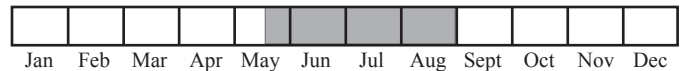


Best Survey Period



Status: State special concern

Global and state rank: G5/S3

Other common names: mountain clematis

Family: Ranunculaceae (buttercup family)

Synonyms: *Atragene americana* Sims; *Clematis verticillaris* de Candolle; *C. verticillaris* var. *cacuminis* Fernald; *C. verticillaris* var. *grandiflora* B.Boivin (Flora of North America 1997).

Taxonomy: Pringle (1971) placed *C. occidentalis*, long known under the illegitimate name of *C. verticillaris*, as one of two species in the subgeneric sect. *Atragene* (L.) DC. *C. occidentalis*, which has a broad North American range from the Pacific Northwest to the Midwest and Northeast, was divided into three distinct varieties, of which Michigan plants, and also all those in eastern North America, were referred to the typical variety, *Clematis occidentalis* var. *occidentalis*.

Range: In western North America, *C. occidentalis* occurs in the Rocky Mountains from Colorado north to the Yukon Territory and east to Saskatchewan and Alberta. In the Midwest and Great Lakes region, it ranges from northeastern Iowa through Wisconsin, Minnesota, and the Upper Peninsula of Michigan to

northern Ontario, and in the east, it occurs from the mountains of North Carolina and Virginia north to the Gaspé Peninsula in Quebec (Pringle 1971). This species is considered rare in Saskatchewan, Quebec, New Brunswick, Nova Scotia, Maine, New Hampshire, Massachusetts, Rhode Island, Maryland, Virginia, West Virginia, North Carolina, Illinois, Iowa, and Wisconsin. It is presumed extirpated in Delaware and is known only from historical records in Ohio (NatureServe 2006).

State distribution: Purple clematis is restricted to Upper Michigan, occurring east to Schoolcraft County, with the principal distribution in the western Upper Peninsula in Dickinson, Marquette, Iron, Gogebic, Ontonagon, and Keweenaw counties. A putative occurrence along the border of Baraga and Houghton counties is currently tracked but remains a tentative identification based on the lack of a fertile specimen. Of the nearly 40 occurrences, a significant number of which are rather dated specimen records, more than half are found on Isle Royale, with the majority of the mainland localities documented in Keweenaw and Marquette counties.

Recognition: *C. occidentalis* is trailing to straggling or climbing vine, ranging to about 2 m or more in length/height, bearing opposite, three-parted leaves (trifoliate) that are ovate to lance-shaped and coarsely scalloped



(crenate) to somewhat lobed. The **softly hairy flowers**, which are solitary, **perfect** (i.e. bearing male and female parts), and **3-4.5 cm long**, are borne from stalks arising from the leaf bases (axils), and bear a **rose-purple perianth** (here an undifferentiated whorl of petal-like sepals); the color is variously described as **reddish-violet** (Gleason 1991) to **pink-purple** Voss (1985). The outer whorls of stamens, which may be entirely sterile (lacking viable pollen), are markedly broader than the inner, functional stamens and distinctively veined. Similar to other *Clematis* species, when in fruit the persistent, curving (flexuous) style becomes plume-like to aid in seed dispersal. In purple clematis, the fruits are formed in **dense, roundish heads** of flattened achenes (dry, one-seeded fruits) that are more than **2 mm broad**.

Purple clematis is most likely to be confused with the common and wide-ranging *C. virginiana* (virgin's bower), a native species that occurs in a variety of habitats throughout the state and could easily occur with purple clematis. It must be emphasized that these two species cannot be distinguished in sterile condition, and thus flowers and/or fruits are required for reliable identification. In contrast to purple clematis, virgin's bower is a perennial, woody vine with unisexual flowers that are borne in inflorescences; the flowers have a white perianth about 7-13 mm in length and produce dense, semi-roundish heads of achenes that are mostly less than 2 mm broad when fully mature.

Best survey time/phenology: Flowering or fruiting individuals are required for positive identification, owing to the variability in the characteristics of the foliage and the fact that the common and wide-ranging *C. virginiana* completely overlaps the range of purple clematis. According to occurrence records, purple clematis typically flowers from about mid-May through June and may flower into late July, even in mainland areas, whereas fruiting plants have been observed from June through mid- to late-August.

Habitat: Throughout its range, purple clematis tends to occur in rocky woodlands, in openings and areas that have experienced some sort of natural to artificial disturbance, and along edges near creeks and even in disturbed rights-of-way and in ditches along roadsides. It is somewhat difficult to generalize its habitat in Michigan. On Isle Royale, purple clematis has been typically found in disturbed openings, including both within disturbed, rocky, deciduous woods with quaking aspen and white and yellow birch, and also in open

balsam fir and white spruce stands at sites of old burns, logging areas, or near old mining camps and along trails and thickets. On the mainland, this species has been found in similar habitats, especially along the edges of recently logged areas, and typically where rocky soils are present.

Biology: Purple clematis is an herbaceous vine that bears perfect flowers. Very little is apparently known of the biology of this species, based on the paucity of published literature regarding any aspect of life history, population structure, genetics, and the like. The currently available publications are principally taxonomic in nature.

Conservation/management: Although there are a reasonable number of records for this species in Michigan, its status not well known. A number of records are derived from dated herbarium records, and few searches to determine the status of historical localities have been conducted. Most occurrences consist of sightings of localized colonies with low numbers of individuals, and with few repeat visits to ascertain the size or persistence of a population. However, based on the available occurrence data, this species appears to require disturbance to emerge, and when this does occur, a colony may be ephemeral within a locality. Beyond revisits to regions to better ascertain the status of the species, long-term monitoring is probably necessary to determine how purple clematis might best be managed, or at least to provide a sense of the specific requirements necessary for perpetuating the species.

Comments: *Clematis* is the only member of the buttercup family in Michigan that is a vine.

Research needs: Beyond basic natural history studies, inventory to determine the status of occurrences and ecological and/or population monitoring coupled with experimental management may provide the best insights for long-term conservation.

Related abstracts: dwarf bilberry, Northern blue, Pygmy snaketail, Rapids clubtail, Wood turtle

Selected references:

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



Hamamelidae. Oxford Univ. Press. New York, NY. 590 pp.

Keener, C.S. and W. M. Dennis. 1982. The subgeneric classification of *Clematis* (Ranunculaceae) in temperate North America north of Mexico. *Taxon* 31:37-44.

NatureServe. 2006. NatureServe Explorer: an online encyclopedia of life [web application]. Version 6.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: December 15, 2006).

Pringle, J.S. 1971. Taxonomy and distribution of *Clematis*, Sect. *Atragene* (Ranunculaceae), in North America. *Brittonia* 23:361-393.

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