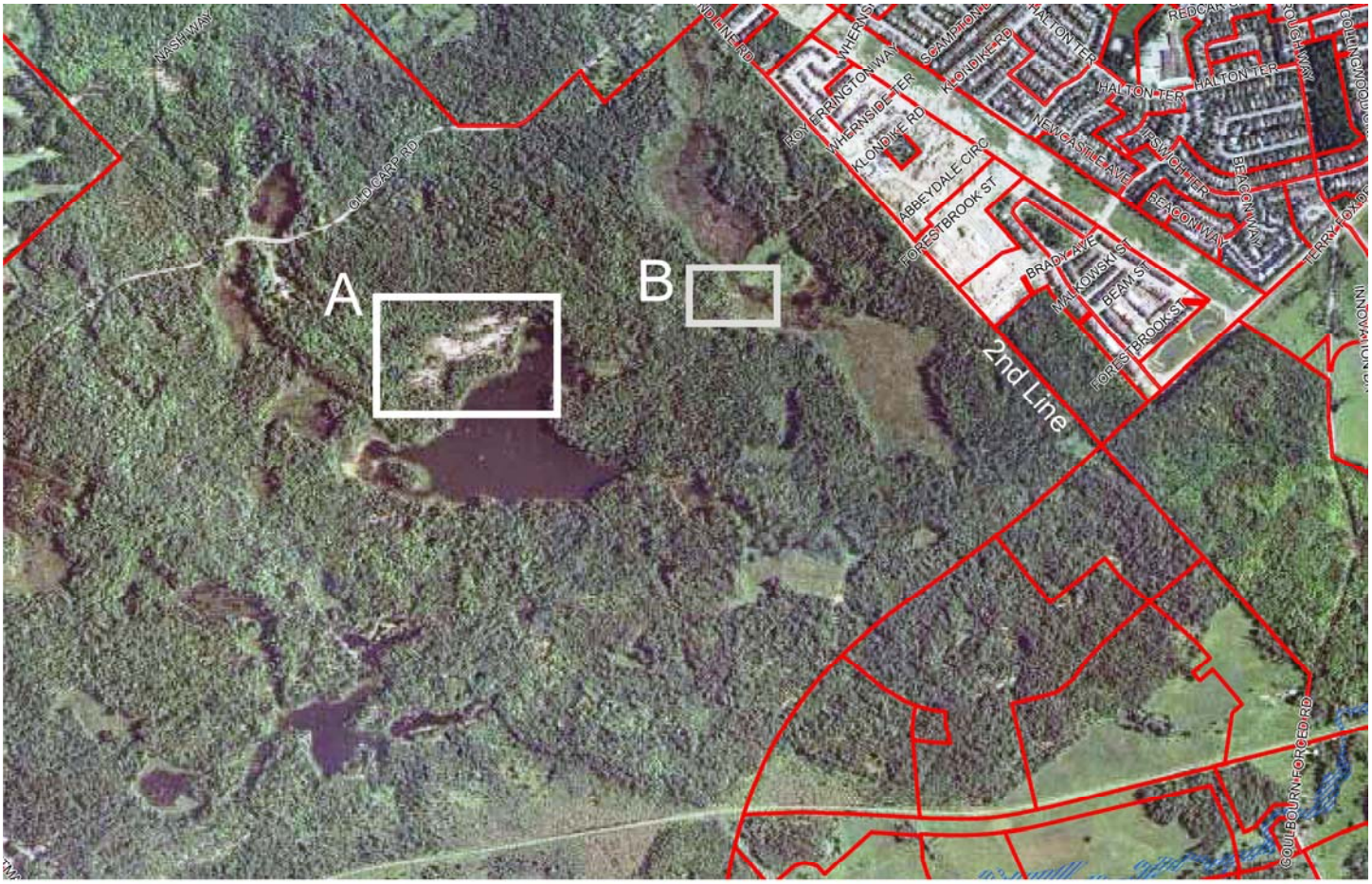
South March Sandstone Pavement Barren

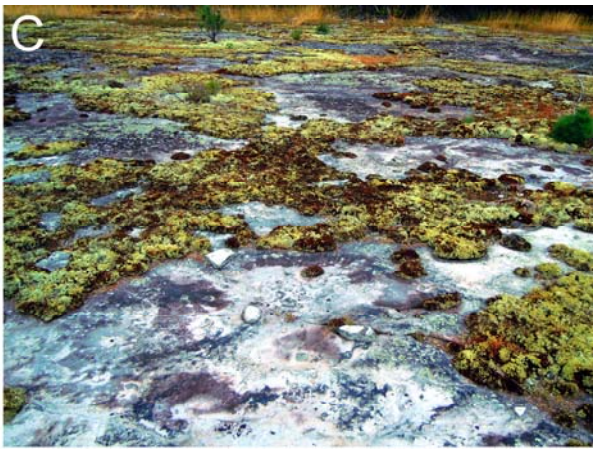
That part of the Carp Ridge – March highlands south of the 2nd line hosts a few acres of special terrain known as a sandstone pavement barren (areas A and B below). As elsewhere (see, e.g.http://faculty.plattsburgh.edu/david.franzi/esfl/Forest%20Ecology.htm) the area resembles



a nutrient-poor alvar except for the silica substrate. In area A, the unweathered sandstone is very white (composed of medium to coarse (< 2mm) very pure silica) with little of the iron cement that adds the buff colour typical of the Nepean.

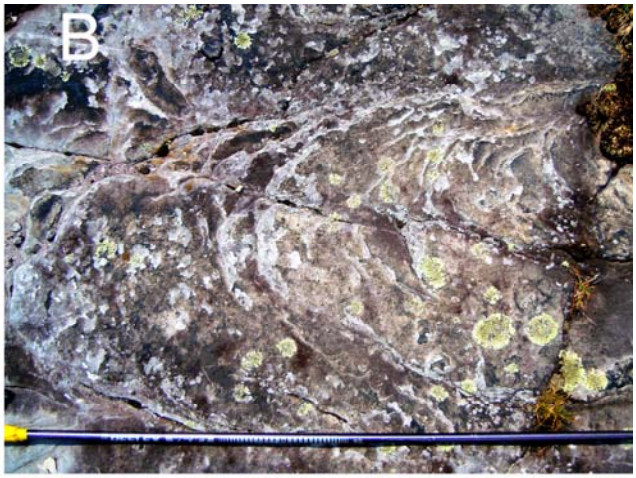
The exposed Nepean formation displays many sedimentary and glacial features.

A – Sandstone formed from well sorted, pure silica sand with only local carbonate cement.



B, C Sandstone pavement supports limited species of trees, mosses and lichens.

Notable sedimentary structures formed during deposition some 500 million years ago, include trough cross bedding, ripples and what may be eroded algal mounds.



A – remnant (symmetrical?) ripple marks; B, C - trough cross beds; D- Eroded Algal mounds? All features suggest a low energy tidal, perhaps estuarine, setting when the area was close to the equator with no vegetation as we know it.

As rock-studded glaciers advanced southwards over the Carp Ridge some 13, 000 years ago, they left chatter marks, striations and crescent gouges.

In area B, glacial chatter marks (above); striations (top right) and crescent gouges are evident. Only chatter marks and crescent gouges provide ice movement direction. The striated surface retains only a remnant mm-thick glacial pavement of semi-fused quartz grains.