GILFORD VILLAGE . . . 15,000 YEARS AGO

[Ed. note: Now this is what we call History! Gilford geologist Brian Fowler unearthed this proof that the Village was an exciting place to be even before it existed.]

Introduction

Between 15,000 and 14,000 years ago, a series of events took place which shaped the topography around what we now call Gilford Village. Prior to that time, and perhaps for as long as 50,000 years, the area of the Village was buried under the Laurentide Ice Sheet, which may have been as thick as 3/4 mile here, and completely buried the peaks of the Belknap Mountains.

As the Ice Age drew to a close, the glacier began to melt. Evidence suggests this happened very rapidly, for Nature's timeframe, with the entire process complete in as little as 1,500 years. Obviously, the rapid melting of 3/4 mile of ice created large quantities of meltwater, and the story of the Village's surficial geology is a story of the interaction of this meltwater with the melting ice and the earthen debris contained in the ice.

The story is complex and very interesting, but unfortunately space restricts our tale. There are two fundamental processes uniquely associated with the rapid melting of glacial ice. First, glacial ice tends to thin and separate over topographically-high terrain as it melts, so that mountains and hilltops are de-iced first and low areas accumulate masses of wasting ice. Second, as these masses continue to melt, the meltwater arising from them seeks progressively lower-elevation channels to flow away from the wasting mass. Consequently, by looking at these ancestral and now mainly abandoned channels, we can determine the general sequence of the deglaciation of the region. When we do this for Gilford Village, we find 4 broad stages, described below.

Stage 1

We come in on our story at a point where the melting of the south side of the Laurentide Ice Sheet had created a "tongue" of glacial ice projecting southward into the Gilford Village area (see illustration #1). This tongue was still connected to the main ice sheet in the Winnipesaukee Basin, and its surface lay at an elevation of about 875 feet above sea level, with principal meltwater outlet channels flowing to the west and south-

