Northern Monkshood

Aconitum noveboracense flowers

Photo credits: *Stephen M. Young*

Scientific Name *Aconitum noveboracense* Gray ex Coville

Family Name Ranunculaceae Buttercup Family

Did you know?
Northern monk's-hood is considered one of the most beautiful rare plants in New York. It is the signature plant of New York's Eastern Chapter of the Nature Conservancy. Genetic studies are presently under way to determine its relationship with the more common Aconitum columbianum. Some taxonomists do not consider it a distinct species.

Summary

Protection Endangered in New York State, Threatened federally.

This level of state protection means: listed species are those with: 1) 5 or fewer extant sites, or 2) fewer than 1,000 individuals, or 3) restricted to fewer than 4 U.S.G.S. 7 ? minute topographical maps, or 4) species listed as endangered by U.S. Department of Interior.

This level of federal protection means: Listed as Threatened in the United States by the US Department of Interior.

Rarity G3, S1

A global rarity rank of G3 means: This species is either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single physiographic region), or is vulnerable to extinction throughout its range because of other factors.
A state rarity rank of S1 means: This plant is endangered/critically imperiled in New York because of extreme rarity (typically 5 or fewer populations or very few remaining individuals) or is extremely vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are five viable populations with plants numbering in the hundreds for each population. There are five populations which were very small in the past and have not been seen in many years. These are probably gone. Even though these populations are isolated in the Catskill Mountains, threats are high.

Short-term Trends

The species can fluctuate greatly from year to year in the stream bank populations that are subject to flooding. There is less fluctuation in the wetland populations but they may be affected by deer browse from year-to-year.

Long-term Trends

There has been a substantial decline from population sizes that were measured in the early 1980s. This is probably due to the repeated severe flooding of Catskill streams.

Conservation and Management

Threats

Rivers may be threatened by trout stream improvements and flood control projects and some populations are probably damaged by fishers and hikers as well as severe flooding along the streams.

Conservation Strategies and Management Practices

Studies need to be undertaken to see which management r?gime is best for this species. Do the plants need disturbance or do they flourish because of it?

Research Needs

Genetic studies are needed to determine the relationship of Catskill plants to Midwestern plants. Should they be considered a separate species or subspecies? More propagation studies are needed to see if populations can be augmented after they are destroyed by flooding or other natural or human events.

Habitat

In New York, Northern Monkshood occurs along streams (or in one case, a cliffside seep), shaded by beech, sugar maple, yellow birch, or eastern hemlock. All existing occurrences have been found on sandstone-derived rocky or sandy soils, at elevations ranging between 400 and 1000 meters (New York Natural Heritage Program 2007).

Associated Ecological Communities

Beech-maple Mesic Forest
A hardwood forest with sugar maple and American beech codominant. This is a broadly defined community type with several variants. These forests occur on moist, well-drained, usually acid soils. Common associates are yellow birch, white ash, hop hornbeam, and red maple.

Calcareous Cliff Community
A community that occurs on vertical exposures of resistant, calcareous bedrock (such as limestone or dolomite) or consolidated material; these cliffs often include ledges and small areas of talus.

Hemlock-northern Hardwood Forest
A mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. Eastern hemlock is present and is often the most abundant tree in the forest.

Ice Cave Talus Community
A community that occurs on rocks and soil at the base of slopes of loose rocks (often below cliffs; these are talus slopes) that emit cold air. The emission of cold air results from air circulation among the rocks of the talus slope where winter ice remains through the summer. The vegetation is distinctive because it includes species characteristic of climates much cooler than the climate of the area where the ice caves occur.

Other Probable Associated Communities

Acidic talus slope woodland

Associated Species

Sugar Maple (*Acer saccharum*)
Yellow Birch (*Betula alleghaniensis*)
Spinulose Shield Fern (*Dryopteris carthusiana*)
American Beech (*Fagus grandifolia*)
Spotted Jewelweed (*Impatiens capensis*)
Wood Nettle (*Laportea canadensis*)
Whorled Aster (*Oclemena acuminata*)
Eastern Hemlock (*Tsuga canadensis*)
Stinging Nettle (*Urtica dioica*)

Identification Comments

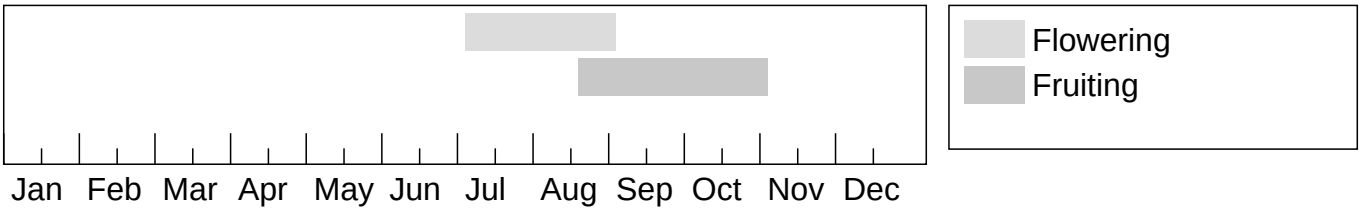
Northern Monk's hood is an upright herbaceous perennial, with alternate leaves. Each leaf is made up of five to seven wedge-shaped, coarsely-toothed lobes. The stem is topped by a spike of dark purple to blue (rarely white), larkspur-shaped flowers, with "hoods" on the top.

Best Life Stage for Identifying This Species

While it's possible to identify this plant in fruit, or even from dried persisting fruit stalks, for easy identification it is best to search for it in flower.

The Best Time to See

Northern Monk's-hood flowers in July or August, and the fruits persist well into the fall.



