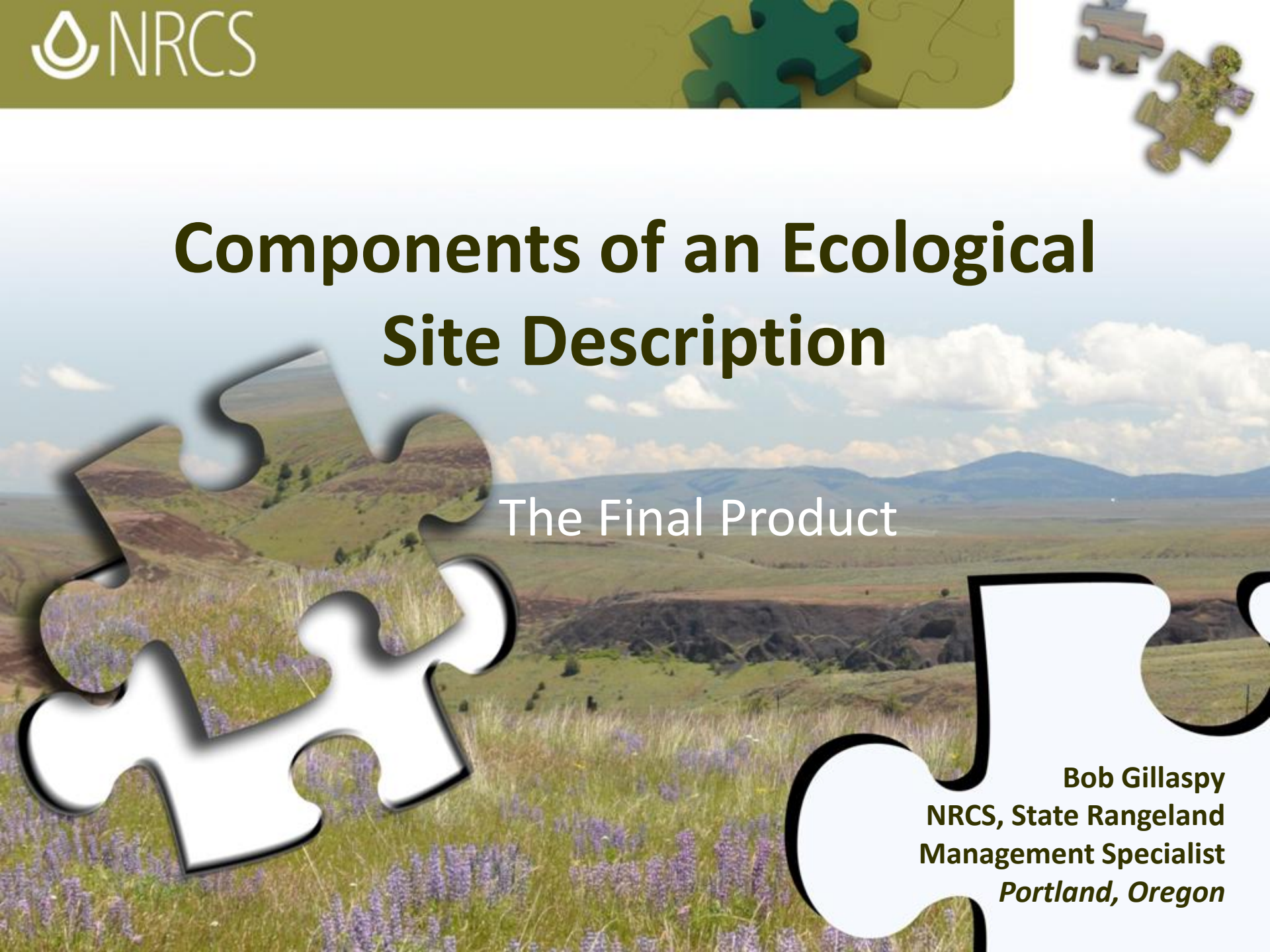
Components of an Ecological Site Description

The Final Product



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NRCS, State Rangeland Management Specialist
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The Final Product (frontier)

- To Explore Strange New Worlds
- To Seek Out New Life and Civilizations
- To Boldly Go Where No Man Has Gone Before

What are ESDs For?

- Where does it occur on the landscape?
- What are the abiotic characteristics?
- What are the biotic characteristics?
- How do you work with this site?

ESDs – What is Under the Hood?

