

Lower-elevation Spruce - Fir Forest

State Rank S5

Community Description

These closed canopy (>75% closure) forests are dominated by red spruce (>60% cover), typically with few other tree species in any of the layers. Fir is often a minor canopy component (up to 20% cover), particularly in open gaps or in younger stands. Hemlock is occasionally mixed with the spruce in southern or central Maine. The lower layers are sparse or patchy, consisting mostly of tree regeneration. In the sparse herb layer, dwarf shrubs are virtually absent except for spotty lowbush blueberry; herbaceous species cover well under 10% of the ground surface, and usually consist of scattered plants of Canada mayflower, starflower, and bunchberry. Most of the ground surface is bare conifer litter, although at some sites (particularly Downeast Maine), bryophytes may form patchy to full cover. Broom-mosses are the most frequent and abundant bryoids.

Soil and Site Characteristics

Sites are typically on hill slopes (lower, middle, or upper) at elevations up to 2200'. Slopes are gentle to moderately steep; aspect is various. The podzolic soils are quite rocky and/or shallow (<40 cm to obstruction) and may be very acidic (pH 4.1-5.2), creating low nutrient conditions. The somewhat xeric to mesic soils range from well drained to imperfectly drained; mottling is often present. Many sites have charcoal in the soil.

Diagnostics

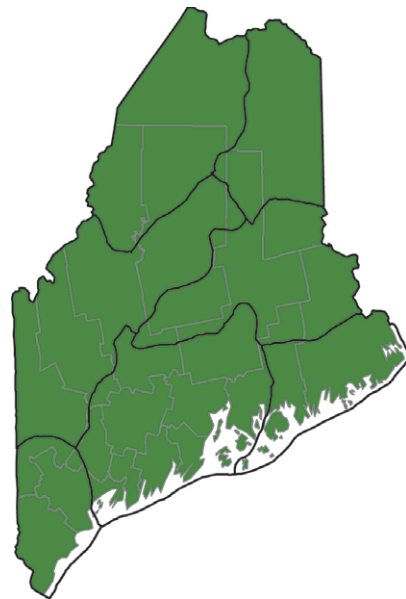
Red spruce is dominant, and fir is usually present but much less abundant. Regeneration is dense in patches, and herbaceous species are almost absent

(< 2% cover, up to 10%). Bryoids are more abundant than herbs and are dominated by broom-moss species.

Similar Types

Maritime Spruce - Fir Forests may be very similar, but generally feature more balsam fir, white spruce, and mountain ash and bryoids other than broom-mosses (typically three-lobed bazzania or red-stemmed moss). Spruce - Fir - Wood-sorrel - Feather-moss Forests have more herbs and a bryoid layer dominated by feather-mosses. Spruce - Heath Barrens have patchier canopies and more extensive shrub and herb layers. At higher elevations, this type can grade into Fir - Heart-leaved Birch Subalpine Forest, where spruce is far less abundant than fir.

Location Map



Community is known from this Ecoregion
 Community may occur in this Ecoregion
 Bailey's Ecoregion
 County



Lower Elevation Spruce - Fir Forest

Conservation, Wildlife, and Management Considerations

This is the dominant spruce - fir type in Maine and is therefore extensively harvested and managed. In addition, spruce-budworm and past harvesting have played significant roles in the age dynamics of this type; some studies suggest that many current stands are more even-aged than they would be in the absence of past harvesting. Large (>1000 acres) examples free from human disturbance are scarce. Some areas of high ecological quality, in the hundreds of acres, are known but not necessarily designated as areas reserved from cutting. Almost all are within a landscape of managed forest rather than surrounded by land that has been permanently cleared and converted to other uses.

This community type may be utilized as nesting habitat by a number of coniferous forest specialist bird species such as the sharp-shinned hawk, yellow-bellied flycatcher, bay-breasted warbler, Cape May warbler, blackpoll warbler, northern parula, blackburnian warbler, boreal chickadee, Swainson's thrush, red crossbill, and white-winged crossbill.

Characteristic Plants

These plants are frequently found in this community type. Those with an asterisk are often diagnostic of this community.

Canopy

Balsam fir
Eastern hemlock
Red spruce*
White pine

Sapling/shrub

Balsam fir*
Red spruce*

Herb

Balsam fir*
Red spruce*

Bryoid

Dicranum moss
Red-stemmed moss
Reindeer lichen
Three-lobed bazzania

Distribution

Statewide, characteristic of the Laurentian Mixed Forest Province and New England - Adirondack Province. Extends eastward, westward, and northward from Maine.

Landscape Pattern: Matrix

Examples on Conservation Lands You Can Visit

- Big & Little Squaw Mountain Public Lands - Piscataquis Co.
- Borestone Mountain Sanctuary - Piscataquis Co.
- East Nubble, Bigelow Preserve - Somerset Co.
- Spruce Hill, White Mountain National Forest - Oxford Co.
- Squa Pan Mountain, Squa Pan Public Lands - Aroostook Co.
- Tunk Mountain & Wizard Pond, Donnell Public Lands - Hancock Co.