

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

on the

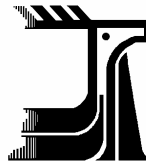
**Bashful Bulrush**  
*Trichophorum planifolium*

in Canada



**ENDANGERED**  
**2000**

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



**COSEPAC**  
COMITÉ SUR LA SITUATION DES  
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AU CANADA

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Bashful Bulrush (*Trichophorum planifolium*) was formerly listed as Few-flowered Club-rush (*Scirpus verecundus*).

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## COSEWIC Assessment Summary

### Assessment Summary – May 2000

**Common name**

Bashful Bulrush

**Scientific name**

*Trichophorum planifolium*

**Status**

Endangered

**Reason for designation**

More than 50% decline over the past decade of the few remaining populations due to habitat destruction and alteration within its two remaining areas of occurrence.

**Occurrence**

Ontario

**Status history**

Designated Special Concern in April 1986. Status re-examined and designated to Endangered in May 2000. Last assessment based on an update status report.



**COSEWIC**  
**Executive Summary**

**Bashful Bulrush**  
*Trichophorum planifolium*

**Description**

Bashful Bulrush (*Trichophorum planifolium* = *Scirpus verecundus*) is a member of the sedge family. It forms small clumps of short, erect, grass-like leaves. In the spring, each clump produces from several to several dozen delicate flowering stalks (culms) that are triangular in cross-section and generally only 10-20 cm high. A small solitary spike develops at the end of each culm. The spike consists of several petal-less flowers, each of which is partly enclosed by an awn-tipped bract. Bashful Bulrush generally occurs as loosely-associated patches of from a few to several hundred clumps. Later in the season, the leaves and culms tend to fall over and become matted on the forest floor.

**Distribution**

The species has a rather limited range in northeastern North America. It occurs in the United States from southern Maine south to northern Virginia and west to Indiana and eastern Missouri. Its only Canadian occurrence is in southern Ontario in the eastern region of Metropolitan Toronto and at the Hamilton Botanical Gardens.

**Habitat**

In Canada, Bashful Bulrush is found in open-canopied forest with little shrub cover and excellent drainage. It is found on semi-open south- or west-facing slopes in deciduous and mixed woods.

**General Biology**

It is a perennial species and, like other members of the sedge family, is wind-pollinated. Its Ontario sites are confined to the western Lake Ontario shoreline that has one of the warmest climates and longest growing seasons in the province.

**Population Size and Trends**

In 1986, this species was known from two areas: the Rouge River valley in Toronto (two populations) and the Royal Botanical Gardens in Hamilton (five sub-populations).

Most populations in 1986 consisted of from several hundred culms to several hundred clumps.

Three of the seven populations and sub-populations could not be found in 1999 despite searches by several people. Three other populations were relocated in the present study but they have declined by at least 50%. A seventh population has not been searched for since 1986. Bashful Bulrush has been specifically searched for in a number of other areas by several experienced field botanists, however, no new sites have been found since 1986.

### **Limiting Factors and Threats**

The main limiting factor for Bashful Bulrush appears to be the lack of suitable habitat. The Ontario range of the plant coincides with one of the most highly urbanized parts of the province. The Toronto sites are vulnerable to the digging of coyote or fox dens. Trampling by hikers and shading by canopy closure and shrub growth, such as from the alien honeysuckles (*Lonicera tatarica* and *L. morrowii*) at some sites, are ongoing threats.

### **Existing Protection**

No formal protection exists.



## COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) determines the national status of wild species, subspecies, varieties, and nationally significant populations that are considered to be at risk in Canada. Designations are made on all native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fish, lepidopterans, molluscs, vascular plants, lichens, and mosses.

## COSEWIC MEMBERSHIP

COSEWIC comprises representatives from each provincial and territorial government wildlife agency, four federal agencies (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biosystematic Partnership), three nonjurisdictional members and the co-chairs of the species specialist groups. The committee meets to consider status reports on candidate species.

## DEFINITIONS

Species	Any indigenous species, subspecies, variety, or geographically defined 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.

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. Species designated at meetings of the full committee are added to the list.



