



Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Bicknell's Hawthorn *Crataegus bicknellii*

Eggl.

State Status: **Endangered**

Federal Status: **None**

GENERAL DESCRIPTION: Bicknell's Hawthorn is a small, shrubby tree (up to 3 m or 10 ft tall) in the Rose Family (Rosaceae) known only from Nantucket Island. It has numerous long (2–6 cm) thorns along its branches, with egg-shaped leaf blades that taper to the base and have double-toothed margins. Five-petaled flowers are produced around mid-May in a flat-topped cluster. The round, red fruit is between one-quarter and one-half inch in diameter and contains 4 to 5 "nutlets" within the soft flesh.

AIDS TO IDENTIFICATION: The genus *Crataegus* is complex and a technical manual must be consulted for proper identification. Bicknell's Hawthorn is best identified using a hand lens or microscope to examine the flowers and nutlets. The flowers are hairless, have 5 to 10 stamens with purplish anthers, and 4 or 5 styles. The calyx lobes are covered with minute glands and have long, pointed teeth. The inner surface of the nutlets can appear smooth or have small erosions.

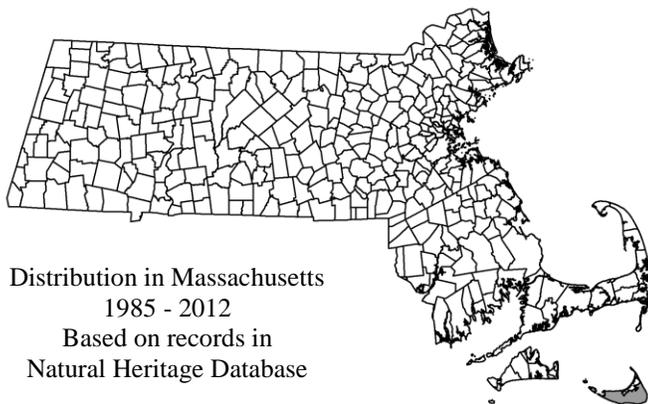
SIMILAR SPECIES: Reports of Bicknell's Hawthorn in Barnstable County were recently determined to be Long-thorned Hawthorn (*C. macracantha*), which also occurs in coastal plain habitats. Long-thorned Hawthorn has 8 to 31 flowers per inflorescence and nutlets with

distinctive depressions on the inner face. In contrast, Bicknell's Hawthorn has fewer flowers per inflorescence and nutlets with mostly smooth inner surfaces (some erosions may be present). Frosted Hawthorn (*C. pruinosa*) is also found on the coastal plain in Massachusetts. This species has two recognized varieties in New England: *Crataegus pruinosa* var. *porteri* and *Crataegus pruinosa* var. *pruinosa*. Differentiating between Bicknell's Hawthorn and Frosted Hawthorn requires close examination of the flowers: Bicknell's Hawthorn has 5 to 10 stamens whereas Frosted Hawthorn has 12 to 20 stamens.

HABITAT: Bicknell's Hawthorn is known from woodlands, roadsides, and field edges. Extant populations on Nantucket Island are located in dense shrub thickets near roadsides. Species found growing in association with Bicknell's Hawthorn include Shadbush (*Amelanchier* spp.), Virginia Creeper (*Parthenocissus quinquefolia*), Black Cherry (*Prunus serotina*), Scrub Oak (*Quercus ilicifolia*), Sassafras (*Sassafras albidum*), Highbush Blueberry (*Vaccinium corymbosum*), Arrowwood (*Viburnum dentatum*), and Fox Grape (*Vitis labrusca*).

RANGE: Until recently, the taxonomy of Bicknell's Hawthorn was unclear, resulting in much uncertainty about its range and status. The only known occurrences for Bicknell's Hawthorn are on Nantucket Island, Massachusetts.

POPULATION STATUS IN MASSACHUSETTS: Bicknell's Hawthorn 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. Bicknell's Hawthorn is known only from Nantucket County.



Distribution in Massachusetts
1985 - 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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Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

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THREATS AND MANAGEMENT

RECOMMENDATIONS: Lack of regeneration and competition from aggressive woody plants are the two greatest management concerns for extant populations of Bicknell's Hawthorn. Fox Grape, a species native to Nantucket, is an aggressive woody vine that may pose the greatest threat to Bicknell's Hawthorn at this time. Fox Grape is capable of out-competing woody plants by growing over the tops of small trees and shrubs and shading the vegetation beneath. Sites supporting populations of Bicknell's Hawthorn should be monitored regularly, and native and non-native woody competitors should be removed to reduce competition. Regeneration of Bicknell's Hawthorn is limited at known populations, and saplings that become established are at risk due to deer browse. Fencing around individual plants may be necessary to allow saplings to mature to adulthood. All active management of rare plant populations (including clearing, fencing, and 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 & Endangered Species Program.

FLOWERING IN MASSACHUSETTS:

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

FRUITING IN MASSACHUSETTS:

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

REFERENCES:

Haines, A. 2011. *Flora Novae Angliae – a Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England*. New England Wildflower Society, Yale Univ. Press, New Haven, CT.

Updated 2015

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

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