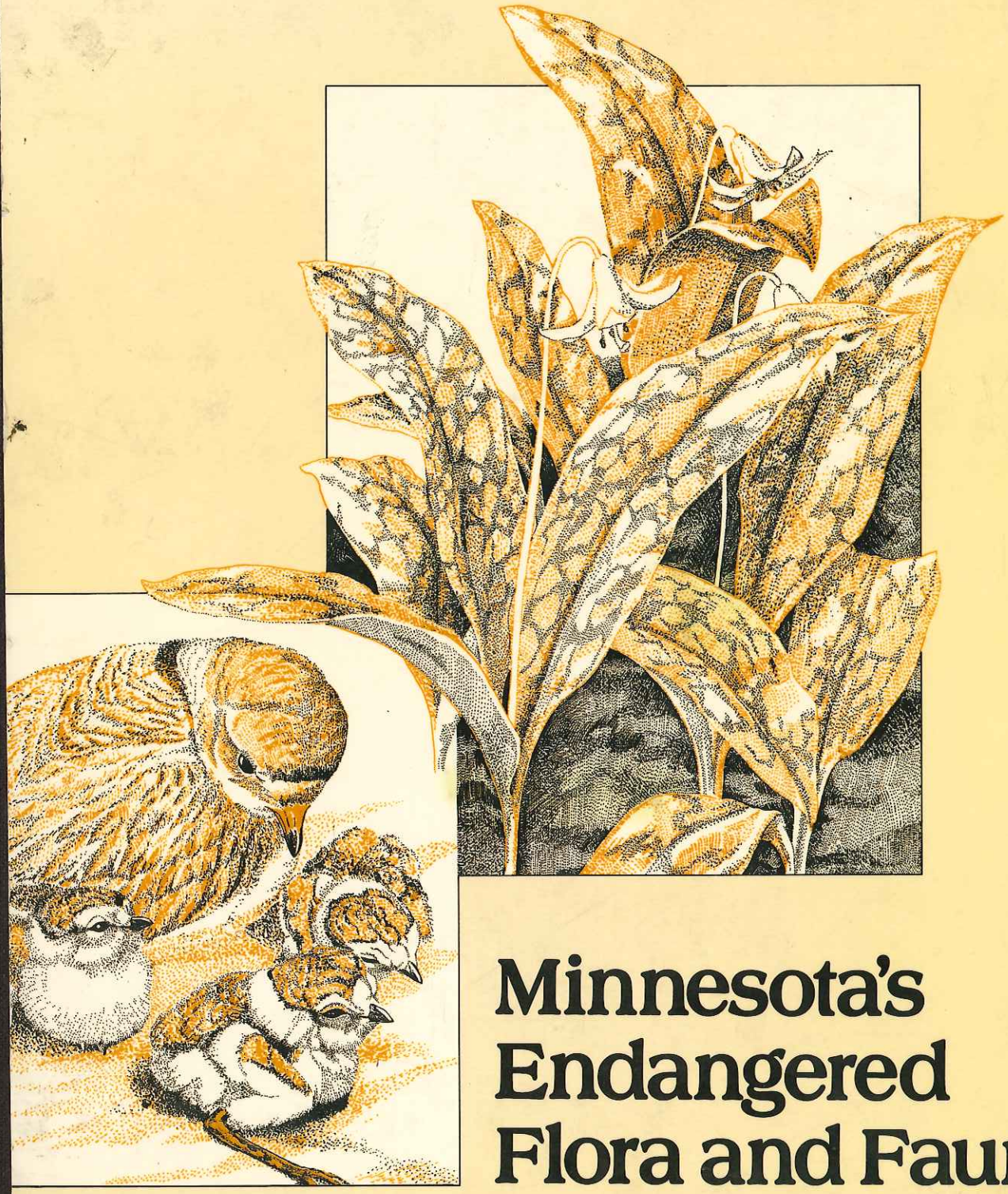

Minnesota's Endangered Flora and Fauna

Barbara Coffin and
Lee Pfannmuller, editors

A Report of the
Minnesota Endangered Species Technical Advisory Committee

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Illustrated by Jan A. Janssens, Nan Marie Kane, Kris A. Kohn, Don Luce, James Tidwell, and Vera Ming Wong

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OFFICIAL STATUS: Proposed Endangered