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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

**Bashful Bulrush**  
*Trichophorum planifolium*

**in Canada**

David J. White

2000

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## SPECIES INFORMATION

### Name and Classification

Scientific Name: *Trichophorum planifolium* (Spreng.) Palla (synonym: *Scirpus verecundus* Fern.)  
Common Name: Bashful Bulrush; Few-flowered Club-rush  
Family: Cyperaceae; Sedge Family  
Major Plant Group: Monocot flowering plant

### Description

Bashful Bulrush is a perennial herb that forms small clumps of short, erect, grass-like leaves. Several dozen delicate flowering stalks, triangular in cross-section and generally only 10-20 cm high, develop in the spring. A small solitary spike develops at the end of each stalk. The spike consists of several petal-less flowers, each of which is partly enclosed by an awn-tipped bract. Plants generally occur as loosely-associated patches of from a few to several hundred clumps. Later in the season, the leaves and culms tend to fall over and become matted on the forest floor.

## DISTRIBUTION

### Global Range

Bashful Bulrush occurs in the United States from southern Maine south to northern Virginia and west to Indiana and eastern Missouri (refer to inset map of Figure 1). It barely extends into southern Ontario.

### Canadian Range

Its only Canadian occurrences are in southern Ontario in the valley of the Rouge River in the eastern region of Metropolitan Toronto and in Hamilton.

## HABITAT

Bashful Bulrush requires open-canopied forest with little shrub cover and excellent drainage (Crins, 1986). It is found on semi-open south- or west-facing slopes in deciduous and mixed woods. The climate is moderated year round at all stations due to the close proximity of Lake Ontario and the warmer-than-normal microclimate at most sites due to the open south- or south-west-facing slope.

