

Cypripedium parviflorum var. *pubescens*

Large yellow lady slipper

Status

Federal status: G5 N5, Not listed

NH state status: S2, Threatened

ME state status: S3?, Not listed

Problems in identification among the various varieties of this orchid species, and confusion caused by numerous conflicting taxonomic viewpoints, make accurate status assessment difficult. Researchers agree that more than one form of American yellow lady-slipper exists but differ in what names to apply to these recognizable forms. There is conflicting documentation on the status of the species across the range of field manuals and State Heritage programs due to recent revision and understanding of the taxonomy of the complex.

Although there may be far more than a thousand populations of this species throughout its extensive range, most are small. There are very few reports of large, demonstrably secure populations anywhere in North America. All reported populations contain less than 400 individuals, and most contain less than 30. There are numerous threats to this species and its habitats, and the typically small populations of this species are highly vulnerable to extirpation. Though accurate quantitative data is not available at this time, available information suggests that this species is in decline.

The current range-wide viability outcome is perceived to be a C, declining toward a D in the next 20 years. On the WMNF its viability outcome is uncertain, as the occurrence record(s) are uncertain, but most NH records are historic.

Distribution

As with status, distribution is confused by taxonomic questions. The taxon has only recently been established as a distinct variety. Significant work remains to be done regarding actual distribution of species in the field. One source indicates that *Cypripedium parviflorum* var. *pubescens* occurs from Alaska, British Columbia, and the Yukon to Newfoundland, and in all the lower 48 U.S. states except for Oregon, California, Nevada, Florida, Louisiana, and Oklahoma. Another identifies a smaller range extending from Nova Scotia to Minnesota, south to New England, along the mountains to Georgia, Alabama, Tennessee, and Missouri.

New Hampshire Natural Heritage Inventory tracks a taxon *Cypripedium pubescens* (synonym of *C. parviflorum* var. *pubescens*). Eighteen records for this taxon are from Carroll, Coos, Grafton, Merrimack, and Strafford Counties. None of these occurrences are on the WMNF, though two are in close proximity and one is within the proclamation boundary. Dan Sperduto indicated there is a strong possibility that it occurs on the WMNF; they have a recent unconfirmed report on the Forest by a credible person. This taxon is reported as uncommon but not rare in Maine, occurring Aroostock, Piscataquis, Somerset, Franklin, Oxford, York, Cumberland, Androscoggin, Kennebec, Lincoln, Knox, Hancock, and Penobscot Counties. Whether the NH and Maine occurrences are all

truly *Cypripedium parviflorum* var. *pubescens*, and whether any occur in the WMNF in Maine is unknown.

Habitat

Cypripedium parviflorum var. *pubescens* in northern New England is most likely to occur in circumneutral-calcareous forests and woodlands including rich mesic forests, seepage forests, and seepage swamps, or along the edges of spring run off streams. In northern New England, this taxon has been observed as high up as 2100', but is usually below 1500'.

The habitat features of most importance to the species appear to be water and soil. It seems to prefer limy soils and upland seepage on benches as well as seepage swamps. Although it is often near water, this is variable and it is not near open water but more in association with seepage water in forests. The species can occur in older or younger forests, with full closure or more open canopies. Forest structure appears to be less important than hydrology and soil chemistry.

Some sources indicate that the variety *pubescens* is strictly limited to rich woods.

Limiting Factors

In northern New England, loss of habitat from conversion or destruction and harvest/collection by humans are the most significant threats to the taxon. The next most important threat is from deer and moose herbivory (browsing on leaves and tubers, as well as flowers by moose). The next most important threat is inundation by beaver. Loss of symbiotic relations and genetic risks due to small population size also may limit this species.

Habitat for this species has been lost to development across its range. Activities that alter soil chemistry or hydrology can negatively impact this species by making habitat unsuitable. *Cypripedium parviflorum* var. *pubescens* is a plant adapted to forested ecosystems. Its response to timber harvest is uncertain, but it is likely that it would not tolerate significant overstory removals.

Collecting for medicinal purposes poses a significant threat to the *Cypripedium* complex in general, though more specifically to *C. parviflorum* var. *pubescens*. Horticultural collecting is also considered a significant threat to the taxon.

The typically small populations of this species are highly vulnerable to extirpation.

Viability concern

Despite confusion created by recent taxonomic changes, consensus appears to be that the taxon is declining range-wide to the point where long-term viability may be a concern in the next couple decades. Taxonomic uncertainties make it uncertain whether it occurs on the WMNF, but it is very likely that it does. This species was kept on the list because of the global concern, likelihood it occurs on the Forest, and potential for WMNF management to affect species habitat and populations.

Management activities that might affect viability

Although the response of this species to timber harvest is unknown, it is likely that regeneration harvests would make habitat unsuitable for a period of time and impact

individuals using the habitat. Any type of harvest could affect individuals depending on timing and proximity of machinery to populations.

Activities that would alter the hydrology of suitable habitat could affect habitat suitability. It does not occur near open water, but does need moist conditions and is often in seepy forest. Dam creation, road construction, and channeling flow could alter local hydrology, as could removal of a substantial portion of the overstory canopy, and management to encourage beaver activity.

Habitat management to benefit deer or moose near populations of this species could result in increased herbivory.

References

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