

**COSEWIC**  
**Assessment and Update Status Report**

on the

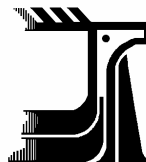
**Branched Bartonia**  
*Bartonia paniculata* ssp. *paniculata*

in Canada



**THREATENED**  
**2003**

**COSEWIC**  
COMMITTEE ON THE STATUS OF  
ENDANGERED WILDLIFE  
IN CANADA



**COSEPAC**  
COMITÉ SUR LA SITUATION DES  
ESPÈCES EN PÉRIL  
AU CANADA

COSEWIC status reports are working documents used in assigning the status of wildlife species suspected of being at risk. This report may be cited as follows:

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Previous report:

White, D.J. 1992. COSEWIC status report on the branched bartonia *Bartonia paniculata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 21 pp.

Production note: COSEWIC would like to acknowledge David J. White for writing the update status report on the branched bartonia *Bartonia paniculata* ssp. *paniculata* in Canada, prepared under contract with Environment Canada, overseen and edited by Erich Haber, COSEWIC Plants and Lichens Specialist Subcommittee Co-chair.

Branched bartonia *Bartonia paniculata* ssp. *paniculata* was formerly assessed by COSEWIC as branched bartonia *Bartonia paniculata*.

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Également disponible en français sous le titre Évaluation et Rapport de situation du COSEPAC sur la situation de la bartonie paniculée (*Bartonia paniculata* ssp. *paniculata*) au Canada – Mise à jour.

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Branched bartonia — Provided by the author

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## COSEWIC Assessment Summary

### Assessment Summary – November 2003

**Common name**

Branched bartonia

**Scientific name**

*Bartonia paniculata* ssp. *paniculata*

**Status**

Threatened

**Reason for designation**

A cryptic wetland annual species of Atlantic Coastal Plain affinity, highly restricted both geographically and ecologically and present at only six of seven documented sites. Ontario populations are disjunct by about 600 km from the main range of the species with little potential for a rescue effect. The greatest potential risk is from the invasive shrub, glossy buckthorn, at two localities.

**Occurrence**

Ontario

**Status history**

Designated Special Concern in April 1992. Status re-examined and uplisted to Threatened in November 2003. Last assessment based on an update status report.



**COSEWIC**  
**Executive Summary**

**Branched Bartonia**  
*Bartonia paniculata* ssp. *paniculata*

**Species information**

Branched bartonia (*Bartonia paniculata* ssp. *paniculata*) is an annual herb 1 to 4 dm tall with a green or purple angled and occasionally twining stem. Due to its common habit of growing deeply nestled in sphagnum moss, it generally appears much shorter. The leaves are reduced to minute scales arranged in an essentially alternate fashion. The inflorescence is usually a panicle of few to numerous, small, white, 4-lobed flowers on divergent or curved ascending branches. The capsule tapers to a blunt tip and averages 4.2 mm long. The seeds average 0.19 mm long x 0.12 mm wide with 1000 to 1500 per capsule. In view of the plant's greatly reduced leaves and thus its limited photosynthetic capacity, branched bartonia may be heterotrophic, i.e., dependent on soil fungi directly or indirectly for much of its organic nutrient requirements. The related subspecies *iodandra* occurs in Atlantic Canada but is not, overall, of conservation concern in the region.

**Distribution**

It has a wide range in the eastern United States from New England south to Louisiana and Texas. In Canada, it occurs only in southcentral Ontario.

**Habitat**

The habitat is open graminoid (grass-like vegetation) or low shrub sphagnum bog or fen with scattered Larch and Black Spruce. The substrate is peat. The site temperature may be lower than normal due to the saturated nature of the peat and the proximity of Georgian Bay.

**Biology**

Branched bartonia is an annual, possibly heterotrophic, species with reproduction only by seed. It is not known how large the seed bank might be or what conditions are necessary for germination.

