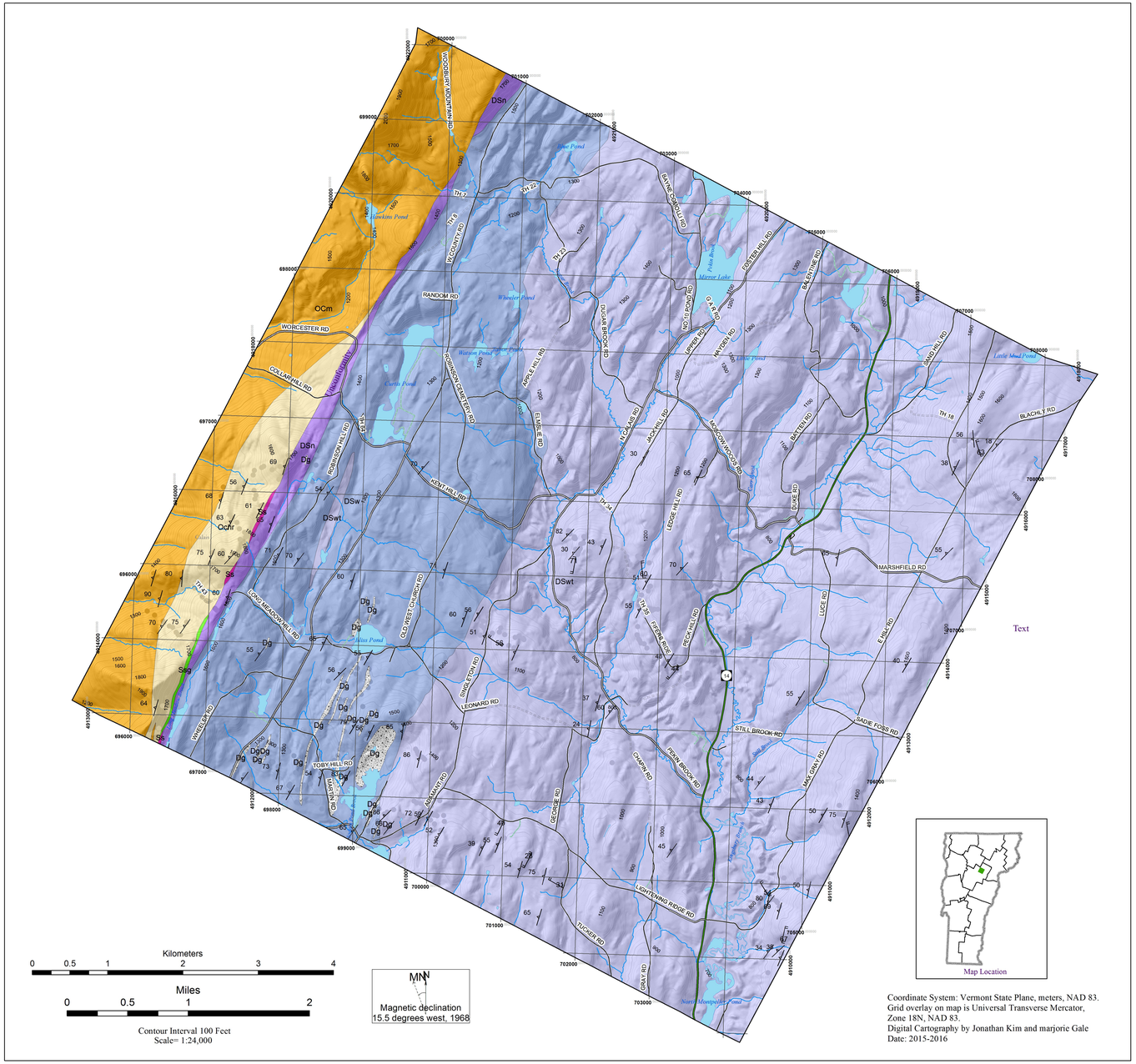


Bedock Geologic Map of Calais, Vermont

Map References: Kim and others 2003, 2011, 2015; Ratcliffe and others, 2011

Vermont Geological Survey Open File Report VG2016-1, Plate 1

LEGEND

Description of Map Units

Dg — Biotite granite of the New Hampshire Plutonic Suite. Medium to coarse grained, light to medium gray, granite composed of potassium feldspar, plagioclase feldspar, quartz and biotite +/- muscovite, garnet.

DSw — Waits River Formation (Lower Devonian and Upper Silurian) - Thin - bedded (0.5'-3'), interlayered rusty-weathering, locally graphitic, gray, chlorite - sericite phyllite +/- pyrite with cross-foliation biotite and punky brown weathering, sandy marble and massive gray calcareous quartzite.

DSwt — Waits River Formation (Lower Devonian and Upper Silurian) - Thick - bedded (2'-30'), interlayered rusty-weathering, locally graphitic, gray, chlorite - sericite phyllite +/- garnet, pyrite with cross-foliation biotite and punky brown weathering, sandy marble and massive gray calcareous quartzite.