- General
- Physiographic Features
- Climate Features
- Water Features
- Soil Features
- Plant Communities
- Site Interpretations
- Supporting Information
- Rangeland Health Reference Sheet

General Section

- Site Type
- Site Name
- Site ID
- Major Land Resource Area
- graphic

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION (Old Format Report)

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site Name: PUMICE HILLS 8-10 PZ

Juniperus occidentalis / *Artemisia tridentata ssp. tridentata* - *Purshia tridentata* / *Hesperostipa comata* - *Oryzopsis hymenoides*
(western juniper / basin big sagebrush - antelope bitterbrush / needle and thread)

Site ID: R010XA002OR

Major Land Resource Area: 010-Central Rocky and Blue Mountain Foothills

Physiographic Features

- General description
- Landform
- Elevation
- Slope
- Flooding
- Ponding
- Runoff classification
- Aspect

Physiographic Features

This site occurs on moderate steep or steep south facing slopes of canyons, buttes, and ridges. Slopes range from 15-80 percent. Elevations range from 1300 to 3700 feet.

Landform: (1) Canyon
(2) Butte
(3) Ridge

	Minimum	Maximum
Elevation (feet):	1300	3700
Slope (percent):	15	80
Water Table Depth (inches):	60	60
Flooding:		
Frequency:		
Duration:	None	None
Ponding:		
Depth (inches):		
Frequency:		
Duration:	None	None
Runoff Class:		
Aspect:	South	

Climatic Features

- General description
- Frost-free period
- Freeze-free period
- Mean annual precipitation
- Monthly precipitation and temperature
- Climate stations

Climatic Features

The annual precipitation typically ranges from 8 to 10 inches, but occasionally up to 12 inches. Most precipitation occurs between November and early June, mostly in the form of rain and snow. The soil temperature regime is mesic. The average annual air temperature is 48 degrees F. with extreme temperatures ranging from -27 to 105 degrees F. The freeze free period is 90 to 120 days. The optimum period for plant growth is from early March through June.

	Minimum	Maximum
Frost-free period (days):	40	115
Freeze-free period (days):	90	120
Mean annual precipitation (inches):	8.0	10.0

Monthly precipitation (inches) and temperature (°F):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precip. Min.	0.97	0.68	0.65	0.88	0.62	0.41	0.45	0.56	0.98	0.92		
Precip. Max.	1.38	1.0	0.95	0.8	1.06	0.84	0.58	0.57	0.43	0.76	1.41	1.22
Temp. Min.	21.0	23.7	25.3	28.0	34.1	40.3	42.8	41.6	34.7	28.6	25.2	20.8
Temp. Max.	43.1	48.1	54.5	61.5	69.1	77.7	86.4	86.0	77.8	65.9	50.3	42.7

Climate Stations: (1) 355515, Metolius 1 W. Period of record 1971 - 2000
(2) 356883, Prineville 4 NW. Period of record 1971 - 2000
(3) 357062, Redmond FAA AP. Period of record 1971 - 2000

Influencing Water Features

- General description
- Wetland description
- System
- Subsystem
- Class

Influencing Water Features

Wetland Description:	System	Subsystem	Class
(Cowardin System)	Palustrine	N/A	Scrub-Shrub Wetland

Representative Soil Features

- General description
- Parent materials
- Texture, surface and subsurface
- Fragments, surface and subsurface
- Drainage and permeability class
- Depth
- Chemistry
- Available water capacity

Representative Soil Features

The soils of this site are very shallow over bedrock or duripan and well drained. The surface layer is typically a very cobbly loam to stony loam 3 to 6 inches thick. The subsoil is a very cobbly silty clay loam to stony clay loam over an extremely cobbly clay. Depth to bedrock, a duripan or heavy clay subsoil is less than 10 inches. Permeability is moderately slow to slow. The available water holding capacity (AWC) is about 2 inches for the profile. The erosion potential is moderate to severe.

