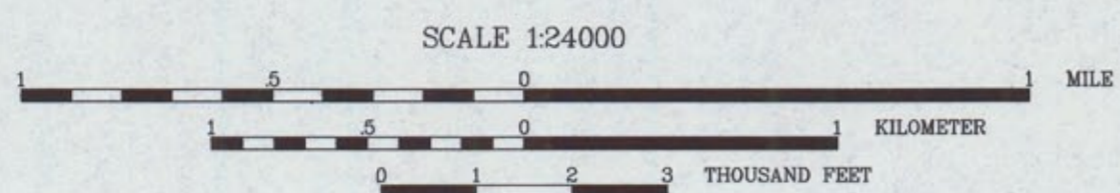




Description of Map Units

- Kd Lamprophyre and diabase dike
- Keb Epidioite breccia dike
- Kds Saussuritized lamprophyre dike
- Kdsy Syenitic dike
- Kdo Ouachitite breccia dike
- Dg DEVONIAN DIKES
Biotite-muscovite granodiorite
- DSnw UNDIFFERENTIATED SILURIAN TO DEVONIAN
NORTHFIELD AND WAITS RIVER FORMATIONS
Dark-gray garnetiferous biotite-quartz-muscovite phyllite
- DSnwc Gray quartzite and quartz-pebble conglomerate
- DSnwl Gray siliceous limestone
- Sbd SILURIAN BARNARD GNEISS
Metadiorite dike
- Sbbf Biotite metatrophdjemite gneiss
- Sbf Hornblende metatrophdjemite gneiss
- Sbm Layered metatrophdjemite with mafic schist and amphibolite
- Omwhg ORDOVICIAN MORETOWN FORMATION
Gray small-garnet biotite-quartz-muscovite phyllite, rare pods of tan dolomite
- Omwhb Dark-gray to black graphitic biotite-quartz-muscovite phyllite
- Omwhbq Dark blue-gray to black quartzite
- Omwha Light-green ankeritic amphibolite
- Omq Gray to tan feldspathic quartzite
- Omgq Gray garnetiferous chlorite-muscovite-biotite-quartz granofels to quartzite
- Omwhv Light-gray to gray garnet-chlorite-biotite-plagioclase-quartz granofels to conglomerate and biotite-plagioclase-quartz gneiss with cotecule
- Oml Laminated gray-green muscovite-chlorite-biotite-plagioclase-quartz schist to granofels
- Omgr Light-green phyllitic quartzite and silvery-green plagioclase-biotite-muscovite-chlorite-quartz phyllite
- Omgt Gray garnetiferous plagioclase-biotite-muscovite-quartz schist
- Ome Dark-green fine-grained amphibolite
- Omak Green ankeritic greenstone
- Omgrc Green small-pebble plagioclase-quartz conglomerate
- Omb Black graphitic biotite-quartz-muscovite phyllite with cotecule
- OZu UNDIFFERENTIATED LATE PROTEROZOIC TO ORDOVICIAN ULTRAMAFIC ROCKS
Serpentine and talc-carbonate schist
- Cts CAMBRIAN TYSON FORMATION
Gray to green-gray magnetite-chlorite-muscovite-quartz phyllite
- Ctbs Dark-gray carbonaceous sulfidic quartz phyllite
- Ctd White to beige dolostone
- Ctqc Quartz-rich phyllitic quartzite and gritty quartzite
- Ctc Feldspathic quartzite, quartz schist, and quartz-cobble and gneiss-cobble conglomerate
- Cpbs CAMBRIAN PLYMOUTH FORMATION
Dark gray carbonaceous quartz phyllite, and blue-gray dolostone at base
- Cpwd Light-gray to pink-gray medium-grained dolostone
