



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

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1994



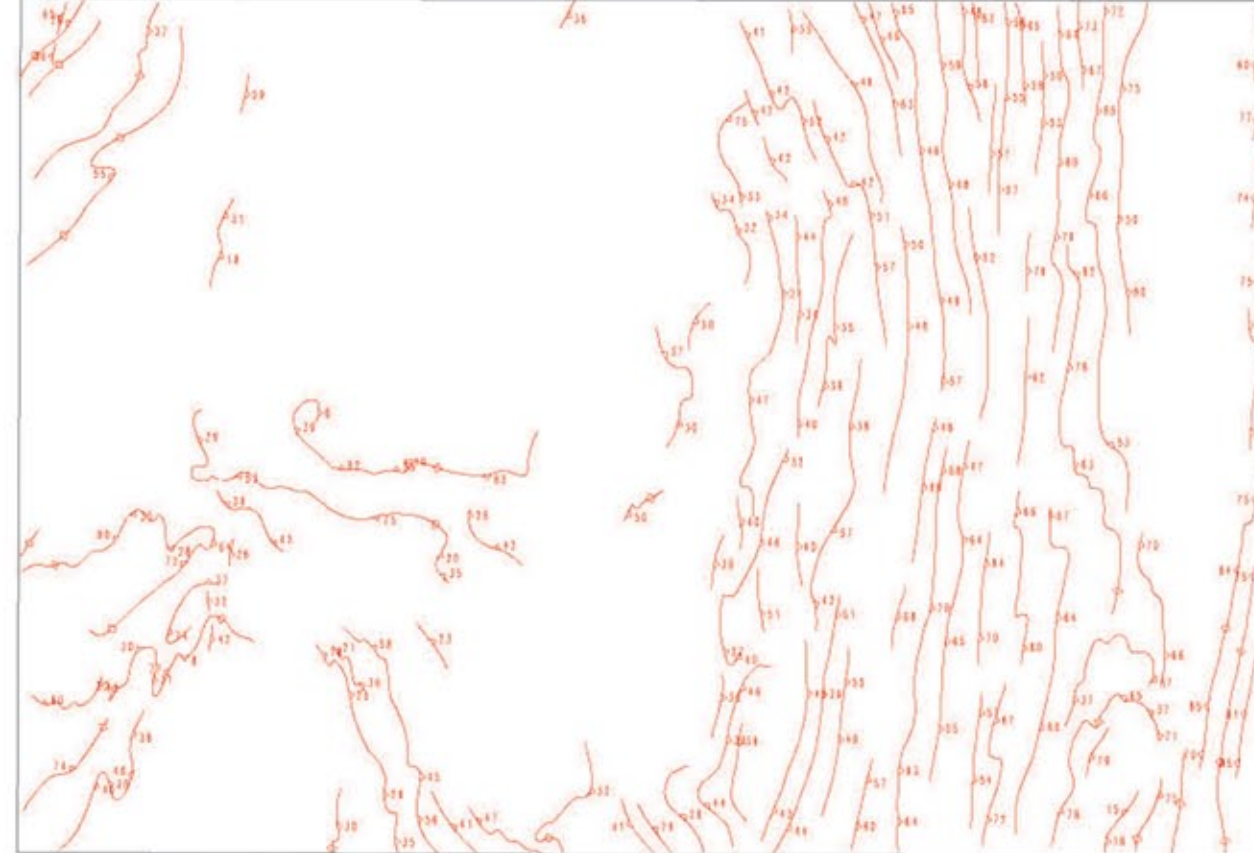
FIGURE 1.