## **Population sizes and trends**

There are six existing populations. Four stations were reconfirmed in 2002: Site 3 with 20 plants (78 plants in 1991); Site 4 with 122 plants (12 plants in 1990); Site 5 with 52 plants (over 200 plants in 1997); and Site 6 with 19 plants (30 plants in 1979). A fifth population occurs on Crown land (Site 7) at an isolated location along the Georgian Bay shoreline. This population has not been visited since 1977 when it had 20-30 plants; however, it is assumed to be still extant. A sixth population (Site 1) has not been visited since 1983 when it had 10-20 plants, but it is also assumed to be extant. A population at Site 2 was confirmed in 1991 when it had 16 plants, but none could be relocated in 2002 and the population may have disappeared. Most recently, 213 plants have been documented, but an estimate of the total number may exceed 500 plants. Since branched bartonia is a small annual plant that is difficult to locate, it is not possible to say with certainty at most sites if the species is increasing or decreasing in numbers.

## **Limiting factors and threats**

The open sphagnum bog or fen habitat for branched bartonia is widespread in southcentral Ontario, and there are potential areas that could have populations of the species. When apparently suitable habitat within the known Ontario range is investigated, however, branched bartonia is rarely found. Members of the Atlantic coastal plain flora, to which branched bartonia apparently belongs, are generally restricted to a rather small area of southcentral Ontario. No imminent threats are known; however, peripheral areas of two sites are being taken over by the invasive shrub black buckthorn (*Rhamnus frangula*). Continued expansion by this shrub could threaten branched bartonia at these sites. Another population, which could not be re-confirmed in 2002, and may have disappeared, is located adjacent to a railway embankment. If this embankment were to be widened the site could be eliminated.

## **Special significance of the species**

Branched bartonia is a rare plant of sphagnum bogs whose natural significance is largely unknown. The Canadian populations could have some biogeographical significance due to their position some 600 km from the northern edge of the plant's range. Branched bartonia is one of a number of so-called Atlantic coastal plain species having disjunct populations in the Muskoka District of Ontario but with a main range along the Atlantic coastal plain. There is no known Aboriginal Traditional Knowledge of branched bartonia.



## COSEWIC HISTORY

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. On June 5, 2003, the *Species at Risk Act* (SARA) was proclaimed. SARA establishes COSEWIC as an advisory body ensuring that species will continue to be assessed under a rigorous and independent scientific process.

## COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. Designations are made on native species and include the following taxonomic groups: mammals, birds, reptiles, amphibians, fishes, arthropods, molluscs, vascular plants, mosses, and lichens.

## COSEWIC MEMBERSHIP

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal organizations (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biosystematic Partnership, chaired by the Canadian Museum of Nature), three nonjurisdictional members and the co-chairs of the species specialist and the Aboriginal Traditional Knowledge subcommittees. The committee meets to consider status reports on candidate species.

## DEFINITIONS (After May 2003)

Species	Any indigenous species, subspecies, variety, or geographically or genetically distinct population of wild fauna and flora.
Extinct (X)	A species that no longer exists.
Extirpated (XT)	A species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A species facing imminent extirpation or extinction.
Threatened (T)	A species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
Not at Risk (NAR)**	A species that has been evaluated and found to be not at risk.
Data Deficient (DD)***	A species for which there is insufficient scientific information to support status designation.

\* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.

\*\* Formerly described as "Not In Any Category", or "No Designation Required."

\*\*\* Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994.



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The Canadian Wildlife Service, Environment Canada, provides full administrative and financial support to the COSEWIC Secretariat.

**Update  
COSEWIC Status Report**

on the

**Branched *Bartonia***  
*Bartonia paniculata* ssp. *paniculata*

**in Canada**

2003

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## SPECIES INFORMATION

### Name and classification

Scientific name: *Bartonia paniculata* (Michx.) Muhl. ssp. *paniculata*  
Common name: branched bartonia  
Family: Gentianaceae (Gentian Family)  
Major plant group: Dicot flowering plant

### Description

Branched bartonia is an annual herb 1 to 4 dm tall with a green or purple angled and occasionally twining stem. Due to its common habit of growing deeply nestled in sphagnum moss, it generally appears much shorter (see Figure 1). The leaves are reduced to minute scales arranged in an essentially alternate fashion. The inflorescence is usually a panicle of few to numerous small white 4-lobed flowers and divergent or curved ascending branches. The capsule tapers to a blunt tip and averages 4.2 mm long. The seeds average 0.19 mm long x 0.12 mm wide with 1000 to 1500 per capsule (Gillett, 1959; 1963). In view of the plant's greatly reduced leaves and thus its limited photosynthetic capacity, branched bartonia may be heterotrophic, i.e., dependent on soil fungi for much of its nutrient requirements (Reznicek & Whiting, 1976).