- Cpfqd Ferruginous dolomitic quartzite and dolostone with pyrite and siderite
- Cpq Light-tan to gray vitreous quartzite
- Cpbd Dark blue-gray fine-grained dolostone
- Cpf Reddish brown to gray-brown dolomitic quartzite and ferruginous dolostone
- Cpfq Tan to gray pinstriped feldspathic biotite-muscovite quartzite and schistose quartzite
- Cpdb Blue-gray mottled dolostone breccia and conglomerate
- Cpd Medium- to dark-gray dolostone and thin dolostone conglomerate
- Cpdq Dark-gray dolomitic quartzite and carbonaceous dolostone, and pods of blue-gray dolostone
- Cob CAMBRIAN OTTAUQUECHEE FORMATION
Dark-gray to black sulfidic graphitic quartz-muscovite phyllite
- Coqb Dark blue-gray to black vitreous quartzite
- Coq Tan vitreous to sandy quartzite
- Coa Amphibolite and greenstone
- Cog Gray-green cross-biotite chlorite-muscovite-plagioclase-quartz schist
- Coga Green albitic chlorite-quartz-muscovite schist
- Cogp Gray-green cross-biotite chlorite-muscovite-plagioclase-quartz gneiss
- Cogc Gray-green cross-biotite chlorite-muscovite-plagioclase-quartz schist with cotecule
- Cogg Gray-green garnetiferous cross-biotite chlorite-muscovite-plagioclase-quartz schist
- Coc Carbonate-bearing schists: Gray muscovite-chlorite-quartz-carbonate schist, sulfidic quartz-muscovite schist to micaceous quartzite, dark-gray calcareous quartzite with green chromium-mica, white chromium-mica carbonate-bearing quartzite, blue-black quartz-muscovite-chlorite phyllite, and rare pods of brecciated black dolomite
- Csa CAMBRIAN STOWE FORMATION
Silvery-green biotite-chlorite-quartz-muscovite schist
- Csa Amphibolite and greenstone
- Cagt Silvery-green garnetiferous biotite-chlorite-quartz-muscovite schist
- CZph CAMBRIAN TO LATE PROTEROZOIC PINNEY HOLLOW FORMATION
Silvery-green magnetite-chlorite-quartz-muscovite + /-chloritoid schist
- CZpha Amphibolite and greenstone
- CZphb Dark-gray to black sulfidic carbonaceous quartz-muscovite schist
- CZphc Dark-gray chloritoid-quartz granofels
- CZh CAMBRIAN TO LATE PROTEROZOIC HOOSAC FORMATION
Dark gray to black quartz-feldspar schist, and gray albitic biotite-quartz granofels and schist
- Ymg MIDDLE PROTEROZOIC MOUNT HOLLY COMPLEX
Mylonitic biotite-muscovite-microcline-quartz gneiss, biotite-quartz-plagioclase gneiss, and granitic gneiss
- Ybg Biotite-quartz-plagioclase gneiss
- Ygg Biotite granite gneiss
- Yfg Felsic magnetite gneiss

