



**Natural Heritage
& Endangered Species
Program**

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Massachusetts Division of Fisheries & Wildlife

**Mountain Alder
*Alnus viridis ssp. crispa***

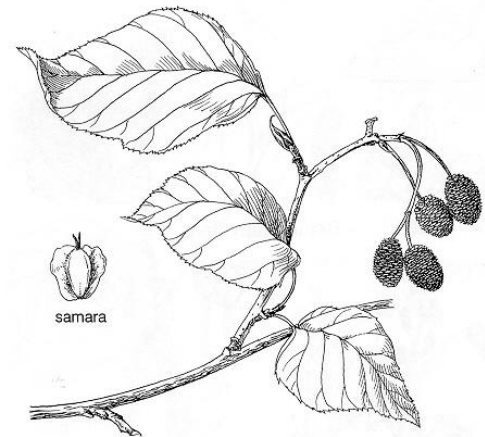
(Aiton) Turrill

State Status: **Special Concern**

Federal Status: **None**

DESCRIPTION: Mountain Alder is a northern, clonal shrub reaching 12 feet (3 meters) in height. It has simple, alternate, sharply-toothed leaves with 6-9 main veins on both sides. The ovate or heart-shaped leaves are 4-9 cm length and 3-6 cm in width. The leaves are borne on short branch spurs and are frequently shiny and resinous when young. In Massachusetts, Mountain Alder usually grows on exposed ledges, boulders, and cobble bars along major rivers in the western part of the state.

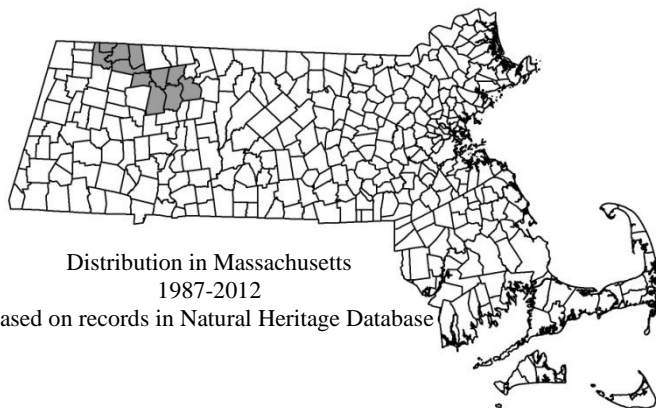
AIDS TO IDENTIFICATION: Mountain Alder's winter buds are sessile and have 3-5 overlapping scales. It has male and female flowers borne on separate catkins, which develop in spring at the same time as the expanding leaves. In spring, clusters of drooping, pollen-bearing male catkins reach a length of 5-8 centimeters. Female catkin clusters (2-10 in number) have two to three leaves at the base and develop into woody, cone-like structures following fertilization in May and June. Mountain Alder bark is typically smooth. The young branches are resinous, with scattered lenticels and a darker, triangular, inner pith.



Alnus viridis var. *crispa*

Holmgren, N. 1998. *The Illustrated Companion to Gleason and Cronquist's Manual*. New York Botanical Garden

SIMILAR SPECIES: Two alder species in Massachusetts, Speckled Alder (*Alnus incana*) and Smooth Alder (*Alnus serrulata*) closely resemble Mountain Alder. Speckled Alder frequently occurs in association with Mountain Alder in river edge habitats. Features distinguishing Mountain Alder include its sessile, overlapping winter buds (the other alders have stalked buds with 2 or 3 even scales); its broadly-winged fruits (Speckled and Smooth Alder have narrow-margined fruits); the maturation of its staminate catkins with the expanding leaves (in Speckled and Smooth Alders, the male catkins develop before the leaves open); and the leaves borne on short branch spurs (the other alders lack this structure). All three alder species have sharply-toothed, often double-toothed leaves which are generally ovate in form. Mountain Alder leaves are shinier, stickier, and have fewer main veins (6-9 as opposed to 8-14) than the other alders.



