

***Populus (tremuloides, grandidentata) - Betula (populifolia, papyrifera) Woodland***

COMMON NAME (Quaking Aspen, Bigtooth Aspen) - (Gray Birch, Paper Birch) Woodland  
SYNONYM Early Successional Woodland/Forest  
PHYSIOGNOMIC CLASS Woodland (II)  
PHYSIOGNOMIC SUBCLASS Deciduous woodland (II.B)  
PHYSIOGNOMIC GROUP Cold-deciduous woodland (II.B.2)  
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (II.B.2.N)  
FORMATION Cold-deciduous woodland (II.B.2.N.a)  
ALLIANCE POPULUS TREMULOIDES WOODLAND ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 3

USFWS WETLAND SYSTEM Terrestrial

RANGE

***Acadia National Park***

This association occurs primarily in the 1947 fire area of Mount Desert Island.

***Globally***

This association occurs in Maine, New York, and possibly New Hampshire.

ENVIRONMENTAL DESCRIPTION

***Acadia National Park***

The three subtypes form an elevational gradient, with forest physiognomy typical of the lowest elevations (below 75 m), woodlands at intermediate elevations (approximately 50 - 300 m), grading into stunted shrubland above 300 m. Aspect spans the compass. They typically occur on moderate to somewhat steep slopes (10 - 50%), on thin glacial till or bare granite. Soil, where present, is usually less than 25 cm deep, and most sites are moderately well drained to somewhat excessively drained (occasional on somewhat poorly drained soils), with a pH of 5.0 - 5.4. All of the sampled aspen - birch complex areas are within the 1947 fire area (although at least one AA point was outside of the fire area), and most contain direct evidence of fire.

***Globally***

This successional deciduous northern hardwood forests occurs on moderate to steeply sloping granite bedrock or thin glacial till.

MOST ABUNDANT SPECIES

***Acadia National Park***

<u>Stratum</u>	<u>Species</u>
Tree Canopy	<i>Populus tremuloides, Populus grandidentata, Betula papyrifera, Acer rubrum, Quercus rubra</i> (locally)
Tree Subcanopy	<i>Betula papyrifera, Betula populifolia, Acer pensylvanicum, Quercus rubra, Fraxinus americana</i>
Short Shrub	<i>Betula populifolia</i>
Dwarf Shrub	<i>Vaccinium angustifolia</i>
Herbaceous	<i>Pteridium aquilinum, Deschampsia flexuosa, Festuca ovina, Aster umbellatum, Aster macrophyllum, Danthonia spicata, Carex lucorum, Maianthemum canadense</i>
Non-vascular	<i>Polytrichum commune, Polytrichum juniperinum, Cladonia pyxidata</i>

***Globally***

<u>Stratum</u>	<u>Species</u>
Tree Canopy	<i>Populus tremuloides, P. grandidentata, Betula papyrifera, B. populifolia, Acer rubrum, Prunus serotina</i>
Dwarf Shrub	<i>Vaccinium angustifolium, Kalmia angustifolia, Comptonia peregrina</i>
Herbaceous	<i>Pteridium aquilinum, Deschampsia flexuosa, Festuca ovina, Aster umbellatus, Aster macrophyllus, Danthonia spicata, Carex lucorum, Maianthemum canadense</i>

CHARACTERISTIC SPECIES

***Acadia National Park***

Deciduous tree cover with early successional species dominant. *Quercus rubra* often present but less abundant.

***Globally***

VEGETATION DESCRIPTION

***Acadia National Park***

FOREST & WOODLAND SUBTYPES: The tree canopy is dominated by *Populus grandidentata* (in the forest subtype) or *P. tremuloides* and, to a lesser extent, *Acer rubrum* (in the woodland subtype). Rarely are both *Populus tremuloides* and *P. grandidentata* present in the canopy. *Acer pensylvanicum, Betula caerulea* and *Betula papyrifera* are frequent but at low cover; *Betula populifolia* is occasional in the subcanopy but prominent in the 1 - 3 m shrub layer. The composition of the shrub layer is otherwise variable; at four sites, *Viburnum acerifolium, Betula alleghaniensis, Physocarpus opulifolius*, or *Hamamelis virginiana* dominated instead of *B. populifolia* in that layer. The low shrub layer is variable in extent and composition, except for the