Topography from Plymouth, VT quadrangle (1966 edition)
Contour interval 20 feet
Map projection is polyconic
Digital map units in State Plane Coordinate System
National Geodetic Horizontal Datum of 1927
Roads from Vermont Center for Geographic Information, Inc.



Approximate Mean Declination
14.5° West, 1966

Geology mapped by Ratcliffe and Norman L. Hatch
in 1990, Ratcliffe in 1991, and Ratcliffe and Walsh
in 1993, assisted by W. Lansing Taylor in 1993.
Digitized by Thomas Merrifield.
Data compiled from Walsh and Ratcliffe (1994).

Digital Bedrock Geologic Map of the
Plymouth Quadrangle, Vermont

By

G.J. Walsh¹ and N.M. Ratcliffe¹

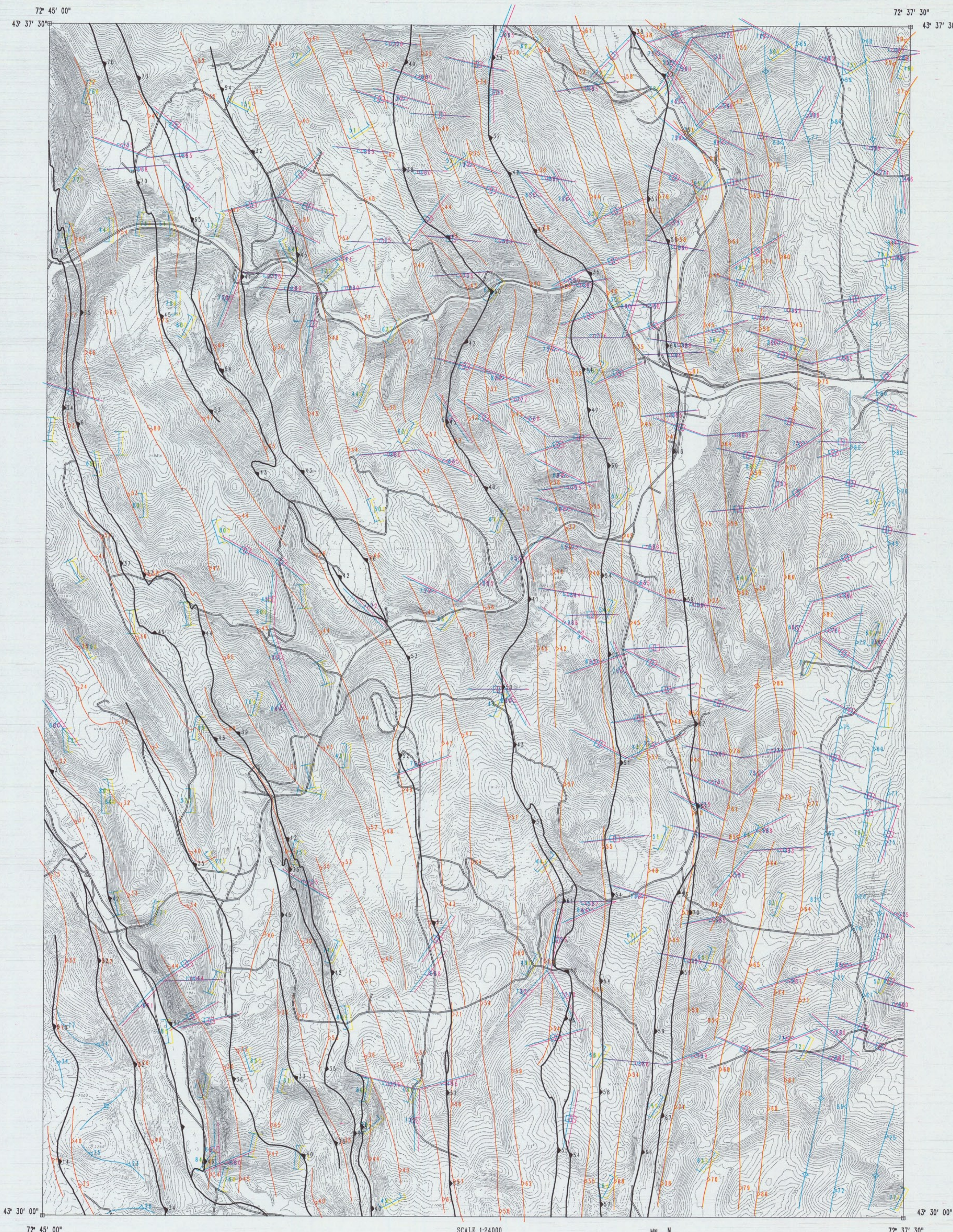
1994

Explanation of Map Symbols

- Contacts
- Outcrops (areas of exposed bedrock examined in this study)
- |— Thrust fault, teeth on upper plate

AFFILIATIONS:
¹U.S. Geological Survey
Reston, Virginia 22092
²Vermont Agency of Natural Resources,
Vermont Geological Survey,
Office of Information Management Services,
Waterbury, Vermont 05671

This report is preliminary and has not been reviewed for
conformity with U.S. Geological Survey editorial standards
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trade names is for descriptive purposes only and does not
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Explanation of Map Symbols

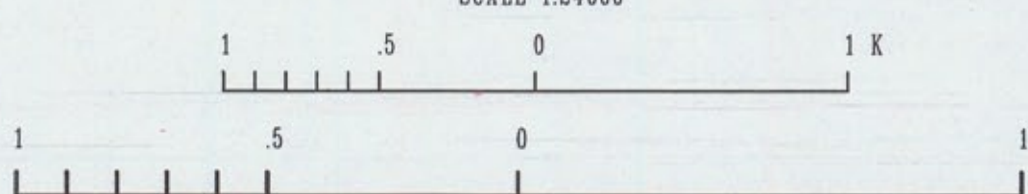
- Schistosity**
 - Strike and dip of inclined schistosity on interpretive form-lines
 - Strike and dip of vertical schistosity on interpretive form-lines
- Gneissosity**
 - Strike and dip of inclined gneissosity on interpretive form-lines
 - Strike and dip of vertical gneissosity on interpretive form-lines
- Brittle Features**
 - Relative vertical displacement of brittle fault, U = up and D = down
 - Strike and dip of inclined brittle fault
 - Strike and dip of inclined joint
 - Strike and dip of vertical joint
- Cleavage**
 - Strike and dip of inclined cleavage
 - Strike and dip of vertical cleavage
- Thrust Faults**
 - Strike and dip of thrust fault

