

# Virginia Snakeroot



*Aristolochia serpentaria*



Photo credits: Troy Weldy

**Scientific Name** *Endodeca serpentaria* (L.) Raf.

**Family Name** Aristolochiaceae  
Birthwort Family

## Did you know?

Virginia snakeroot's species and common name comes from its use by Native Americans and pioneers to cure rattlesnake bites. It was also used to treat fevers, toothaches, coughs, and disorders of the stomach and lung. The genus name is Greek for best (aristos) delivery (lochia) for its ancient use in child delivery.

## Summary

**Protection** Threatened in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 6 to fewer than 20 extant sites, or 2) 1,000 to fewer than 3,000 individuals, or 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ½ minute topographical maps, or 4) listed as threatened by U.S. Department of Interior.

**Rarity** G4, S2

A global rarity rank of G4 means: This species is apparently secure globally (typically with more than 100+ populations), though it may be quite rare in parts of its range, especially at the periphery.

A state rarity rank of S2 means: This plant is threatened/imperiled in New York because of rarity (typically 6-20 populations or few remaining individuals) or is vulnerable to extirpation from New York due to biological factors.

## Conservation Status in New York

With the exception of a few casual reports, this plant was absent from the New York flora for nearly 100 years. Numerous surveys tried to relocate this plant, but the focus was in areas that resemble its southern habitats. Not until 1994, when this plant was finally rediscovered in New York, did we begin to understand its New York habitat. Since then, more surveys have been conducted in appropriate habitat and we know of at least six populations. As surveys continue, we expect to find more populations of this plant in the Hudson Highlands and the mid-Hudson Valley.

## Short-term Trends

Since this plant was just rediscovered in New York in 1994, the short-term trends are difficult to assess. Now that the habitat requirements in New York are better understood, more populations are being discovered. These may have been present all along or this plant may be spreading northward. Populations that have been surveyed more than once appear stable.

## Long-term Trends

After going nearly a century without any reports of this plant (absent between 1895-1994), this plant was rediscovered in the Hudson Highlands. Since this rediscovery, a number of new populations have been found. Whether these populations were here all along or if the plants are increasing in this region is unclear. Stanley Smith commented in the 1960s that he thought he saw this plant at a site in Ulster County, New York, but no voucher specimen was collected. All of the historical populations in the New York City and Long Island area are presumed extirpated.

# Conservation and Management

## Threats

Besides a few plants being nipped by deer, no threats are known within New York.

## Conservation Strategies and Management Practices

While this plant has a specific habitat requirement, it requires no active management. Although active forestry is not practiced in areas where this plant is currently known, it should be noted that clear-cutting may be incompatible with the protection of this plant. Likewise, any development proposed upslope from *Aristolochia* populations should study potential impacts.

## Research Needs

Now that habitat requirements are better understood, habitat modeling could assist with finding new occurrences in the Hudson Highlands.

## Habitat

An often difficult to see plant of well-drained wooded slopes, rocky slopes of oak woods, open woods, moist woods, rich woods, and only rarely in clearings. It particularly seems to favor drainage patterns on southwest to southeast facing slopes in oak-hickory forests or chestnut oak forest. Search areas on the slope where leaves collect as water drains down the slope. These areas may have lots of *Carex pennsylvanica* surrounding the water sink, but little to no *Carex pennsylvanica* directly within the drainage where the *Aristolochia* may be concentrated (New York Natural Heritage Program 2004). Mesic forest (FNA 1997). Moist or dry upland woods (Gleason & Cronquist 1991). Rich, often calcareous soils, woodlands and floodplains (Mitchell and Beal 1979). Rich, often calcareous woods (Fernald 1970).

## Associated Ecological Communities

### Appalachian Oak-hickory Forest

A hardwood forest that occurs on well-drained sites, usually on ridgetops, upper slopes, or south- and west-facing slopes. The soils are usually loams or sandy loams. This is a broadly defined forest community with several regional and edaphic variants. The dominant trees include red oak, white oak, and/or black oak. Mixed with the oaks, usually at lower densities, are pignut, shagbark, and/or sweet pignut hickory.

### Chestnut Oak Forest

A hardwood forest that occurs on well-drained sites in glaciated portions of the Appalachians, and on the coastal plain. This forest is similar to the Allegheny oak forest; it is distinguished by fewer canopy dominants and a less diverse shrublayer and groundlayer flora. Dominant trees are typically chestnut oak and red oak.