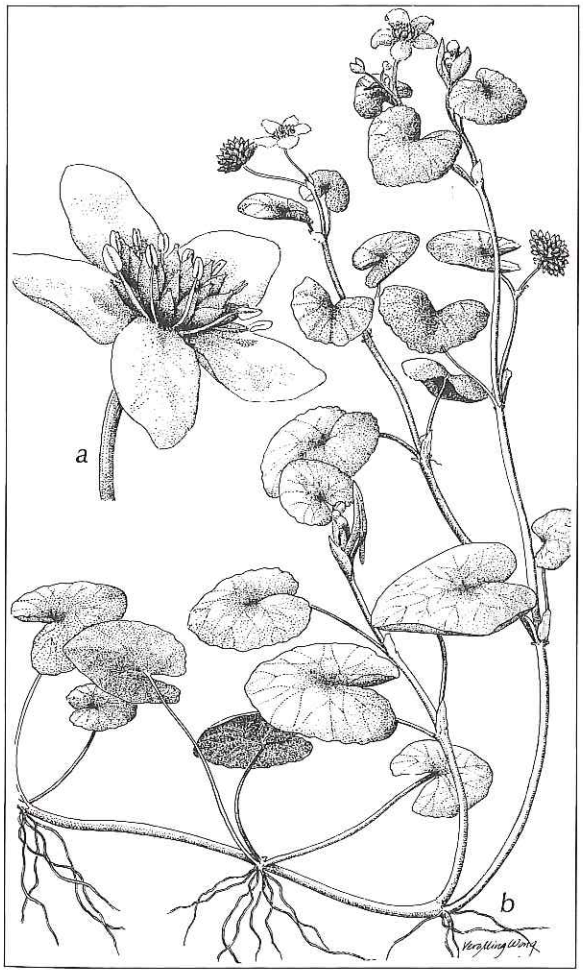
BASIS FOR STATUS: This circumboreal species is generally rare or local throughout its North American range. This is especially true south of the Canadian border, where it has been found only six times (five times in Minnesota, once in Wisconsin). An additional cause for concern in Minnesota is the local extirpations recently suffered by this species. The reason for the extirpations is largely habitat loss, which is a well- documented problem for aquatic species statewide.

Caltha natans was first discovered in Minnesota near Tower on Vermillion Lake (St. Louis County) in 1889 and recollected there several times prior to 1905. It has not been seen there in recent years and probably disappeared sometime before 1940. A second site was discovered on Vermillion Lake in 1953 but apparently did not survive the heavy traffic of resort users and was gone by 1984. A third population is known to have occurred at the mouth of the inlet of Deep Lake (St. Louis County). This population has not been seen since 1953 when Lakela reported that nearby mining activities had lowered the water level and stranded the population. There are two additional records from near Hibbing and Zim (St. Louis County), but they have not been visited since 1959 and 1956 respectively and their current status is unknown. The absence of recent records for *C. natans* probably means a decline in population but does not necessarily mean that it is entirely gone from Minnesota. That can be determined only after all the historical collection sites have been revisited and other suitable sites have been searched.

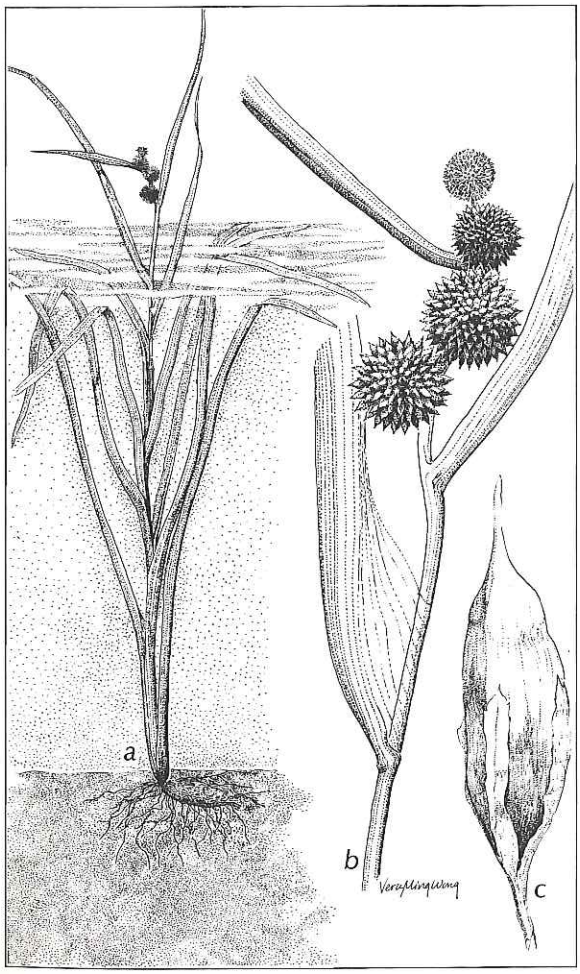
PREFERRED HABITAT: *C. natans* is an aquatic species that occurs in shallow water in creeks, pools, ditches, and sheltered lake margins. It typically roots in mud, silt, or clay, and it spreads by rooting at the nodes.

