



Description of Map Units

Holocene Deposits

- af** Artificial Fill. Artificially-emplaced material along road beds, embankments and in developed areas. Material varies from natural sand, gravel, or till to various artificial waste materials. Thickness varies.
- Ha** Alluvium. Silt, sand, and gravel deposited by modern streams. Includes stream channel, bar, and floodplain deposits. Wetland deposits are common within these areas and are not distinguished. Thickness in tributary valleys is typically less than 3 meters, although the depth may be much greater in the valleys of the larger streams.
- Hat** Alluvial Terrace Deposits. Silt, sand, and gravel deposited on terraces above the modern floodplains of streams. They are composed of a variety of channel, bar, and floodplain deposits. Generally less than 5 meters thick.
- Haf** Alluvial Fan Deposits. Boulder, pebble, and cobble gravel and pebbly sand deposited at sites where steep, stream gradients are sharply reduced. Common at the mouths of steep tributaries where they meet the main stream. Generally less than 5 meters thick.
- Hta** Talus. Fans or aprons of fallen blocks of angular rock at the bases of bedrock cliffs. May contain colluvial (slope-wash) deposits as well. Of variable thickness.
- Hw** Wetland Deposits. Accumulations of organic matter and/or clastic sediment in low-lying areas. Includes a wide variety of wetland types. Commonly overlying other deposits such as alluvium, lacustrine sediment, or till. Only larger deposits are shown.

Pleistocene Deposits

- Paf** Older Alluvial Fan Deposits. Remnants of late Pleistocene alluvial fans can sometimes be found at sites where alluvial material built out onto glacial lake deposits. Subsequent downcutting by the main stream and tributaries may leave the late Pleistocene alluvial fan deposit stranded at the back edge of a lake-bottom terrace.
- Pi** Lacustrine Deposits, Undifferentiated. Coarse- to fine-grained sediment deposited in a proglacial lake.
- Plc** Lacustrine Deposits, Coarse-grained. Well-sorted sand, pebbly sand and/or sandy gravel deposited in shoreline, shallow water, or lake bottom environments of a glacial lake.
- Pif** Lacustrine Deposits, Fine-grained. Clay, silt, and very fine to fine sand deposited in deeper waters. Commonly laminated. Pifv (varved) where clear indications of annual layers are present. Deposited in distal lake bottom environment of a glacial lake.
- Pldw** Lacustrine Deposits, Delta. Well-sorted sand and gravel deposited in glacial Lake Winoski at the mouth of a tributary stream. Includes topset and foreset beds. Delta remnants are found on the slopes west of the mouth of Hancock Brook and on two small streams in the southeast corner of the quadrangle.
- Po** Outwash Deposits. Glacial meltwater deposits composed of stratified sand and gravel deposited in streams in locations out beyond the glacial margin. Includes relatively narrow valley train deposits in confined mountain valleys and broad sheets of outwash deposited in the broad lowlands.
- Pi** Ice-contact Deposits, Undifferentiated. Unsorted to poorly-sorted stratified sand, gravel, and silt deposited in contact with glacial ice. Surface may contain scattered kettle holes formed by melting of buried ice blocks or be a highly complex kame and kettle.
- Pie** Esker Deposits. Elongate ridge of ice-contact stratified sand and gravel deposited by glacial meltwater streams in tunnels within or beneath the glacial ice. A short esker is located on the east side of Russ Pond Brook in the northeast corner of the map.
- Pt** Till. Very dense to moderately dense, unsorted to very poorly sorted material deposited directly from glacial ice. Contains a wide range of grain sizes, from clay or silt up to large boulders. The till matrix texture ranges from fine sand to clayey silt. Boulders are common throughout the study area, but in contrast to the Woodbury quadrangle to the east there are relatively few large (> 1 meter) surface boulders. Thickness is highly variable, from less than 1 meter to greater than 30 meters. Over large portions of this study area the till deposits are very thin (commonly less than one meter). Areas at the bases of steep slopes may include colluvium and talus deposits.

Quaternary Deposits

- Qg** Sand and Gravel, Undifferentiated. Encompasses a wide variety of coarse-grained surficial materials in cases where information is inadequate to determine age and environment of deposition. The deposit in the east-central part of the study area near the mouth of Hardwood Brook may be glacial outwash.

Older Deposits

- rk** Area of extensive bedrock exposures.

- Surficial Field Station
- Bedrock Point
- Bedrock Outcrop
- Shallow Bedrock
- ↑ Glacial Striation
- Wells
- ⊕ Borings
- × Sand and Gravel Pit
- + Cross Section Point
- Contacts (All Are Approximate)
- Meltwater Channel
- Cross Section Line
- Glacial Lake Winoski
- Quadrangle
- Town Boundaries
- Summits (feet)
- Roads, Major
- Roads, Minor
- Water Bodies
- Streams
- Index Contours (100 foot)
- Contours (20 foot)

Definitions

Abandoned Channel. A segment of stream channel that is still exposed at the Earth's surface that has been cut off from the remainder of the stream. Includes oxbows and other abandoned channel segments on modern floodplains as well as older features preserved on alluvial terraces.

Crag and Tail Landform. A streamlined hill or ridge, consisting of a knob of resistant bedrock with an elongate body of more erodible bedrock, till, or both, on its lee side.

Meltwater Channel. A channel cut by glacial meltwater flowing under, along, or in front of an ice margin. Lateral ice-marginal channels commonly run across a hillside, beginning and end abruptly, with limited modern-day drainage areas. These channels commonly occur in down-stepping sets on moderate to gentle till slopes and probably formed as the ice-margin retreated progressively down slope.

Coordinate System: Vermont State Plane, FIPS 4400, NAD 83.
Geographic coordinates shown at topo corners are in NAD 83.
Grid overlay on map is UTM, Zone 18N, NAD83.
Base map data from the Vermont Center for Geographic Information (VCGI).
Contours and shaded relief layer derived from 0.7 m lidar DEM, downloaded as a 5.0 m DEM from VCGI.
Digital cartography by George Springston, Norwich University, Dept. Earth and Environmental Sciences, December, 2023.

Additional bedrock outcrops are derived from the Vermont Geological Survey layer "Bedrock Outcrops" hosted by VCGI.

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Surficial Geologic Map of the Eastern Part of the Mount Worcester 7 1/2 Minute Quadrangle, Vermont

by
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