The eight maps shown below illustrate the data layers in the bedrock geology database of the Vermont Geographic Information System. The bedrock geology of the Mount Holly and Ludlow quadrangles was mapped at a scale of 1:24,000 and is shown here at a scale of 1:100,000 – the scale of the new State bedrock geologic map. These maps show the level of detail that can be preserved in the transfer from large-scale to small-scale maps. The geologic units, thrust faults, outcrops, and joints and brittle faults represent complete datasets from the original geologic mapping. The schistosity, gneissosity, and cleavage layers represent derivative datasets developed by the authors of the geology from a subset of the total structural data. See Plates 1 and 2 for a complete explanation of map units and symbols.

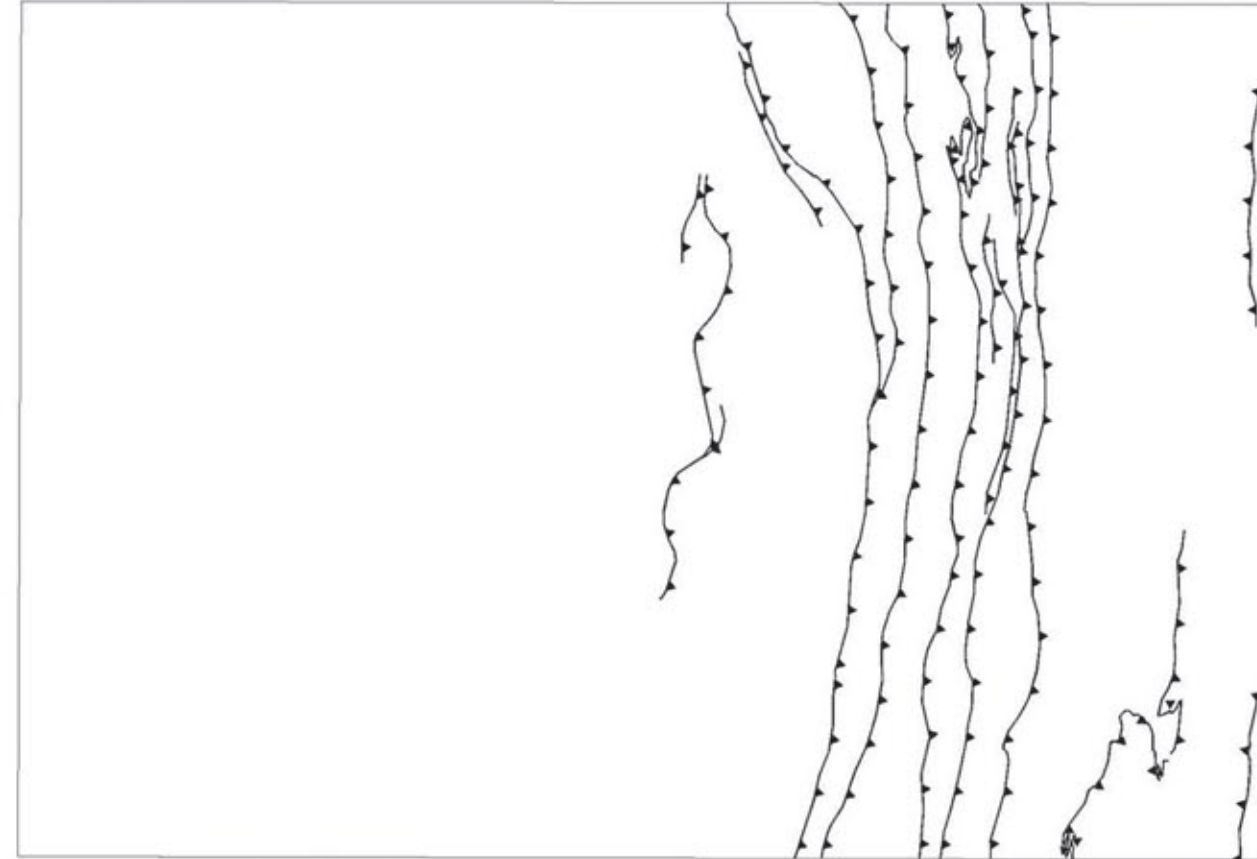
GEOLOGIC UNITS



