DESCRIPTION OF MAP UNITS

A layer of windblown fine- to medium-grained sand and silt less than 3 ft (1 m) thick is present over much of the surface of the map area but is not shown. The lower part of this layer is generally mixed with underlying surficial deposits

al — **Alluvium (Holocene)**--Sand, silt, and minor gravel in flood plains along present-day rivers and streams. As much as 25 ft (8 m) thick and generally underlain by adjacent deposits. Extent of alluvium indicates most areas flooded in the past which may be subject to future flooding. Note: textures for alluvium are not shown

sw — **Swamp deposits and wetlands (Holocene)**--Muck, peat, silt, and sand underlying poorly drained areas. Generally 5 to 10 ft (1.5-3 m) thick but may be as much as 30 ft (9.1m) thick

GLACIAL LAKE AND GLACIAL STREAM DEPOSITS (Pleistocene)

Glacial lake and glacial stream deposits were laid down during deglaciation of the Milford quadrangle chiefly at or near the margin of the continental ice sheet as it retreated from the region. Material for these sediments was derived mostly from within the ice sheet, with a minor amount derived from meltwater erosion of the area adjacent in front of the stagnant-ice margin. These deposits are subdivided into morphosequences (Koteff and Pessl, 1981) on the basis of their position, altitude, and textural composition, and their location represents a particular chronologic position of the stagnant-ice margin during general ice retreat. Most of the units in the Parker Mountain quadrangle were deposited either as eskers within and/or near the margin, or as deltas into ponded water bodies. The glacial stream or fluvial portion of the deltas is represented by topset beds which overlie foreset beds that were deposited below the lake level

br_2 / br_1 — **Big River area deposits (Pleistocene)**--Sand and gravel with minor silt deposited near the ice margin at the western edge of the quadrangle. Unit br_1 is the oldest. As much as 30 ft (10 m) thick

sc_2 / sc_1 — **Shackford Corners deposits (Pleistocene)**--Sand and gravel with minor silt deposited as ponded bodies in two stages; Unit Sc_1 is the oldest. Unit Sc_1 was laid down in an area confined by ice that still occupied the Big River Valley, and the threshold was over the ice. Unit Sc_2 was laid down at the ice margin into a ponded water body controlled by a bedrock threshold about 0.06 mi (I km) south of Shackford Corners

bre_2 / bre_1 — **Big River esker and fan deposits (Pleistocene)**--Sand and gravel with minor silt; deposited in a tube at the bottom of the ice sheet or just beyond the ice margin. As much as 60 ft (18 m) thick. Unit bre_1 is the oldest. It is possible that parts of unit bre_1 may be related in time unit bh_4. Much of both the Big River esker and subaqueous fan units were covered later by lake-bottom sediments as ice still blocked the Big River drainage to the west

bh_4 / bh_3 / bh_2 / bh_1 — **Blue Hill area deposits (Pleistocene)**--Sand and gravel with minor silt; as much as 100 ft (30 m) thick; unit bh_1 is the oldest. All four units were deposited at the ice margin into ponded water controlled by a bedrock spillway at about 690 ft altitude.

lb **Lake-bottom deposits (Pleistocene)**--Mostly sand, with minor silt, and possibly minor clay. Early lake-bottom sediments drape much of the Big River esker and fan deposits

at^{t} **Till (Pleistocene)**--Nonsorted to poorly sorted mixture of clay, silt, sand, pebbles, cobbles. and boulders; dominant grain size is silt to small pebbles; locally contains small irregular masses of sand and gravel. Deposited directly by the ice sheet. Nearly all of the surface till was deposited during the last glaciation (Wisconsinan) that overran the area. Drumlins generally are underlain by older Illinoian till, which is siltier and generally contains smaller and fewer boulders than the Wisconsinan till. ⁂ Indicates localities of older till exposures. Thickness of the surface till (Wisconsinan) generally less than 15 ft (4.6 m); thickness in the drumlins is as much as 150 ft (46m). Ablation till (unit at), which has a matrix of very little silt or clay, occurs only at the northern shore of Bow Lake. This material appears to have been derived during erosion of nearby till deposits by meltwater and washed onto a stagnant block of ice that occupied the Bow Lake basin. After melting of the ice block, the ablation till was let down.

af **Artificial fill**--Earth-fill material that was derived from surficial deposits and/or bedrock in made land. Many small bodies not shown on the map;

Bedrock exposures- Shaded pattern indicates areas of abundant exposures and areas where surficial cover is thin (generally less than 10 ft [3 m] thick)

REFERENCES

Koteff, Carl, and Pessl, Fred, Jr., 1981, Systematic ice retreat in New England: U. S. Geological Survey Professional Paper 1179, 20 p

Mapped in cooperation of the National Geologic Map Program; STATEMAP program

EXPLANATION OF MAP UNITS

Contact

Retreatal position of the stagnant-ice margin--Approximate position of ice during deposition of designated morphosequence

Meltwater spillway--Controlled deposition of meltwater deposits. Underlain chiefly by bedrock. Letter symbol indicates map unit controlled by spillway

Meltwater channel--Erosional features developed mostly in till. In places, acted as the debris-laden meltwater feeder for nearby morphosequences

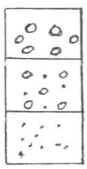
Glacial grooves and striations--Indicates direction of ice movement. Observation is at tip of arrow. Number is in degrees east or south

Long axis of drumlin--Generally parallel to inferred direction of ice movement

Older till locality--Highly oxidized, probably deposited during the Illinoian glaciation

MATERIALS OBSERVATIONS

Texture of stratified deposits--Indicated to a depth of at least 5 ft (1.5 m).