Parent Materials:

Kind: Volcanic ash, Eolian deposits, Alluvium

Origin: Rhyolite, Basalt

Surface Texture: (1)Very stony Loam

(2)Very cobbly Silty clay loam

Subsurface Texture Group: Clayey

	Minimum	Maximum
Surface Fragments <=3" (% Cover):	10	30
Surface Fragments > 3" (% Cover):	10	30
Subsurface Fragments <=3" (% Volume):	10	25
Subsurface Fragments > 3" (% Volume):	10	35

Drainage Class: Well drained To Moderately well drained

Permeability Class: Moderately slow To Slow

	Minimum	Maximum
Depth (inches):	2	10
Electrical Conductivity (mmhos/cm):	0	0
Sodium Absorption Ratio:	0	0
Calcium Carbonate Equivalent (percent):		
Soil Reaction (1:1 Water):		
Soil Reaction (0.01M CaCl2):		
Available Water Capacity (inches):	0.5	2.0

Plant Communities

- Ecological Dynamics of the Site
  - STM diagram
- Reference Plant Community
  - General description
  - Plant species composition by type and groups
  - Annual production
- Other Plant Communities
- Plant Growth Curve

Plant Communities

Ecological Dynamics of the Site

The potential native plant community is strongly dominated by Idaho fescue and mountain big sagebrush. Sandberg bluegrass is the dominant shallow rooted perennial grass. Bluebunch wheatgrass, prairie junegrass, parsnip flower buckwheat and a variety of other grasses and forbs are present. Wax currant, mountain snowberry and other deciduous shrubs occur sporadically. Vegetative composition of the community is approximately 75 percent grasses, 10 percent forbs and 15 percent shrubs. Approximate ground cover is 70 to 80 percent (basal and crown).

Range in Characteristics:
Idaho fescue increases on silty clay loam surfaces. Bluebunch wheatgrass increases on slight south and west exposures. Needlegrasses increases on coarser surfaces and over shallower depths. Shrubs increase over gravelly and fractured substratums. Basin big sagebrush increases at lower elevations and as the precipitation zone approaches 12 inches. Production, antelope bitterbrush, serviceberry, snowberry and pine increase at the upper end of the precipitation zone.

Response to Disturbance - States:
If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases. Mountain big sagebrush rapidly increases. Sandberg bluegrass increases and juniper invades from isolated rocky areas. With continued overgrazing, mountain big sagebrush and juniper dominate the overstory. Sandberg bluegrass dominates the understory. Annual invasion is limited unless ground disturbance occurs. With further deterioration and lack of fire juniper dominates the site, shrubs decrease and bare ground increases. With fire and heavy use or ground disturbance

Reference Plant Community - Community Phase 1.1

Representative Plant Community

The reference native plant community is strongly dominated by Idaho fescue and mountain big sagebrush. Sandberg bluegrass is the dominant shallow rooted perennial grass. Bluebunch wheatgrass, prairie junegrass, parsnip flower buckwheat and a variety of other grasses and forbs are present. Wax currant, mountain snowberry and other deciduous shrubs occur sporadically. Vegetative composition of the community is approximately 75 percent grasses, 10 percent forbs and 15 percent shrubs. Approximate ground cover is 70 to 80 percent (basal and crown).

Reference Plant Community Plant Species Composition:

Grass/Grasslike

Group	Group Name	Common Name	Symbol	Scientific Name	Annual Production in Pounds Per Acre Low	Annual Production in Pounds Per Acre High	Foliar Cover Percent Low	Foliar Cover Percent High
1	**-Dominant moderate rooted bunchgrass**				**960**	**1280**		
		Idaho fescue	FEID	*Festuca idahoensis*	960	1280		
2	**-Sub-dominant moderate rooted bunchgrass**				**30**	**320**		
		bluebunch wheatgrass	PSSPS	*Pseudoroegneria spicata ssp. spicata*	30	320		
3	**-Common, shallow rooted perennial grass**				**30**	**80**		
		Sandberg bluegrass	POSE	*Poa secunda*	30	80		
4	**-Other perennial grasses**				**60**	**350**		
		western needlegrass	ACOC3	*Achnatherum occidentale*	0	32		
		Thurber's needlegrass	ACTH7	*Achnatherum thurberianum*	32	128		
		mountain brome	BRMA4	*Bromus marginatus*	0	32		
		threadleaf sedge	CAFI	*Carex filifolia*	0	32		
		bottlebrush squirreltail	ELEL5	*Elymus elymoides*	5	32		
		prairie Junegrass	KOMA	*Koeleria macrantha*	16	48		
		basin wildrye	LECI4	*Leymus cinereus*	16	48		
		bulbous oniongrass	MEBU	*Melica bulbosa*	0	32		

Annual Production by Plant Type:

Plant Type	Annual Production (lbs/AC) Low	Representative Value	High
Grass/Grasslike	900	1200	1500
Forb	120	160	200
Shrub/Vine	180	240	300
Total:	1200	1600	2000

Plant Growth Curve:

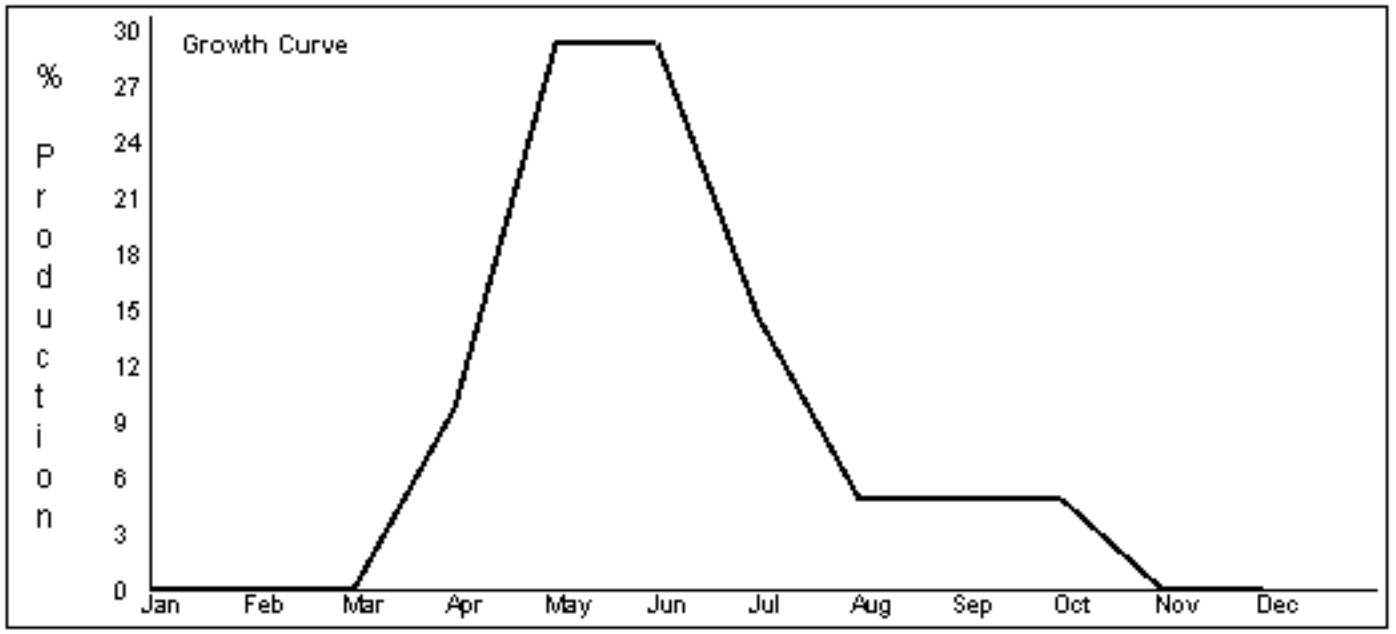
Growth Curve Number: OR4481

Growth Curve Name: B10 SR Mtn, Cool & No 12-16pz

Growth Curve Description: SR Mtn, Cool & No 12-16pz RPC Growth Curve

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	10	30	30	15	5	5	5	0	0



Ecological Site Interpretations

- Animal Community
- Hydrology Functions
- Recreational Uses
- Wood Products
- Other Products
- Other Information

Supporting Information

- Associated Sites
- Similar Sites
- State Correlation
- Inventory Data References
- Type Locality
- Relationship to Other Established Classifications
- Other References
- Site Description and Revision approvals

Rangeland Health Reference Sheet

- 17 indicators reference information

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

2. **Presence of water flow patterns:**None

3. **Number and height of erosional pedestals or terracettes:** None to very few (some frost heaving)

4. **Bare ground from Ecological Site Description or other studies (rock, litter, standing dead, 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, Moderate wind erosion hazard

7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement

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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):** Significantly resistant to erosion: aggregate stability = 4-6

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9. **Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness):** Granular to platy to sub-angular blocky structure; Dry color value 4-5; 3-9" thickness; Low to moderate OM (1-4%)

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10. **Effect on plant community composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate to significant ground cover (60-70%) and gentle slopes (2-12%) effectively 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

14. **Average percent litter cover (15-30 %) and depth (<0.5 inches):**

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15. **Expected annual production (this is TOTAL above-ground production, not just forage production):** Favorable: 2000, Normal: 1500, Unfavorable: 1000 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 indicator, we are describing what in 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

NRCS