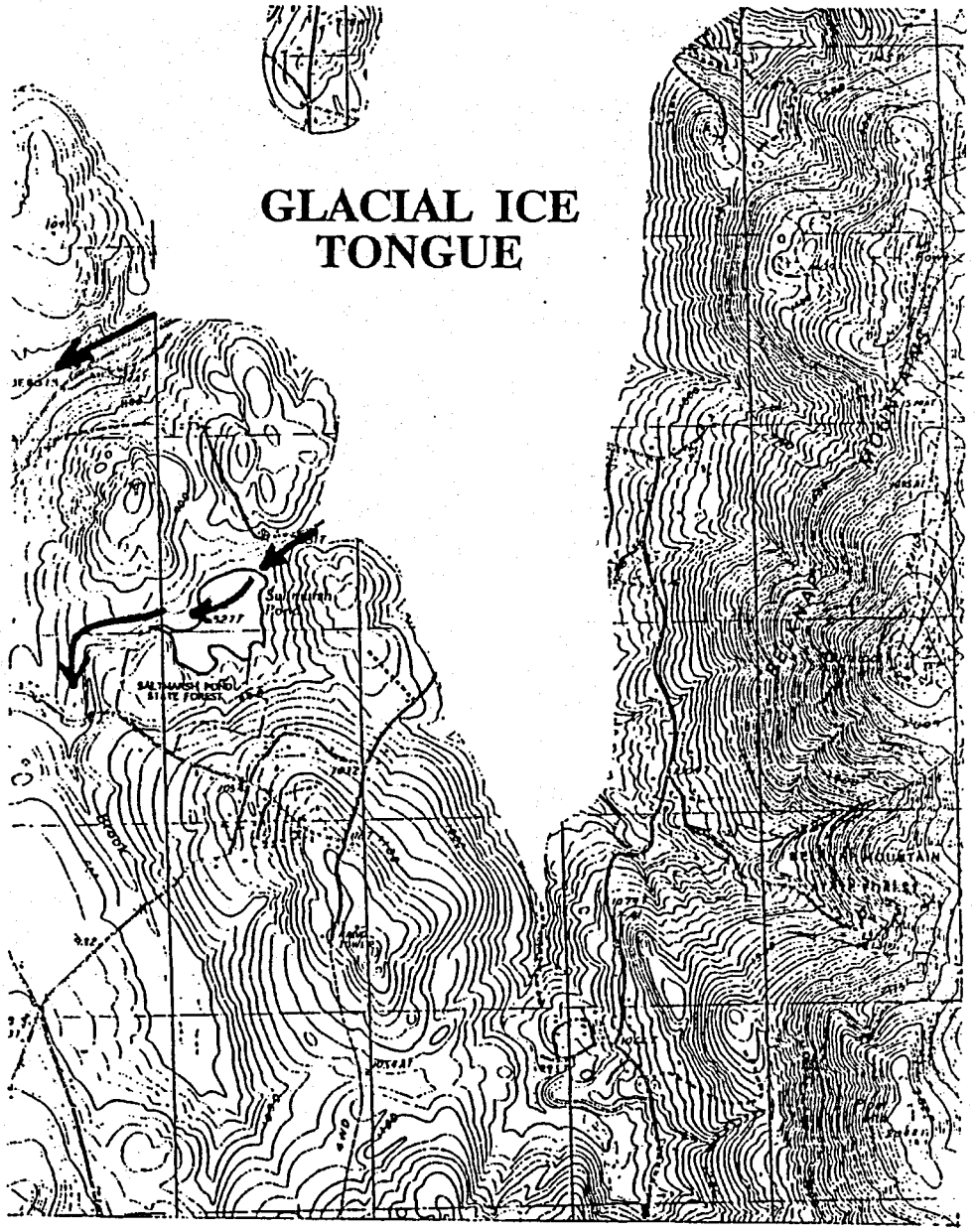

Illustration #1

west. The higher elevations around the Village had already been de-iced by then, and streams running down their slopes carried sediment from the earthen glacial debris (called "till") left there, sorting and depositing it on the ice surfaces below.

We know this ice configuration (or something close to it) must have existed in this stage because of evidence that very large volumes of meltwater passed down the two principal drainages. Both of these channels (called the Saltmarsh Pond Channel, dramatically visible from Liberty Hill Road, and the Route 11A Channel, through which 11A now passes) were deeply incised into the hillsides they descend, and the streams that flow within them today are not large enough to have created such dramatic erosion channels without enormous amounts of additional water.

Stage 2

The residual Gilford Ice Mass was eventually separated from the larger mass of Laurentide Ice in the Winnipesaukee Basin as it continued to recede northwards and out of the area. As wasting of the Gilford Ice Mass continued further and its surface elevation lowered, meltwater abandoned the higher-elevation Saltmarsh Channel. It continued to flow through the Rte. 11A Channel until its water was pirated away by a new, even lower elevation channel, developed in the lower portion of what is now the bed of the Gunstock River, parallel to Route 11B (see illustration #2). Sediment carried by this lowest channel began depositing the Gilford Delta into ancestral Lake Winnipesaukee, the water surface of which lay some 5-8 feet higher than today due to the swollen volume of meltwater in the lake basin at that time (about 510 feet then, covering Gilford Meadows; about 504 today).

Water-born sediment derived from deposits of glacial debris from the hillsides above and around the Village continued to be deposited on the surface of the residual Gilford Ice Mass, as well as immediately underneath its margins. These small streams, flowing beneath the ice, began to coalesce to form the ancestral Gunstock River.