The genus has three taxa in Canada. *Bartonia virginica* also occurs in southern Ontario and *Bartonia paniculata* ssp. *iodandra* occurs in Nova Scotia, New Brunswick and on insular Newfoundland. The subspecies *iodandra* is not presently of conservation concern, overall, in Atlantic Canada. The presence of a slender and lax stem with alternate leaves and pedicels and yellow anthers distinguishes *Bartonia paniculata* ssp. *paniculata* from its nearest relatives. *Bartonia paniculata* ssp. *iodandra* has a thick stout stem with purple anthers or filaments. *Bartonia virginica* has opposite leaf scales and pedicels. The present treatment follows Gillett (1959), who did not recognize ssp. *paniculata* as occurring in Nova Scotia. Roland and Smith (1969), however, considered that there was a gradation of plants from typical ssp. *paniculata* in southwestern Nova Scotia to plants with distinctive ssp. *iodandra* features in Cape Breton. Further clarification of the taxonomy of this species in the Maritimes is required. In spite of this possible intergradation between the two subspecies in Nova Scotia, the Ontario populations represent an appropriate designatable unit due to their occurrence in a distinct biogeographic region from that in the Maritimes.



Figure 1. *Bartonia paniculata* ssp. *paniculata* nestled in sphagnum moss at Site 3.

## DISTRIBUTION

### Global range

*Bartonia paniculata* ssp. *paniculata* has a wide range in the eastern United States from New England south to Louisiana and Texas (see Figure 2).

### Canadian range

In Canada it occurs only in southcentral Ontario (see Figure 3). At the time of the original status report (White, 1991), there were five stations known: four in Muskoka District and one just north of Muskoka in Parry Sound District. Since that time, two additional stations have been found, one is within two kilometres of an existing site (Site 6) and the other is 11 kilometres from Site 6. Both new sites are well within the previously known Ontario range. Site 2 population was confirmed in 1991 but could not be relocated in 2002 and may have disappeared.

## HABITAT

### Habitat requirements

*Bartonia paniculata* ssp. *paniculata* occurs in southcentral Ontario in the Georgian Bay Forest Region (Rowe, 1972) and in the Georgian Bay Site Region 5E (Hills, 1959). The habitat is open graminoid or low shrub sphagnum bog or fen with scattered Larch and Black Spruce. The substrate is peat. The site temperature may be colder than normal due to the saturated nature of the peat and the proximity of Georgian Bay.

The following species have been recorded as common associates of *Bartonia paniculata* ssp. *paniculata*.

- Aronia melanocarpa* (Black Chokeberry)
- Eriophorum virginicum* (Virginia Cotton-grass)
- Larix laricina* (Larch)
- Nemopanthus mucronatus* (Mountain-holly)
- Platanthera blephariglottis* (White-fringed Orchid)
- Pogonia ophioglossoides* (Rose Pogonia)
- Rhynchospora alba* (White Beak-rush)
- Woodwardia virginica* (Virginia Chain Fern)

### Protection/ownership

Most *Bartonia paniculata* ssp. *paniculata* sites are located on private land. The population at site 7 is located within a Nature Reserve that is managed by the Ontario Ministry of Natural Resources.

