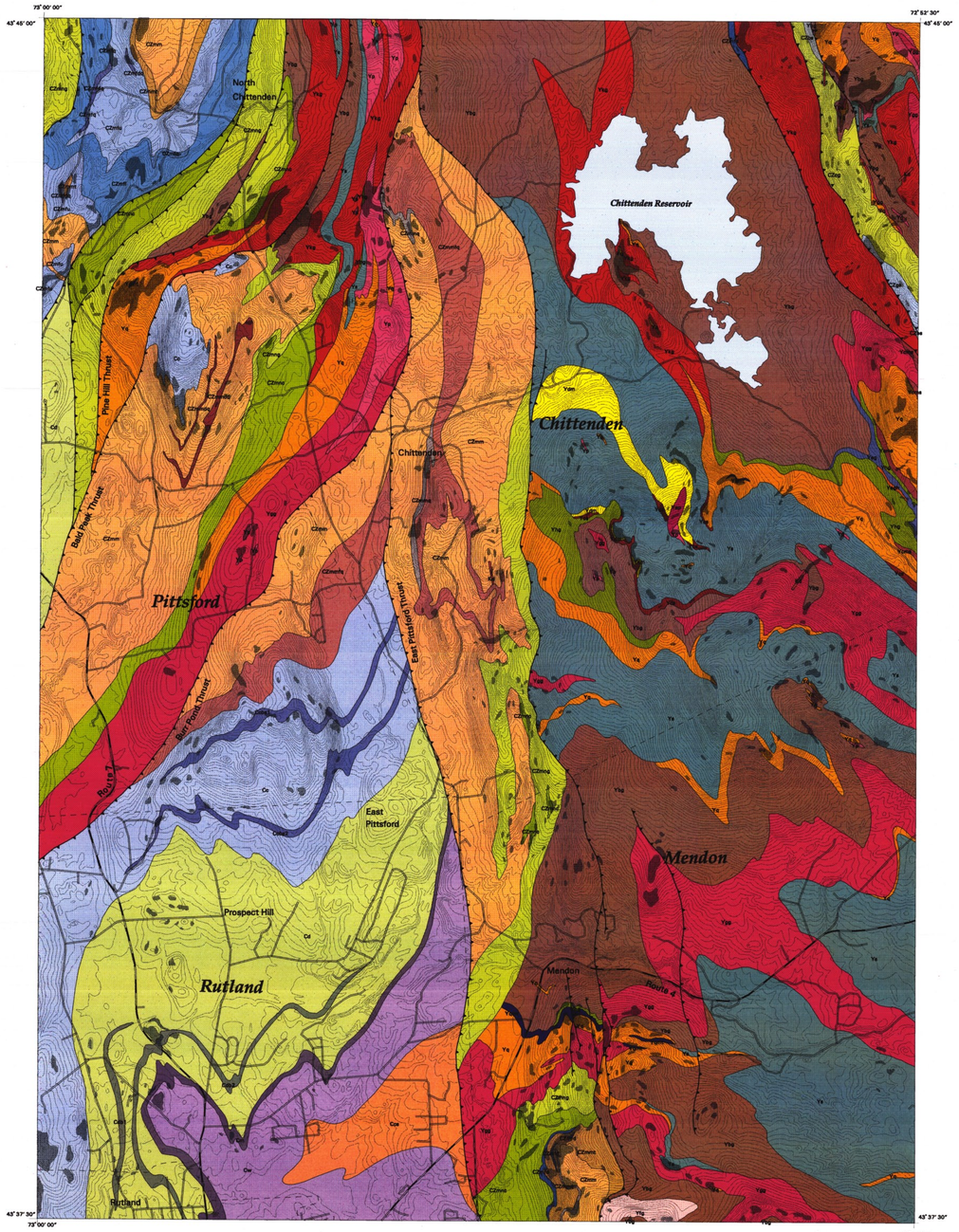
U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
STATE OF VERMONT, GEOLOGICAL SURVEY

OPEN-FILE REPORT 97-854A
Plate 1 of 1

GEOLOGIC UNITS AND OUTCROP MAP



Topography from the Chittenden quadrangle (1961 edition)
Contour Interval 20 feet
Digital map units in State Plane Coordinate System
National Geodetic Horizontal Datum of 1927
Roads and town boundaries from the Vermont Center for Geographic Information, Inc.

