



Colicroot



Photo: © Jennifer Anderson @USDA-NRCS PLANTS Database

new transportation corridor caused the removal of more than 50% of all mature plants in the Canadian population and loss of habitat. Although plants have been transplanted from the transportation corridor to nearby restoration sites, it is too early to know whether these relocated subpopulations will be self-sustaining so they cannot yet be considered to contribute to the population.

Wildlife Species Description and Significance

Colicroot (*Aletris farinosa*) is a herbaceous perennial in the Bog Asphodel Family (Nartheciaceae). It has a basal rosette of yellowy-green, lance-shaped leaves. In early summer, it produces an upright flowering stalk about 40 – 100 cm tall, with a spike of small, white flowers with a mealy texture. After flowering, the dried petals remain on the fruit capsules. Colicroot has been used to treat menstrual and uterine problems and contains active chemicals that may have hormonal properties.



Colicroot flowers

Photo: © Thomas G. Barnes @ USDA-NRCS PLANTS Database

Scientific name

Aletris farinosa

Taxon

Vascular Plants

COSEWIC Status

Endangered

Canadian range

Ontario

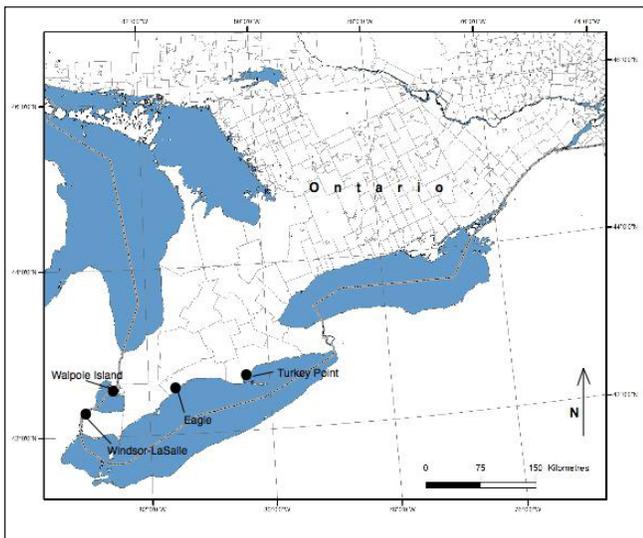
Reason for Designation

This perennial herb is restricted to remnant, disturbance-dependent prairie habitats in southwestern Ontario. It continues to decline in the face of multiple threats, including habitat modification, invasive species, and browsing by deer. Prairie habitat, for example, naturally transitions to less suitable habitat types in the absence of periodic disturbance (e.g., fire), and its quality and extent are also vulnerable to ongoing urban and industrial development. Recent construction of a

Distribution

In Canada, Colicroot is restricted to four geographic regions in southwestern Ontario: the City of Windsor-Town of LaSalle; Walpole Island; near Eagle (Municipality of West Elgin); and is inferred to be extirpated near Turkey Point (Haldimand-Norfolk County).

Map showing the distribution of Colicroot (*Aletris farinosa*) in Canada, indicating four regions with extant subpopulations. Colicroot has an extremely restricted geographic range in Canada and has never been observed outside of southwestern Ontario. Current confirmed occurrences are the City of Windsor and the adjacent Town of LaSalle; Walpole Island (in Lake St. Clair); and near Eagle, in the municipality of West Elgin, Ontario. Seven subpopulations with 35 patches are confirmed extant, and one patch in one subpopulation is presumed extirpated.



Distribution of Colicroot (*Aletris farinosa*) in Canada showing regions with extant subpopulations. Historical occurrences are not shown. Windsor-LaSalle: 4 subpopulations, 30 patches. Walpole Island: 2 subpopulations, 4 patches. Eagle: 1 subpopulation, 1 patch. Turkey Point: 1 subpopulation, 1 patch with status unknown but presumed extirpated.

