10110
Rocky Mountain Aspen Forest and Woodland

BpS Model/Description Version: Aug. 2020

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Vegetation Type
Forest and Woodland

Map Zones
28

Geographic Range
Western CO, UT, northern NM, northern AZ and central NV.

Biophysical Site Description
This type occurs on flat to moderately steep terrain (<50%) on all aspects. Elevation typically ranges from 2,275m-3,335m (7,000-11,000ft) in MZ28. Stable aspen typically occurs above grass, sagebrush or PJ. Soils are generally deep, mollic, cool and moist. As a species, aspen is adapted to a much broader range of environments than most plants found associated with it.

Vegetation Description
Aspen exists in single-storied or more commonly multi-storied stands. Conifers are not generally present in this type. Understory consists of an abundant herbaceous component, perhaps with snowberry (*Symphoricarpos* spp.), meadow rue (*Thalictrum fendleri*) and/or yarrow (*Achillea millefolium*) present. Aspen suckers 5-15ft tall will be present in all classes at least 500 stems/acre. Lack of suckers is representative of an uncharacteristic class. Another uncharacteristic class is indicated if sagebrush cover is >10% (in UT).

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
POTR5	*Populus tremuloides*	Quaking aspen
SYOR2	*Symphoricarpos oreophilus*	Mountain snowberry
ARUV	*Arctostaphylos uva-ursi*	Kinnikinnick

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

Disturbance Description
Fire, insects and disease. In absence of disturbance, may stay aspen. Fire will generally come from adjacent systems. Surface fire would generally affect the margins of stands as a result of fire on adjacent vegetation types. Mixed fire may occur, but is undocumented.

Fire Frequency

Severity	Avg FI	Percent of All Fires	Min FI	Max FI
Replacement	148	79	50	300
Moderate (Mixed)	1761	7		
Low (Surface)	860	14		

All Fires	118	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

Patch sizes range in the 10s-100s of acres. Fires may have been as large as thousands of acres, but patches of this system would have typically been smaller than thousands of acres.

Adjacency or Identification Concerns

If conifers are present, please review the mixed conifer BpS as options. Stable stands appear to occur more often at lower elevations compared to seral stands. Adjacent forest types such as ponderosa pine or warm/dry mixed conifer with more frequent fire may influence fire frequency in stable aspen to facilitate regeneration. Adjacent systems include sagebrush/grass (lower elevation) and mixed conifers (higher elevation).

Issues or Problems

Aspen decline does not appear to be the same across the region. Decline is thought to be critical in UT, AZ and NM, but not in CO (especially SW CO).

Aspen stands tend to remain dense through most of the lifespan, hence the open stand descriptions were not used. These are typically self-perpetuating stands, they may not need regular disturbance to regenerate. As aspen is such a wide-ranging species, there are not dominant understory species which assist in identification of this type. There are surface fires which burn small areas throughout these stands. They do not set succession back.

Native Uncharacteristic Conditions

Comments

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	C	C	C	C	C	C	C	C	C	C
Tree	25-50	C	C	C	C	C	C	C	C	C	C
Tree	>50	C	C	C	C	C	C	C	C	C	C

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

Indicator Species

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

Description

Aspen suckers less than six feet tall and abundant. Aspen will not necessarily be tree form; will often be less than one inch DBH. Grass and forbs resprout vigorously with high cover. Often densely vegetated.

Maximum Tree Size Class

Seedling <4.5ft

Class B 35 Mid Development 1 - Closed

Indicator Species

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

Description

Aspen over six feet tall dominate. Canopy cover highly variable, but usually dense. Understory also usually dense.

Maximum Tree Size Class

Pole 5-9" DBH

Class C 58 Late Development 1 - Closed

Indicator Species

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

Description

Aspen trees nine inches plus DBH. Canopy cover is highly variable, but usually dense. Understory dense. Lots of dead and downed material.

Maximum Tree Size Class
Large 21-33"DBH

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:ALL	0	Mid1:CLS	9
Mid1:CLS	10	Late1:CLS	69
Late1:CLS	70	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	0.005	200	Yes	0
Native Grazing	Early1:ALL	Early1:ALL	0.2	5	No	0
Insects or Disease	Mid1:CLS	Mid1:CLS	0.002	500	No	0
Replacement Fire	Mid1:CLS	Early1:ALL	0.007	143	Yes	0
Mixed Fire	Late1:CLS	Early1:ALL	0.001	1000	Yes	0
Surface Fire	Late1:CLS	Late1:CLS	0.002	500	No	0
Insects or Disease	Late1:CLS	Late1:CLS	0.002	500	No	0
Wind or Weather or Stress	Late1:CLS	Late1:CLS	0.005	200	No	0
Replacement Fire	Late1:CLS	Early1:ALL	0.007	143	Yes	0

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