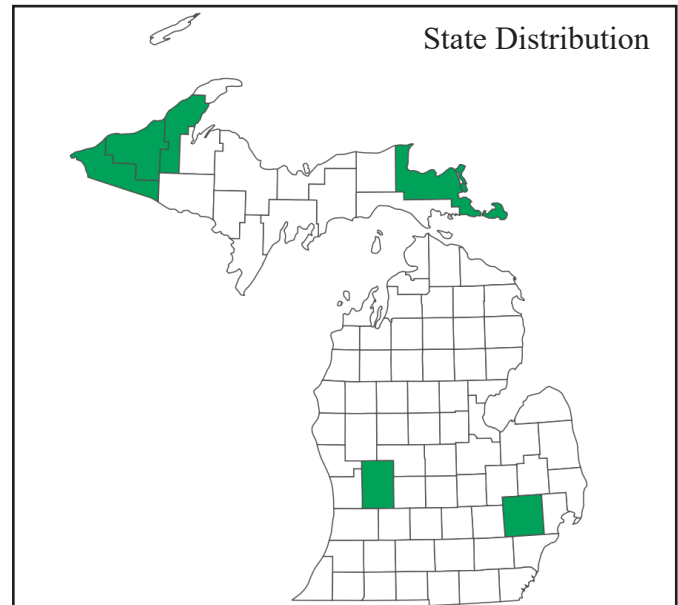
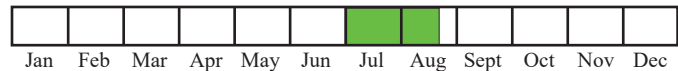


Photograph by [Nate Martineau](#), iNaturalist



Best Survey Period



Status: State Threatened

Global and state rank: G5 (Secure) / S1S2 (Critically imperiled to Imperiled)

Family: Potamogetonaceae – pondweed family

Synonyms: *Potamogeton lateralis* Morong, *Potamogeton vaseyi* var. *latifolius* Morong

Taxonomy: The genus *Potamogeton* is placed in the order Alismatales (water plantains) and the family Potamogetonaceae (Stevens 2026). *Potamogeton* is a taxonomically problematic genus that requires more phylogenetic study to explain relationships within the group and with other closely related groups of aquatic plants within the family Potamogetonaceae. Members of the genus *Potamogeton* are generally divided into two artificial groupings based on submerged leaf morphology: the broad-leaved pondweeds and the linear-leaved pondweeds with Vasey's pondweed being placed within the linear-leaved pondweed group (Les et al. 2009, Lindqvist et al. 2006). The genus *Potamogeton* had previously been divided into infrageneric sections and sub-sections or categories but after re-

view of specimens from all around the world it was determined that this is unwarranted by taxonomists (FNA 1993+).

Total range: Vasey's pondweed is found in fresh, slow-moving waters of rivers, ponds, and small lakes across eastern North America, ranging from Ontario to New Brunswick in Canada and extending south to New Jersey, west to Iowa, and north to Minnesota in the United States. The species is considered Apparently Secure (N4) in Canada and Secure (N5) in the United States. Within Canadian provinces, it is Critically Imperiled (S1) in Prince Edward Island, Imperiled to Vulnerable (S2S3) in New Brunswick, Vulnerable (S3) in Quebec, and Apparently Secure (S4) in Ontario. In the United States, it is Critically Imperiled (S1) in Connecticut, Indiana, Iowa, Massachusetts, New Hampshire, Ohio, and Pennsylvania, and Critically Imperiled to Imperiled (S1S2) in Michigan. It is Imperiled (S2) in Maine and Vermont, Vulnerable (S3) in Minnesota, New York, and Wisconsin, and Presumed Extirpated (SX) in Illinois (NatureServe 2026).

