Natural Heritage &
Endangered Species
Program

Commonwealth of Massachusetts
Division of Fisheries & Wildlife
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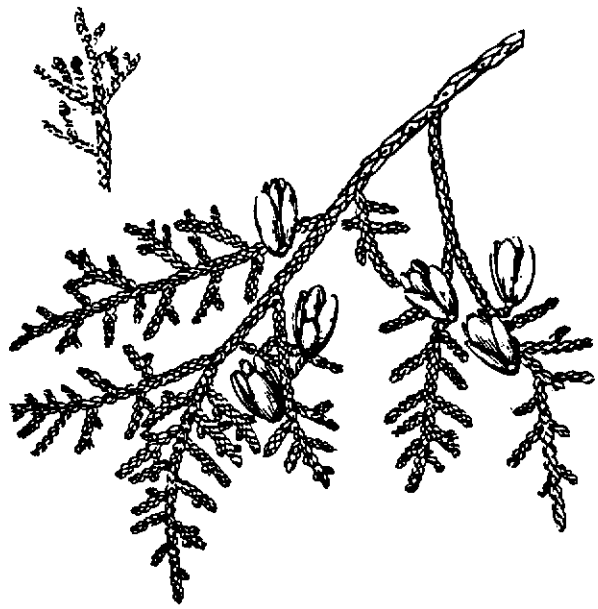
MASSACHUSETTS ENDANGERED PLANTS

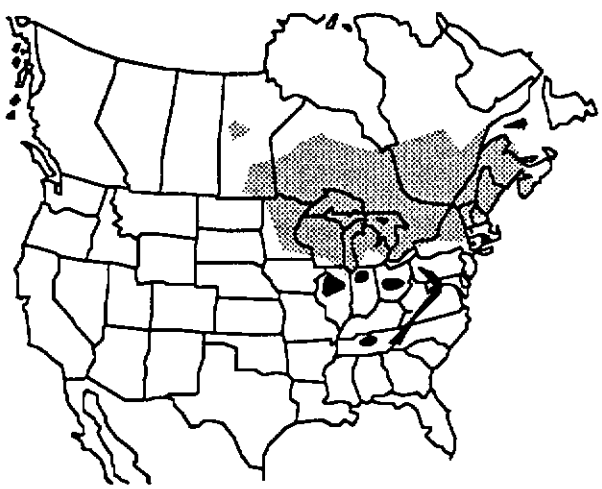
ARBORVITAE
(*Thuja occidentalis* L.)

Description

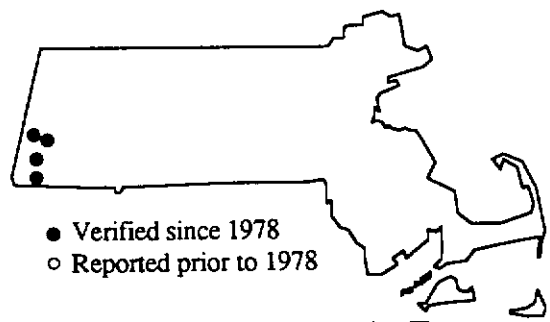
Arborvitae--or Northern White-cedar--is a medium-sized, somewhat cone-shaped tree in the Cypress family (Cupressaceae). It grows from 15 to 18 m (49 - 59 ft.) in height. Its short trunk is 30-92 cm (2 - 3 ft.) in diameter and is frequently buttressed. Arborvitae's bark is thin, narrowly ridged and fibrous and ranges from gray to red-brown in color. The twigs are flattened in appearance and branch profusely in one plane; terminal branchlets are from 1 to 2 mm (1/25 - 2/25 in.) wide and form fan-shaped sprays. The 1.5-3 mm (2/25 - 3/25 in.) long leaves are a bright yellow-green and form four rows of overlapping scales that are tightly appressed to the branches. Only the tips of the scales are free. These leaves give off a spicy fragrance when crushed. Arborvitae is a monoecious tree: It has unisexual flowers, and each plant has both male and female



Native and Naturalized Trees of Massachusetts. USDA and Cooperative Extension Service, University of Massachusetts.



Documented Range of Arborvitae



Massachusetts Distribution by Town

flowers. The pinkish female flowers arise from the tips of the terminal branchlets, while the yellowish male flowers appear near the bases of branchlets. Arborvitae's pale-brown, egg-shaped cones are 7-13 mm (7/25 - 13/25 in.) long and are composed of pointless, overlapping scales. Cones appear in April or May, and female cones ripen during their first autumn.

The wood of Arborvitae is soft, light, and extremely resistant to both decay and termite damage. As a result, it is frequently used for poles, fences, and railroad cross-ties. It is also a popular ornamental tree. The trees supply shelter for white-tailed deer, and their leaves and bark provide forage for deer, rabbits, porcupines and squirrels. Jacques Cartier and his companions were reportedly treated for scurvy with a medicine the Huron Indians had made from Arborvitae leaves. Its common name, meaning "tree of life," originated with this incident.

Range

The documented range of Arborvitae extends from Nova Scotia and Quebec to Hudson Bay, on through central Ontario and southeastern Manitoba, and south to Maine and Minnesota. Disjunct populations occur in Ontario, Manitoba, southern New England, Illinois, Ohio, and in the Appalachians from Pennslyvania to Tennessee.

Similar Species

White Cedar (*Chamaecyparis thyoides*) could easily be confused with Aborvitae. However, the scale-like leaves of White Cedar are a dark blue-green. Furthermore, the cones do not have overlapping scales but, rather, have peltate scales. (Peltate scales are attached to a supporting stalk that connects inside the margin, somewhat like the stalk of a mushroom). Finally, the terminal branchlets of White Cedar are somewhat thinner than those of Arborvitae--only 1 mm (1/25 in.) in width.

Habitat in Massachusetts

Arborvitae prefers moist sites, especially near streams or on calcareous soils. In Massachusetts, habitats include an alkaline seepage fen (an area where cold, alkaline, nutrient-poor groundwater seeps to the surface), dolomitic ledges along a railroad cut, the lower slope of a steep riverside bank with natural seep, and an open, calcareous depression bisected by a stream. Species associated with Arborvitae include Shrubby Cinquefoil (*Potentilla fruticosa*), Porcupine Sedge (*Carex hystricina*), a species of rush (*Juncus dudleyi*), Tamarack (*Larix laricina*), and Grass-of-Parnassus (*Parnassia glauca*). Rare Massachusetts plants that have been found with Arborvitae include Great Blue Lobelia (*Lobelia siphilitica*), Autumn Willow (*Salix serissima*), Hoary Willow (*Salix candida*), and Labrador Bedstraw (*Galium labradoricum*).

Population Status

Arborvitae is currently listed as "Endangered" in Massachusetts. There are four current stations (discovered or relocated since 1978), all in Berkshire County. Threats to Arborvitae include flooding caused by beaver dams and by roads that cross wetlands.