

Beauty in the Fen

By Shauna Hee, Botanist, and Jacqueline de Montigny, Soil Scientist, Wrangell Ranger District

In the scientific realm, mountain lady's slipper orchid is known as *Cypripedium montanum* (Douglas ex. Lindl.). The word part *Cypri* is Latin for Venus and Greek for Aphrodite, and *-pedi* is Latin for foot, thus Venus' foot or Aphrodite's slipper. Aphrodite is the Greek goddess of beauty. Her Roman counterpart, Venus, shares that reputation which for centuries has been immortalized in both art and literature. Aphrodite's legendary birthplace is Cyprus and she was known as the Lady of Cyprus.

slipper's inflated flower resembles the shape of a shoe. The lower pouch-shaped modified petal attracts pollinators and is characteristic of all lady's slipper orchids.

Seventeen different orchid species have been recorded in Southeast Alaska, some of which are more abundant than others. To date, mountain lady's slipper is documented at one location in the Alaska Region: Etolin Island on the Wrangell Ranger District of the Tongass National Forest.



Pollinators on the mountain lady's slipper flower



Fen soil samples are shown in the top two slots, and adjacent muskeg soil show in the lower two.

Mountain lady's slipper is a rhizomatous perennial herb. Each spring new vegetative growth arises from the rhizome, and dies back at the end of the growing season. The rhizome can produce multiple aboveground stems that can be up to three feet high. One stem can produce multiple flowers. The

Due to its disjunct, isolated distribution and suspected downward population trend, the regional forester designated this species as Sensitive in 2009. The Alaska Natural Heritage Program ranks the species as critically imperiled.

The Etolin Island mountain lady's slipper population was first discovered in 2006, and revisited in 2007. Minimal documentation on site and habitat conditions was collected during these visits. Each visit noted visible signs of herbivory to the population, possibly from native deer or non-native elk introduced to Etolin Island in 1987.

During the wet summer of 2011, intrepid "ologists" revisited the population with the purpose of characterizing existing habitat conditions and documenting potential or historic disturbance agents. The first visit occurred when plants were at the initial stages of flowering. General site information was collected,

in addition to location information, soil characteristics, population abundance, associated species, plant community classification, and visible impact or disturbance agents. The second visit occurred when plants had grown older. Further site classification information was collected, the population extent mapped, visible impact or disturbance agents assessed, and the stream headwaters located.

The mountain lady's slipper population occurs in a calcareous fen (lime impregnated soil) fed by the overland surface flow of a small stream emanating from a limestone cliff upslope from the site. The fen is drastically different from the adjacent muskeg. Within the population, soil pH measured 7.5 and water electrical conductivity measured 90-110 micro Siemens. The muskeg soil pH measured 4.5 and water electrical conductivity 8-20 micro Siemens. Vegetation within the fen

is dominated by pale sedge (*Carex livida*) and tufted clubrush (*Trichophorum cespitosum*), in addition to an ironically uncommon presence of common yarrow (*Achillea millefolium*), red columbine (*Aquilegia formosa*), and leathery grapefern (*Sceptridium multifidum* syn *Botrychium multifidum*). Various species of peat moss (*Sphagnum* spp.) and Ericaceous shrubs and subshrubs dominate the vegetation in the adjacent muskeg. There is also a strong presence of carnivorous plants including greater bladderwort (*Utricularia vulgaris*), two sundews (*Drosera rotundifolia* and *D. anglica*), and common butterwort (*Pinguicula vulgaris*).

Potential threats to the habitat include changes in

hydrology and/or water chemistry, and invasion by non-native species along the nearby roadside. With subsequent visits and monitoring, changes in population size, habitat quality, and disturbances can be tracked and a determination of population trend can be inferred.

Novelist Margaret Wolfe Hungerford is credited with the saying “Beauty is in the eye of the beholder.” Is it any wonder such an alluring plant would be named for Aphrodite?

Mountain lady’s slipper has also been reported along the Stikine River. Any information about additional population locations would be greatly appreciated. Please contact Shauna Hee, 907-228-4118.
