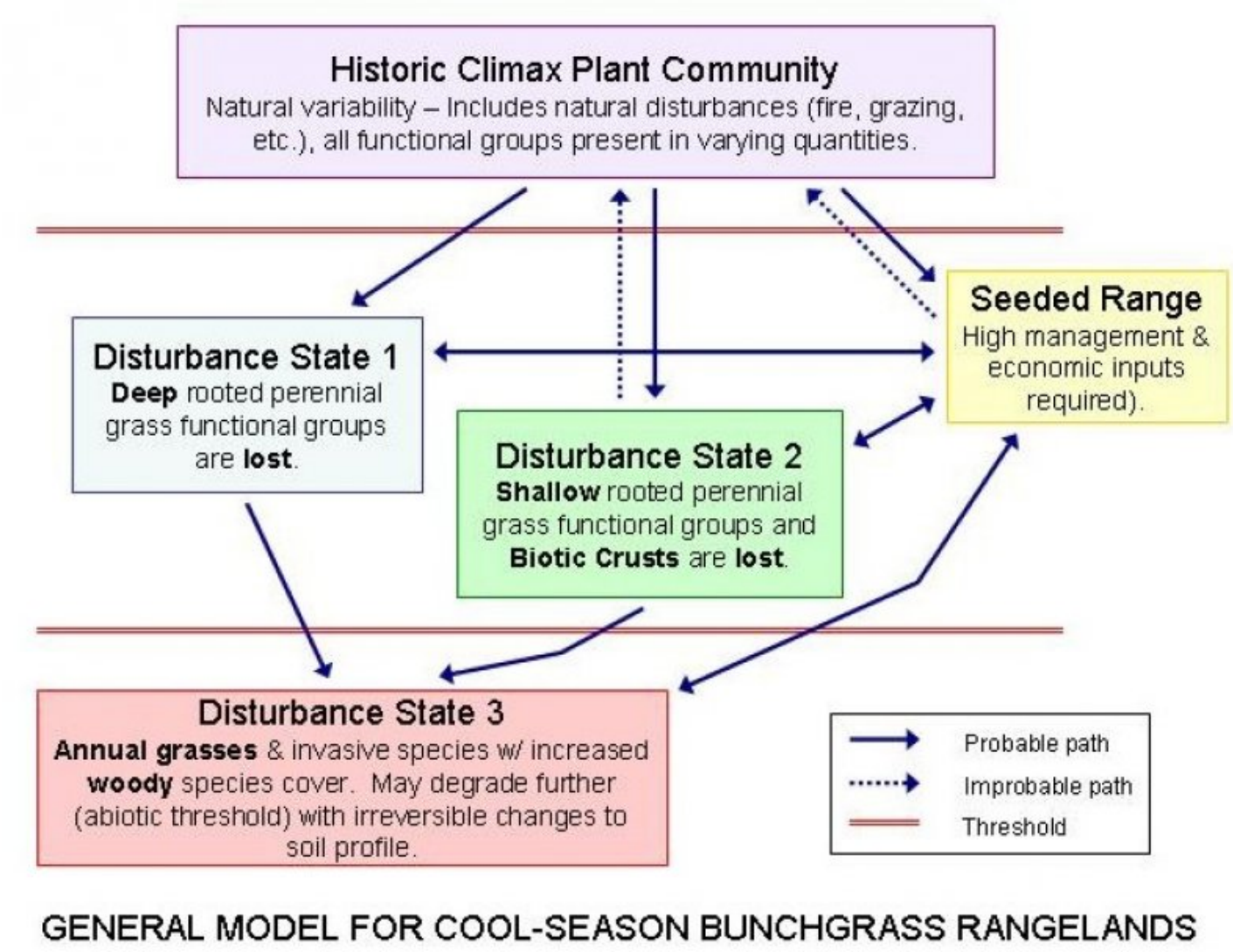
Drainage class	Somewhat excessively drained
Permeability class	Moderately rapid
Soil depth	60 in
Available water capacity (0-40in)	2–4 in

Ecological dynamics

Burning reduces juniper and sagebrush cover but usually stimulates bluebunch wheatgrass.

Areas with more gravel and cinders on the surface have less herbaceous cover

State and transition model



State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

The potential native plant community is dominated by an open stand of short, stunted western juniper and Wyoming big sagebrush. Bluebunch wheatgrass and Sandberg bluegrass dominate the ground layer.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	235	318	400
Shrub/Vine	80	108	135
Tree	25	38	50
Forb	10	15	20
Total	**350**	**479**	**605**

Figure 3. Plant community growth curve (percent production by month). OR4051, B10A Mesic, Mid Elev., N/A, Stony, Good Condition. HCPC Growth Curve B10A Mesic, Mid Elev., N/A, Stony, Good Condition - Cindery Hills & Lava Blisters.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	30	55	10	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 (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Dominant deep rooted perennial grasses**			200–275	
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	200–275	–
2	**Sub-dominant deep rooted perennial grasses**			10–50	
	Thurber's needlegrass	ACTH7	*Achnatherum thurberianum*	5–25	–
	Idaho fescue	FEID	*Festuca idahoensis*	5–25	–
3	**Dominant shallow rooted perennial grasses**			25–75	
	Sandberg bluegrass	POSE	*Poa secunda*	25–75	–
Forb					
7	**Dominant perennial forbs**			10–20	
	common yarrow	ACMI2	*Achillea millefolium*	5–10	–
	spreading phlox	PHDI3	*Phlox diffusa*	5–10	–
Shrub/Vine					
11	**Dominant evergreen shrubs**			75–125	
	Wyoming big sagebrush	ARTRW8	*Artemisia tridentata ssp. wyomingensis*	75–125	–
12	**Sub-dominant evergreen shrubs**			5–10	
	antelope bitterbrush	PUTR2	*Purshia tridentata*	5–10	–
Tree					
16	**Dominant evergreen trees**			25–50	
	western juniper	JUOC	*Juniperus occidentalis*	25–50	–

Animal community

Little wildlife use is made of this site.

Hydrological functions

The soils of this site have high infiltration rates and low runoff potential.

Wood products

Poorly suited for wood products.

Other products

Generally not widely use for grazing due to steep slopes and fragile soils.

Other information

Not suited for mechanical site preparation.

This is a marginal site for seeding due to the droughty nature of the soils. Low survival rates should be expected even with species compatible with the site i.e., crested wheatgrass, Siberian wheatgrass, Canby bluegrass, and Secar bluebunch wheatgrass.

Contributors

Cici Brooks
E Ersch
Gene Hickman
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 and Bruce Frannsen
Contact for lead author	State Rangeland Management Specialist for NRCS - Oregon
Date	08/03/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to some, Severe 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):** 5-15%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to some, Severe 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):** Slightly resistant to erosion; aggregate stability = 2-4

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep (scoriaceous cinders occur at 10-20 inches), excessively drained sandy loam; low OM (1-2%)

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate ground cover (45-60%) and steep slopes (to 50%) slightly limit rainfall impact and overland flow

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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 > Wyoming big sagebrush > Sandberg bluegrass = Western Juniper > other dominant grasses > forbs > Antelope bitterbrush

    Sub-dominant:

    Other:

    Additional:

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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: 600, Normal: 500, Unfavorable: 300 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 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