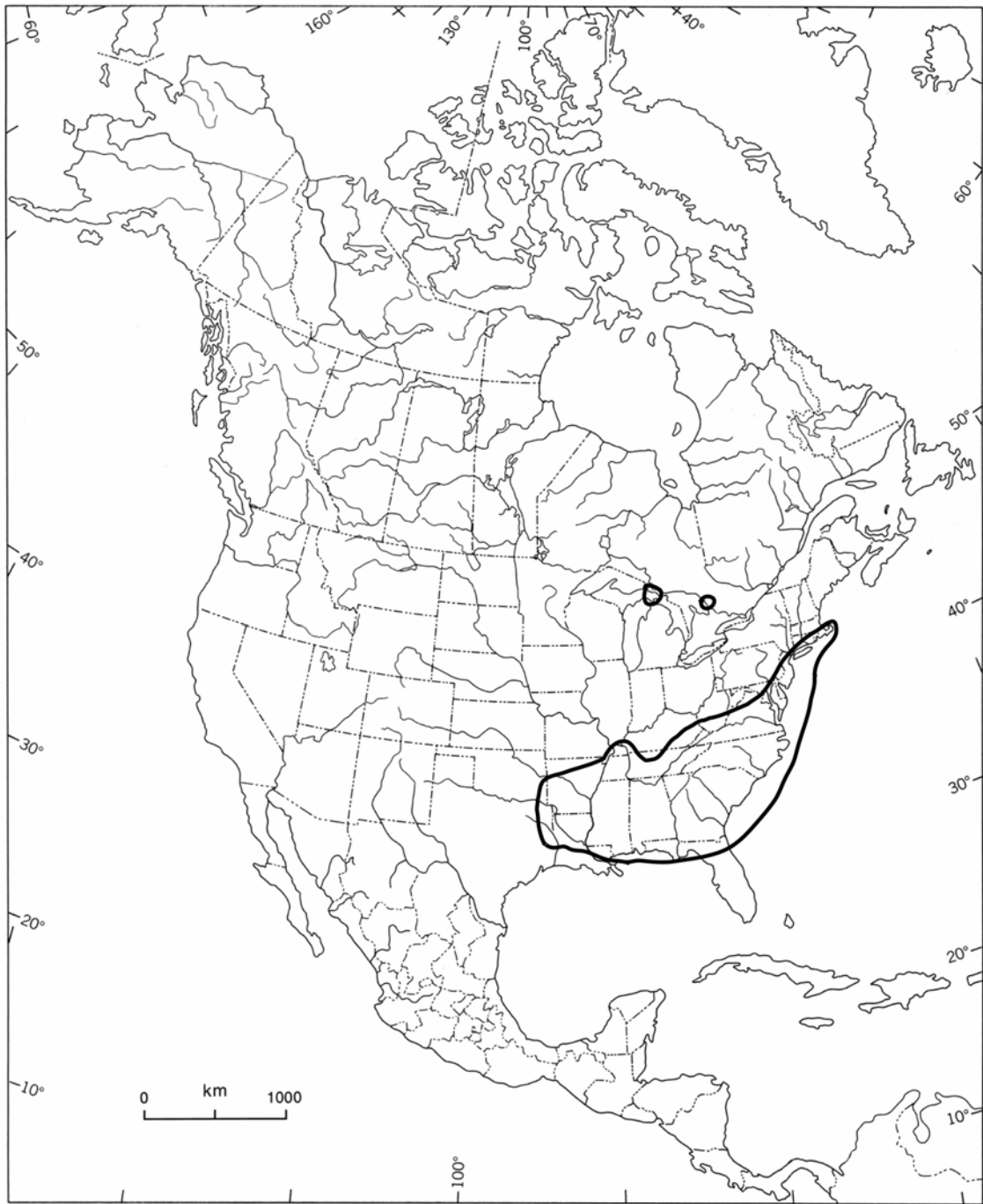


Figure 2. North American distribution of *Bartonella paniculata* ssp. *paniculata*.