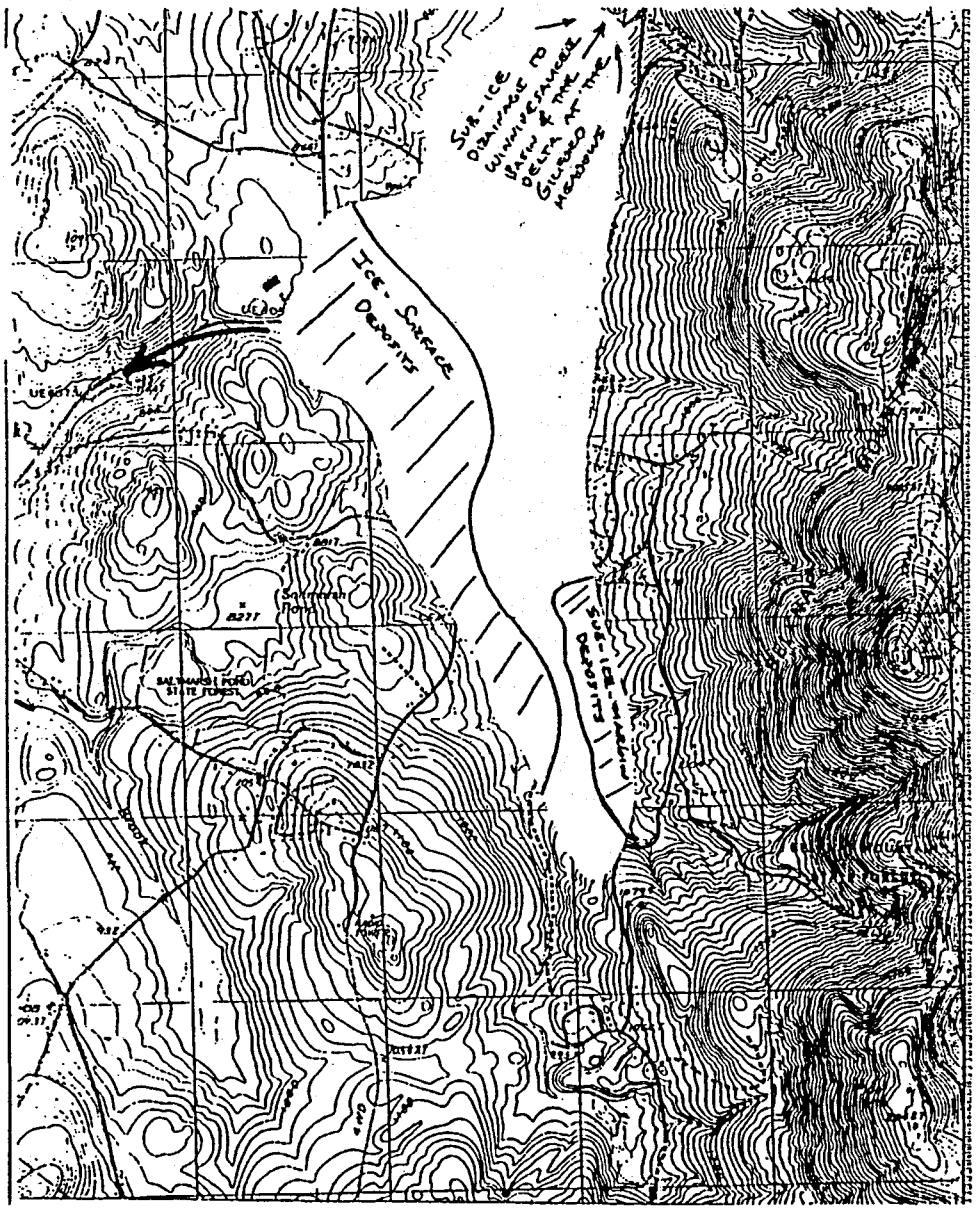

Illustration #2

Stage 3

The Gilford Ice Mass continued to waste until it occupied only the area now comprised of the flat fields in the Village. The ice-surface and sub-ice-surface deposits collapsed onto the newly exposed ground surfaces as the edges of the mass shrank. The ancestral Gunstock River, then much larger and located in today's small stream channel behind the Elementary School, deposited its sandy terrace along the easterly valley slope between the Ice Mass and the side of Mt. Rowe.

As the ancestral river approached the location of the

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resent center of the Village, it plunged beneath the Ice Mass (at a point very near to the bedrock outcrops next to the Library). It ran along the present channel of the Gunstock River parallel to Rte. 11B and out onto the furthest edge of the then nearly-completed Gilford Delta, the level of the lake being nearly at its present elevation.

Smaller but still significant streams continued to run off the now-diminutive Gilford Ice Mass to the east and northeast, depositing large and multi-peaked piles of sorted and clean gravelly sand (geologically known as "kames") near the present locations of Gilford Knolls, the Community Church, and the Gilford Outing Club (see illustration #3).

Stage 4

As the Gilford Ice Mass met its ultimate demise and disappeared, the Gunstock River sought lower ground to the west and northwest of its ancestral and now partially-backfilled channel. As it assumed its present course, it deposited the medium to fine silty sands and organic silts we find today beneath the Village Fields.