Habitat

Colicroot grows in open, moist, sandy ground associated with tallgrass prairie habitats and damp sandy meadows. It is currently found in prairie remnants, old fields, utility corridors, and woodland edges. It is intolerant of shading by surrounding vegetation. For habitat to remain suitable, some type of disturbance must occur to keep vegetation open, short, and sparse. Historically, fire probably maintained habitat but more recently, human activities, such as periodic mowing, cultivation, and the use of walking and bicycling trails, create disturbance in Colicroot habitat but keep habitat only marginally suitable. Loss of habitat due to succession is the number one cause of the decline of Colicroot and is an urgent threat. Habitat has also been lost to urban development, to construction of the Right Honourable Herb Gray Parkway (Parkway), and to conversion to agricultural use.

Habitat in Parkway restoration sites and at some sites on Walpole Island is currently maintained by controlled burning and manual removal of woody and invasive species. However, habitat has been lost in Natural Heritage Areas and a provincial nature reserve, showing that Colicroot is not protected if management is not adequate. It is unknown whether habitat can be restored from a completely wooded state.

Biology

Colicroot is perennial and some plants probably live for decades. The time required to reach maturity from seed is unknown but is likely more than one year and probably depends on site conditions. It is unknown how long seeds remain viable or if there is a seed bank in the soil. In addition to sexual reproduction, vegetative reproduction is possible but infrequent from buds on the rhizome. Thus, some plants in a patch may not be genetically distinct individuals. Flowers are insect-pollinated, mainly by bumblebees and solitary bees. It is unknown whether the flowers are self-fertile. It has been suggested

that Colicroot may have mycorrhizal requirements because, until recently, most attempts to transplant the species were unsuccessful. However, greenhouse tests found no evidence that mycorrhizal fungi confer an advantage. Colicroot has no specialized structures to assist dispersal. Flowering stalks are frequently eaten by deer or other herbivores, and the leaves are sometimes eaten by insects. It is unknown whether herbivores can disperse seeds through the gut.

Population Sizes and Trends

Total abundance in 2014 was between 14,000 to 15,000 plants, with ~14,600 the best available estimate. Over half of the individuals in the Canadian population are the results of transplants and those propagated to allow for the construction of the Parkway. There are 35 patches of Colicroot in seven subpopulations confirmed extant and one patch in one subpopulation presumed extant with status unknown. Approximately 93% of all individuals occur within 12 km² in Windsor-LaSalle, and 82% of individuals (~12,000) are in the Parkway restoration sites. Only about 18% (~2700 plants) are present elsewhere. All Colicroot planted in Parkway restoration sites were originally naturally occurring plants, so plants in restoration sites are considered natural individuals.

Discoveries of new sites and increases of mature individuals constitute ~14,000 plants, but the total 2014 abundance is around 14,600: most of the population known when it was first assessed in 1987 has been lost. Assuming newly discovered plants existed previously and including the plants remaining from the previously known population, there may have been a base population of at least 18,330 in 1986. If the transplanted 7,680 individuals are removed from

the total, a population of 10,650 remains. Since then, there has been a measurable loss of more than 5000 plants or >47% of the population, with the actual decline well upwards of that.

Threats and Limiting Factors

Threats to Colicroot include 1) Lack of Disturbance, 2) Invasive Species, 3) Herbivory, and 4) Development. To maintain Colicroot, its habitat must be actively and frequently managed to arrest succession; most of the habitat isn't managed this way, even in protected areas. Recreational activities may cause trampling but sometimes also provide necessary disturbance. It is unknown whether the net result is beneficial or detrimental.

Protection, Status and Ranks

COSEWIC most recently assessed this species as Endangered in November 2015. Colicroot is currently listed as Threatened on Schedule 1 of the Canadian *Species at Risk Act* (SARA) and as Threatened under the Ontario *Endangered Species Act* 2007. As of November 2014, no habitat has been regulated under provincial law. Sixteen Colicroot patches are in publicly owned "protected" areas, yet Colicroot remains highly threatened with significant declines on these lands. Ten patches are in private ownership, four patches are on First Nation lands, five are in Parkway restoration sites, and one has corporate ownership.

Source: COSEWIC. 2015. COSEWIC assessment and status report on the Colicroot *Aletris farinosa* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 39 pp.

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