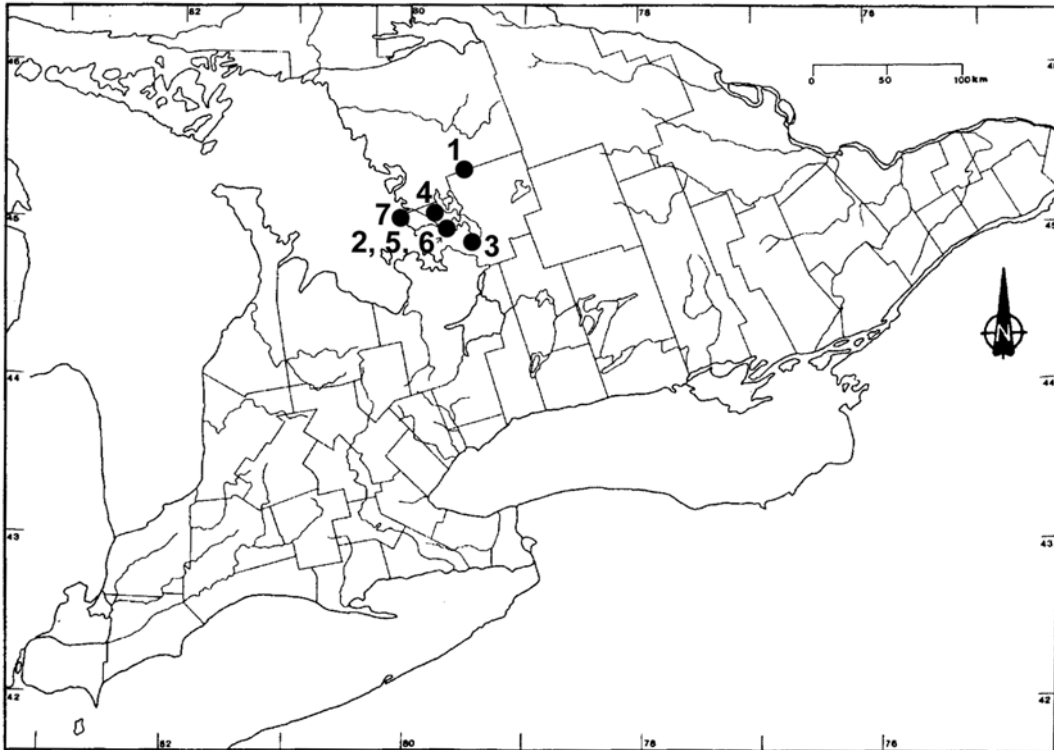


Figure 3. Distribution of *Bartonia paniculata* ssp. *paniculata* in Southern Ontario.

## BIOLOGY

### General

*Bartonia paniculata* ssp. *paniculata* populations generally occur as clumps of plants. Occasionally a few plants might be scattered over a wide area. These populations are quite local as can be seen from Figure 3. Branched bartonia is an annual, possibly heterotrophic species (relying on other organisms for its nutrients), reproducing only by seed. It is not known how large the seed bank might be or what conditions are necessary for germination.

Population sizes for Ontario branched bartonia are not known with certainty because detailed searches have not been conducted at most known sites and because the plant is very easily overlooked and sometimes occurs in rather extensive bogs.

## POPULATION SIZES AND TRENDS

In early September of the 1991 field season, the writer investigated and confirmed two branched bartonia sites. Other field botanists had confirmed additional sites around that time and their field data is incorporated below. The region in which branched bartonia is found is well known for its Atlantic Coastal Plain Disjuncts. It has been extensively surveyed over a period of many years by knowledgeable botanists and naturalists. At the time of the original status report, there were five populations known in the province, all of which had been verified since 1973. Four of the populations occur in Muskoka District and one occurs just outside Muskoka in Parry Sound District. A sixth population (Site 4) was found in 1990 (Oldham, 2002) but was not listed in the original status report (White, 1991).

Since the time of the original status report, one new location has been found (Site 5) to bring the total known to seven. For the present update, the writer conducted three days of fieldwork (Sept. 11-13, 2002). A population at site 2, confirmed in 1991, could not be relocated in 2002 despite a careful search in a well-defined location and it may have disappeared. Since branched bartonia is a small annual plant that is difficult to locate, it is not possible to say at most sites if the species is increasing or declining.

A total of 213 plants were located in 2002. Some considerable variation in total numbers is apparent at some sites over the course of several years (cf. Sites 4 and 5) but it is uncertain whether these represent gradual changes or more abrupt fluctuations. It is likely that the total numbers of plants are much higher than presently recorded.

The following is an overview of the seven documented sites (locations are mapped in Figure 3):

**Site 1** supported a small colony of branched bartonia in a rather unusual habitat at the edge of a sand spit. It was discovered in 1983 by Irene Wisheu. Approximately 10 to 20 plants were found (I. Wisheu, pers. com., 1991). It has not been searched for since its discovery in 1983 and its current status is unknown. Given the isolated nature of the site, branched bartonia is presumed to be still extant there.

