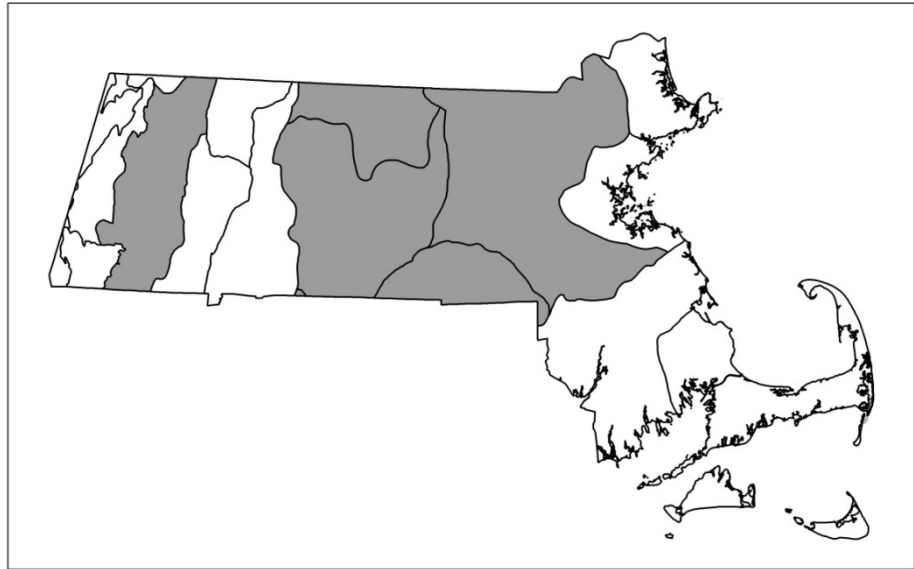




Spruce – Tamarack Bog

Community Code: CP1B1B1000

State Rank: S2



Concept: Acidic forested peatlands with a short overstory (usually) of black spruce and tamarack and an understory of heath shrubs on sphagnum moss.

Environmental Setting: Spruce - Tamarack Bogs are forested communities that occur on thick peat deposits, often as part of larger wetland complexes, usually in the older, more stable areas, that include other forested, shrub, and open community types. The forested bogs are late-successional peatlands that typically occur around more open bog mats. The layer of peat (dead and living moss and barely or partially decomposed roots and other plant material) isolates the plants from nutrients in groundwater. The forest canopy is >25% cover, often with dense small (<12m (40 ft.) and dbh <15cm (6in)) black spruce and tamarack trees, although northern/higher elevation occurrences may be more forest-like.

Vegetation Description: Spruce - Tamarack Bogs are forested peatlands dominated by spruce (usually black spruce, *Picea mariana*, sometimes red spruce, *P. rubens*) and tamarack (*Larix laricina*) and with substantial cover of sphagnum moss on the surface. Shrubs, often of the heath family (such as highbush blueberry (*Vaccinium corymbosum*)), swamp azalea (*Rhododendron viscosum*) and leatherleaf (*Chamaedaphne calyculata*) may form dense shrub layers. Spruce and tamarack are key indicators of this community, along with an extensive surface cover of sphagnum moss that may be hidden under shrubs. Lichens cover or drape branches, with the most obvious being old man's beard (*Usnea* spp.). Other tree species often present include red maple (*Acer rubrum*), white pine (*Pinus strobus*), and pitch pine (*Pinus rigida*). The species of the shrub layer, often dense and about 2m (6.5 ft.) tall, vary with geographic area. Labrador tea (*Rhododendron groenlandicum*), creeping snowberry (*Gaultheria*



hispidula), and, to some extent, bog laurel (*Kalmia polifolia*) are most likely in northern and western parts of the state; sweet pepperbush (*Clethra alnifolia*) tends to be more eastern and southern. Mountain holly (*Nemopanthus mucronatus*), wild raisin (*Viburnum nudum* var. *cassinoides*), leatherleaf (*Chamaedaphne calyculata*), winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), mountain laurel (*Kalmia latifolia*), sheep laurel (*K. angustifolia*), fetterbush (*Eubotrys racemosa*), and maleberry (*Lyonia ligustrina*) may be present anywhere. The herbaceous layer can include three-seeded bog sedge (*Carex trisperma*), tussock sedge (*Carex stricta*), three-leaved Solomon's seal (*Maianthemum trifolium* WL), bluebead-lily (*Clintonia borealis*), goldthread (*Coptis trifolia*), pitcher plant (*Sarracenia purpurea*), sensitive fern (*Onoclea sensibilis*), marsh fern (*Thelypteris palustris*), cinnamon fern (*Osmundastrum cinnamomeum*), and water arum (*Calla palustris*). Dwarf mistletoe (*Arceuthobium pusillum*) has been found in some occurrences.

Differentiating Occurrences: Spruce - Tamarack Bogs have a tree canopy of >25%, dominated by black spruce and tamarack. Open (non-forested) acidic peatlands such as Level Bogs, Kettlehole Level Bogs, and Acidic Graminoid Fens may have clumps of trees, but with <25% canopy overall. Atlantic White Cedar Bogs have >25% tree canopy and the existing trees are dominated by Atlantic white cedar (*Chamaecyparis thyoides*). Atlantic White Cedar Bogs share many species with Spruce - Tamarack Bogs, but are generally found within Pitch Pine - Scrub Oak or Oak - Pine communities. Red Spruce Swamps have taller, larger diameter trees and are dominated by red rather than black spruce, generally with a more open understory (fewer shrubs). They share species with Spruce - Tamarack Bogs, but also contain balsam fir (*Abies balsamea*). Red Spruce Swamp occurrences are often larger than Spruce - Tamarack Bogs. Hemlock Swamps are dominated by eastern hemlock (*Tsuga canadensis*). Red Maple - Black Ash - Tamarack Calcareous Seepage Swamps also contain tamarack, and may contain red spruce. However, these generally have much greater species diversity and occur in calcareous or circumneutral groundwater.

Associated Fauna: Small patch communities such as Spruce - Tamarack Bogs contribute variation to the habitats of large, mobile animals. Breeding birds include a suite of northern species typical of conifer forests.

Public Access: Cookson State Forest, New Marlborough; Otis State Forest, Otis; Muddy Brook WMA, Hardwick; Ware River Watershed (Dept. of Conservation and Recreation), Rutland and Oakham.

Threats: Nutrient input from surroundings would damage the peat. Changes in hydrology that might either flood or drain peatlands such as road construction or nearby water withdrawal.

Management Needs:

USNVC/NatureServe: A3418 *Picea rubens* Northern Appalachian Swamp Forest Alliance *Picea mariana*/(*Vaccinium corymbosum*, *Gaylussacia baccata*)/*Sphagnum* spp. Woodland



(CEGL006098); northern MA *Picea mariana* - (*Larix laricina*)/*Ledum groenlandicum*/*Sphagnum* spp. Forest. (CEGL005271) [NatureServe maps as further north].