

11390

Northern Rocky Mountain Lower Montane-Foothill-Valley Grassland

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
Katie Phillips	cgphillips@fs.fed.us	Lois Olsen	lolsen@fs.fed.us
Randall Walker	rmwalker@fs.fed.us	None	None
Larry Kaiser	larry_kaiser@blm.gov	None	None

Vegetation Type

Herbaceous

Map Zones

10, 19

Geographic Range

Northern Rockies throughout Montana, northern Idaho, and northeastern Washington (Okanogan Highlands). May occupy river valleys, including the Salmon, Snake, and Clearwater rivers. Drier portions of this type will resemble bluebunch wheatgrass communities in Columbia Basin.

Biophysical Site Description

This type occupies productive uplands below lower treeline or in small pockets where cold air drainage or shallow soils inhibit conifer growth, generally ranging from 1,000-5,000ft.

Vegetation Description

This type is dominated by bluebunch wheatgrass with Idaho fescue and rough fescue as dominant associates. Bluebunch wheatgrass is more prevalent in drier areas. Mueggler and Stewart (1980) have described these types as: Fredi/Agsp (now PSSP6) and Fesc/Agsp. Additional species include needle-and-thread, Sandberg's bluegrass, and a variety of mesic forbs (e.g., showy cinquefoil, sticky geranium, phlox, lupine, and yarrow).

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
PSSP6	<i>Pseudoroegneria spicate</i>	Bluebunch wheatgrass
FEID	<i>Festuca idahoensis</i>	Idaho fescue
FECA4	<i>Festuca campestris</i>	Rough fescue
STCO	<i>Stachys coccinea</i>	Scarlet hedgenettle

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

Disturbance Description

This type has frequent replacement fires. Most species in this type are fire-adapted and respond favorably to these fire types. Where these systems occur within forested ecosystems, fire frequency will be strongly influenced by the surrounding forest's fire regime (e.g., 10-20yrs). Where these systems occur below lower treeline, fire frequencies may be longer (e.g., 20-30yrs).

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	17	100	2	30

Moderate (Mixed)				
Low (Surface)				
All Fires	17	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 type can occupy broad expanses and also narrow bands below the lower montane forest. It may occur as small patches within forested ecosystems as a topoedaphic climax. In large valleys, fires may have been expansive historically, up to 1,000s of acres.

Adjacency or Identification Concerns

Since this is a broad type, the dry bluebunch wheatgrass/needle-and-thread variant will probably have more bare ground and a slightly higher mean fire interval (MFI). Response to fire may differ slightly also.

Non-native species present today can include spotted knapweed, yellow starthistle, and leafy spurge.

Issues or Problems

This is a highly variable type, which includes most of Mueggler and Stewart's habitat types. The literature in FEIS suggests an MFI of between 10-30yrs for this type. The Lewis and Clark range type classification needs to be incorporated into this model also.

Native Uncharacteristic Conditions

Comments

Map zones 10 and 19 were combined during 2015 Biophysical Setting (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	B	C	C	C	C	C	C	C
Herb	0.5-1.0	A	A	B	C	C	C	C	C	C	C
Herb	>1.0	A	A	B	C	C	C	C	C	C	C
Shrub	0-0.5	C	C	C	C	C	UN	UN	UN	UN	UN
Shrub	0.5-1.0	C	C	C	C	C	UN	UN	UN	UN	UN
Shrub	1.0-3.0	C	C	C	C	C	UN	UN	UN	UN	UN
Shrub	>3.0	C	C	C	C	C	UN	UN	UN	UN	UN
Tree	0-5	C	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	5-10	C	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	C	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	C	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	>50	C	UN	UN	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 6 Early Development 1 - All Structures

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PSSP6	Pseudoroegneria spicata	Bluebunch wheatgrass	Upper
KOMA	Koeleria Macrantha	Prairie Junegrass	Upper
POSA	Poa saltuensis	Oldpasture bluegrass	Upper
STCO	Stachys coccinea	Scarlet hedgenettle	Upper

Description

Post-fire, early seral community dominated by bunchgrasses and forbs. Herbs and forbs will generally have higher cover than pre-burn and may include astragalus, balsamroot, lupines, yarrow, and prairie junegrass. Idaho fescue may be present but will recover more slowly than the bluebunch wheatgrass after fire.

Maximum Tree Size Class

None

Class B 27 Mid Development 1 - Closed

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
PSSP6	Pseudoroegneria spicata	Bluebunch wheatgrass	Upper
FEID	Festuca idahoensis	Idaho fescue	Upper
POSA	Poa saltuensis	Oldpasture bluegrass	Upper
STCO	Stachys coccinea	Scarlet hedgenettle	Upper

Description

Mid-development with moderate canopy closure dominated by bunchgrasses with forb cover generally higher than pre-burn.

Maximum Tree Size Class

None

Class C 67 Late Development 1 - Closed

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
--------	-----------------	-------------	-----------------

PSSP6	Pseudoroegneria spicata	Bluebunch wheatgrass	Upper
FEID	Festuca idahoensis	Idaho fescue	Upper
POSA	Poa saltuensis	Oldpasture bluegrass	Upper
STCO	Stachys coccinea	Scarlet hedgenettle	Upper

Description

Late-development, closed canopy of grasses and forbs. Bunchgrasses dominate with low densities of shrubs (<10%) in some areas, particularly where this BpS transitions to shrub- or tree-dominated communities. Shrub species may include *Artemisia tridentata*, *eriogonum* (buckwheats), *Ceanothus*, bitterbrush, and *Symphoricarpos*.

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:CLS	6
Late1:CLS	6	Late1:CLS	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	Early1:ALL	Early1:ALL	0.003	333	Yes	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.04	25	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.07	14	Yes	0

References

Agee, J.K. 1994. Fire and weather disturbances in terrestrial ecosystems of the eastern Cascades. In: P. Hessburg, ed. Volume III: Assessment. eastside forest ecosystem health assessment. General Technical Report PNW-GTR-320. USDA Forest Service, Pacific Northwest Research Station.

Daubenmire, R.F. and J.B. Daubenmire. 1968. Forest vegetation of eastern Washington and northern Idaho. Technical Bulletin 60. Pullman, WA: Washington State University, Agricultural Experiment Station. 104 p.

Mueggler, W.F. and W.L. Stewart. 1980. Grassland and shrubland habitat types of western Montana. Gen. Tech. Rep. INT-66. Ogden, UT: USDA Forest Service, Intermountain Forest and Range Experiment Station, 154 pp.

NatureServe. 2007. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, VA. Data current as of 10 February 2007.