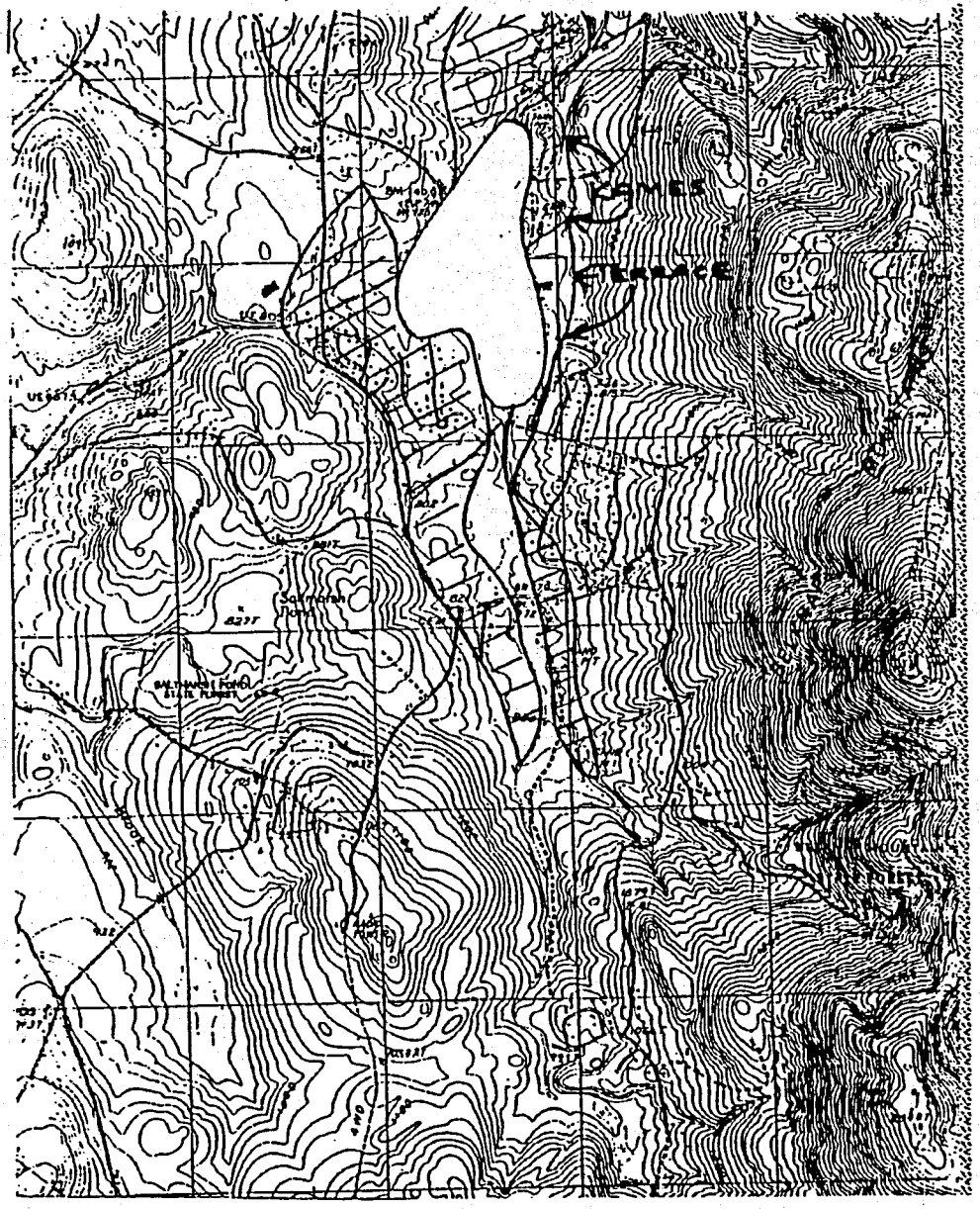

Illustration #3

Conclusion

The results of these stages of deglaciation in the area of the Village have clearly affected and likely encouraged human activity and physical development here. When the Village was initially settled, agriculture quickly appropriated the flat fertile lowlands. The cemetery was assigned to the undoubtedly "easier digging" of the ancestral Gunstock River terrace. The once-prosperous brick, block [at the Benjamin Rowe Farm], and glass [at the Benjamin Jewett, Jr. House] manufacturing activities in the 19th-century Village exploited the raw materials available in the kames.

Later on, highway construction heavily relied upon the fill and road-base aggregates obtained from the collapsed ice-surface and sub-ice-surface deposits at the "Needham Pits" (opposite the Gilford Outing Club) and at the "Lyman Pits" (off Hoyt Rd.). Residential development has taken good advantage of the high percolation rates and easy excavation characteristics of similar deposits on the west side of the Village Fields and along the lower westerly slopes of the Belknap Mountains.

We should be grateful to Mother Nature for wasting the Gilford Ice Mass as fortuitously as she did. This process provided us with a beautifully diverse topography, easily-available building sites, and sources of materials for early construction, underlain by plentiful, but not inexhaustible, resources of water and fertile soils.

Interested readers who want more information will be able to find it at the Gilford Public Library. If sufficient interest is expressed, perhaps a field trip can be organized in the spring. (Call Adair Mulligan, 524-7454).

- Brian Fowler