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Rocky Mountain Aspen Forest and Woodland

BpS Model/Description Version: Aug. 2020

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None	None	None	None

Vegetation Type

Forest and Woodland

Map Zone

7

Geographic Range

Aspen occur in scattered small patches of <10ac, with somewhat more extensive areas in riparian zones. Extensive areas of aspen (100s of acres) in this zone are rare. Steens Mountain provides an example of an extensive area, as well as the Unity District of the Wallowa Whitman National Forest.

Biophysical Site Description

Commonly on moderate, mid-elevation slopes as small, scattered inclusions in the Douglas-Fir-Ponderosa Pine Biophysical Setting (BpS). Also in riparian zone at lower elevations. Primarily occurs in the mid-elevation zone (3,000-5,000ft).

Vegetation Description

Small, scattered patches of aspen. In the existing vegetation condition, Douglas-fir, grand fir, and ponderosa pine are common in the stands because of fire exclusion, and aspen is often decadent.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
POTR5	<i>Populus tremuloides</i>	Quaking aspen

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

Disturbance Description

Historically burned as part of a mixed-severity vegetation mosaic with Douglas-fir-ponderosa pine.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	124	45	50	300
Moderate (Mixed)	100	55		
Low (Surface)				
All Fires	55	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

Primarily at fine scale (<10ac) in this map zone. A few areas in the hundreds of acres. This is a rare map unit in this zone. Normally, aspen are a fine-scale component mapped as part of other BpSs.

Adjacency or Identification Concerns

Issues or Problems

Map only where aspen occur in large enough areas to represent a range of aspen seral stages.

Native Uncharacteristic Conditions

Comments

During the 2017 BpS Review Kori Blankenship found that the reported fire frequency and succession class percents did not match the modeled results. It was unclear why the results differed. Blankenship was able to produce similar results by changing the modeled Alt Succession probability from .25 to .0125.

Model review resulted in reducing the frequency of fire. Darren Johnson changed upper layer lifeform minimum canopy closure in Class A from 51% to 0%.

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	B	B	B	B	B	B	B	B	B	B
Tree	10-25	D mix	D mix	D mix	D mix	E mix	E mix	E mix	E mix	E mix	E mix
Tree	10-25	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf
Tree	10-25	D con	D con	D con	D con	E con	E con	E con	E con	E con	E con
Tree	25-50	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf
Tree	25-50	D mix	D mix	D mix	D mix	E mix	E mix	E mix	E mix	E mix	E mix
Tree	25-50	D con	D con	D con	D con	E con	E con	E con	E con	E con	E con
Tree	>50	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf	C brdlf
Tree	>50	D con	D con	D con	D con	E con	E con	E con	E con	E con	E con

Tree	>50	D mix	D mix	D mix	D mix	E mix	E mix	E mix	E mix	E mix	E mix
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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	28	Early Development 1 - All Structures
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
POTR5	Populus tremuloides	Quaking aspen	Upper

Description

Aspen suckers and saplings. Grass and forbs present. Mixed-severity fire does not change vegetation dynamics.

Maximum Tree Size Class

Seedling <4.5ft

Class B	18	Mid Development 1 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
POTR5	Populus tremuloides	Quaking aspen	Upper

Description

Aspen >6ft dominate. Canopy cover highly variable. Mixed-severity fire does not change the successional age of these stands, although this fire consumes litter and woody debris and may stimulate suckering.

Maximum Tree Size Class

Sapling >4.5ft; <5" DBH

Class C	18	Mid Development 2 - Closed
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Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
POTR5	Populus tremuloides	Ouaking aspen	Upper

Description

Maximum Tree Size Class
Medium 9-21" DBH

Indicator Species

Description

Maximum Tree Size Class
Large 21-33" DBH

Indicator Species

Description

Maximum Tree Size Class
Large 21-33" DBH

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
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Early1:ALL	0	Mid1:CLS	39
Mid1:CLS	40	Late1:ALL	79
Mid2:CLS	80	Mid2:CLS	999
Late1:ALL	80	Late1:CLS	149
Late1:CLS	150	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	0.008	125	Yes	0
Mixed Fire	Early1:ALL	Early1:ALL	0.01	100	No	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.008	125	Yes	0
Mixed Fire	Mid1:CLS	Mid1:CLS	0.01	100	No	0
Alternative Succession	Mid1:CLS	Mid2:CLS	0.0125	80	Yes	0
Insects or Disease	Mid2:CLS	Mid1:CLS	0.005	200	Yes	0
Replacement Fire	Mid2:CLS	Early1:ALL	0.008	125	Yes	0
Mixed Fire	Mid2:CLS	Mid2:CLS	0.01	100	No	0
Replacement Fire	Late1:ALL	Early1:ALL	0.008	125	Yes	0
Mixed Fire	Late1:ALL	Late1:ALL	0.01	100	No	0
Insects or Disease	Late1:CLS	Late1:ALL	0.003	333	Yes	0
Replacement Fire	Late1:CLS	Early1:ALL	0.008	125	Yes	0
Mixed Fire	Late1:CLS	Late1:ALL	0.01	100	Yes	0

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