AID TO IDENTIFICATION: *C. natans* is a distinctive plant that bears only superficial resemblance to the larger, more familiar *C. palustris*. It has small flowers (about 1 centimeter broad), no petals, and five white, petal-like sepals. The leaves are simple, thin, and subentire. The stems commonly float in shallow water but may occur stranded in mud and rooted at the nodes.

SELECTED REFERENCES: Lakela, O. 1943. Rediscovery of *Caltha natans* in Minnesota. Rhodora 45:53-55.



Caltha natans: (a) flower, x 2 1/2; (b) entire plant, x 1/2.



Sparganium glomeratum: (a) entire plant, x 1/4; (b) inflorescence, x 1; (c) seed, x 10.

OFFICIAL STATUS: Endangered

BASIS FOR STATUS: This typically Eurasian species is one of the rarest plants in North America. Its occurrence here presents a very puzzling case of plant distribution. There are only three areas where it has been found on the continent (Alberta, Quebec, and Minnesota). This extreme rarity and scattered distribution has attracted the attention of numerous botanists and opened a debate on the origin of these occurrences. Some authorities maintain that the species was recently and accidentally introduced from Europe, whereas others believe it is indigenous. On the one hand, all the populations occur in native habitats and exhibit a pattern of distribution that is similar to other species with naturally occurring, circumboreal ranges. On the other hand, at least some of the populations (Quebec and Minnesota) occur in proximity to international shipping ports, which are notorious sources of alien seeds.

The question of origin cannot easily be answered. But in listing this species as endangered in Minnesota, the assumption is made that the Minnesota populations are natural components of our native flora.

It was first discovered in Minnesota by Lakela in 1939 on Minnesota Point in Duluth. The site was a small *Sphagnum* bog, but the area has recently been affected by road building and the construction of an air strip, and it is not known if the species still survives there. There have been four subsequent collections in Minnesota, all in similar habitats in the same region of the state. Only one of these collections is recent (Itasca County, 1977), and the current status of the other populations is unknown.

PREFERRED HABITAT: The site in Duluth was described by Lakela as a shallow *Sphagnum* bog formerly connected to Superior Bay. The plants grew in water that was several centimeters deep. Associated species included *Calla palustris* (wild calla) and *Acorus calamus* (sweetflag). The other collections are from floating mats in emergent wetland habitats.

AID TO IDENTIFICATION: There are several species of *Sparganium* in Minnesota, all of which are similar in general appearance. *Sparganium glomerata* can be reliably distinguished only by characters of the inflorescence. The staminate flowers are borne in a single, small, terminal head (rarely two). There are three to five supra-axillary, densely crowded, pistillate heads. All but the lowest head are usually overlapping. The pale fruits are 5 to 6.5 millimeters long, fusiform, with a slender conical beak no more than 1.5 millimeters long and about equaling the stipe.

SELECTED REFERENCES: Argus, G. W., and D. J. White. 1978. The rare vascular plants of Alberta. Syllogeus 17. National Museum of Natural Sciences, Ottawa. 46pp.; Boivin, B. 1967-81. Flora of the prairie provinces. 5 parts. Provancheria 2, 3, 4, 5, and 12. Université Laval, Quebec; Bouchard, A., D. Barabe, M. Dumais, and S. Hay. 1983. The rare vascular plants of Quebec. Syllogeus 48. National Museum of Natural Sciences, Ottawa. 75pp.; Hulten, E. 1964. The circumpolar plants 1. Vascular cryptogams, conifers, monocotyledons. Kungliga Svenska Vetenskapsakademiens Handlingar 8:1-275; Lakela, O. 1941. *Sparganium glomeratum* in Minnesota. Rhodora 43:83-85; Moss, E. H. 1983. Flora of Alberta. University of Toronto Press. 687pp.