**Site 2** supported a small population that was first located by Jim Goltz in 1975 with the discovery of one plant. The species was not seen there again despite searches for it (R.E. Whiting, pers. com., 1991) until the author's fieldwork in 1991. Two separate subpopulations were located, one with two plants and the other with 14 plants. This site is rather vulnerable due to the presence of the Canadian National Railway that passes along the lakeshore within several metres of the plants. The colony could be eliminated if the railway embankment was widened with additional fill along the shore. Despite careful searching of the site by the author in 2002, no branched bartonia could be found and the species may have disappeared there.

**Site 3** is the site of the plant's first discovery in the province in 1973 by R.E. Whiting and represents one of the larger known populations. Branched bartonia

occurs in this bog as a number of apparently discrete colonies. The author found three such colonies in 1991 of from 22 to 32 plants within an area of about 50 m by 500 m. Additional site(s) were found in the same bog after the original discovery independently by J. Soper and B. Bowles (R.E. Whiting, pers. com., 1991). In 2002, the author found 4 subpopulations of from one to 16 plants totalling 20 plants.

**Site 4** is an extensive open bog that supports a small population of branched bartonia (12 widely scattered plants). This colony was discovered in 1990 by Jim Goltz but was not listed in the original Status Report (White, 1991). In 2002, the author found 6 subpopulations of from one to 45 plants totalling 122 plants.

**Site 5** is an extensive open fen that supports a large population of branched bartonia (over 200 plants seen in three subpopulations). This colony was discovered in 1997 by Jim Goltz, Richard Aaron, and Shirley Lee. In 2002, the author found six subpopulations of from one to 25 plants totalling 52 plants.

**Site 6** is a small bog that contains a small colony of branched bartonia. It was discovered in 1977 by Jim Goltz but only a few plants were located at that time (R.E. Whiting, pers. com., 1991). About 30 plants were found in 1979 (Oldham, 2002). In 2002, the author found three subpopulations of from one to 16 plants totalling 19 plants.

**Site 7** is an extensive bog that supports at least a small colony of branched bartonia. This site is now protected by its inclusion within the O'Donnell Point Nature Reserve. This colony was discovered in 1977 by Stephen Darbyshire, Bill Crins, Vivian (Brownell) Catling, and Loney Dickson. Approximately 20 to 30 plants were seen at the site although extensive searches were not carried out (B. Crins, V. (Brownell) Catling, and S. Darbyshire; pers. com., 1991). It has not been searched for since its discovery in 1977 and its current status is unknown. Given the isolated nature of the site, branched bartonia is presumed to be still extant at the site.

A summary of populations and sizes is provided in Table 1.

**Table 1. Population summary for branched bartonia.**

Location	Status Report Count (date in brackets)	Other Count (date in brackets)	2002 Count	2002 Area of Population
Site 1	10-20 (1983)			
Site 2	16 (1991)		0	possibly extirpated
<b>Site 3</b>	78 (1991)		20	50mx180m
<b>Site 4</b>		12 (1990)	122	250mx300m
Site 5		200+ (1997)	52	30mx800m
Site 6	30 (1979)		19	20mx80m
<b>Site 7</b>	20-30 (1977)			

## LIMITING FACTORS AND THREATS

The open sphagnum bog or fen habitat for branched bartonia is widespread in southcentral Ontario and there are potential areas that could have populations of the species. Two apparently suitable sites within the known Ontario range were investigated by the author in 1991; however, branched bartonia was not found. Another apparently suitable site within the range was investigated by the author in 2002; however, branched bartonia was not found at that site. Members of the Atlantic coastal plain flora, to which branched bartonia apparently belongs, are generally restricted to a rather small area of southcentral Ontario.

No imminent threats are known that would eliminate branched bartonia in the next several years; however, peripheral areas of two sites (Sites 5 and 6) are being taken over by the invasive shrub black buckthorn (*Rhamnus frangula*). This shrub is also present but not yet dominant in the open areas in the immediate vicinity of branched bartonia. Continued expansion by this aggressive invasive shrub could threaten branched bartonia at these two sites in the coming decades. At Site 2, where the species could not be confirmed in 2002, the population was located adjacent to a railway embankment. If this embankment were to be widened the site could be eliminated.

## SPECIAL SIGNIFICANCE OF THE SPECIES

*Bartonia paniculata* ssp. *paniculata* is a rare plant of sphagnum bogs whose natural significance is largely unknown. The Canadian populations could have some biogeographical significance due to their position some 600 km from the previously known northern edge of the plant's range. The species is one of a number of so-called Atlantic Coastal Plain Species having disjunct populations in the Muskoka District of Ontario but with a main range along the Atlantic coastal plain.