The time of year you would expect to find Northern Monkshood in New York.

Similar Species

The shape of the flowers makes this genus distinctive. Garden aconite (Aconitum napellus), is the only other species of Aconitum found in New York. It is a stouter plant, with larger flowers and more deeply cleft leaves. It is rare that this species would escape from gardens and unlikely for it to co-occur with our native species. For leaf identification the following characters should be useful: *Aconitum* has 5 "leaflets" that are joined at the base and not on separate petioles as in Ranunculus hispidus. The first lobes from the bottom of the leaflets of *Aconitum* are large and angle out from the leaflet with usually 2-3 additional big secondary lobes. Leaves of *Ranunculus acris* are similar but in *Geranium maculatum* the first lobes are not much larger than the upper central leaflet and usually have small secondary lobes on them. *Ranunculus hispidus* has leaves with mostly three leaflets that are stalked. *Ranunculus recurvatus* has a central leaflet sometimes without the two larger lobes or the lateral lobes have small secondary lobes like *Geranium*. *Ranunculus acris* has unlobed basal leaves and upper leaves with a few narrow leaflets. Aconitum petioles are glabrous or have tiny white hairs that arch over and the blades are glabrous or with scattered tiny white hairs. The secondary veins are faint. *Geranium maculatum* and other similar *Ranunculus* species have sparse to dense long white hairs that cover the petiole and leaves.

Taxonomy

Kingdom Plantae
└ **Phylum** Anthophyta
└ **Class** Dicots (Dicotyledoneae)
└ **Order** Ranunculales
└ **Family** Ranunculaceae (Buttercup Family)

Additional Common Names

New York Monk's-hood

Synonyms

Aconitum columbianum (Nutt.)
Aconitum columbianum ssp. *columbianum*
Aconitum columbianum var. *columbianum*
Aconitum uncinatum (L.)

Additional Resources

Links

New York Flora Atlas
http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=2574
Flora of North America
http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500015
USDA Plants Database
http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=ACONITUM+NOVEBORACENSE
NatureServe Explorer
http://natureserve.org/explorer/servlet/NatureServe?searchName=ACONITUM+NOVEBORACENSE
Google Images
http://images.google.com/images?q=ACONITUM+NOVEBORACENSE

Best Identification Reference

Gleason, Henry A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx, New York. 910 pp.

References

Fernald, M.L. 1950. Gray's manual of botany. 8th edition. Corrected printing (1970). D. Van Nostrand Company, New York. 1632 pp.

Flora of North America Editorial Committee. 1997. Flora of North America, North of Mexico. Volume 3. Magnoliophyta: Magnoliidae and Hamamelidae.

Gleason, H.A. 1952. The new Britton and Brown illustrated flora of the northeastern United States and adjacent Canada. 3 volumes. Hafner Press, New York. 1732 pp.

Gleason, Henry A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx, New York. 910 pp.

Holmgren, Noel. 1998. The Illustrated Companion to Gleason and Cronquist's Manual. Illustrations of the Vascular Plants of Northeastern United States and Adjacent Canada. The New York Botanical Garden, Bronx, New York.

Keys, Jr.,J.; Carpenter, C.; Hooks, S.; Koenig, F.; McNab, W.H.; Russell, W.;Smith, M.L. 1995.

Ecological units of the eastern United States - first approximation (cd-rom), Atlanta, GA: U.S. Department of Agriculture, Forest Service. GIS coverage in ARCINFO format, selected imagery, and map unit tables.

McCance, R.M., Jr., and J.F. Burns, eds. 1984. Ohio endangered and threatened vascular plants: Abstracts of state-listed taxa. Division Natural Areas and Preserves, Ohio Dept. Natural Resources, Columbus. 635 pp.

Mitchell, Richard S. and Charles J. Sheviak. 1981. Rare Plants of New York State. Bull No. 445. New York State Museum. Univ. of New York. State Ed. Department Albany, NY.

Mitchell, Richard S. and Gordon C. Tucker. 1997. Revised Checklist of New York State Plants. Contributions to a Flora of New York State. Checklist IV. Bulletin No. 490. New York State Museum. Albany, NY. 400 pp.

NatureServe. 2005. NatureServe Central Databases. Arlington, Virginia. USA

New York Natural Heritage Program. 2010. Biotics database. New York Natural Heritage Program. New York State Department of Environmental Conservation. Albany, NY.

Office of Endangered Species. 1986. Endangered species information system, species record for Aconitum noveboracense. 19 pp.

Read, R.H., and J.B. Hale. 1981. National recovery plan for the northern monk's hood (Aconitum noveboracense). U.S. Fish and Wildlife Service, Washington DC.

U.S. Fish and Wildlife Service. 1978. Determination that 11 plant taxa are endangered species and 2 plant taxa are threatened species. Federal Register 43(81): 17910-17916.

Weldy, T. and D. Werier. 2010. New York flora atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research http://www.fccdr.usf.edu/. University of South Florida http://www.usf.edu/

Weldy, Troy W. and David Werier. 2005. New York Flora Atlas. [S.M. Landry, K.N. Campbell, and L.D. Mabe (original application development), Florida Center for Community Design and Research. University of South Florida]. New York Flora Association, Albany,

New York Natural Heritage Program
625 Broadway, 5th Floor,
Albany, NY 12233-4757
Phone: (518) 402-8935
acris@nynhp.org

This project is made possible with funding from:
- New York State Department of Environmental Conservation Hudson River Estuary Program
- Division of Lands & Forests, Department of Environmental Conservation
- New York State Office of Parks, Recreation and Historic Preservation

Information for this guide was last updated on Mar 18, 2013

This guide was authored by