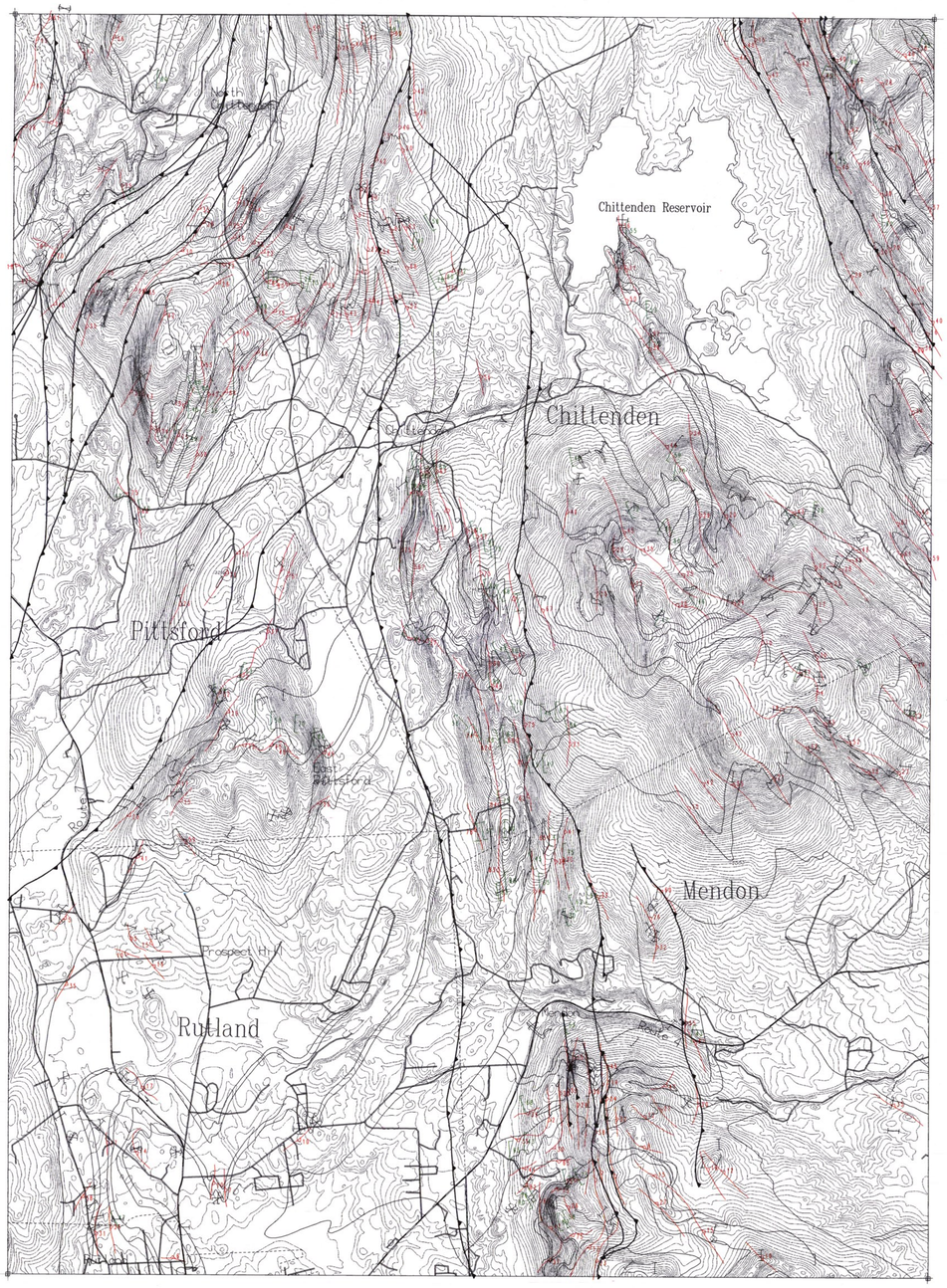
Geology mapped by Ratcliffe in 1995-1996.
Digitized by Laura Cadmus[1], and Vicki Keegan[1].

SCALE 1:24000
MILE
KILOMETER
THOUSAND FEET

MN N
Approximate Mean Declination
15°30' West, 1984

AFFILIATIONS:
[1]U.S. Geological Survey
Reston, Virginia 20192
[2]Vermont Agency of Natural Resources,
Vermont Geological Survey,
Waterbury, Vermont 05671

STRUCTURE MAP



Description of Map Units

(Not necessarily in stratigraphic order; minerals listed in order of increasing abundance)

Cretaceous dikes
- Kd — Mafic dike

Clarendon Springs Dolomite (Upper Cambrian)
- Ccs — Dolomite

Winooski Dolomite (Lower Cambrian)
- Cw — Dolomite

Monkton Quartzite (Lower Cambrian)
- Cm — Quartzite

Dunham Dolomite (Lower Cambrian)
- Cd — Light-gray- to cream-weathering, massive dolostone, sedimentary breccia
- Cdb2 — Dark-gray weathering dolostone
- Cdb1 — Dark-gray weathering dolostone

Cheshire Quartzite (Lower Cambrian)
- Cc — Vitreous quartzite
- Ccbs1 — Siliceous muscovite-quartz schist
- Ccbs2 — Siliceous muscovite-quartz schist