## EXISTING PROTECTION OR OTHER STATUS

Branched bartonia has no legal protection; however, it is considered rare in Ontario and Canada in Argus & White (1983) and in Argus & Pryer (1990). Branched bartonia is given the priority ranking of "3" in Argus & Pryer (1990) because of its rarity in Canada and its absence in bordering states. Its provincial rank (SRANK) is "S1", the highest rating (NatureServe 2003). Its global rank is G5T5 which means that it is "very common and demonstrably secure with many occurrences" (NatureServe 2003).

## SUMMARY OF STATUS REPORT

Branched bartonia is rare in the province due to the limited number of sites known (7 sites known but perhaps only 6 extant), its estimated small population (perhaps 500



or at most 1000 plants; this upper value is highly speculative), its small geographical distribution within Ontario, the significant 600 km distance to the main range of the species, and the plant's specialized habitat. Branched bartonia is a very small cryptic species that is easily overlooked — even during specific searches for the species. Within its small range are other areas of apparently suitable habitat that could have undiscovered populations. However, many small bogs within the Muskoka-Georgian Bay region have been surveyed and the species has not been found. Being an annual plant, it may not be found above ground at a site in a particular year but still be present in the seed bank.

Sites 5 and 6 are being taken over by an invasive shrub that could threaten branched bartonia at these sites. At Site 2, the species could not be re-confirmed in 2002 and may have disappeared. The former location of the population is adjacent to a railway embankment where any widening could eliminate the site.

## TECHNICAL SUMMARY

### Bartonia paniculata ssp. paniculata

Branched Bartonia

bartonie paniculée

Range of Occurrence in Canada: Ontario

<b>Extent and Area Information</b>	
<ul style="list-style-type: none"> <li>• <i>Extent of occurrence (EO)(km<sup>2</sup>)</i> <b>Based on polygon around sites.</b></li> </ul>	400 km <sup>2</sup>
<ul style="list-style-type: none"> <li>• <i>Specify trend in EO</i></li> </ul>	Stable
<ul style="list-style-type: none"> <li>• <i>Are there extreme fluctuations in EO?</i></li> </ul>	No
<ul style="list-style-type: none"> <li>• <i>Area of occupancy (AO) (km<sup>2</sup>)</i> <b>Based on area of bogs-fens at the sites</b></li> </ul>	<1 km <sup>2</sup>
<ul style="list-style-type: none"> <li>• <i>Specify trend in AO</i></li> </ul>	Stable
<ul style="list-style-type: none"> <li>• <i>Are there extreme fluctuations in AO?</i></li> </ul>	No
<ul style="list-style-type: none"> <li>• <i>Number of known or inferred current locations</i></li> </ul>	6
<ul style="list-style-type: none"> <li>• <i>Specify trend in #</i></li> </ul>	Unknown
<ul style="list-style-type: none"> <li>• <i>Are there extreme fluctuations in number of locations?</i></li> </ul>	No
<ul style="list-style-type: none"> <li>• <i>Specify trend in area, extent or quality of habitat</i></li> </ul>	Stable
<b>Population Information</b>	
<ul style="list-style-type: none"> <li>• <i>Generation time (average age of parents in the population)</i></li> </ul>	1 year
<ul style="list-style-type: none"> <li>• <i>Number of mature individuals</i></li> </ul>	Perhaps 500-1000 (the upper value is highly speculative)
<ul style="list-style-type: none"> <li>• <i>Total population trend:</i></li> </ul>	Unknown
<ul style="list-style-type: none"> <li>• <i>% decline over the last/next 10 years or 3 generations.</i></li> </ul>	N/A
<ul style="list-style-type: none"> <li>• <i>Are there extreme fluctuations in number of mature individuals?</i></li> </ul>	Unknown
<ul style="list-style-type: none"> <li>• <i>Is the total population severely fragmented?</i></li> </ul>	Yes
<ul style="list-style-type: none"> <li>• <i>Specify trend in number of populations</i></li> </ul>	Stable
<ul style="list-style-type: none"> <li>• <i>Are there extreme fluctuations in number of populations?</i></li> </ul>	No
<ul style="list-style-type: none"> <li>• <b>List populations with number of mature individuals in each: See table 1</b></li> </ul>	
<b>Threats (actual or imminent threats to populations or habitats)</b>	
<ul style="list-style-type: none"> <li>- invasive shrubs at two sites represent the most serious threats</li> <li>- potential rail line reconstruction</li> </ul>	
<b>Rescue Effect (immigration from an outside source)</b>	
<ul style="list-style-type: none"> <li>• <i>Status of outside population(s)?</i> <b>USA: Secure</b></li> </ul>	
<ul style="list-style-type: none"> <li>• <i>Is immigration known or possible?</i></li> </ul>	Unlikely
<ul style="list-style-type: none"> <li>• <i>Would immigrants be adapted to survive in Canada?</i></li> </ul>	Unknown
<ul style="list-style-type: none"> <li>• <i>Is there sufficient habitat for immigrants in Canada?</i></li> </ul>	Possibly
<ul style="list-style-type: none"> <li>• <i>Is rescue from outside populations likely?</i></li> </ul>	Unlikely
<b>Quantitative Analysis</b>	<b>N/A</b>
<b>Current Status</b>	
COSEWIC: Threatened	