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**Acadia National Park**

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presence in half of the samples of *Vaccinium angustifolium*; *Kalmia angustifolia* and *Comptonia peregrina* were important in some samples. Dominant herbs include *Pteridium aquilinum* and *Festuca ovina/filiformis*; *Aster macrophyllus*, *Deschampsia flexuosa*, and *Carex lucorumrum* are frequent associates. The bryoid layer is sparse and features *Polytrichum* mosses. SHRUBLAND SUBTYPE: The dominant growth is *Betula populifolia* and (lesser) *Sorbus americana* of about 2 - 3 tall, sometimes with scattered *Picea rubens* or *Alnus viridis*, with a dense low shrub understory of *Vaccinium angustifolium*, *Kalmia angustifolia*, and *Viburnum nudum* (with *Photinia melanocarpa* and *Spiraea alba* present at lower cover); *Rhododendron canadense* and *Ilex verticillata* were important in one sample. The herb layer, while not extensive, contains several species common to the woodland and forest subtypes, as well as some species not usually present in those variants, such as *Calamagrostis canadensis* and *Carex debilis*. Introduced species are more prevalent in this type than in other forest and woodland types, although (as in other types) they generally contribute less than 5% of the vegetation cover even where they are present.

The basal area ranged from 8 - 35 m<sup>2</sup>/ha. Canopy heights were none (shr) - 20 m (forest).

**Globally**

The community is broadly defined, and includes vegetation developing after severe disturbance such as logging, fires, severe hurricanes, or simply heavily fragmented residential development. The tree canopy is a heterogeneous mixture of light-requiring, wind-dispersed trees usually composed of several codominant species including *Populus tremuloides*, *Populus grandidentata*, *Betula papyrifera*, *Betula populifolia*, *Acer rubrum*, *Prunus serotina*, typically with minor components of *Pinus strobus*, *Picea rubens*, *Acer saccharum*, *Quercus rubra*, or *Fraxinus americana*. The shrub layer is sparse to absent, and may include *Sorbus americana*, *Acer pensylvanicum*, or *Hamamelis virginiana*. *Vaccinium angustifolium*, *Kalmia angustifolia*, and *Comptonia peregrina* form a dwarf-shrub layer, and associated herbs include *Pteridium aquilinum*, *Deschampsia flexuosa*, *Festuca ovina*, *Aster umbellatus*, *Aster macrophyllus*, *Danthonia spicata*, *Carex lucorumrum*, and *Maianthemum canadense*. The bryophyte layer is generally of low cover but may include *Polytrichum commune*, *Polytrichum juniperinum*, and *Cladonia* spp.

**OTHER NOTEWORTHY SPECIES**

CONSERVATION RANK G5.

DATABASE CODE CEGLO06303

**COMMENTS**

**Acadia National Park**

Physiognomic gradient as described. A broad type spanning a wide array of compositional variety. Proportion of spruce in the shrubland type can vary. *Acer rubrum* and *Populus* spp. are inversely abundant in the woodland subtype.

Red Oak Talus Slope Woodland (*Betula alleghaniensis* - *Quercus rubra* / *Polypodium virginianum* Woodland) is segregated as a separate type and has *Betula alleghaniensis* dominant at least in the sapling-sized trees. The high-slope shrubland variants grades into the summit vegetation complex Blueberry Granite Barrens (*Vaccinium angustifolium* - *Sorbus americana* / *Sibbaldiopsis tridentata* Dwarf-shrubland). Mixed summit shrublands share many of the same species but have more spruce, less grey birch, and greater cover of deciduous shrub species. The forest and woodland types grade into oak types, the prevalence of *Quercus rubra* is used as the diagnostic character but is not always easy to apply in the field.

**Globally**

**Note:**

This association is found in four different map classes:

- 1) [Aspen – Birch Woodland/Forest Complex \(forest phase\)](#)
- 2) [Aspen – Birch Woodland/Forest Complex \(woodland phase\)](#)
- 3) [Aspen – Birch Woodland/Forest Complex \(shrubland phase\)](#)
- 4) [Mixed Conifer – Deciduous Woodland](#)