Fenton-Ruby Park Glacial Geology Walk Station Descriptions

By Brian D. Jones and Dan Forrest

Use the attached map as a reference for the numbered geologic features. Definitions of selected geologic terms (capitalized in the text) are provided on the attached map.

1) After crossing the dike bridge, we enter a dense white pine stand. The pines indicate that the underlying soils are sandy. Such pine stands often indicate the locations of fine, sandy glacial *DELTA* deposits. These sediments were deposited during deglaciation as they eroded into standing bodies of water. Usually fan-shaped, this delta is elongated, suggesting that it was constrained along its flanks, probably by standing ice in Taylor Pond and the Fenton River Valley.

2) Two glacial *ERRATICS* lie off the trail to the west. These stones were transported by glacial ice after being torn from their bedrock sources. Erratics typically traveled on the surface of the glacier, thereby escaping the tremendous erosive forces that crushed and ground rocks beneath the ice flows. Most erratics were transported relatively short distances, but some have been traced to sources over 150 miles from their final resting place! The smaller of the two erratics here is still angular, indicating that it was not moved as far as the larger, rounded stone to its south.

3) This expansive flat area dominated by hardwoods is very stony in the southeast where it flanks the drumlin hill, but becomes more gravelly as we proceed north and west. This landform likely represents a late-stage S*TREAM TERRACE* deposited by the proto-Fenton River as the glaciers were retreating. A glacial pond once covered this area. As the glaciers melted at the end of the last ice-age, the water level within the pond eventually spilled over the sediments damming the pond near the Moose Meadow Road bridge over the Fenton River. As the river coursed back and fourth across the pond bottom, sandy and gravelly sediments were deposited. It is likely that the Fenton River was a braided stream at this time, that is it lacked the energy of its earlier glacial meltwater stage, and thus sediments were deposited in a series of overlapping gravel bars rather than eroded away. These evidence of these gravel bars is still visible as the "hummocky" uneven ground surface on this terrace.

4) Looking across the Fenton River we see its modern FLOODPLAIN system. Soils here are wet and silty, supporting a very different type of vegetation. The river itself is "underfit", that is, it lies deep in its bank. The high silty banks suggest the river was dammed in the past, allowing silt to fill much of the valley bottom. This could have been caused by

repeated beaver dams, but in this case probably also reflects the presence of 19th-century mill dams downstream. The presence of gravel bars and cobbles along its edge indicates that the river sometimes flows with much greater force. These coarse sediments could only be transported during spring and storm-related flooding.

5) As we climb out of the lower terrace, we see a second higher terrace. This flat land surface paralleling the Fenton likely represents an early glacial river terrace. This terrace was deposited during the high-energy glacial meltwater stage of the Fenton Valley. It is likely that the valley once matched the terrace's elevation here, but was subsequently scoured by the fast-moving meltwater river, perhaps when a sediment dam downstream collapsed, releasing a great deal of energy.

6) We passed the same boulder-strewn GULLY on the lower terrace. This gully represents an early erosional channel cut into the flank of the drumlin hillside as glacial ice melted from the area. Only a high-energy meltwater environment could have transported enough coarse sediment (gravels and cobbles) from the drumlin's flank to expose the large boulders here. The gully continues to act as a drainage channel, providing an important micro-habitat for upland wetland species.

7) **The trail here follows the comfortable flat surface of a KAME terrace flanking the drumlin hill. Kame terraces are produced when meltwaters flow along the glacial margin margin, depositing layers of sand and gravel. As the glacier melted, these sediments were left behind, forming a flat "bench" along the hillside. Such features are common in Connecticut's glacial uplands.**

8) **The drumlin hill to our east dominates the landscape here. Drumlins represent landforms left by the preceding glacial period (the Illinoisan), 125,000 years or more ago. These tough land features are armored in a layer of cobbles and boulders. They were "streamlined" by the last ice-age (Wisconsinan) into typically low, rounded hills with an elongated north-south axis. They tend to be rather impervious to water, and thus springs often flanks their sides and base.**

9) **Drumlin hills are remnants of a more ancient landscape than the other features you see here. Usually they have stony cobble surfaces, and larger boulders are also often draped across their summits. These erratics are similar to those noted on the lower terrace below, but would have been dropped by the receding glacier at an earlier time.**