### Status and Reasons for Designation

<b>Status:Threatened</b>	<b>Alpha-numeric code: Met criteria for Endangered, B1ab(iii)+2ab(iii); C2a(i), because it is not at imminent risk of extirpation.</b>
Reasons for Designation: A cryptic wetland annual species of Atlantic Coastal Plain affinity, highly restricted both geographically and ecologically and present at only six of seven documented sites. Ontario populations are disjunct by about 600 km from the main range of the species with little potential for a rescue effect. The greatest potential risk is from the invasive shrub, glossy buckthorn, at two localities.	

## ACKNOWLEDGEMENTS

Mike Oldham, Natural Heritage Information Centre, Peterborough, provided a listing of known *Bartonia paniculata* records in Ontario with details of recent confirmations.

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David J. White has a B.Sc. in biology and has been conducting natural area inventories and evaluating the status and significance of rare plants for more than 25 years. He began doing field surveys in 1972 for the International Biological Program.

From 1973 to 1983, David was employed by the Canadian Museum of Nature as a research technician. During that period he co-authored a number of publications on rare plants, including the Atlas of the Rare Vascular Plants of Ontario. From 1984 to the present, David has worked as a self-employed life science consultant. He has completed projects ranging from natural area inventories and evaluations to reports on invasive species. David has previously written COSEWIC Status Reports on three species and authored or co-authored Update Status Reports on 19 other species.

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- Oldham, M. January 2002. Botanist/Herpetologist, Natural Heritage Information Centre, Ministry of Natural Resources, 300 Water Street, 2nd Floor, North Tower, Peterborough, Ontario K9J 8M5.
- Pratt, R. October 2002. Canadian Wildlife Service, Environment Canada, 49 Camelot Drive, Nepean, Ontario K1A 0H3.

### **COLLECTIONS EXAMINED**

The following herbaria were consulted for records of branched bartonia in Canada in 1980. All Ontario specimens from these herbaria were examined by J.M. Gillett for the Ontario Rare Plant Atlas (Argus & White, 1983). The herbaria at CAN and DAO were also checked in 1991 by the author for records received after 1980.

- CAN National Museum of Natural Sciences, Ottawa.
- DAO Agriculture and Agri-Food Canada, Ottawa.
- HAM Royal Botanical Gardens, Hamilton.
- LKHD Lakehead University, Thunder Bay.
- MT University of Montreal, Montreal.
- MTJB Montreal Botanical Garden, Montreal.
- OAC Ontario Agricultural College, Guelph.
- PFM Herbarium of P.F. Maycock, Erindale College, Toronto.
- QFA Laval University, Montreal.
- QK Queen's University, Kingston.
- RPP Herbarium of Rondeau Provincial Park.
- SFS Sherbrooke University, Sherbrooke.
- TRT University of Toronto, Toronto.
- TRTE University of Toronto, Erindale College, Toronto.
- UWO University of Western Ontario, London.
- WLU Wilfred Laurier University, Waterloo.