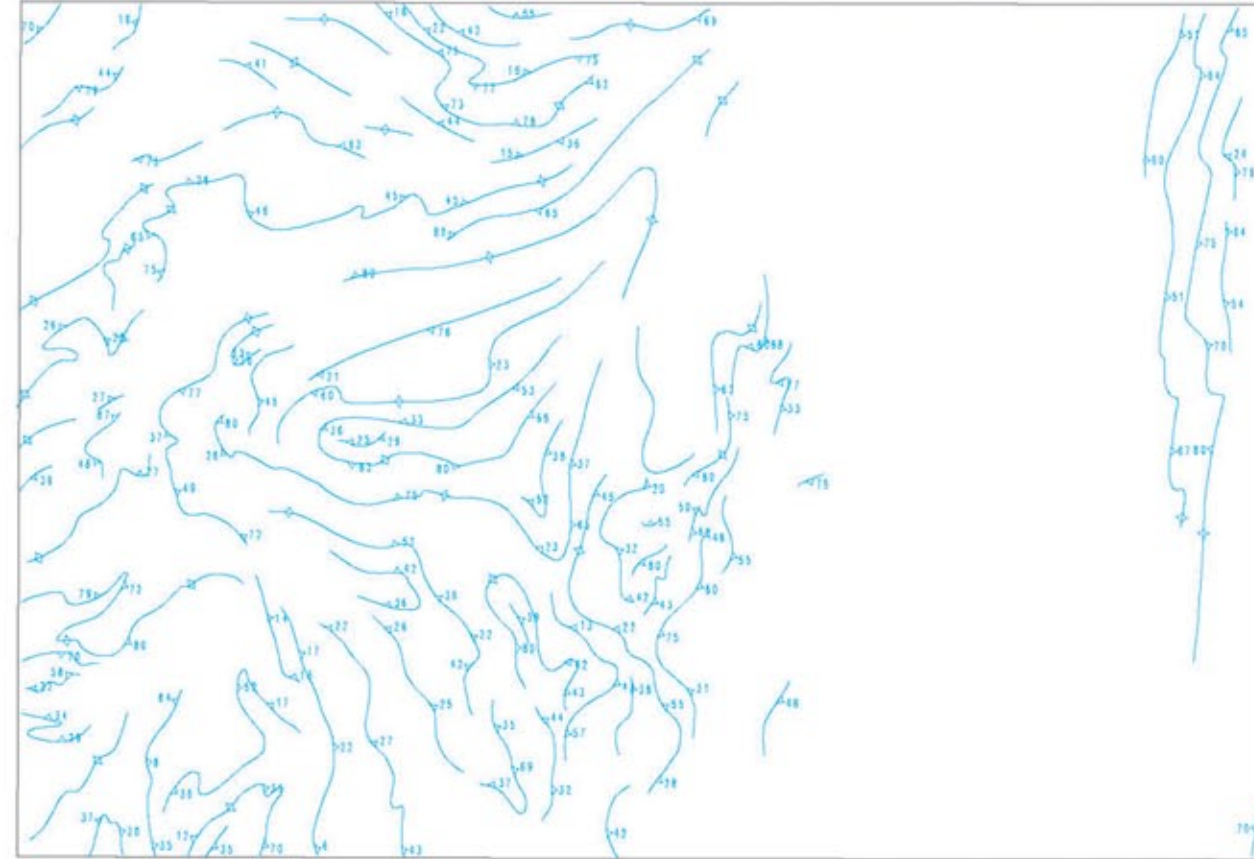
SCHISTOSITY FORM LINES



THRUST FAULTS



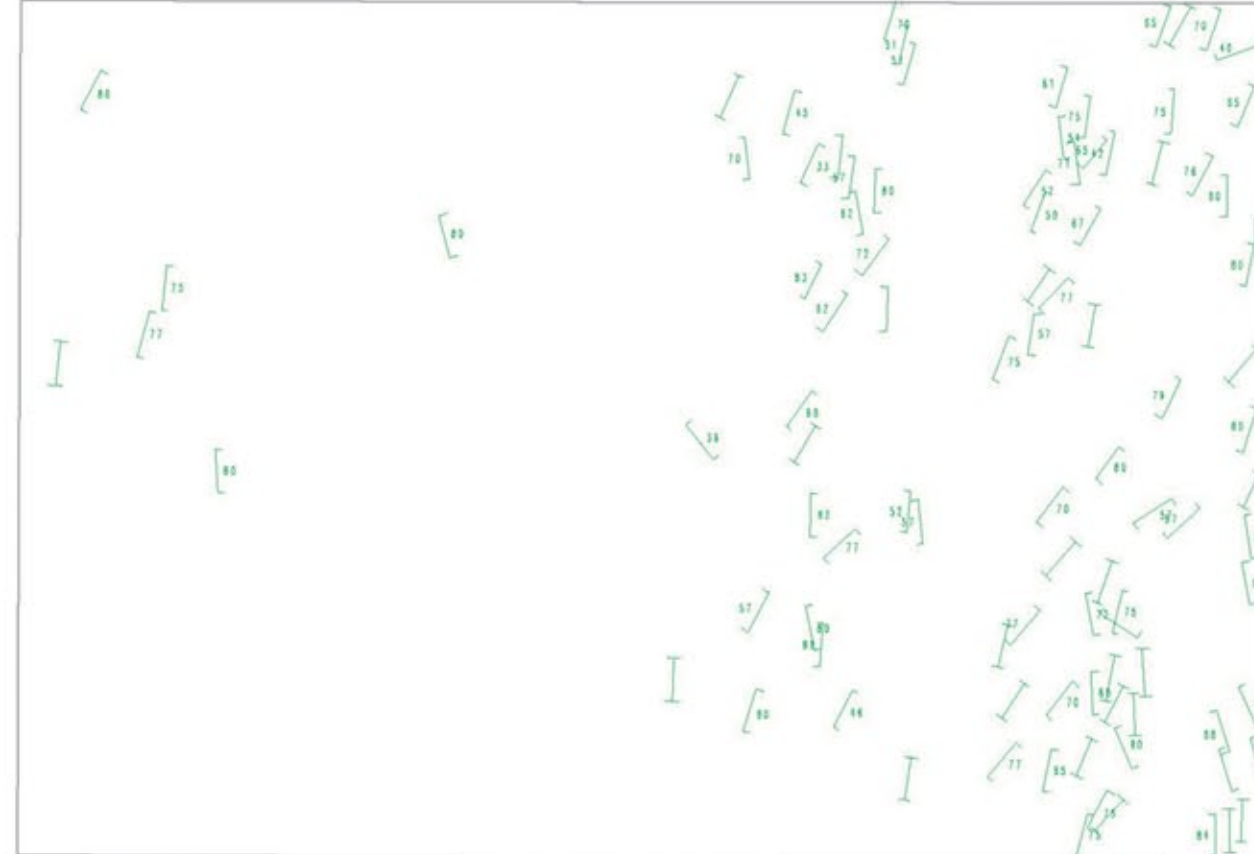
GNEISSOSITY FORM LINES



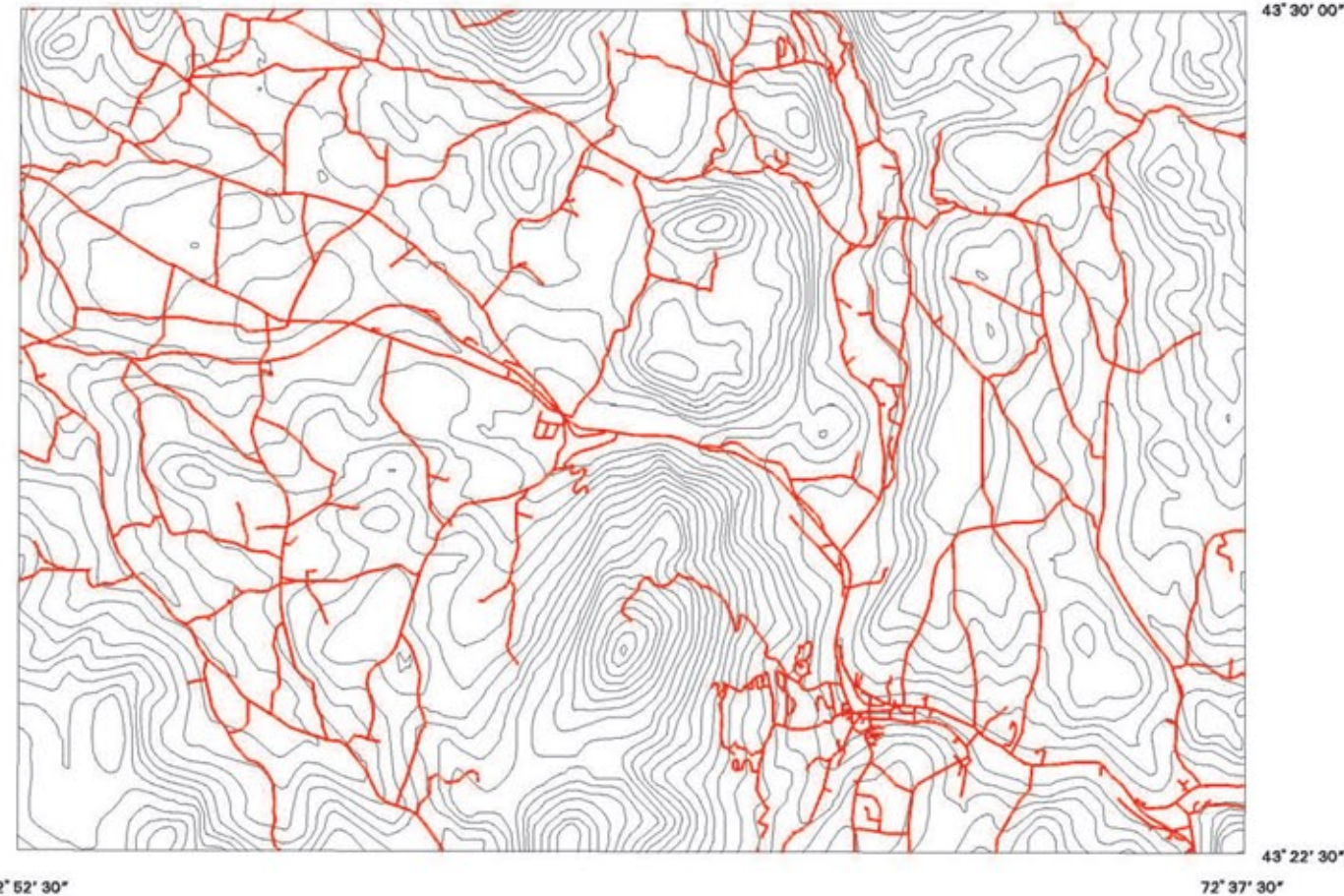
OUTCROPS



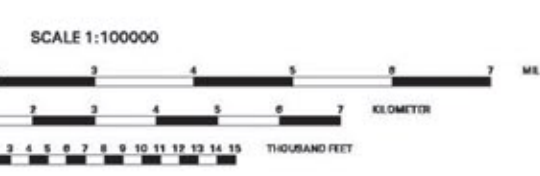
CLEAVAGE



BASE MAP (Topography and Roads)



