

## DESCRIPTIVE NOTES

The continental Laurentide Ice Sheet glaciated the Estsine Lake (NTS 94 P/13) map area during the Late Wisconsinan (ca. 25 000–10 000 years ago). Extensive glacial flutings show that the ice flowed in from the northeast. The flutings are most pronounced south of Petitot River where the ice flowed uphill under compression. Compressive ice flow in this area probably resulted in the thick accumulations of till, which are evident as broad ridges in the west part of the map area along the southern Petitot River valley. Nevertheless, sandstone and shale outcrops along Dilly Creek show that the underlying bedrock also controls much of the topography.

In places, numerous small ridges drape over the glacial flutings in crosscutting patterns. These features are likely a combination of crevasse fillings and minor moraines and can provide some indication of the ice sheet configuration, particularly during deglaciation. The patterns indicate that the ice margin generally receded to the northeast, but esker systems on either side of the modern Petitot River, and numerous kettle lakes south of the river, indicate that stagnant glacier ice also remained in the area.

At some point during deglaciation, glacial lakes formed in the lowland when the Laurentide Ice Sheet and local stagnant ice masses blocked the regional drainage. A series of nested moraines near Estsine Lake outline various positions of a lobate ice margin extending from the northeast. This lobe seems to crosscut the overall pattern of minor moraines and crevasse fills, suggesting a local stillstand or minor readvance during regional ice retreat. Subaerial channels, and possibly subglacial channels bounded by glacier ice, routed meltwaters to the Petitot River valley lowland. A large confluent channel formed in the west half of the map area where extensive glaciofluvial deposits occur as terraces along Petitot River.

Poorly drained areas underlain by clayey till and glaciolacustrine sediments are covered by extensive muskeg, forming hummocky peatlands. These areas are in large part underlain by permafrost and probably contain significant amounts of ground ice.