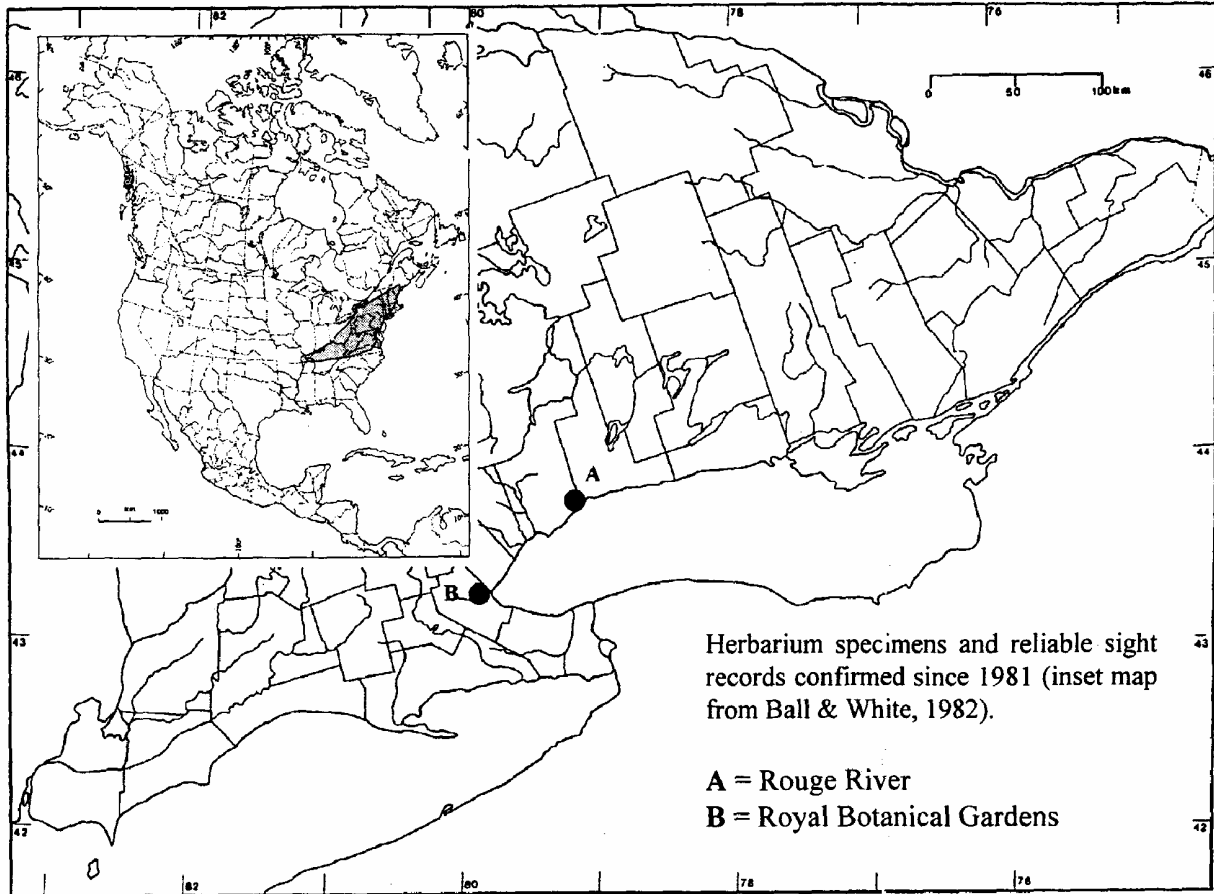


Figure 1. Canadian and North American (inset) distribution of Bashful Bulrush (*Trichophorum planifolium*)

## GENERAL BIOLOGY

This southern species occurs in Canada only in two areas within a zone where the climate is ameliorated by nearby Lake Ontario. Like other members of the sedge family, this herbaceous perennial is wind-pollinated. Little else is known about the biology of this species.

## POPULATION SIZE AND TRENDS

This species occurs only in two areas: the wooded slopes of the Rouge River valley in Toronto and the wooded slopes adjacent to Dundas Marsh on the grounds of the RBG in Hamilton. Between 1986 and the present, all relocated sites have declined.

### Rouge River

Crins (1986) reported a large population (his site 1a) south of Highway #401 consisting of "hundreds of flowering culms". Varga *et al.*, (1991) reported "several hundred clumps" in an area of several square metres. Mike Oldham, of the Natural

Heritage Information Centre, Peterborough, searched unsuccessfully for this site in 1997. On 5 May 1999, the author, Steve Varga of the Ontario Ministry of Natural Resources, Aurora, Mike McMurtry, also of the Aurora office of the Ontario Ministry of Natural Resources, and Pam Fulford of the Rouge Park, Toronto, searched this area. After two hours of concerted effort we were only able to find one small clump where the large colony had previously occurred. A nearby coyote or fox den, not present in 1990, is situated very close to the remaining clump. It is likely that the digging and traffic around the den have eliminated most plants of this rare species at this site. This is a dramatic reduction to less than 1% of the population that was known as recently as 1990.

A second Rouge valley site (1b of Crins, 1986) occurred north of Highway #401, however, it has not been seen since 1981 when the single clump was first found by Steve Varga. It was not relocated by Crins (1986) nor was it found by Varga *et al.*, (1991). Mike Oldham, of the Natural Heritage Information Centre, Peterborough, searched unsuccessfully for this population in 1997. This site may no longer be extant.

### **Royal Botanical Gardens**

Crins (1986) lists five historic sub-populations from the RBG (four of which were found in 1984): three from the north shore of Dundas Marsh (sites 2a, 2b, and 2c) and two from the south shore of the Marsh (sites 2d and 2e). Two of the north shore sub-populations (along the Gray Doe trail) are within 100 metres of one another and the two south shore populations are also quite close together.

The present author, Tyler Smith of the RBG, and Anthony Goodban, Milton, searched the north shore Grey Doe trail area on 6 May 1999 for three hours and found only a small patch of Bashful Bulrush consisting of four clumps, each with about 10 flowering culms. This is probably site "2a" reported by Crins (1986) that had 8 small clumps with 5-30 flowering culms each in 1984. This would appear to be a 50% reduction. The three of us found no plants of this species at Crins' (1986) site "2b" that contained several hundred flowering culms in an area of 10 m X 10 m. This site may have disappeared or it may have declined to a few plants that were missed by us in 1999. Crins (1986) reported an additional site (his 2c) on the north shore that occurred in an area of 1 m by 10 m with several hundred flowering culms. This population has not been searched for since 1984 so its status is unknown.

Tyler Smith and the present author searched the south shore area for two hours on 6 May 1999 and found only a single patch (1.5m x 1.5m) of 10 clumps, each with 10-20 flowering culms. This may be site "2d" reported by Crins (1986) that consisted of several hundred flowering culms in an area of 8 by 5 metres on both sides of a trail. This is a reduction on the order of at least 50%. Crins (1986) was not able to find site 2e (located a few hundred metres west of 2d) that was last seen by the original collector (A. Tamsalu) in 1958. The present author also looked briefly at this location without any success.

There are several historic collections made by A. Tamsalu in 1957-1958 from the north and south shores of Dundas Marsh. It is unclear if any of these old records represent localities additional to those discussed here or in Crins (1986).

