

13860

Acadian-Appalachian Alpine Tundra

BpS Model/Description Version: Aug. 2020

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Modelers		Reviewers	
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None	None	None	None
None	None	None	None

Vegetation Type

Shrubland

Map Zones

66

Geographic Range

Higher summits of the northern Appalachian Mountains, from northern New England and the Adirondacks into the Canadian Gaspé, extending south in scattered locations into southern New England.

Biophysical Site Description

Occurs above treeline on northeastern mountains. This system typically occurs above 4,900ft and is bounded on the lower elevation by Acadian-Appalachian Subalpine Woodland and Heath-Krummholz (BpS 1389).

The vegetation is exposed to high winds, a short growing season, low temperatures, heavy cloud cover and snow accumulation, high precipitation and fog interception, and well drained soils with low nutrient availability and high organic matter content (Sperduto and Cogbill 1999).

Most of the cover is dwarf-shrubland, lichen, or sparse vegetation; islands of taller shrubs may occur in protected spots. This system includes wetland depressions, small alpine bogs, within the surrounding upland matrix.

Vegetation Description

Overall plant composition in this system relates well to elevation range, area, and range of soil moisture conditions (Sperduto and Cogbill 1999, Bliss 1963). Most of the cover is dwarf-shrubland, lichen, or sparse vegetation; islands of taller shrubs may occur in protected spots. The dominant plants are ericads (*Vaccinium uliginosum* is diagnostic and often dominant, with several other alpine-restricted ericads such as *Phyllodoce caerulea* and *Loiseleuria procumbens*) and cushion-plants such as *Diapensia lapponica*. *Carex bigelowii* is a characteristic and, in some places, locally dominant sedge.

BpS Dominant and Indicator Species

Symbol	Scientific Name	Common Name
VAUL	<i>Vaccinium uliginosum</i>	Bog blueberry

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

Disturbance Description

These systems typically do not contain enough fuel to sustain fire. Rare landslides and snowslides may be the only probabilistic disturbances to affect this system.

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

[illegible]

Shrub	1.0-3.0	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Shrub	>3.0	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	0-5	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	5-10	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	10-25	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	25-50	UN	UN	UN	UN	UN	UN	UN	UN	UN	UN
Tree	>50	UN	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 14 Early Development 1 - Open

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
DILA	Diapensia lapponica	Pincushion plant	lower
CABI5	Carex bigelowii	Bigelow's sedge	lower

Description

This class represents the first 300yrs after a catastrophic disturbance that scraped the area down to bare rock.

Maximum Tree Size Class

None

Class B 86 Late Development 1 - Open

Indicator Species

Symbol	Scientific Name	Common Name	Canopy Position
VAUL	Vaccinium uliginosum	Bog blueberry	
PHCA10	Phyllodoce caerulea	Blue mountainheath	

Description

This class represents the mature vegetation of this system, a mix of dwarf-shrubland, herbaceous vegetation, and patches of lichen/bare rock.

Maximum Tree Size Class

None

Model Parameters

Deterministic Transitions

From Class	Begins at (yr)	Succeeds to	After (years)
Early1:OPN	0	Late1:OPN	299
Late1:OPN	300	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
Optional 1	Early1:OPN	Early1:OPN	0.0005	2000	Yes	0
Optional 1	Late1:OPN	Early1:OPN	0.0005	2000	Yes	0

Optional Disturbances

Optional 1: Landslide/snowslide

References

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