

Pinus rigida / *Photinia melanocarpa* / *Deschampsia flexuosa* - *Schizachyrium scoparium*
Woodland

COMMON NAME Pitch Pine / Black Chokeberry / Wavy Hairgrass - Little Bluestem Woodland
SYNONYM Pitch Pine Rocky Summit
PHYSIOGNOMIC CLASS Woodland (II)
PHYSIOGNOMIC SUBCLASS Evergreen woodland (II.A)
PHYSIOGNOMIC GROUP Temperate or subpolar needle-leaved evergreen woodland (II.A.4)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (II.A.4.N)
FORMATION Rounded-crowned temperate or subpolar needle-leaved evergreen woodland (II.A.4.N.a)
ALLIANCE PINUS RIGIDA WOODLAND ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Terrestrial

RANGE

Acadia National Park

This association occurs throughout the Park.

Globally

This association occurs in Connecticut, Maine, Massachusetts, New Hampshire, New York, Pennsylvania, Vermont, and West Virginia.

ENVIRONMENTAL DESCRIPTION

Acadia National Park

Pitch pine woodlands occur in xeric environments, bedrock exposures of middle to upper hillslopes and crests. Slopes range up to 25%; aspect from east to northwest. They occur at all elevations within the Park. Soils are thin (rarely over 20 cm to rock), moderately well drained to excessively drained, and usually coarse-textured. Soil pH is usually around 5.0, ranging from 4.8 - 5.6. They occur throughout the Park, inside and outside of the 1947 fire area, but most contain evidence of fire regardless of their location.

Globally

This northeastern pitch pine community occurs on dry rocky ridges and summits of low to moderate elevations. Soils are derived from acidic bedrock and are typically shallow, well-drained, coarse sands or gravels. In the northern Appalachian Mountains, this community generally occurs at elevations from 100 to 1265 feet and in the central Appalachians this community occurs at elevations up to 4400 feet.

MOST ABUNDANT SPECIES

Acadia National Park

<u>Stratum</u>	<u>Species</u>
Tree Canopy	<i>Pinus rigida</i> , <i>Picea rubens</i> , <i>Thuja occidentalis</i>
Tree Subcanopy	variable (<i>Pinus rigida</i> , <i>Picea rubens</i>)
Dwarf Shrub	<i>Gaylussacia baccata</i> , <i>Vaccinium angustifolia</i> , <i>Kalmia angustifolia</i> , <i>Photinia melanocarpa</i> , <i>Juniperus communis</i> , <i>Amelanchier</i> spp., <i>Rhododendron canadense</i>
Herbaceous	<i>Pteridium aquilinum</i> , <i>Deschampsia flexuosa</i> , <i>Sibbaldiopsis tridentata</i> , <i>Gaultheria procumbens</i> , <i>Minuartia glabra</i> , <i>Melampyrum lineare</i>
Non-vascular	<i>Cladina</i> spp., <i>Rhizocarpon geographicum</i> , <i>Grimmia</i> spp.

Globally

<u>Stratum</u>	<u>Species</u>
Tree Canopy	<i>Pinus rigida</i>
Dwarf Shrub	<i>Vaccinium angustifolium</i> , <i>Vaccinium pallidum</i> , <i>Vaccinium myrtilloides</i> , <i>Gaylussacia baccata</i>
Herbaceous	<i>Pteridium aquilinum</i> , <i>Schizachyrium scoparium</i> , <i>Deschampsia flexuosa</i> , <i>Danthonia spicata</i> , <i>Carex pennsylvanica</i> , <i>Maianthemum canadense</i>

CHARACTERISTIC SPECIES

Acadia National Park

Pinus rigida in all layers, woodland structure.