State distribution: In Michigan, Vasey's pondweed is known from 12 occurrences across six counties



with the majority of records from the Upper Peninsula: Gogebic and Ontonagon Counties both have three occurrences each and Houghton and Chippewa counties both have a single occurrence each. In the Lower Peninsula, Kent and Oakland Counties both have two occurrences each. Most occurrences are verified extant, but their viability is not assessed; two were assessed at fair estimated viability (C), one has fair or poor estimated viability (CD), and three are historic (H) (MNFI 2026).

Recognition: Vasey's pondweed has stems that are terete and without spots and glands, measuring 2–5 cm (0.8–2.0 in) long. Turions (i.e., vegetative buds) are soft and commonly found on short lateral branches and in some leaf axils. Vasey's pondweed can have only submersed leaves or **both submersed and floating leaves present**. Submersed leaves are sessile, spirally arranged and delicate. Submersed leaf blades are light green, linear-filiform, and **2–8 cm (0.8–3.2 in) long by 0.1–1 mm (0.004–0.04 in) wide**. The leaf bases of submersed leaves are slightly tapering, without lobes and do not clasp the stems. Leaf margins are entire, not curly or wavy. The leaf apex is acute to almost bristle-tipped. Lacunae, gaps or air pockets within the tissue, are found in 0–2 rows on each side of the midvein and are rarely absent. Vein count for submersed leaves is typically 1. Stipules are only found on submersed leaves and are persistent, inconspicuous, free from the blade, green to brown and are not ligulate, with the apex tapering gradually to a point. Floating leaves are opposite or spirally arranged and have petioles that are continuous in color. Floating leaf blades are greenish brown on the upper surface, shaped elliptic to obovate with 5–9 veins and **1.5 cm (0.59 in) long by 8 mm (0.3 in) wide**. The leaf base is acute and the apex is obtuse. Fruits are sessile, green to brown, obliquely round-obovoid, compressed and are keeled on the lower surface. The beak is erect and the sides lack basal tubercles. **The embryo has up to one full spiral** (FNA 1993+, Minnesota Wildflowers n.d.).

Identifying pondweeds can be challenging because fruiting plants with welldeveloped submersed

leaves are not always available, vegetative or damaged specimens are hard to distinguish, and there is often natural variation influenced by water conditions. Several other pondweeds have threadlike submersed leaves less than 1 mm wide, including *P. bicupulatus*, which has flowering spikes in the axils of submersed leaves and stipules attached to the leaf blades; *P. oakesianus*, which has longer submersed leaves and larger pointed floating leaves; *P. confervoides*, which lacks floating leaves and *P. berchtoldii*, which may have very narrow submersed leaves but no floating leaves, with flowering spikes in the axils of submersed leaves. Vasey's pondweed also closely resembles *P. spirillus* but can be distinguished by fruit morphology and submersed leaf blade width: in Vasey's pondweed, **the embryo is less conspicuous and never coils more than one revolution and submersed leaf blades are less than 1 mm wide**, whereas in *P. spirillus* the strongly coiled embryo is visible through the thin fruit wall and the leaf blades can be up to 1.6 mm (0.1 in) wide (Minnesota Wildflowers n.d., Reznicek et al. 2026). **Best survey time/phenology:** The best time to survey for Vasey's pondweed is when both floating and submersed leaves are present and during its flowering time from the first week of July to the third week of August (MNFI 2026).

Habitat: In Michigan, Vasey's pondweed is found in Great Lakes marshes and submergent marsh natural community types. It prefers freshwater lakes of moderate alkalinity (pH 7.2–7.6) at depths of approximately 0.2 to 3.0 meters (0.7 to 9.8 feet), as well as in man-made ponds, ponds created by beaver dams, and slow-flowing creeks and drainages (MNFI 2026, Reznicek et al. 2026).

