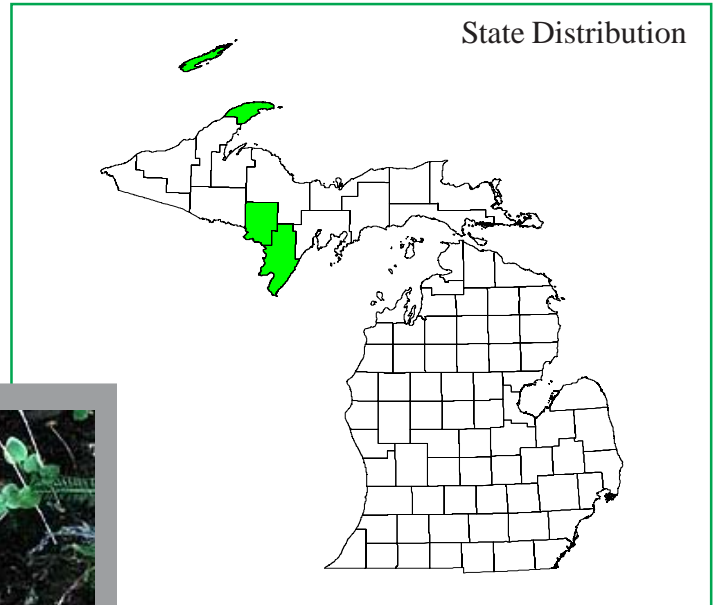
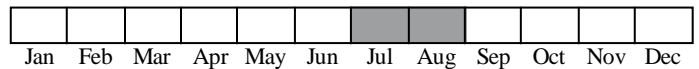


Photo by Phyllis Carlson



Best Survey Period



**Status:** State threatened

**Global and state rank:** G5/S2

**Other common names:** northern Grass-of-Parnassus, bog-star

**Family:** Saxifragaceae (saxifrage family)

**Taxonomy:** According to Hultén (1970), *P. palustris* is a species complex composed of several closely related races, of which only the arctic-montane race is circumpolar. M.L. Fernald considered all North American material, other than some plants from western Alaska, to be referable to var. *neogaea*.

**Total range:** In North America, this boreal circumpolar species is distributed from Alaska to Labrador, Newfoundland and Quebec, ranging south to Oregon, Wyoming, North and South Dakota, the Upper Great Lakes region, and New York. It is considered rare in South Dakota, Wisconsin, and New York.

**State distribution:** Most occurrences for this predominantly northern species are in Isle Royale National Park (Keweenaw County), where it occurs in swamps, on rocky Lake Superior shores, and sedgy bog mats of inland lakes. Elsewhere in the Upper Peninsula, this plant was collected in 1950 near Cat Harbor in the Keweenaw Peninsula and is also known as far south as Menominee County, where a very localized population within a bog was discovered by E.G. Voss in 1968 (Voss 1985).

**Recognition:** Flowering plants of *P. palustris* produce stems that range from 1-4 dm in height. Except for a single

stem leaf, the leaves are produced in a basal rosette. **The basal leaves are long-petioled, with rounded, heart-shaped blades that are about 15-30 mm long and 11-25 mm broad, smooth-margined, and thin-textured.** Upward, a single leaf is produced in the middle of the flowering stem; **this stem leaf is stalkless and clasping, and has a blade approximately as large as those of the basal leaves.** The flowering stem is terminated by a single, creamy white flower with **5 conspicuously veined petals 8-13 mm long. Alternating with the 5 stamens are 5 staminodia (modified stamens that function to help attract pollinators) divided about halfway to the base into 9 or more distinct filaments.** *P. glauca*, a common and widespread species in Michigan characteristic of meadows, fens, and other alkaline habitats, is distinguished by its much thicker, tougher leaves, a stem leaf that is, if present, much smaller than basal leaf blades, and staminodia that are cleft nearly to the base into only 3 segments. *P. parviflora*, a species of upper Great Lakes shores and frequently occurring with the preceding (Voss 1985), has narrower basal leaf blades (4-13 mm broad) that are tapered to the base, shorter petals, and staminodia with fewer filaments (5-7).

**Best Survey Time / Phenology:** The prime time for survey of this species is from July through August during the peak of flowering and fruiting.

**Habitat:** Like other species of *Parnassia*, this species frequently occurs in more alkaline habitats, such as meadows and in damp calcareous sands on lakeshores. Slavik and Janke (1987) reported this species as rare in Isle Royale National Park, where it occurs in swamps and on



lake margins. In Isle Royale National Park it has also been collected along rocky shores and from a lake with a sphagnum bog mat where it was common, occurring with such species as *Myrica gale* (sweet gale), *Menyanthes trifoliata* (bog buckbean), *Potentilla palustris* (marsh cinquefoil), *Sarracenia purpurea* (pitcher-plant), *Drosera* spp. (sundew), and *Chamaedaphne calyculata* (leatherleaf). In Menominee County, this species was discovered on the sedge mat of a boggy lake within a cedar swamp complex.

**Biology:** *P. palustris* is a perennial, usually flowering from July through August. Records indicate that the flowering period may occur as early as late June and continue into September. The staminodia, which produce nectar but no pollen, aid in attracting insects for pollination (Swales 1979). The stamens, which mature before the stigma is fully developed and receptive, ripen and dehisce successively, promoting a longer period for cross-pollination (Swales 1979).

**Conservation/management:** Since most occurrences are in Isle Royale National Park, this species is relatively secure. The status of the mainland Keweenaw County site is unknown, whereas the Menominee County site occurs within state forest land where the locality has been identified for protection with regard to proposed local timber management and other activities.

**Research needs:** Inventory, particularly to determine the status of the mainland sites, as well as survey to discover new locations would be desirable, as would monitoring of any extant colonies for population trends and dynamics.

**Related abstracts:** calypso orchid, ram's head orchid

#### Selected references:

- Fernald, M.L. 1950. Gray's Manual of Botany. 8th ed. illustrated. D. VanNostrand Company. Ixiv + 1632 pp.
- Hultén, E. 1971. The Circumpolar Plants. II. Dicotyledons. Sv. Vet-akad. Handl. IV. 13(1). 463 pp.
- Slavik, A.D. and R.A. Janke. 1987. The vascular flora of Isle Royale National Park. Mich. Bot. 26:91-134.
- Swales, D.E. 1979. Nectaries of certain Arctic and sub-Arctic plants with notes on pollination. Rhodora 81:363-407.
- Voss, E.G. 1985. Michigan Flora: Part II, Dicots (Saururaceae-Cornaceae). Bull. Cranbrook Inst. Sci. 59 and U. of Mich. Herb. xix + 724 pp.

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