Globally

VEGETATION DESCRIPTION

Acadia National Park

If one had to pick one vegetation type that best characterized Acadia, it would likely be pitch pine woodlands. They are

USGS-NPS Vegetation Mapping Program
Acadia National Park

extensive and well developed here and show a range of compositional and environmental variation. These are woodlands in which *Pinus rigida* is the strong canopy dominant. Canopy cover varies over the woodland range, from open woodlands with about 20% canopy to almost forest-like stands with around 65% coverage. Canopy height may be as low as 4 m, with stands rarely over 15 m. The subcanopy and high shrub strata are variable. *Picea rubens* is a frequent constituent. *Quercus ilicifolia* is an important associate in some stands. The shrub layer varies widely from almost absent to moderately dense (60%). *Pinus rigida* and *Picea rubens* are typical; some stands may have large amounts of *Quercus ilicifolia*, *Viburnum nudum*, or *Betula papyrifera*. A characteristic feature of these woodlands is the dwarf shrub stratum: it is consistently over 30% cover (up to 70%) and is dominated by the heaths *Gaylussacia baccata*, *Vaccinium angustifolium*, and *Kalmia angustifolia*. Other common shrubs (usually lower cover) are *Photinia melanocarpa*, *Rhododendron canadense*, *Juniperus communis*, and *Amelanchier* spp. The herb layer is sparse and variable in composition. *Pteridium aquilinum* and low *Pinus rigida* most commonly occur; *Deschampsia flexuosa*, *Sibbaldiopsis tridentata*, *Minuartia glabra*, and *Melampyrum lineare* are among the occasional species. The bryoid layer, likewise sparse, features *Cladina lichens*, *Rhizocarpon geographicum*, and *Grimmia* mosses, with only scattered larger bryophyte species.

The basal area ranged from 5 - 30 m²/ha. Canopy heights were 4 - 14 m (avg. 8 m).

Globally

The open canopy is dominated by *Pinus rigida* with a variable mixture of associates, such as *Betula populifolia*, *Quercus rubra*, *Pinus strobus*, *Betula lenta*, *Acer rubrum*, and *Prunus serotina*. The tall-shrub layer is absent or, if present, is poorly developed and comprised of scattered *Quercus ilicifolia* or *Quercus prinoides*. The shrub layer is well-developed, dominated by heaths, such as *Vaccinium angustifolium*, *Vaccinium pallidum*, *Vaccinium myrtilloides*, and *Gaylussacia baccata*, as well as other shrubs, such as *Comptonia peregrina* and *Aronia melanocarpa*. The herbaceous layer is of variable cover, and may include *Pteridium aquilinum*, *Schizachyrium scoparium*, *Deschampsia flexuosa*, *Danthonia spicata*, *Carex pensylvanica*, *Maianthemum canadense*, *Melampyrum lineare*, *Fragaria virginiana*, and *Cypripedium acaule*. In the northern Appalachian Mountains, this community may include species of northern affinity, such as *Viburnum nudum*, *Kalmia angustifolia*, *Betula papyrifera*, *Picea rubens*, and *Rhododendron canadense*, while in the central Appalachians, this community has occasional associates including *Pinus pungens* and *Ilex montana*.

OTHER NOTEWORTHY SPECIES *Minuartia glabra*

CONSERVATION RANK G?.

DATABASE CODE CEGL006116

COMMENTS

Acadia National Park

All gradations of pitch pine - other conifer mixtures seem to occur in Acadia. For classification, we consider Pitch Pine Rocky Summit to be those woodlands where *Pinus rigida* makes up at least 60% of the tree canopy (relative dominance). The addition of *Quercus ilicifolia* on Acadia Mountain is interesting; usually this species is associated with sandy pitch pine barrens.

Dominance of *Pinus rigida* in the canopy and of *Gaylussacia baccata* and *Vaccinium angustifolium* in the dwarf shrub layer are consistent; associated species can be quite variable.

This typical variant of pitch pine woodlands is closely related to two other types in Acadia. Coastal Pitch Pine Outcrop Woodland (*Pinus rigida* / *Corema conradii* Woodland, known in Acadia only from Wonderland and Isle au Haut) is very similar except that *Corema conradii* accompanies *Gaylussacia baccata* and *Vaccinium angustifolium* in their dominance of the dwarf shrub layer. Pitch Pine / Blueberry spp. - Huckleberry Woodland (*Pinus rigida* / *Vaccinium* spp. - *Gaylussacia baccata* Woodland, known in Acadia only from Long Island) grows on sandy soils on gentle slopes, rather than on bedrock; have somewhat taller, straighter trees, and a more well developed bryophyte layer. Pitch pine woodlands can also grade to mixed conifer woodlands.

Globally

Periodic fires are probably necessary for persistence of this association. This association is differentiated from other *Pinus rigida*-dominated woodlands of rocky habitats by the absence or very low cover of scrub oak *Quercus ilicifolia*.