Common herbaceous associates include sweet-flag (*Acorus americanus*), northern water-plantain (*Alisma triviale*), water-marigold (*Bidens beckii*), water-shield (*Brasenia schreberi*), common waterweed (*Elodea canadensis*), rattlesnake grass (*Glyceria canadensis*), northern manna grass (*Glyceria borealis*), soft-stemmed rush (*Juncus effusus*), common duckweed (*Lemna minor*), red duckweed



(*Lemna turionifera*), slender naiad (*Najas flexilis*), yellow pond-lily (*Nuphar variegata*), sensitive fern (*Onoclea sensibilis*), water smartweed (*Persicaria amphibia*), pickerel-weed (*Pontederia cordata*), a variety of pondweeds (*Potamogeton foliosus*, *P. gramineus*, *P. natans*, *P. richardsonii*, *P. zosteriformis*), threesquare (*Schoenoplectus pungens*), wool-grass (*Scirpus cyperinus*), grass-leaved arrowhead (*Sagittaria graminea*), green-fruited bur-reed (*Sparganium emersum*), American bur-reed (*S. americanum*), bur-reed (*S. fluctuans*), Sago pondweed (*Stuckenia pectinata*), Fernald's false mannagrass (*Torreyochloa fernaldii*), broad-leaved cat-tail (*Typha latifolia*), and eel-grass (*Vallisneria americana*) (MNFI 2026).

Biology: *Potamogeton* is a biologically and phylogenetically complex genus of aquatic monocots. Further research is needed to clarify processes such as hybridization, phenotypic plasticity, reproductive strategies, and life history. Vasey's pondweed is considered a shortlived annual that flowers in July, produces fruit and senesces by mid-August. Floating leaves form through July with fertile stems only in shallow water while deeperwater plants remain sterile. Submerged leaves typically start developing early summer and start deteriorating by mid-summer and can be hard to detect. The plant normally senesces by mid-August (MassWildlife Natural Heritage and Endangered Species Program 2025).

Sexual reproduction in the genus *Potamogeton* involves both wind pollination (i.e., anemophily) and specialized watermediated mechanisms. It has been suggested that *Potamogeton* species may have evolved either from an ancestor that relied on wind-driven crosspollination—like Vasey's pondweed—or from an ancestor that had the more derived and specialized underwater selfpollination seen in some other pondweeds (Philbrick and Anderson 1987). Vasey's pondweed flowers are small and inconspicuous and grow above the water (i.e., emergent) in cylindrical spikes and therefore are windpollinated. Flowers develop into sessile, keeled achenes following pollination. Philbrick and Anderson (1987) showed that species of *Potamogeton* with emergent



Photograph by [Ryne Rutherford](#) iNaturalist

Figure 2. Habit and relative size of Vasey's pondweed.

flowers, such as Vasey's pondweed, show higher pollen/ovule ratios (ranging from ~3,000–40,000 grains per ovule) and larger pollen grains. Species with higher ratios and larger pollen grains are often windpollinated and rely on crossfertilization.

Research on seed germination indicates that seeds of many *Potamogeton* species show increased germination after passing through the digestive systems of animals such as ducks. Beyond this, however, little is known about animal interactions or pathogen effects specific to Vasey's pondweed. Muenscher (1936) also demonstrated that several *Potamogeton* species respond favorably to cold, wet storage for two to six months at 1–3°C (34–37°F), which leads to noticeable increases in germination. In contrast, seeds stored under dry conditions showed almost no germination because the treatment caused high seed mortality (Fernald 1932, FNA 1993+, Haynes 1978, Hellquist et al. 1988, Les et al. 2009, Morong 1893).

In Vasey's pondweed, asexual reproduction via turions and stem fragments is likely the primary mode of reproduction (Muenscher 1936). Turions begin developing in the spring with the onset of increased light and heat and develop throughout the growing





Photograph by [Nate Martineau](#), iNaturalist

Figure 3. Left: Floating leaf and flowers are less than 1.5 cm long. Right: Submersed leaves are 2 - 8 cm long by 0.1 - 1 mm wide.

season (Chambers et al. 1985). After a turion detaches and settles into the lake or stream substrate, it can overwinter—even beneath ice—and resume growth in spring.

