

10472

Northern Rocky Mountain Mesic Montane Mixed Conifer Forest - Cedar Groves

BpS Model/Description Version: Aug. 2020

Modelers		Reviewers	
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None	None	None	None
None	None	None	None

Vegetation Type

Forest and Woodland

Map Zones

10, 19

Model Splits or Lumps

This Biophysical Setting (BpS) is split into multiple models: nearly pure cedar groves, with much longer fire return intervals, have been split from the more common cedar-hemlock type (BpS 10471).

Geographic Range

Occurs in the maritime-influenced zone of northern Idaho and northwestern Montana.

Biophysical Site Description

Wet canyon bottoms and toe slopes <5,000ft elevation; generally small to moderate-size "stringer" groves dominated by *Thuja plicata* that often escape burning during fires on adjacent slopes.

Vegetation Description

Sheltered groves of nearly pure uneven aged *Thuja plicata*, with occasional minor associates *Abies grandis*, *Tsuga heterophylla*, and *Larix occidentalis*. Understories are usually dominated by low-growing forbs and ferns such as *Asarum caudatum*, *Viola orbiculata*, *Clintonia uniflora*, *Tiarella trifoliata*, *Coptis occidentalis*, *Oplopanax horridum*, *Athyrium filix-femina*, and *Adiantum pedatum*.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
THPL	<i>Thuja plicata</i>	Western red cedar
ABGR	<i>Abies grandis</i>	Grand fir
LAOC	<i>Larix occidentalis</i>	Western larch

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

Disturbance Description

Long-interval stand-replacement fire regime (200-500yrs) with occasional mixed-severity fires (i.e., burn margin effect from fires on adjacent drier slopes).

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
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Replacement	382	84	75	1000
Moderate (Mixed)	2027	16		
Low (Surface)				
All Fires	321	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

Stand-replacing disturbances tended to be extensive in the surrounding landscape, but smaller patches of mixed-severity fire can occur during less-severe fire weather. This vegetation type represents relatively small imbedded "fire refugia," where *Thuja plicata* groves can persist for 500-1,000yrs between stand-replacement fires.

Adjacency or Identification Concerns

Type transitions to cedar/hemlock types (10471) with increasing slope steepness and elevation. This type is distinguished by the more mesic conditions (i.e., riparian areas, draws, and canyon bottoms) and composition of pure or nearly pure western red cedar.

Issues or Problems

Should seek reviewer advice about the roles of diseases; root rots and other fungi were important in stand successional patterns and pathways but mostly for producing local gap-phase openings rather than stand replacement.

Native Uncharacteristic Conditions

Comments

Map zones 10 and 19 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	A	A	A	A	A
Herb	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Herb	>1.0	A	A	A	A	A	A	A	A	A	A
Shrub	0-0.5	A	A	A	A	A	A	A	A	A	A
Shrub	0.5-1.0	A	A	A	A	A	A	A	A	A	A
Shrub	1.0-3.0	A	A	A	A	A	A	A	A	A	A
Shrub	>3.0	A	A	A	A	A	A	A	A	A	A
Tree	0-5	A	A	A	A	A	A	A	A	A	A
Tree	5-10	C	C	C	C	B	B	B	B	B	B
Tree	10-25	C	C	C	C	B	B	B	B	B	B
Tree	25-50	D	D	D	D	E	E	E	E	E	E
Tree	>50	D	D	D	D	E	E	E	E	E	E

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	7	Early Development 1 - All Structures
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
CLUN	Clarkia unguiculata	Elegant clarkia	Lower
ADPE	Adiantum pedatum	Northern maidenhair	Lower
ATFI	Athyrium filix-femina	Common ladyfern	Lower
THPL	Thuja plicata	Western red cedar	Upper

Description

Post-burn sites dominated by forbs, ferns, and shrubs; tree regeneration generally consists of western red cedar and grand fir seedlings to saplings. Herbaceous layer will be up to 100% cover and may dominate prior to the development of cedar and hemlock saplings.

Maximum Tree Size Class

Sapling >4.5ft; <5" DBH

Class B	41	Mid Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
THPL	Thuja plicata	Western red cedar	Upper

Description

Moderate to heavy regeneration of pole-size western red cedar. Occasional grand fir, western larch, and other species may be present.

Maximum Tree Size Class

Pole 5-9" DBH

Class C	7	Mid Development 1 - Open
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
THPL	Thuja plicata	Western red cedar	Upper

Description

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	0.002	500	Yes	0
Mixed Fire	Mid1:OPN	Mid1:OPN	0.0008	1250	No	0
Replacement Fire	Mid1:OPN	Early1:ALL	0.0017	588	Yes	0
Mixed Fire	Mid1:CLS	Mid1:OPN	0.0005	2000	Yes	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.0028	357	Yes	0
Insects or Disease	Mid1:CLS	Early1:ALL	0.003	333	Yes	0
Insects or Disease	Mid1:CLS	Mid1:OPN	0.0033	303	Yes	0
Mixed Fire	Late1:OPN	Late1:OPN	0.001	1000	No	0
Replacement Fire	Late1:OPN	Early1:ALL	0.0028	357	Yes	0
Mixed Fire	Late1:CLS	Late1:OPN	0.0005	2000	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.0028	357	Yes	0
Insects or Disease	Late1:CLS	Mid1:OPN	0.005	200	Yes	0
Insects or Disease	Late1:CLS	Late1:OPN	0.005	200	Yes	0

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