Mendon Formation–Mossalamoo Member (Late Precambrian and Lower Cambrian)
- CZmm — Siliceous phyllitic metasiltstone
- CZmmfq — Well-bedded to laminated feldspathic quartzite
- CZmmq — Flaggy feldspathic quartzite
- CZmmdq — Dolomitic quartzite
- CZmmt — Gray-brown to greenish-gray-weathering magnetite metasiltstone

Mendon Formation–Forestdale Member (Late Precambrian and Lower Cambrian)
- CZmfu — Orangish-brown- weathering, impure dolostone
- CZmfq — White-weathering quartz-feldspar grit
- CZmfdq — Cross-bedded quartzose dolostone
- CZmfl — Cream- to beige-weathering dolostone
- CZmfd — Beige weathering dolostone as lenses in green albitic granofel

Mendon Formation–Nickwackett Member (Late Precambrian and Lower Cambrian)
- CZmno — Quartz-feldspar grit and conglomerate
- CZmng — Chlorite muscovite-albite granofels commonly rich in magnetite

Undifferentiated Eastern Cover Sequence (Cambrian and Late Proterozoic)
- CZgs — Green lustrous schist
- CZbs — Black phyllite
- CZcg — Green chloritoid schist and granofels

Mount Holly Complex (Middle Proterozoic)
- Yp — Pegmatite
- Ykg — Microcline megacrystic gneiss and gneissic granite
- Yap — Aplite
- Ygg — Granitic gneiss
- Ys — Schist and granofels
- Ydm — Dolomite marble
- Ycs — Calc-silicate rocks
- Yq — Quartzite
- Yams — Magnetite schist and granofels
- Yqmt — Magnetite-quartzite breccia and magnetite-rich quartzite
- Yhg — Hornblende garnet amphibolite
- Yeg — Epidote gneiss
- Yegh — Fine-grained hornblende-diopside amphibolite
- Ybg — Biotite-quartz-plagioclase gneiss
- Yfg — Felsic gneiss

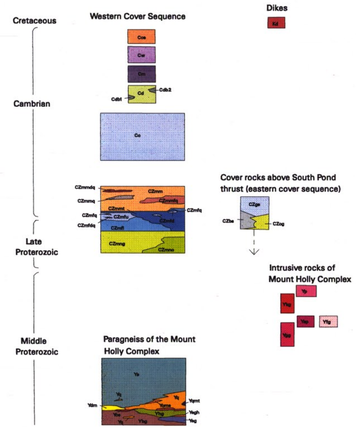
Explanation of Map Symbols

- Contacts
- Outcrops (areas of exposed bedrock examined in this study)
- Thrust fault, teeth on upper plate
- Inclined joint (Dip values not plotted, but in database)
- Vertical joint
- Inclined brittle fault (Dip values not plotted, but in database)

Foliation form-line (number and triangle shows point of observation)
- 70 — Strike and dip of inclined foliation
- Strike and dip of vertical foliation

Cleavage
- 73 — Strike and dip of inclined cleavage
- Strike and dip of vertical cleavage

Correlation of Map Units



Digital and Preliminary Bedrock Geologic Map of the Chittenden Quadrangle, Vermont

by

N.M. Ratcliffe[1]

1997

LOCATION OF MAP

This plate is a paper representation of the digital bedrock geologic information of the Chittenden quadrangle located in Rutland County, Vermont. All of the bedrock geology data were obtained from Ratcliffe (1997), and were digitally compiled on a personal computer system using PC ARC/INFO version 3.5.1 by Environmental Systems Research Institute, Inc.. The data shown on the geologic units and outcrop map were exported to ARC/INFO version 7.0 where solid color fill patterns were generated, and faults were drawn using symbols from a lineset (alcwrg.lin) 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 topography. The topography was obtained from a photographic negative separate of contour lines from the Chittenden (1961 edition) U.S.G.S. 7.5' topographic quadrangle. The negative was scanned on an Anatech Eagle 4080 ET raster-format scanner. The raster image was vectorized using GTX OSR Contour version 2.00 by GTX Corporation, Inc., and converted into an unattributed line coverage in ARC/INFO version 7.0.

This plate is a derivative product and should not serve as the primary source for the complete geologic information for this area; the correct reference should be number 2 below:

1. 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.

2. Ratcliffe, N.M., 1997, Preliminary bedrock geologic map of the Chittenden Quadrangle, Rutland County, Vermont: U.S. Geological Survey Open-File Report 97-703, scale 1:24000.

3. 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, and explanation of the bedrock geology database in the Vermont Geographic Information System: U.S. Geological Survey Open-File Report 94-229, scale 1:24000.

This plate is part A and the database is part B of this Open-File Report. Both parts are available from the Vermont Geological Survey, telephone (802) 241-3608.