DSn — Northfield Formation (Lower Devonian and Upper Silurian) - Rusty-weathering, gray to black, thinly foliated chlorite, sercite phyllite.

Ss — Shaw Mountain Formation (Upper to Lower Silurian) - Tan to light brownn weathering, calcareous, light gray quartzite, phyllitic quartzite, and quartz pebble conglomerate.

Ssg — Shaw Mountain Formation, Greenstone member

---------- UNCONFORMITY ----------

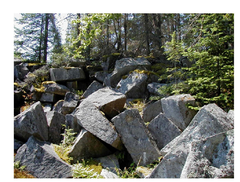
Ochr — Cram Hill Formation (Ordovician) - Rusty weathering, dark gray quartz-sericite-chlorite phyllite and phyllitic granofels.

OCm — Moretown Formation (Lower Ordovician to Cambrian) - Grayish green, quartz-chlorite-sericite phyllitic granofels commonly with a "pinstriped" tectonic fabric; phyllitic and more massive varieties are commonly interlayered.

Map Symbols

Strike and dip of dominant foliation (n)

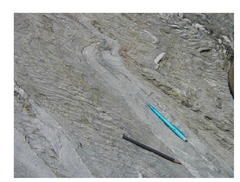
Strike and dip of crenulation cleavage


Granite Old Quarry Blocks

Granite Ridge

Waits River Formation

Shaw Mountain Formation


Moretown Formation

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Ratcliffe, NM, Stanley, RS, Gale, MH, Thompson, PJ, and Walsh, GJ, 2011, Bedrock Geologic Map of Vermont: USGS Scientific Investigations Series Map 3184, 3 sheets, scale 1:100,000.

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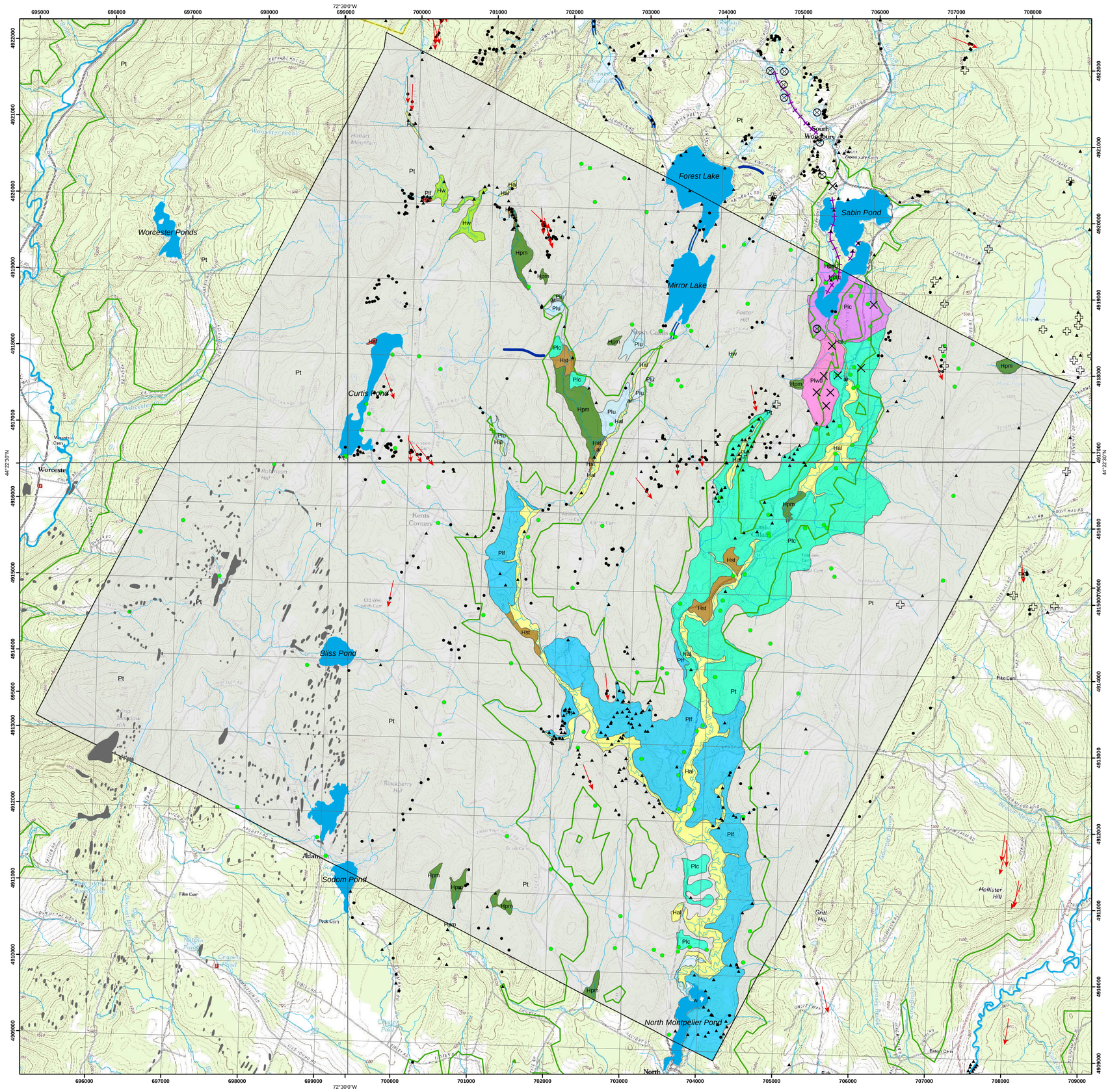

