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Columbia Plateau Steppe and Grassland

BpS Model/Description Version: Aug. 2020

21/14

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Vegetation Type

Steppe/Savanna

Map Zones

1, 7, 8, 9

Geographic Range

Eastern Washington, eastern Oregon, western Idaho, and northern Nevada.

Biophysical Site Description

Sagebrush steppe habitats where fire has removed the sagebrush and local seed sources. Occurs on plains and foothills, in the range of habitats that support sagebrush. (Varied soils but always with some soil development, rainfall 8-15in, all aspects and most non-canyon slopes.)

Vegetation Description

Grassland dominated by *Pseudoregnaria spicata*, *Festuca idahoensis*, *Poa secunda*, and *Achnatherum thurberianum* (see Ecological System CES304.083 [NatureServe 2004]). These are in a shrub steppe environment.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
PSSP6	<i>Pseudoregnaria spicata</i>	Bluebunch wheatgrass
POSE	<i>Poa secunda</i>	Sandberg bluegrass
ACTH7	<i>Achnatherum thurberianum</i>	Thurber's needlegrass
FEID	<i>Festuca idahoensis</i>	Idaho fescue

Species names are from the NRCS PLANTS database. Check species codes at <http://plants.usda.gov>.

Disturbance Description

Fire is the primary disturbance factor. Historically, fire resulted in local removal of sagebrush, but repeated, high-frequency fire has eliminated the sagebrush and the seed sources of sagebrush, creating extensive grasslands. Currently, cheatgrass and other introduced grasses often invade these habitats after fire. The historic frequency was 30-100yrs.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	39	100	25	100
Moderate (Mixed)				
Low (Surface)				
All Fires	39	100		

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

Scale Description

This Biophysical Setting (BpS) can occur in large landscapes. Patch and disturbance sizes limited in canyons by broken topography and limited by extensive riparian areas.

Adjacency or Identification Concerns

This type occurs in a mosaic with steppe vegetation. In the early 1900s, heavy sheep and cattle grazing led to an increase of shrubs into much of the area, although shrubs generally don't occur in the canyon grassland. Fescue dominates more heavily on north aspects and moist sites, which have a lower fire frequency.

Issues or Problems

Too much fire has turned this into annual grasslands in many areas and has turned large areas of shrubland into grasslands.

Native Uncharacteristic Conditions

Class C >30% closure would be uncharacteristic.

Comments

Map zones 01, 07, 08, 09 were combined during 2015 BpS Review.

Succession Classes

Mapping Rules

Upper Layer Lifeform	Height (m)	Canopy Cover (%)									
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Herb	0-0.5	A	A	A	A	A	B	B	B	B	B
Herb	0.5-1.0	A	A	A	A	A	B	B	B	B	B
Herb	>1.0	A	A	A	A	A	B	B	B	B	B
Shrub	0-0.5	C	C	C	UN	UN	UN	UN	UN	UN	UN
Shrub	0.5-1.0	C	C	C	UN	UN	UN	UN	UN	UN	UN
Shrub	1.0-3.0	C	C	C	UN	UN	UN	UN	UN	UN	UN
Shrub	>3.0	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	0-5	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	5-10	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	C	C	C	UN	UN	UN	UN	UN	UN	UN
Tree	>50	C	C	C	UN	UN	UN	UN	UN	UN	UN

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

Description

Class A	3	Early Development 1 - All Structures
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PSSP	Psilostrophe sparsiflora	Greenstem paperflower	Upper
POSE	Poa secunda	Sandberg bluegrass	Upper
FEID	Festuca idahoensis	Idaho fescue	Upper

Description

Grassland having just burned. Young, green vegetation.

Maximum Tree Size Class

None

Class B	81	Mid Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PSSP	Psilostrophe sparsiflora	Greenstem paperflower	Upper
POSE	Poa secunda	Sandberg bluegrass	Upper
FEID	Festuca idahoensis	Idaho fescue	Upper
ACTH7	Achnatherum thurberianum	Thurber's needlegrass	Upper

Description

Perennial bunchgrass with solid cryptogam cover, large bluebunch grasses, lower POSE and forb cover, greater forb diversity.

Maximum Tree Size Class

None

Class C	16	Late Development 1 - Open
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
ARTRW8	Artemisia tridentata ssp. wyomingensis	Wyoming big sagebrush	Upper
CHVI4	Chloris virgata	Feather fingergrass	Upper
ERNA10	Ericameria nauseosa	Rubber rabbitbrush	Upper
PSSPS	Pseudoroegneria spicata ssp. spicata	Bluebunch wheatgrass	Lower

Description

Native grassland with shrubs beginning to get a foothold or small pockets of remnants from the original fire expanding into the grassland. It equals the early seral states in Wyoming Big

Sagebrush Steppe Ecological System. Grasses dominate with the same grass height range as in Class B. The class is “Open” due to the shrub component. Patches within this matrix die back due to competition/maintenance.

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Mid1:CLS	1
Mid1:CLS	2	Late1:OPN	50
Late1:OPN	51	Late1:OPN	999

Probabilistic Transitions

Disturbance Type	Disturbance occurs In	Moves vegetation to	Disturbance Probability	Return Interval (yrs)	Reset Age to New Class Start Age After Disturbance?	Years Since Last Disturbance
Replacement Fire	Mid1:CLS	Early1:ALL	0.02	50	Yes	0
Competition or Maintenance	Late1:OPN	Late1:OPN	0.05	20	No	0
Replacement Fire	Late1:OPN	Early1:ALL	0.06	17	Yes	0

References

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