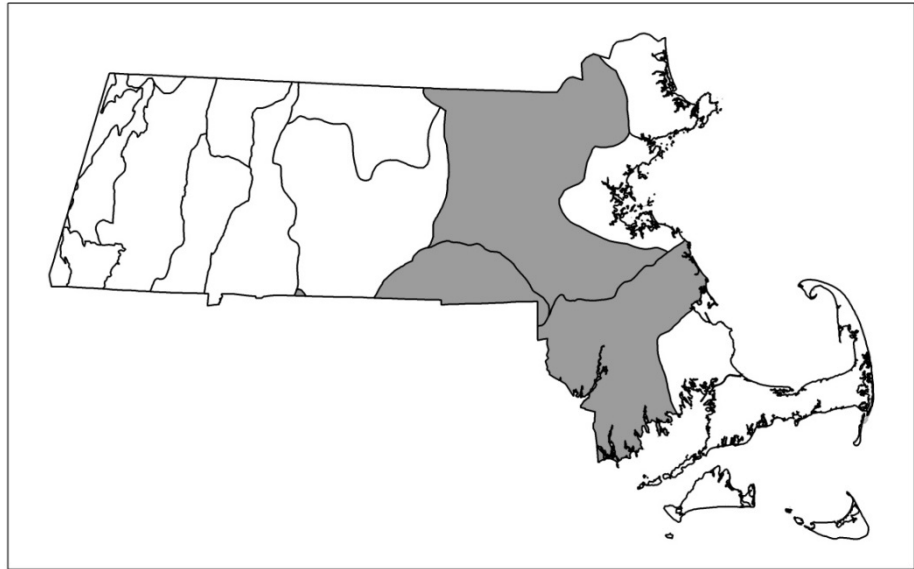




Alluvial Atlantic White Cedar Swamp

Community Code: CP1B1A4000

State Rank: S2



Concept: Forested swamps occurring along low-gradient rivers where Atlantic white cedar is co-dominant with red maple in the overstory.

Environmental Setting: Alluvial Atlantic White Cedar Swamps occur within the floodplain of low-gradient rivers and streams, or at the fringes of open marshy areas along ponds. They receive annual or semi-annual overbank flooding, making them more mineral-rich than other Atlantic white cedar wetlands. But like other Atlantic white cedar swamps and other floodplain communities, they are often poorly drained, retaining sediment-saturated flood water well into the growing season. Groundwater from uplands and surrounding wetlands may maintain soil moisture over the growing season. Soils are typically silt loams with a mucky surface organic layer. Alluvial Atlantic White Cedar Swamps often occur in wetland mosaics with other alluvial and floodplain forests and swamps, as well as with more open wetland communities.

Vegetation Description: Alluvial Atlantic White Cedar Swamps are highly variable in their composition. Atlantic white cedar (*Chamaecyparis thyoides*) and red maple (*Acer rubrum*) dominate the tree layer, and highbush blueberry (*Vaccinium corymbosum*) and sweet pepper-bush (*Clethra alnifolia*) occur in the shrub layer, along with silky dogwood (*Swida amomum*). The herb layer is comprised of species common to very wet, open, or enriched sites, including sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*), bugleweed (*Lycopus* spp.), marsh fern (*Thelypteris palustris*), and marsh St. John's-wort (*Triadenum virginicum*).



Differentiating Occurrences: Alluvial Atlantic White Cedar Swamps differ from other Atlantic white cedar wetlands in that they occur within the floodplain of low-gradient rivers and streams or at the fringes of open marshy areas along ponds, generally in the eastern part of the state. They receive annual or semi-annual overbank flooding, making them more mineral-rich than other Atlantic white cedar wetlands. Silky dogwood, sensitive and royal ferns, bugleweed, and marsh St. John's-wort are more common than in other Atlantic white cedar swamps, and sphagnum carpets are less dense in regularly flooded areas. As with all natural communities, transitions and mixes occur. Coastal Atlantic White Cedar Swamps are not along river floodplains, although geographic distribution and resultant coastal species may overlap with Alluvial Atlantic White Cedar Swamps. Inland Atlantic White Cedar Swamps may also overlap geographically, but are also not in floodplains. Yellow birch is more common in Inland Atlantic White Cedar Swamps than in Alluvial Atlantic White Cedar Swamps. Inland Atlantic White Cedar Swamps have lower abundance of coastal indicators such as greenbrier, inkberry, dangleberry, swamp sweetbells, Virginia chain-fern, and netted chain-fern than Alluvial or Coastal Atlantic White Cedar Swamps. In Alluvial Red Maple Swamps, silver maple is often codominant with red maple; there is very little Atlantic white cedar (<25% cover), if it is present at all.

Associated Fauna: Alluvial Atlantic White Cedar Swamps can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these areas provide important amphibian breeding habitat.

Public Access: Maple Park Conservation Area, Mansfield; West Hill Dam and Park (US Army Corps of Engineers), Uxbridge; Moose Hill Wildlife Sanctuary (Massachusetts Audubon Society), Sharon; Bungay River Conservation Area, Attleboro; Noquochoke WMA, Dartmouth.

Threats: The two greatest threats to Atlantic white cedar swamps are land clearing for agricultural, commercial and residential development, and interference with normal hydrological functioning as a result of development. Atlantic white cedar has been cut extensively for posts and shingles for over three centuries. In an extensive statewide vegetation inventory funded by NHESP in 1990, no uncut stands were found, but several sites contained cedars that were 100-200 years old. Selective cutting is detrimental to the persistence of Atlantic white cedar swamps, because hardwoods, such as red maple, out-compete and replace Atlantic white cedar. Any alteration to the natural hydroperiod of Atlantic white cedar swamps threatens their persistence.

Management Needs: Due to the limited distribution of Atlantic white cedar swamps, it is recommended that no clearing or filling of these wetlands be allowed. Atlantic white cedar will regenerate best following catastrophic disturbance events such as hurricanes and fires. Data suggest that in the absence of disturbance, red maple and shrubs increase in abundance at the expense of Atlantic white cedar. Fire suppression negatively threatens the long-term persistence of Atlantic white cedar swamps, and controlled burning practices may be an appropriate restoration tool in many areas.



Controlled burning should be accompanied by small-patch clearcuts to be most effective. By clear-cutting small patches, generally 20 m x 20 m, and removing the slash and competing vegetation, pure, even-aged stands of Atlantic white cedar are able to regenerate. Atlantic white cedar swamps require a natural cycle of wet and dry periods for their survival and reproduction. Standing water for much of the year is unfavorable for both seed germination and seedling survival, and young seedlings are killed by both drowning and drought. It is recommended that any alterations in water levels be avoided, including development and road construction in uplands surrounding Atlantic white cedar swamps which can alter water levels. Where cedar wetlands are associated with river systems, it is important to maintain the normal hydrologic regime of the river.

USNVC/NatureServe:

Chamaecyparis thyoides Northern Peatland Alliance [A3400] -- *Chamaecyparis thyoides* - *Acer rubrum*/*Lycopus* spp. Forest (CEGL006364).