

## **Rules of the Tour**

**The Carp Barrens are ecologically sensitive and easily disturbed. It is a fragile and special area. It can take years for plants to regenerate.**

- Stay on the trail or bare rock. The moss and lichen mats on the rock barrens are very fragile.
- If you turn over a rock to look for wildlife (snakes, etc...), please replace the rock gently where it was.
- Please do not create rock piles. The scattered rocks provide important habitat and shelter for wildlife, including several species at risk. Leave them in place.
- Do not remove any plants, animals or other natural objects from the barrens.
- If you come across a Blanding's turtle, do not handle it (unless removing it from a road).
- Do not handle wildlife.
- Pack all garbage back out.

**Carp Barrens Ecological Tour with Dr. Owen Clarkin**  
**9 May 2015**  
**For the Friends of Huntley Highlands**

The Carp Hills are formed from a 13 km long and 3 to 4 km wide band of Canadian Shield highlands that rise above fertile farmland. About 10% of this area (~700+ acres) consists of large expanses of bare rock with patchy vegetation called the Carp Barrens. Outcrops of exposed Canadian Shield bedrock are folded into glacial-scraped ridges and troughs of ponds and wetlands. This generally acidic and extreme environment supports plants uncommon or rare in the Ottawa area. Scattered trees, shrubs, sedges, and grasses grow in small pockets of soil or wherever they can put down roots to extract limited nutrients and moisture. The rock itself is covered with mosses and lichens that can survive complete dehydration.

**This is a fragile and special area. It can take years for plants to regenerate.**  
**Please stay on the path.**

### Geology

The Carp Barrens (like Gatineau Park) are composed of the oldest rocks in the Ottawa area, which were formed in the Precambrian Era over 2.5 billion years ago and known as the Canadian Shield. The Barrens are underlain by gneiss, schist, marble and granitoid rocks, capped in a few places by Lower Paleozoic strata. This geology creates an acidic environment, which may be moderated by the more alkaline marble substrate.



The Carp Hills are part of the band of pink (Precambrian rock) shown east of Arnprior. (From the Ottawa-Gatineau Geoheritage Project.)

Gneiss contains mica. There are two, small shallow mica mines found on the Barrens. More than a century ago, Eastern Ontario was one of the mica mining capitals of the world. The mica was fashioned into sheets of glass-like, thermal windows for lanterns and wood stoves. Mica is stable when exposed to electricity, light, moisture, and extreme temperatures.



## A Land of Extremes



Rock barrens have a wide variation in soil depth and in water-holding capacity over a short distance. These variations are responsible for the mosaic patterns of vegetation. The rock is acidic and generally contributes to the formation of acidic soils. There is a large wetland of Leatherleaf, a plant that is characteristic of acidic bogs and fens.

We have measured the pH of the water where the Leatherleaf grows at around 6.2, indicating slightly acidic conditions. We believe this area is a Fen in formation; see the patches of floating sphagnum moss mats.

The Carp Barrens are also characterized by frequent hot, drought-like conditions as there is little moisture retention on the open rock. There have probably been many brush fires caused by lightning striking the tinder dry conditions. The presence of Red Pine and Jack Pine on the northwest side barrens is indicative of regeneration by fire as the latter's cones only open at temperatures above 50°C.

## Vegetation



You are seeing the Carp Barrens at a special time of year. What moisture remains from the melted snow and the early rains causes an explosion of flowers and greenery in the spring as plants reproduce while conditions are favorable. The mosses and lichens rehydrate and extend fruiting bodies, shown in rusty orange in the photo. Blueberries are blooming in the background.

Because of the extreme conditions and poor nutrients, plants grow slowly on the Barrens. The Red Oak and the Large Tooth Aspen near the trailhead are probably well over 100 years old and have undoubtedly survived some brush fires.

Common trees on this southeastern side of the Barrens are: White Pine, Paper Birch, Red Oak, Trembling Aspen, White Spruce, and Red Maple. Four young Tamaracks are growing in water with the Leatherleaf shrubs. You will see quite a few trees and shrubs that were victims of the summer 2012 drought. Bur oak (which is normally drought tolerant), white spruce, and juniper were particularly hard hit.

Common shrubs are: Speckled Alder, Winterberry, Leatherleaf, Blueberries, Common Juniper, Choke Cherry, and Wild Raisin Viburnum, some of which prefer acid soil.

Spring flowers that you may see are: Pale Corydalis, Wild Columbine, Bicknell's Geranium, and Blueberry bushes. Common Polypody fern perches in shallow crevices. The uncommon Fernald's Sedge and Spikemoss are highlighted in the 1992 ANSI report. Perhaps you can identify more plants!