Gravel

Mixed sand and gravel

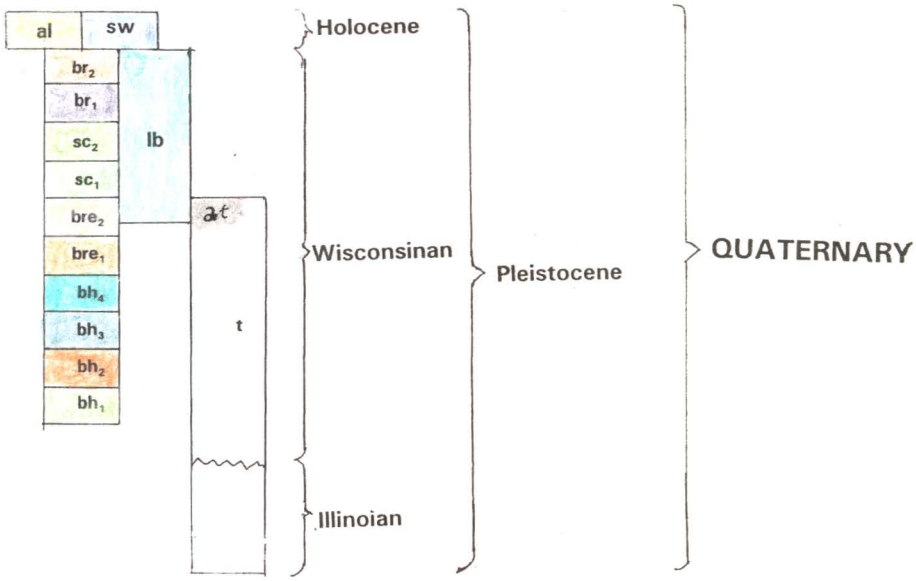
Sand with minor silt

Note: Textures for alluvium are not shown

Gravel or sand pit--Letter symbols indicate predominant texture of exposed materials: s, sand; p, pebble; c, cobble; b, boulder, in decreasing order of abundance: g, gravel; for example, pcg means pebble-cobble gravel, that contains interlayers of sand. Abandoned gravel or sand pit

Note: Well data are provided with this map as a separate overlay, which is also available in digitized format from the N.H. Department of Environmental Services, N. H. Geological Survey, Concord, New Hampshire

CORRELATION OF MAP UNITS



SURFICIAL GEOLOGY OF THE PARKER MOUNTAIN QUADRANGLE

Locality A. Wisconsinan-Illinoian Drumlin Till Exposure

The yellowish-brown upper layer has a very sandy matrix that contains scatterd angular boulders and cobbles; it probably was deposited on and against the lower gray till unit and appears to have been overridden later by ice. Although not well shown here, the sandy unit grades upward into the more typical surface (Wisconsinan) till common to the New England region. Because of its sheared nature, such sediments have been referred to as "deformation till". The lower till that underlies the sandy unit is very compact and gray and is probably Illinoian, but it does not exhibit a brown oxidation horizon (as much as 30 ft (10 m) thick) that has been observed in most southern New England drumlin exposures. It is probable the sandy and sheared unit represents an original Illinoian water-laid deposit on the lower till that prevented oxidation (Sangamon age?) of the till at this locality. This relationship has been well observed at only one other locality in New Hampshire[1], Nash Stream in the northern part of the state.

[1]Koteff, Carl, and Pessl, Fred, Jr., 1985, Correlations with adjacent New England and Quebec, *in* Borns, H.W., Jr., LaSalle, Pierre, and Thompson, W.B., eds., Late Pleistocene history of northeastern New England and adjacent Quebec: Geological Society of America Special Paper, 197

also Lower Peabody Valley, White Mtns (?)
Fowler, B.K., 1999
Pre-late Wisconsinan age for part of the glaciolacustrine Stratigraphy, lower Peabody Valley, Northern White Mountains, Gorham, New Hampshire.
Geographie physique et Quaternaire v. 53, n. 1, p. 109-116

Locality B. Exposure of a subaqueous fan in mapped unit bre_2. The arched-shaped sand and gravel beds are indicative of deposits that had only just emerged from an esker that was still entirely in the ice. The materials in the esker tube were under much hydrolic pressure, and entered a lake that was about 100 ft (30 m) deep. None of the sediments of the unit bre_2 ever reached lake level.