

Ecological site R008XY120OR Loamy 12-14 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

R008XY200OR	South 10-14 PZ
R008XY210OR	Shallow South 10-14 PZ
R008XY220OR	North 10-14 PZ

Similar sites

R008XY110OR	Loamy 10-12 PZ Lower precipitation
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on the tops of ridges and plateaus underlain by basalt bedrock.

Table 2. Representative physiographic features

Landforms	(1) Ridge (2) Plateau
Elevation	305–914 m
Slope	2–12%
Water table depth	10–38 cm
Aspect	N, S

Climatic features

The annual precipitation ranges from 12 to 14 inches which occurs mostly as snow during the months of October through May. Spring and fall rains are common. The temperature regime is mesic with extreme temperatures ranging from 100 degrees F. to -20 degrees F. The frost-free period is 100 to 180 days, and the optimum period for plant growth is from mid-April through June.

Table 3. Representative climatic features

Frost-free period (average)	180 days
Freeze-free period (average)	
Precipitation total (average)	356 mm

Influencing water features

Soil features

The soils of this site are moderately deep to very deep, well drained silt loams formed in loess over basalt bedrock. The permeability is moderate and the available water holding capacity is 4 to 15 inches for the profile. The erosion hazard is moderate for water and slight for wind.

Table 4. Representative soil features

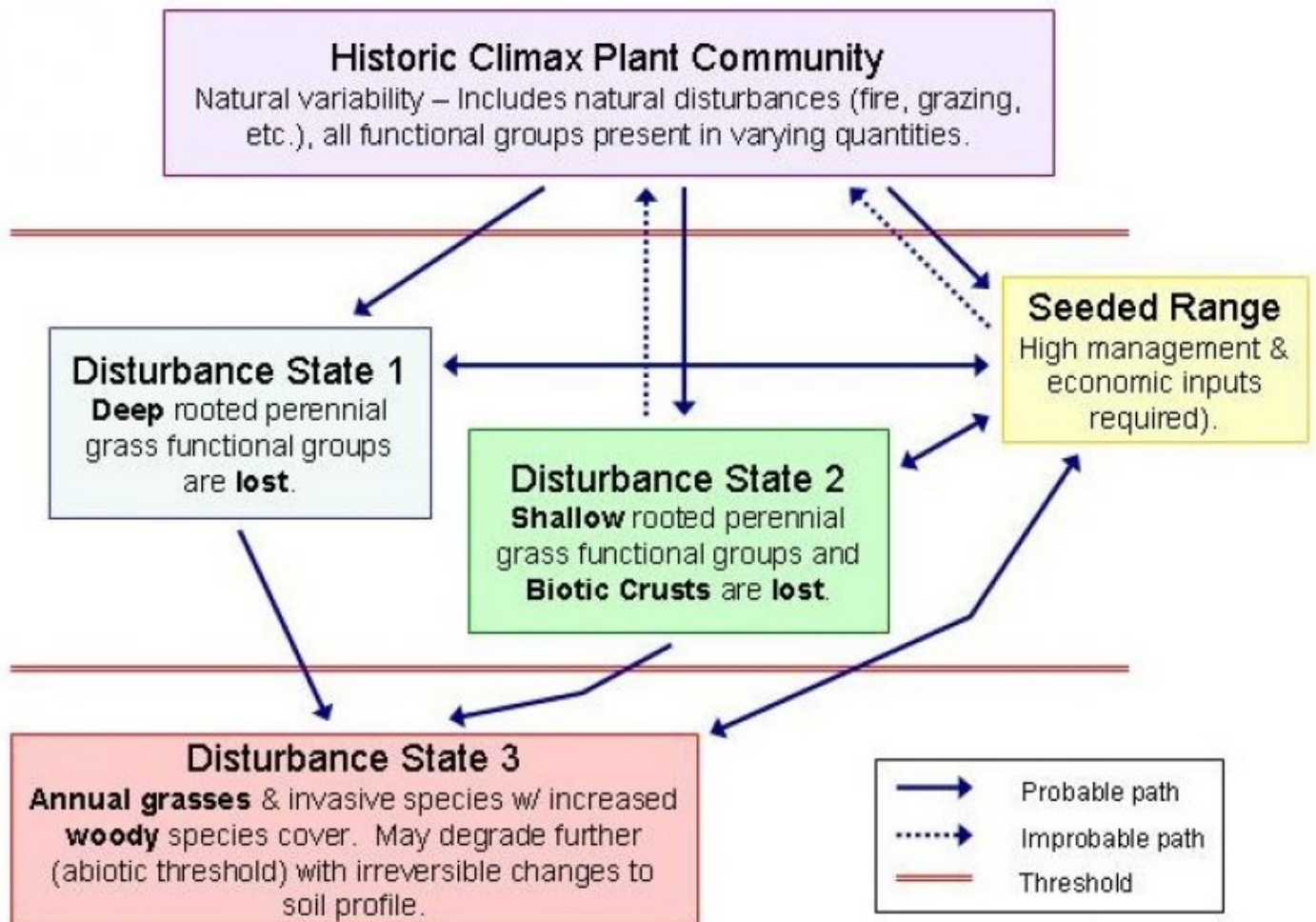
Surface texture	(1) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	152 cm
Available water capacity (0-101.6cm)	10.16–38.1 cm