Distribution in Massachusetts
1987-2012

Based on records in Natural Heritage Database

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

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HABITAT: Mountain Alder in Massachusetts occurs in several habitat types which combine open, exposed areas and cool local temperatures. The most common habitat is exposed ledges, boulders, and cobble bars on the edges of the Connecticut and Deerfield Rivers. Many of these high-energy river shores are influenced by seasonal flooding. Other habitats include a railroad cut and a road cut in the vicinity of the Deerfield River, and one upland site on an exposed summit and ridgeline (c. 1700 feet in elevation) on a mountain in Franklin County. Associated species include Red Maple (*Acer rubrum*), Silver Maple (*Acer saccharinum*), Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Speckled Alder (*Alnus incana*), willow spp. (*Salix* spp.), Meadowsweet (*Spiraea latifolia*), Red-berried Elder (*Sambucus racemosa*), Broom Sedge (*Carex scoparia*), Spotted Joe-Pye-Weed (*Eupatorium maculatum*) Swamp Candles (*Lysimachia terrestris*), Royal Fern (*Osmunda regalis*), Tall Meadow-rue (*Thalictrum pubescens*), Marsh Fern (*Thelypteris palustris*), and Golden Alexanders (*Zizia aurea*). Rare plants documented in close proximity to Mountain Alder include Tradescant’s Aster (*Symphyotrichum tradescantii*), Shore Sedge (*Carex lenticularis*), and Upland White Aster (*Solidago ptarmicoides*).

POPULATION STATUS IN MASSACHUSETTS: Mountain Alder is currently listed as Special Concern in Massachusetts. As with all species listed in Massachusetts, individuals of the species are protected from take (picking, collecting, killing...) and sale under the Massachusetts Endangered Species Act. Mountain Alder is rare in Massachusetts where it is nearing the southern limit of its range, and there is limited cool, open, montane or river shore habitat available. There are 21 current Mountain Alder occurrences in Massachusetts. Most of these populations occur along the Deerfield River in Franklin County. There are additional populations in Berkshire County. Mountain Alder numbers at these stations range from several to 100 or more plants. Most populations contain robust mature individuals as well as immature specimens.

RANGE: Mountain Alder is a circumboreal species. In North America, it ranges from Labrador and Newfoundland west to Alberta and south to northern New England, New York, Michigan, and Minnesota. There are disjunct populations in western Pennsylvania and on Roan Mountain straddling the North Carolina-Tennessee border. Western Massachusetts is the

southernmost point of Mountain Alder’s range in New England. It is more widely distributed in Maine, New Hampshire, and Vermont.

THREATS: Mountain Alder is a disturbance-adapted, relatively hardy species. Threats to its persistence in Massachusetts include alteration of natural hydrology or disturbance regime, conditions keeping its habitat open, or competition with the invasive exotic plant Japanese Knotweed (*Fallopia japonica*).

MANAGEMENT RECOMMENDATIONS: As for many rare species, exact needs for management of Mountain Alder are not known. The following comments are based primarily on observations in Massachusetts. Mountain Alder grows best on exposed rock on the edges of large rivers. It can tolerate periodic inundation. Most of the populations occur along the Deerfield River, which is subject to periodic releases from the Bear Swamp pump storage station. This flooding is likely beneficial in that the physical disturbance of the flood, as well as ice scour, keeps these sites in an early successional stage. The populations in the railroad and road cuts could be affected by maintenance activities or roadbed expansion. Populations of Mountain Alder should be monitored closely for the presence of Japanese Knotweed that is becoming more frequent along Massachusetts river shores, and which could out-compete Mountain Alder.

Mature Fruit Present

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

INTERESTING FACTS ABOUT ALDERS: The genus *Alnus* is one of the most widespread and ecologically important genera in North America. An unusual association with the nitrogen-fixing bacteria *Frankia alni*, which the alder houses in root nodules, accounts in part for its ability to thrive in open, wet, early successional habitats.

Updated 2015

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