



Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Downy Arrow-wood *Viburnum rafinesqueanum*

J.A. Schultes

State Status: **Endangered**

Federal Status: **None**

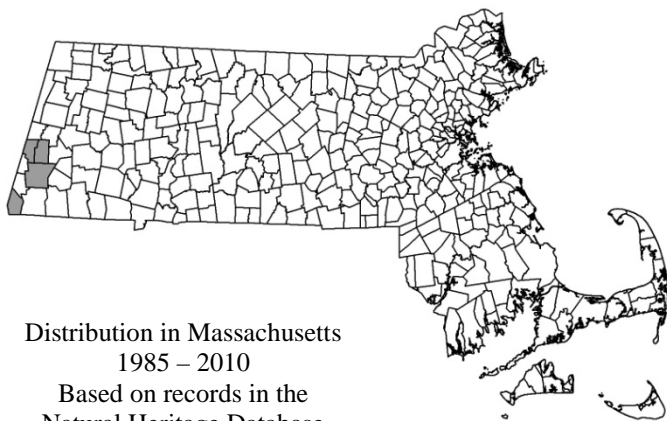
GENERAL DESCRIPTION: Downy Arrow-wood (*Viburnum rafinesqueanum*) is a small to medium-sized shrub, generally less than 1.5 m (~ 5 feet) in height with egg-shaped opposite leaves. In late spring, it bears round-topped clusters of small white flowers that are followed by green flattened fruits that ripen to blue-black. Downy Arrow-wood prefers dry open forests, and in Massachusetts is often found on summits and ridges.

AIDS TO IDENTIFICATION: Downy Arrow-wood has coarsely toothed ovate or narrowly ovate unlobed leaves. The petioles and lower leaf surfaces are covered with soft short hairs. Downy Arrow-wood often has a pair of stipules at the base of each petiole.

SIMILAR SPECIES: Downy Arrow-wood closely resembles all varieties of arrow-wood (Southern Arrow-wood (*Viburnum dentatum* var. *venosum* [formerly *V. dentatum*]) and Northern Arrow-wood (*Viburnum dentatum* var. *lucidum* [formerly *V. recognitum*]) in terms of stature, habit, flower shape and color, and fruit color. However, these two varieties are generally found in wetlands and are not frequent on dry



Downy Arrow-wood flower clusters and buds, also showing opposite toothed leaves. Photos: B.A. Sorrie, NHESP.



Distribution in Massachusetts
1985 – 2010

Based on records in the
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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hilltops. Downy Arrow-wood can be distinguished from these by the pubescence on the lower leaf surfaces and the presence of stipules at the base of the short petioles.

HABITAT IN MASSACHUSETTS: In Massachusetts, Downy Arrow-wood is found on open rocky ridgelines, lightly wooded summits, and dry rocky slopes in both acidic and calcareous soils. Associated canopy species include Red Oak (*Quercus rubra*), Chestnut Oak (*Q. montana*), White Oak (*Q. alba*), Shagbark Hickory (*Carya ovata*), Hop Hornbeam (*Ostrya virginiana*), and White Ash (*Fraxinus americanus*). At one location Downy Arrow-wood is found in association with Yellow Oak (*Q. muehlenbergii*), a Threatened species in the Commonwealth. Other associated shrubs may include Gray Dogwood (*Cornus racemosa*) and Pasture Rose (*Rosa caroliniana*). Vines may include Virginia Creeper (*Parthenocissus quinquefolia*) and Poison Ivy (*Toxicodendron radicans*). Common associated herbaceous species include Pennsylvania Sedge (*Carex pensylvanica*), Bottlebrush Grass (*Elymus hystrix*), Field Chickweed (*Cerastium arvense*), Columbine (*Aquilegia canadensis*), Wild Geranium (*Geranium maculatum*), Small-flowered Bittercress (*Cardamine parviflora*), Lyre-shaped Rock-cress (*Arabidopsis lyrata*; Endangered), Ebony-Spleenwort (*Asplenium platyneuron*), and Marginal Fern (*Dryopteris marginalis*).

RANGE: Downy Arrow-wood is found from Quebec and Manitoba southward through the Dakotas and most of the midwestern states to Alabama and Georgia. This species is considered vulnerable to critically imperiled in Quebec, New Hampshire, Connecticut, West Virginia, and Kentucky.

POPULATION STATUS: Downy Arrow-wood is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It is currently known from Berkshire County and historically was also known from Franklin County.

MANAGEMENT RECOMMENDATIONS:

Herbivory may be a threat to Downy Arrow-wood. Browsing by White-tailed Deer and feeding by the non-native Viburnum Leaf Beetle (*Pyrrhalta viburni*) could be detrimental. Sites should be monitored for deer browse and defoliation by the Viburnum Leaf Beetle.

Sensitive open rocky woods and summits should be protected from recreational overuse. Known locations should be buffered from activities that would cause direct impacts to populations or alter light or moisture conditions.

Invasion by non-native plants such as Buckthorn (*Rhamnus* spp.) has been identified at one site. Methods to address these invasive plants or herbivory should be incorporated in a plan developed in consultation with the Massachusetts Natural Heritage and Endangered Species Program. All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage and Endangered Species Program.

Flowering time in Massachusetts

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

FOR MORE INFORMATION SEE:

Massachusetts Department of Agricultural Resources. 2008. Pest alert: Viburnum leaf beetle. Massachusetts Introduced Pest Outreach Project, Boston, MA. Available via <http://www.massnrc.org/PESTS/pestFAQsheets/viburnumleaf.html>. , Accessed May 3, 2010.

Rhoads, A. F. and T. A. Block. 2000. The Plants of Pennsylvania: an illustrated manual. University of Pennsylvania Press, Philadelphia, PA.

Updated 2019

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