## Other Probable Associated Communities

Limestone woodland  
Oak-tulip tree forest  
Rich mesophytic forest  
Successional old field

## Associated Species

Sugar Maple (*Acer saccharum*)  
Garlic Mustard (*Alliaria petiolata*)  
Lyre-leaved Rockcress (*Arabidopsis lyrata*)  
Whorled Milkweed (*Asclepias quadrifolia*)  
*Aster divaricatus*  
Bellow-beaked Sedge (*Carex albicans* var. *albicans*)  
Slender Wood Sedge (*Carex digitalis*)  
Pennsylvania Sedge (*Carex pennsylvanica*)  
Pignut Hickory (*Carya glabra*)  
Yellow Corydalis (*Corydalis flavula*)  
Pink Corydalis (*Corydalis sempervirens*)  
Common Dittany (*Cunila origanoides*)  
Licorice Bedstraw (*Galium circaezans*)  
Hophornbeam (*Ostrya virginiana*)  
White Oak (*Quercus alba*)  
Chestnut Oak (*Quercus montana*)  
Red Oak (*Quercus rubra*)  
Black Oak (*Quercus velutina*)  
Rock Crowfoot (*Ranunculus micranthus*)  
Bluestem Goldenrod (*Solidago caesia*)

## Identification Comments

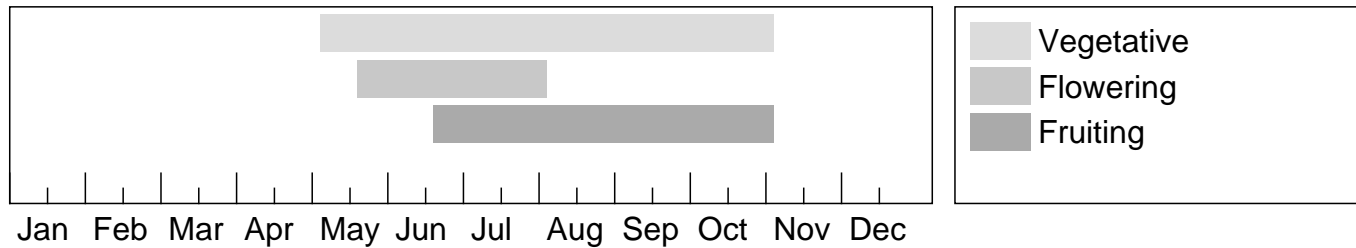
This plant has lance to arrow-shaped leaves 6-12 cm long that are arranged alternately on a stem that can grow to 60 cm long. The stem may be erect if short or lying on the ground if long. The flowers will usually be hidden under the leaf litter, one at the end of each branch. They are inch-long, purple, S-shaped flower tubes that flare-out at the tip.

## Best Life Stage for Identifying This Species

Fortunately, one can easily identify this plant based on leaves alone. Since the flower is often hidden under the leaf litter, it is infrequently observed.

## The Best Time to See

The plant flowers from mid-May to late July and the fruits persist until late October. Since this plant will often appear in areas surrounded by *Carex pennsylvanica*, surveys may be most effective after the *Carex* begins to senesce. The ideal survey time is from July to September.



The time of year you would expect to find Virginia Snakeroot in New York.

## Similar Species

A very unique plant, even vegetatively, that is not easily confused with any plant in our region.

## Conservation Comments

Together the segregate genera *Endodeca* and *Isotrema* form a very well supported clade that is morphologically, molecularly, and cytologically distinct from the rest of *Aristolochia sensu lato* (Kelly and Gonzalez 2003, Neinhuis et al. 2005, Ohi-Toma et al. 2006, Wanke et al. 2006). These authors work strongly supports Hubers (1993) taxonomic alignment which recognizes *Endodeca* and *Isotrema* as distinct genera. Ohi-Toma et al. (2006), while supporting the recognition of segregate genera within *Aristolochia s.l.*, chose to lump *Endodeca* under *Isotrema* because the two share the same chromosome number but their work also strongly supports the recognition of the two as distinct at the generic level with the choice somewhat subjective. We currently recognize *Endodeca* (*E. serpentaria*) and *Isotrema* (*I. macrophyllum*, *I. tomentosum*) as distinct from *Aristolochia* (*A. clematitis*) following (Huber 1993, Kelly and Gonzalez 2003, Neinhuis et al. 2005). A few taxa (all occurring south of New York) have been described within *Endodeca serpentaria* (e.g. *Aristolochia hastata*, *A. convolvulacea*) sometimes at the infraspecific level. We follow recent authors (Gleason and Cronquist 1991, Berringer 1997) in recognizing only one variable taxon.

## Taxonomy

Kingdom Plantae

└ Phylum Anthophyta

└

**Class** Dicots (Dicotyledoneae)

└ **Order** Aristolochiales

└ **Family** Aristolochiaceae (Birthwort Family)

## Additional Common Names

Narrow-leaved Snakeroot  
Pelican-flower  
Sangree-root  
Serpentaria  
Serpentary  
Snagrel  
Snakeweed  
Virginia Serpentaria

## Synonyms

*Aristolochia serpentaria* (L.)  
*Aristolochia serpentaria* var. *hastata* ((Nutt.) Duchartre)

## Additional Resources

### Links

#### USDA Plants Database

<http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=ARISTOLOCHIA+SERPENTARIA>

#### NatureServe Explorer

<http://natureserve.org/explorer/servlet/NatureServe?searchName=ARISTOLOCHIA+SERPENTARIA>

#### Google Images

<http://images.google.com/images?q=ARISTOLOCHIA+SERPENTARIA>

#### Flora of North America

[http://efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=233500164](http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500164)

#### New York Flora Atlas

<http://www.newyork.plantatlas.usf.edu/Plant.aspx?id=149>

## 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.

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