

## *Aconitum noveboracense* A. Gray

### Northern Monkshood



ODNR

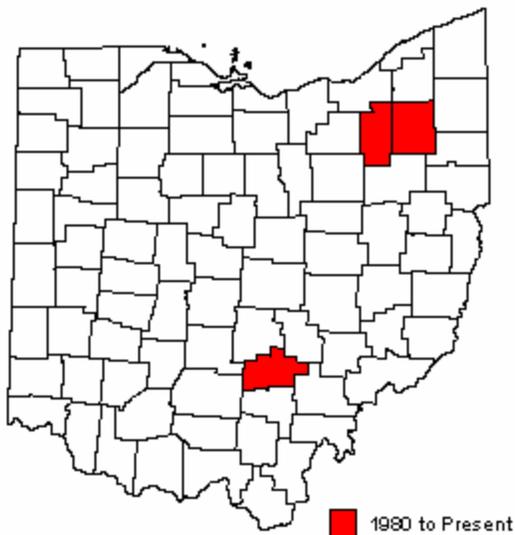
**Family:** Ranunculaceae

**Synonyms:** *Aconitum columbianum* Nutt. subsp. *columbianum*

*Aconitum uncinatum* L. subsp. *noveboracense* (A. Gray) Hardin

**Description:** Branched or simple, erect herbaceous perennial up to 1 (1.5) meter tall; stem from a tuberous rootstock with one to several associated tubers; inflorescence type varying from terminal panicles or racemes dependent on the age and vigor of the plant; flowers with 2-5 petals, pinkish-purple tinged, sepals 5 intensely deep purple to lavender-blue; leaves palmatifid, alternate, dark green, 2-9 cm broad (sometimes leathery), with or without a fine pubescence; petioles 0.1-8 cm long, reduced upward on the stem (Flora of North America Committee 1997).

**Flowering:** Mid-July to mid-September; **Fruiting:** August to late October.



**Similar Species:** *Aconitum noveboracense* is vaguely similar to *Delphinium* spp. but *Aconitum* has hooded sepals compared to spurred sepals of *Delphinium*. It differs from *A. uncinatum* by the tubers being contiguous not separated by the rhizome.

**Total Range:** USA: IA, NY, OH, WI.

**Ohio Range:** Hocking, Portage, Summit counties.

**Ohio Status:** [www.ohiodnr.com/dnap](http://www.ohiodnr.com/dnap)

**Habitats:** On sandstone in cool, shaded ravines in close proximity to running water; seeps, talus slopes; rock shelters; vertical cliff faces.

**Threats:** Drying of habitat by loss of forest canopy; herbivory (deer, slugs); scientific overcollecting and poaching; soil contamination (salt, alterations in phosphorous availability); herbicide drift; hydrology modifications; invasive species; trampling; incompatible land-use.

**Recovery Potential:** *Aconitum noveboracense* grows in very specific habitats and there is very little gene flow, if any, among the isolated populations. Seed germination is poor and transplanted plants seldom survive (Read, 1977; Read and Hale, 1982). Few plants flower each year in the Ohio populations (Windus and Cochrane, 2000). Threats to long-term viability of the three known sites have been increasing in the last 25 years.

**Inventory Guidelines:** All populations should be disturbed as little as possible. State and federal collecting permits are required to collect.

**Comments:** *Aconitum noveboracense* geographical range is likely close to being known especially in Ohio where most areas of suitable habitat has been searched in the last twenty years. Hocking Hills Region is the best area in Ohio for the discovery of new populations. There is a remote possibility for undiscovered populations in northeast Ohio.

Populations throughout its range are isolated geographically from each other and therefore have poor chance of cross-pollinating among populations. In Ohio, this is certainly the case with 3 small, very isolated populations. Two of the three known populations are persisting but numbers are low (<100 plants each) and long-term viability is questionable. The third is almost extirpated as the habitat had been drastically altered and a single plant was found in 2006 compared to nearly 100 plants in the late 1980s.

The similar *Aconitum uncinatum* occurs in different habitats than *A. noveboracense* as it occurs in floodplains, not rock shelters/cliffs. There have been several different taxonomic treatments on the genus and most recent work has suggested *A. noveboracense* should be ranked as a subspecies of the western *Aconitum columbianum* (Flora of North America Committee 1997). Recent molecular work by Cole and Kuchenreuther (2001) on the two species supported the treatment of *A. noveboracense* as a subspecies of the western *A. columbianum*.

#### **Selected References:**

- Andreas, B.K. 1983. Status report on *Aconitum noveboracense* in Ohio. A report submitted to the Ohio Department of Natural Resources, Columbus, Ohio.
- Brink, D. 1982. Tuberos *Aconitum* (Ranunculaceae) of the continental United States; morphological variation, taxonomy and disjunction. Bull. Torrey Bot. Club 109: 13-23.
- Cole, C.T. & M.A. Kuchenreuther. 2001. Molecular markers reveal little genetic differentiation among *Aconitum noveboracense* and *A. columbianum* (Ranunculaceae) populations. American Journal of Botany 88(2): 337-347.
- Coville, F.V. 1886. *Aconitum noveboracense* Gray. Bull. Torrey Bot. Club 13: 190-191.
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Mitchell, R.S. and J.K. Dean. 1982. Ranunculaceae (crowfoot family) of New York State. *New York State Museum Bull.* 446. 100 pp.

Windus, J. and K. Cochrane. 2000. Monitoring, research and restoration activities for Ohio populations of northern monkshood (*Aconitum noveboracense*): 1997-1999. A final report submitted to the U.S. Fish & Wildlife Service, Reynoldsburg, Ohio.



### **Ohio Natural Heritage Program**

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