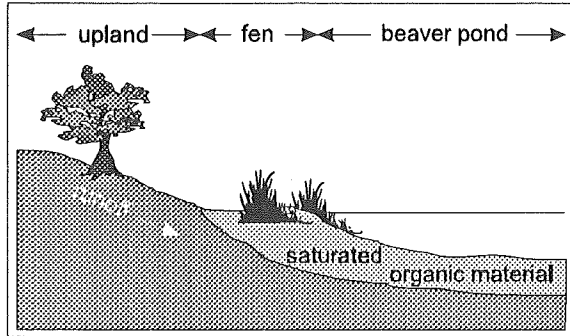


The fen within Purdon Conservation Area provides excellent soil, water, vegetative and light conditions for the orchids and, with continued management, these conditions will be maintained.



## Management techniques

Three major management techniques are used at Purdon to protect and expand the colony: water management, vegetation management and artificially-assisted orchid propagation.

The control of the water level throughout the year is critical to the habitat. Because water in a fen continually flows into and out of it, there is a potential for flooding in the spring or drying out in the summer. The beaver dam at the outflow of the pond controls minimum water levels and the overflow pipe, installed in the dam, controls maximum levels. Although this system is self-regulating, it is checked on a regular basis to ensure that the pipe is not clogged (potential for a flood) or that the beavers have not abandoned the dam

or let it fall into disrepair (potential for a drained pond.)

Vegetative management includes control of competing species and supplementation of complementary species. Trees and brush are thinned to create small clearings and open the canopy, thus improving conditions for existing plants and for new habitat areas. Complementary species, such as wetland flowers and flowering shrubs, are supplemented with seedlings to attract bees and insects to the area and assist with pollination.

Management practices that deal directly with the orchids include a restriction on picking of blossoms and a scientific program to artificially pollinate selected plants to ensure continued seed production in the colony.

## Leafy White Bog Orchid

*Platanthera dilatata*

This orchid is known by many common names, including White Bog Orchid, Tall Leafy White Orchid, Cinnamon Orchid and Bog Candles. It has a tall spike, 30 cm to 1 meter, and there are up to 12 linear tapered leaves. The flowers grow in a spiral on the spike and its waxy, white petals and sepals form a flower with a spur about 1 cm long. The blossoms have a unique fragrance, similar to clover



or cinnamon. Flowers can be found in the Purdon fen between mid-June and mid-July.

## Range

These orchids are found throughout the provinces and in the southern parts of the Yukon.

## Habitat

Leafy White Bog Orchids thrive in meadows, bogs, fens, swamps, wet woods and along streams and lake shores

This is a natural area. Thank you for leaving it as you found it.

- Use marked trails and stay on boardwalk.
- Do not pick the orchids or other plants.
- Keep pets on a leash.
- Motor vehicles are prohibited.
- Overnight camping, open fire and firearms are not permitted.
- Use at your own risk; this is an unsupervised area.

# Purdon Conservation Area



# Orchid Biology

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## Showy Lady's Slipper Orchid

*Cypripedium reginae*

The Showy Lady's Slipper Orchid is a large orchid, standing 35-90 cm tall. It has a spectacular flower, from 5 to 10 cm in size, with pure white sepals and petals surrounding pouch that varies from deep rose to light pink. Individual stems produce one to three flowers and each stem has 3-7 ovate leaves.

### Range



### Habitat

This species of orchid requires a wetland habitat and is often found in cedar, spruce and tamarack bogs and fens.

### The Orchid Colony

The Showy Lady's Slipper Orchid is a perennial plant which grows in colonies. The Purdon colony, probably the largest single colony in Canada, has been in existence for more than 50 years and has spread from the original dozen flowers to more than 16,000 stems.

## Biological Structure

### Flower

The flower of the Showy Lady's Slipper Orchid contains several parts: the white sepals are broadly ovate and fused behind the lip; the petals are also white and oblong-elliptic in shape; the lip is a pouch-shaped sac with shallow furrows and rose-pink streaks on a white background; the staminode is ovate and yellow-white with pink to purple spots.

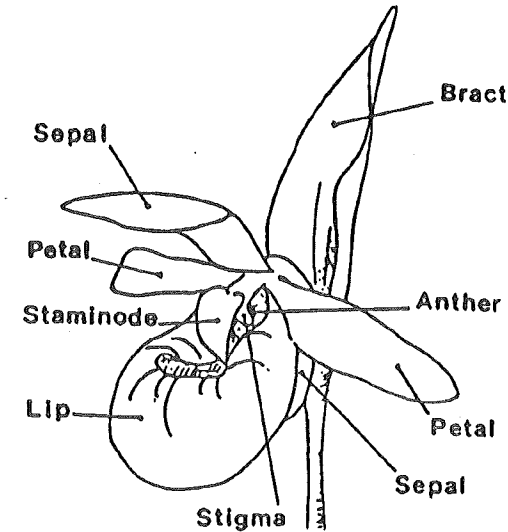
### Leaves and stem

The leaves and stem are dense with fine hairs (*pubescent*) and have a soft, fuzzy feel. The 3-7 leaves sheathed around the stem excrete a liquid that can cause a rash similar to poison ivy. The stem is single or branched depending on the number of flowers and terminates at the flower with a leaf-like bract.

### Roots

The root system consists of one major rhizome and numerous small lateral roots. Each year the perennial rhizome produces a new bud approximately 1cm from the previous bud. This form of vegetative reproduction creates a clump of orchids. The age of a clump can be determined by counting the nodes on the rhizome, similar to counting rings on a tree stump.

## Parts of an orchid



## Flower Pollination

The structure of the flower makes it impossible to self pollinate. It has two fixed anthers and the pollen can not reach the stigma without a pollinating insect.

Because the flower does not contain nectar, it is not consistently attractive to bees or other insects. The orchids must rely on the investigative instincts of bees and on the accidental entry of insects into the flower. Consequently, a very small percentage of the flowers are pollinated. In the semi-open areas where insects are attracted by other plants, the orchid pollination rate averages approximately 25%; the denser forest only has a 10 % success rate.

If an insect visits the flower, and the sticky pollen on the anther is transferred to the stigma, the flower will produce 15,000-35,000 seeds in a pod. In the late summer, these seeds are dispersed by the wind. Although there are many thousands, only a small number of seeds will land in areas of suitable habitat and very few of those will survive to produce new plants. If a seed does begin to grow, it must first produce the rhizome root system and then produce leaves. This process can take 5-7 years and then several more years before the plant will produce a new flower. The entire cycle can take up to 15 years.

## Habitat Requirements

The Showy Lady's Slipper Orchids has precise habitat requirements. It will grow only in areas of prolonged wetness, but will not tolerate standing water. It likes acidic to moderately alkaline soil with a high organic composition, such as soils found in bogs, fens or swamps in the temperate regions of Canada. Trees commonly associated with fens are cedar, spruce and tamarack.

Although the orchid grows best in a semi-open habitat, it can be found in a dense canopy area that has only sparse light penetration. Flower and seed production are more predominant in open areas, and vegetative production more prolific in shaded areas.