Ecological dynamics

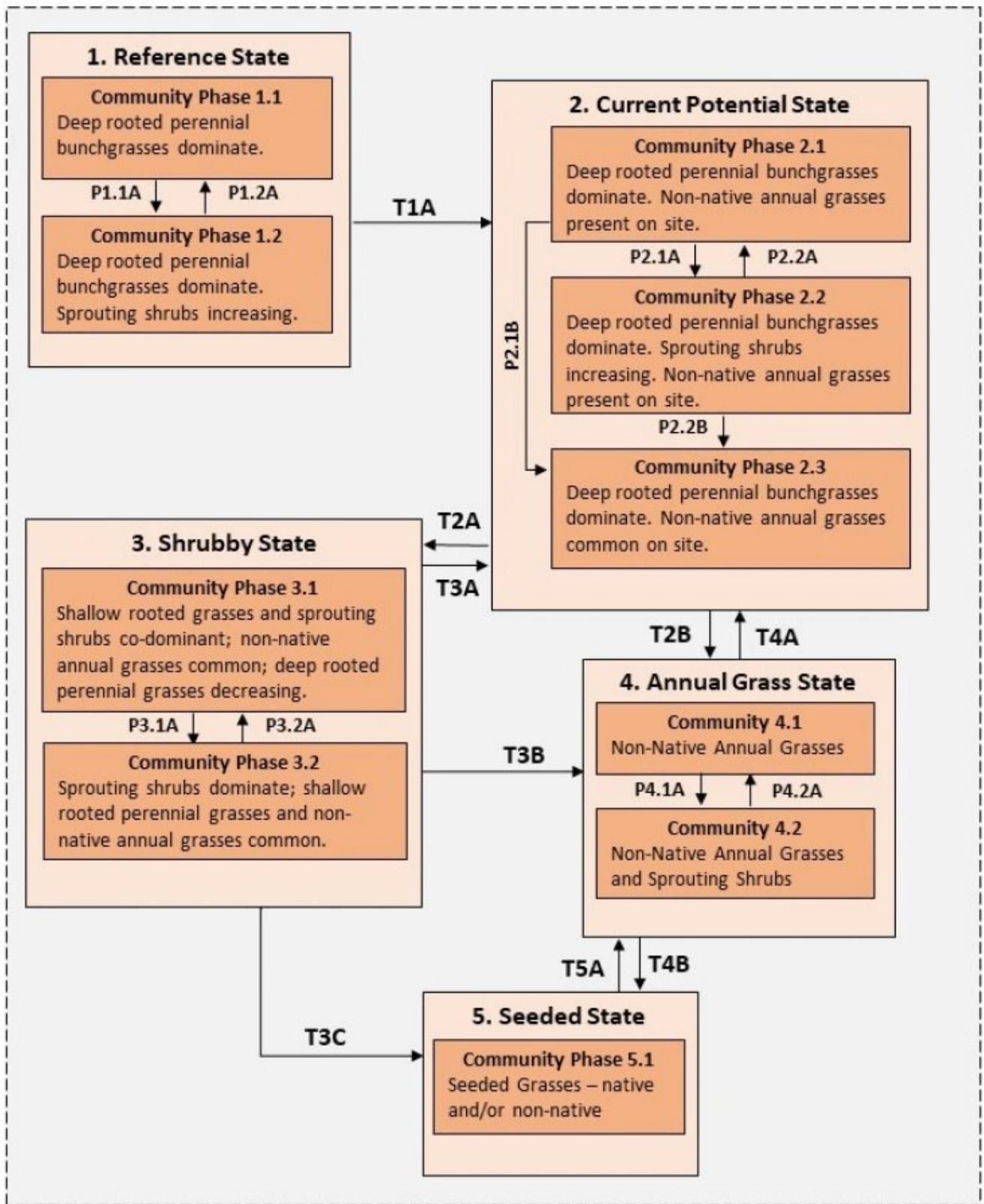
If heavy grazing causes site deterioration, Idaho fescue will decline in vigor and be lost from the stand. Continued abuse will weaken and eventually remove the bluebunch wheatgrass. Gray rabbitbrush will increase, cheagrass, China lettuce, salsify, and other weeds will invade the site.