The maps in this report are a paper representation of the digital bedrock geologic information for the Plymouth 7.5-minute quadrangle located in Windsor and Rutland counties, Vermont. This report is the second of a series of cooperative U.S. Geological Survey (USGS) and Vermont Geological Survey (VGS) digital bedrock geologic maps of Vermont. Plates 1 and 2 were developed from a geographic information system (GIS) database and serve as a guide to the geologic information in this database (section B of this Open-File Report). The bedrock geology data were obtained from the bedrock geologic map of the Plymouth quadrangle (Walsh and Ratcliffe, 1994) and were digitally compiled on a personal computer system using PC-Arc/INFO version 3.4 D Plus by Environmental Systems Research Institute, Inc. The data shown on Plate 1 were exported to ARC/INFO version 6.1 where solid color fill patterns were generated, and thrust faults were drawn using a symbol from a linestyle (dashed line) from ALACARTE software (Fitzgibbon and Wentworth, 1991). The compilation procedures discussed in Walsh and others (1994) were used in the preparation of this report, with the exception of the topographic base. The topography was obtained from a photographic negative of contour lines from the 1966 edition of the U.S.G.S. 7.5-minute Plymouth quadrangle. The negative was scanned on a Tektronix series 4990 auto-vectorizing scanner, and the vectorized image was converted into a coverage in ARC/INFO version 6.1. The topography is superior to the DEM-modeled topography in Walsh and others (1994) because it more closely conforms to the original source and is therefore more accurate.

The maps in this publication are derivative products and are not complete geologic maps as appear in USGS Geologic Quadrangle maps, Miscellaneous Investigations Series maps, or other Open-File Report geologic maps. These standard maps contain more complete geologic information such as cross sections, detailed descriptions of map units, and complete structural information obtained of each outcrop. They may also contain detailed discussions of stratigraphy, structure, metamorphism, age of units, geochronology, tectonic interpretations, or other information unique to a particular geologic setting. This report was primarily designed to provide a database of the essential bedrock geologic information to users of Vermont's statewide geographic information system, with consideration to the planning, engineering, and other similar applications of a GIS. This product should not serve as the primary source for the complete geologic information for this area; the correct reference should be number 1 below:

1. Walsh, G.J., and Ratcliffe, N.M., 1994. Preliminary bedrock geologic map of the Plymouth quadrangle and eastern portion of the Killington Peak quadrangle, Windsor and Rutland counties, Vermont: U.S. Geological Survey Open-File Report 94-225, scale 1:24000.
2. Walsh, G.J., Ratcliffe, N.M., Dudley, J.B., and Merrifield, T., 1994. Digital bedrock geologic map of the Mount Holly and Ludlow quadrangles, Vermont: U.S. Geological Survey Open-File Report 94-228, scale 1:24000.
3. Fitzgibbon, T.T., and Wentworth, C.M., 1991. ALACARTE user interface: AML code and demonstration maps, Version 1.0: U.S. Geological Survey Open-File Report 91-587.

Topography from Plymouth, VT quadrangle (1966 edition)
Contour interval 20 feet
Map projection is polyconic
Digital map units in State Plane Coordinate System
National Geodetic Horizontal datum of 1927
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Geology mapped by Ratcliffe and Norman L. Hatch in 1950; Ratcliffe in 1991; and Ratcliffe and Walsh in 1993, assisted by W. Lonsing Taylor in 1993. Digitized by Thomas Merrifield. Data compiled from Walsh and Ratcliffe (1994).

Digital Bedrock Geologic Map of the Plymouth Quadrangle, Vermont

By
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