Detailed site information has been provided to the Subcommittee for Vascular Plants, Mosses and Lichens (COSEWIC).

### **LIMITING FACTORS AND THREATS**

Bashful Bulrush occurs in two remnant natural areas: the Rouge River valley and the wooded portions of the Royal Botanical Gardens. Both natural areas are criss-crossed by numerous trails and are in great demand for passive recreation, such as hiking, jogging, and mountain biking. The area around the Rouge valley is heavily populated and an urban campground (Rouge Park) occurs in the valley not far from the northern site. Coyotes and foxes choose the same open, well-drained knolls for their den sites in the Rouge valley that the Bashful Bulrush requires (pers. obs.; S. Varga, pers. com., 1999).

There is an extensive network of trails on the north shore of Dundas Marsh and the trails receive much use from visitors to the RBG. There are also many trails along the south shore of the Marsh and these trails are heavily used by students from the adjacent McMaster University. The known sites of Bashful Bulrush at the RBG are all close to trails.

When the original status report was written, Crins (1986; 1989; pers. com., 1999) considered Bashful Bulrush to be vulnerable not threatened or endangered because the populations appeared stable with no apparent threats to the species in Ontario. Much has changed since 1986. All sites that have been relocated have declined. In the 15 years since the initial field work, no new have been discovered despite a detailed inventory of the Rouge valley by Steve Varga in 1990, who essentially covered every square foot of the valley (S. Varga, pers. com., 1999), and despite extensive field work in Hamilton-Wentworth by Anthony Goodban and Don Sutherland for the Hamilton-Wentworth Natural Area Inventory (Heagy, 1993) and by Anthony Goodban for the recent flora of Hamilton-Wentworth (Goodban, 1995). Since this general area is highly urbanized, there are few other undeveloped sites left that might also harbour this species.

### **SPECIAL SIGNIFICANCE OF THE SPECIES**

No characteristics or features of particular significance are known for this species.

## **EVALUATION AND PROPOSED STATUS**

### **Existing Legal Protection or Other Status**

The sites in the Rouge River valley are owned by the Toronto and Region Conservation Authority and managed by the Conservation Authority, the City of Toronto Parks Department, and the Ontario Ministry of Natural Resources. The Hamilton sites are owned and managed by the Royal Botanical Gardens. These organizations are aware of the presence of this species and are committed to its protection (T. Smith, S. Varga, pers. com., 1999).

### **Assessment of Status and Author's Recommendation**

Bashful Bulrush was designated as vulnerable by COSEWIC in 1986. Although the plant had a very limited range in Canada, most of the populations were sizeable and seemed secure at the time (Crins, 1986). In 1986, the plant was known from two populations in Toronto and four populations in Hamilton

When the status designation of vulnerable was assigned in 1986, Bashful Bulrush was known from two areas: the Rouge River valley in Toronto and the RBG in Hamilton. At least two populations, and perhaps others, still occur in the RBG. The Rouge valley population, however, is very precarious, consisting of only a single clump in a hazardous location next to an active coyote or fox den. Since 1986, experienced field botanists Steve Varga, Bill Crins, John Riley, Don Sutherland, and others have looked for this species in other apparently suitable habitats in the Toronto and Hamilton areas but no new sites have been found (Oldham, 1999). The few populations/sub-populations present in Canada have declined by at least 50%. A designation of Endangered is warranted for this species.

## **ACKNOWLEDGEMENTS**

Steve Varga, Ontario Ministry of Natural Resources, Aurora, provided maps and background information on the Rouge valley sites and helped with the fieldwork. Bill Crins provided maps and directions to the RBG sites. Tyler Smith, RBG, provided maps, historic records, and helped with the fieldwork at both RBG sites. Anthony Goodban, Milton, provided information on historic records and confirmed that there were no new records from the Hamilton-Wentworth area. Anthony also helped with the fieldwork at the RBG. Mike Oldham, Natural Heritage Information Centre, Peterborough, provided background reports and a listing of known records with details of recent confirmations. Audrey Heagy, London, checked for records from the Hamilton-Wentworth natural area inventory. Mike McMurtry, Ontario Ministry of Natural Resources, Aurora, and Pam Fulford, Rouge Park, Toronto, helped with fieldwork at the Rouge valley site. Funding provided by the Canadian Wildlife Service, Environment Canada.

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## THE AUTHOR

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 ten other species.