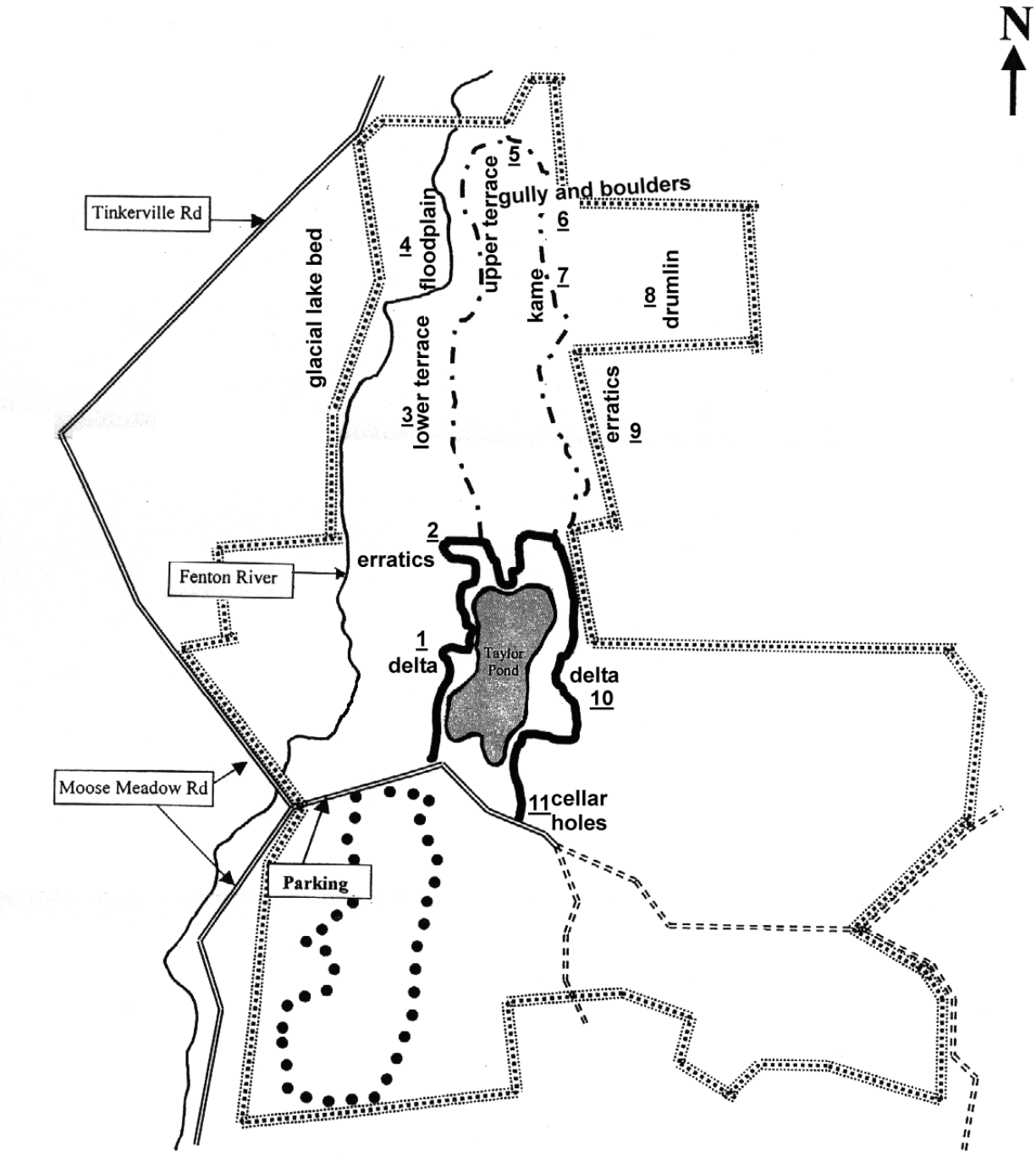
10) This delta parallels the first one we saw, and was probably formed at the same time as water flowed into the glacial pond that now forms Taylor Pond. The elevation of the top of the delta expresses the depth of this glacial pond - clearly deeper than it is today. Again, this area is dominated by the pines that thrive on its sandy, well-drained sediments.

11) The Taylor House foundation. This house was built by Thomas and Patty Knowlton in about 1809, and later acquired by John Taylor. The remains are typical of many early 19th-century farm house ruins that lie scattered across Connecticut's forests. This was a fairly large house, with a central chimney stack. An addition extends, without a cellar, to the north of the main foundation. Nearby is a small root cellar which appears to have had an outbuilding attachment to the west. The house was burned in the 1960s - charred timbers are still evident around the chimney stack.

Additional Reading:

Bell, Michael (1985) The Face of Connecticut: People, Geology and the Land. Connecticut Department of Environmental Prote, Hartford, CT. Or point your browser to http://www.wesleyan.edu/ctgeology/Glacial/GlacialGeology.html

This guide was developed by Dr. Brian Jones, Assistant Professor of Archaeology at UMass, and Daniel Forrest, Senior Archeologist at Archaeological and Historical Services, Inc. for the Willington Conservation Commission's Fenton-Ruby Park Day, October 18, 2008.



GLACIAL LANDFORM TERMINOLOGY

delta - fine sediments deposited into standing water
kame - water-lain sands and gravels along glacial margin
terraces - sands and gravels deposited along glacial meltwater streams
erratic - glacially transported boulder
gully - area eroded during deglaciaition
floodplain - area of active stream cutting and deposition