



# SHINGLE SHANTY PRESERVE and Research Station

FIELD NOTES - MARCH 19, 2013

## **Glacial Lake St. Agnes**

*by Steve Langdon, Project Manager, Shingle Shanty Preserve and Research Station*



*Black flies, black spruce and botanist Jillian Post in the Glacial Lake St. Agnes peatland. Early June.*

From the North Pond Flowgrounds, west to where the outlet of Deer Pond levels out and north all the way out to Lake Lila is one of the largest peatland complexes in the Adirondacks. While digging footers for a canoe shed, geologist Don Potter noticed a thick greasy layer of sediment characteristic of a lake bottom. It became clear that the entire basin through which Shingle Shanty Brook now runs was a lake not quite the size of Stillwater Reservoir. Don named the glacial lake for the camp that once stood between the stream and a logging railroad bed: Glacial Lake St. Agnes. As the last of the glacial ice receded this lake drained, leaving perfect conditions for the development of a peatland.

Peatlands are a type of wetland that occur from the tropics to the sub-arctic in places where there is an excess of water. A combination of factors like glacial topography, cooler temperature and lack of



nutrients in the Adirondacks allows certain plants to flourish, but almost halts decomposition. Peat soils - undecomposed organic matter- accumulates at a rate of about 80-200cm per century in peatlands. Excluding the oceans, one third of the carbon stored in living or dead plants and animals is in peatlands.

Adirondack peatlands are the home to assemblages of plants and animals that are approaching the southern extent of their range. Spruce grouse, gray jays, bog lemmings and moose are a big part of what makes our Adirondacks feel so sublime and desolate and beautiful. It is the Boreal Forest: the lowland black-spruce that in the Adirondacks is a southern outlier of this much larger biome that stretches across the northern reaches of North America, Asia, and Europe. Here though, the black spruce and tamarack can't out-compete the maples, beech and yellow birch on the drier soils of the uplands like they do a few hundred miles to the north. But they prosper in the peat soils where these temperate trees have no chance.

The plants and animals that live in the boreal developed under particular climatic conditions that are now changing. As such, the flora and fauna of lowland boreal peatlands - already at the edge of what they find tolerable - must either adapt, move, or disappear. Documenting those changes, and where possible, mitigating those changes has been underway since Shingle Shanty Preserve and Research Station began its field work 4 years ago.



*As part of the assessment of vegetation of Glacial Lake St. Agnes peatland complex we measured the depth of peat at 50 randomly chosen locations in the peatland. Peat depths was measured with a 6m probe (actually four, 1.5m fiberglass chimney sweep poles). We drive the probe into the peat 4 or 5 times at each site and take the deepest measurement. The depth of peat ranged from about 2m at the edge of the big bog to greater than 6m in the small bog. As peat accumulates at different rates it is difficult to 'age' a peatland based on depth. The 1985 study of a bog near the inlet of Brandreth Lake carbon dated the base layer of peat, accurately aging the bog at 10,300 years young.*

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