Relatives of Vasey's pondweed are highly vulnerable to drought, which is expected to increase in frequency under future climate change predictions: Daumal et al. (2024) showed that *Potamogeton nodosus* and *P. perfoliatus* can tolerate short-term drought of 1–5 days. After 15 days of continuous drought, however, both species experienced high mortality.

Conservation/management: Vasey's pondweed is a fully aquatic species whose long-term viability depends on the availability of suitable habitat. It is sensitive to habitat degradation caused by water pollution, eutrophication and nutrient loading from fertilizers, invasive plants and animals, recreational pressures, shoreline development, alterations to hydrological regimes, climate change, and drought (NatureServe 2026). Protecting the sites where this species is known to occur is therefore essential.

In the Lower Peninsula, the four documented populations are exclusively in small lakes with no public access. Three lakes have heavily developed shorelines and the fourth is privately owned but isn't fully developed. In contrast, the eight Upper Peninsula populations show greater ecological integrity overall, with most lakes and wetlands featuring largely undeveloped shorelines and substantial public land ownership. Several Upper Peninsula sites occur within protected areas such as National Forests, National Wildlife Refuges, and State Wildlife Management Areas, contributing to their high levels of natural shoreline and minimal shoreline degradation. These protections are likely to support long-term conservation and enhance site viability (MNFI 2026).

Comments: Pondweeds are one of the most important plant groups in the aquatic environment, especially as food or habitat for aquatic animals (Haynes 1978). *Potamogeton* is derived from the Greek words *potamos* (river) and *geitōn* (neighbor), referring to the typical aquatic habitat the plant thrives in (Mid-Atlantic Herbaria 2026). Vasey's pondweed was named after the English-born



American botanist George Vasey by the American botanist James Watson Robbins, who first described the plant in 1867 (IPNI 2026).

Research needs: More targeted surveys are needed to determine the full extent of Vasey's pondweed in Michigan and assess the viability of the species within Michigan. Minnesota Biological Survey documented Vasey's pondweed in over 120 lakes of 2,000 surveyed in Minnesota, demonstrating that the species was more widespread than previously thought. These dedicated surveys lead to delisting of Vasey's pondweed in Minnesota from State Special Concern in 2013.

Further research on the life history and phylogenetics of Vasey's pondweed and related species is still needed. This work would help scientists better understand how these plants are related to each other and how they have evolved over time. It would also clarify some uncertainties about how to correctly classify them. Learning more about this group of plants will increase conservation managers' ability to protect these plants.

There is very little known about how Vasey's pondweed interacts with the insects and pathogens that may feed on or infect it. These kinds of relationships can affect how well a plant species survives in the long term. Without this knowledge, it is difficult to understand what threats the species might face in the wild. Studying these interactions would help guide decisions about how best to manage and protect its populations.

As climate change brings more frequent and severe droughts, it is important to understand how Vasey's pondweed might respond. Aquatic plants differ widely in how well they can handle low water conditions. Because this species is fully aquatic, it may be at higher risk when water levels drop for long periods. Research on its drought tolerance would help conservationists plan for future environmental changes.

Other ecological pressures, such as competition

from nonnative species and the effects of nutrient pollution, are also important considerations. Nonnative plants can overtake native species and change the structure and chemistry of aquatic habitats. Eutrophication, caused by excess nutrients like phosphorus and nitrogen, can reduce water clarity and alter entire freshwater communities. Understanding how these changes affect Vasey's pondweed is key to maintaining healthy ecosystems and protecting rare plants.

Propagation and reintroduction of Vasey's pondweed have not been well studied. Learning how to grow the species successfully in controlled environments would be useful. This information will help conservationists if they ever need to move or reestablish populations in the wild. Developing these methods now would provide valuable options for protecting the species in the future.

Related abstracts: Great Lakes marsh, submergent marsh.

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