DESCRIPTION OF MAP UNITS

Holocene Deposits

ar — Artificial Fill. Artificially-emplaced earth along road beds, embankments and in low-lying areas.

Hal — Alluvium. Silt, sand, and gravel deposited by modern streams. Deposits include stream channel and bar deposits and finer-grained floodplain deposits. Wetland deposits are common within these areas and are not distinguished. Thickness in the tributaries is typically less than 3 meters, although the depth may be much greater in the valleys of the larger streams.

Hw — Wetland Deposits. Accumulations of clastic sediment and/or organic matter. Commonly overlaying other sediments such as alluvium, lacustrine deposits, or till. Only a few of the larger deposits are shown.

Hpm — Wetland Deposits, Peat or Muck. Thick accumulation of organic matter with minor clastic sediment. Commonly overlaying other sediments such as alluvium, lacustrine deposits, or till. Thickness of organic horizon ranges from 0.3 meter to greater than one meter.

Haf — Alluvial Fan Deposits. Boulder, pebble, and cobble gravel and pebbly sand deposited at the mouths of tributaries.

Hst — Stream Terrace Deposits. Silt, sand, pebble, cobble, and boulder gravel deposited on terraces above the modern floodplains of streams. They represent former floodplains that have been dissected by younger streams.

Pleistocene Deposits

Plwd — Delta Deposits, glacial Lake Winooski. Coarse gravels and gravelly sand deposits, generally well-sorted, deposited an arm of glacial Lake Winooski in the valley of the Kingsbury Branch to the south of Sabin Pond. Most of the commercial sand and gravel operations appear to be sited on these deposits.

Plf — Lake Deposits, Fine-grained. Clay, silt, and very fine to fine sand deposited in deeper waters. Commonly varved. Deposited in lake bottom environments of glacial Lake Winooski or in higher-level glacial lakes of limited areal extent.

Plc — Lake Deposits, Coarse-grained. Well-sorted sand, pebbly sand and/or sandy gravel deposited in shoreline, shallow waters, or lake bottom environments of glacial Lake Winooski.

Plu — Lake Deposits, undifferentiated. Coarse- to fine-grained lake deposits. Deposits in arms of glacial Lake Winooski in the southern 1/3 of the study area.

Pic — Ice-contact Deposits. Unsorted to poorly-sorted sand, gravel, and silt deposited in contact with glacial ice.

Pt — Till. Dense to very dense, unsorted to very poorly sorted, fine-sand- to silt-matrix till. Surface boulders are common, with boulders of the local Woodbury Granite common in the eastern part of the town. Thickness of the till is highly variable, from less than 1 meter to greater than 10 meters, although the till is generally less than 3 meters thick over most of the upland portions of the study area.

- Field Site
- Bedrock Outcrop
- Glacial Striation
- Water Well
- Kettle Hole
- Granitic Glacial Boulder
- Sand or Gravel Pit
- Bedrock Quarry
- Projected Glacial Lake Winooski Shoreline
- Esker
- Meltwater Channel
- Spillway
- Study Area
- Quadrangle Boundaries
- Water Bodies

Scale 1:24,000

Miles: 0 1 2 3

Kilometers: 0 1 2 3 4 5

Contour Interval 20 feet

Magnetic declination
14.8 degrees west, 2015

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Surficial Geologic Map of Calais, Vermont

by
George E. Springston, Ethan J. Thomas,
and Jonathan J. Kim

2016

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Springston, G.E., Thomas, E.J., and Kim, J.J., 2014, Surficial geologic map of the northern 2/3 of the South Mountain quadrangle, Vermont: Vermont Geological Survey Open File Report 2014-2, Montpelier, 1 color plate, 1:24,000.

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Base map from U.S. Geological Survey.
Coordinate System: Vermont State Plane, meters, NAD 83.
Geographic coordinates shown at topo corners are in NAD 83.
Grid overlay on map is UTM, Zone 18N, NAD83.

Digital cartography by George Springston, August 16, 2016.
Research supported by the Vermont Geological Survey,
Dept. of Environmental Conservation, VT ANR.

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of Vermont.