As slopes dip to the south, the amount of bluebunch wheatgrass will increase. North-trending slopes will favor and increase in Idaho fescue.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS



Code	State Change	Description
Transitions		
T1A	1 → 2	Introduction of non-native species, especially non-native annual grasses.
T2A	2 → 3	Fire suppression and/or prolonged disturbance
T2B	2 → 4	Increased fire frequency due to presence of non-native annual grasses causes native bunchgrass community to decline and annual grasses to become dominant on site.
T3A	3 → 2	Restoration of native plant community
T3B	3 → 4	Increased fire frequency due to presence of non-native annual grasses and/or continued prolonged disturbance
T3C	3 → 5	Seeding of site to adapted native and/or introduced species
T4A	4 → 2	Invasive species control and restoration of native plant community
T4B	4 → 5	Invasive species control and seeding of site adapted native and/or introduced species
T5A	5 → 4	Mechanical seedbed preparation without adequate seedling establishment OR Fire after extended fire suppression and/or continued prolonged disturbance

Code	Phase Change	Description
Community Pathways		
P1.1A	1.1 → 1.2	Time and lack of fire
P1.2A	1.2 → 1.1	Low intensity fire
P2.1A	2.1 → 2.2	Time and lack of fire
P2.1B	2.1 → 2.3	Medium-high intensity fire, or increased fire frequency
P2.2A	2.2 → 2.1	Low intensity fire
P2.2B	2.2 → 2.3	Medium-high intensity fire, or increased fire frequency
P3.1A	3.1 → 3.2	Continued fire suppression and prolonged disturbance
P3.2A	3.2 → 3.1	Time and lack of disturbance
P4.1A	4.1 → 4.2	Time and lack of fire
P4.2A	4.2 → 4.1	Fire

State 1 Reference State

Dominant plant species

- Idaho fescue (*Festuca idahoensis*), grass
- bluebunch wheatgrass (*Pseudoroegneria spicata*), grass
- Sandberg bluegrass (*Poa secunda*), grass

Community 1.1

Reference Plant Community

The potential native community is dominated by Idaho fescue and bluebunch wheatgrass with lesser amounts of Sandberg bluegrass. Vegetative composition is about 95% grasses, 3% forbs, and 2% shrubs.

Dominant plant species

- Idaho fescue (*Festuca idahoensis*), grass
- bluebunch wheatgrass (*Pseudoroegneria spicata*), grass
- Sandberg bluegrass (*Poa secunda*), grass

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	695	1093	1390
Forb	67	106	135
Shrub/Vine	22	34	45
Total	784	1233	1570

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			740–1233	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	493–740	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	247–493	–
4	Sub-dominant deep rooted perennial grasses			25–99	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	12–49	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	12–49	–
5	Other perennial grasses			0–25	

	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–12	–
	needle and thread	HECO26	<i>Hesperostipa comata</i>	0–12	–
Forb					
7	Dominant perennial forbs			62–123	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	12–25	–
	milkvetch	ASTRA	<i>Astragalus</i>	12–25	–
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	12–25	–
	phlox	PHLOX	<i>Phlox</i>	12–25	–
	desertparsley	LOMAT	<i>Lomatium</i>	12–25	–
9	Other perennial forbs			0–25	
	agoseris	AGOSE	<i>Agoseris</i>	0–12	–
	brodiaea	BRODI	<i>Brodiaea</i>	0–12	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–12	–
	beardtongue	PENST	<i>Penstemon</i>	0–12	–
	deathcamas	ZIGAD	<i>Zigadenus</i>	0–12	–
Shrub/Vine					
11	Dominant shrubs			25–49	
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	12–25	–
7	Other shrubs			0–25	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0–12	–
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	0–12	–

Animal community

Mule deer, Pronghorn antelope, Elk

This site offers forage for deer.

Hydrological functions

The soils of this site have moderate infiltration rates and low runoff potential. The hydrologic soil groups are B and C.

Wood products

None

Other products

This site is suited for livestock use during spring, summer, and fall. Snow may prevent winter use in some years. A planned grazing system is needed.

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	State Rangeland Management Specialist
Date	07/26/2012
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None, moderate sheet & rill erosion hazard
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2. **Presence of water flow patterns:** None
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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):** 10-15%
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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 - limited movement
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Significant resistant to erosion; aggregate stability = 4-5
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderately deep to very deep well drained silt loams; Low OM (2-3)
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (50-70%) limits 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
-
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 > Sandberg bluegrass and Prairie junegrass > other grasses = forbs = 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; 1400, Normal: 1100, Unfavorable: 700 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
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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually
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