JOINTS and BRITTLE FAULTS



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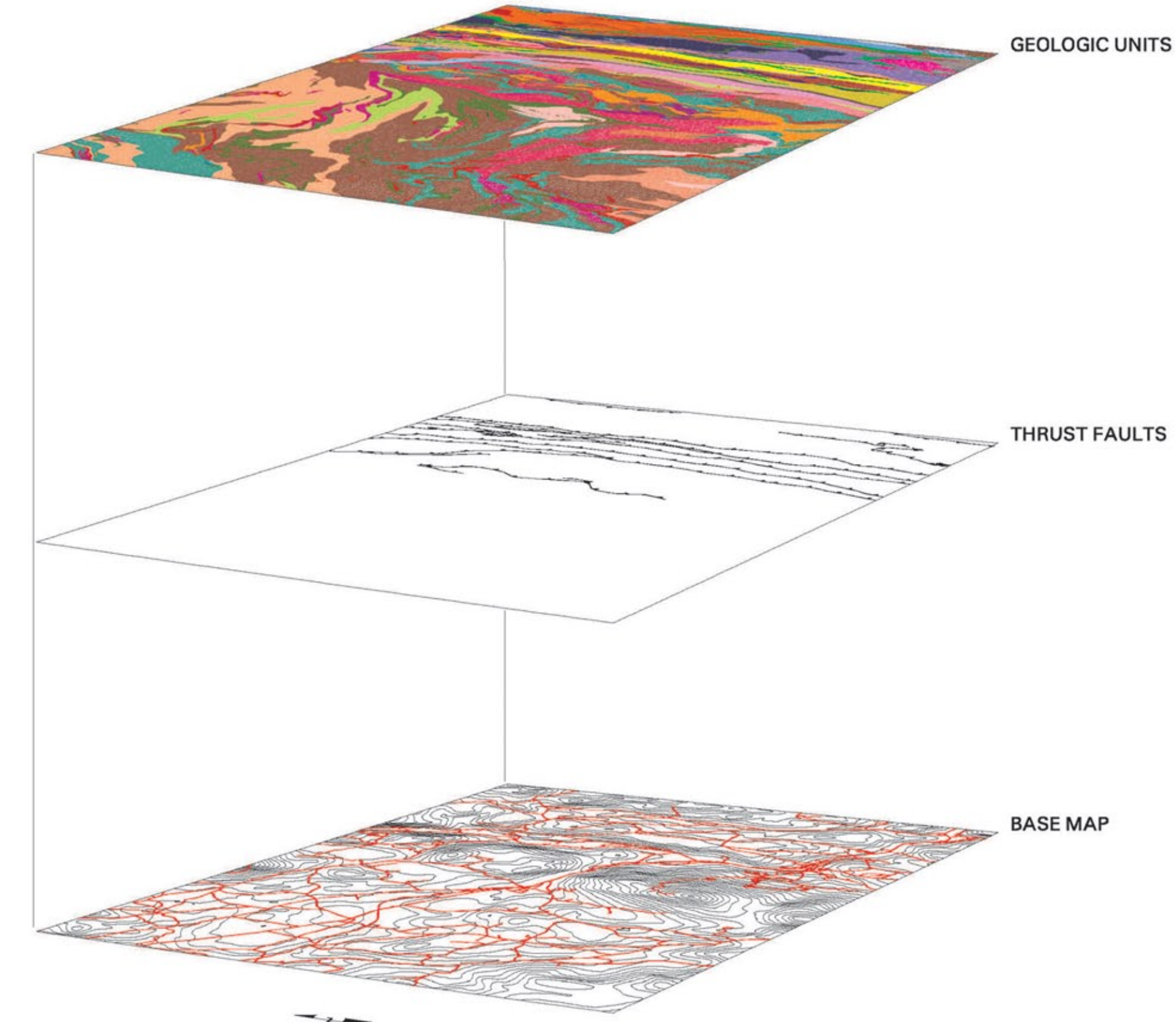
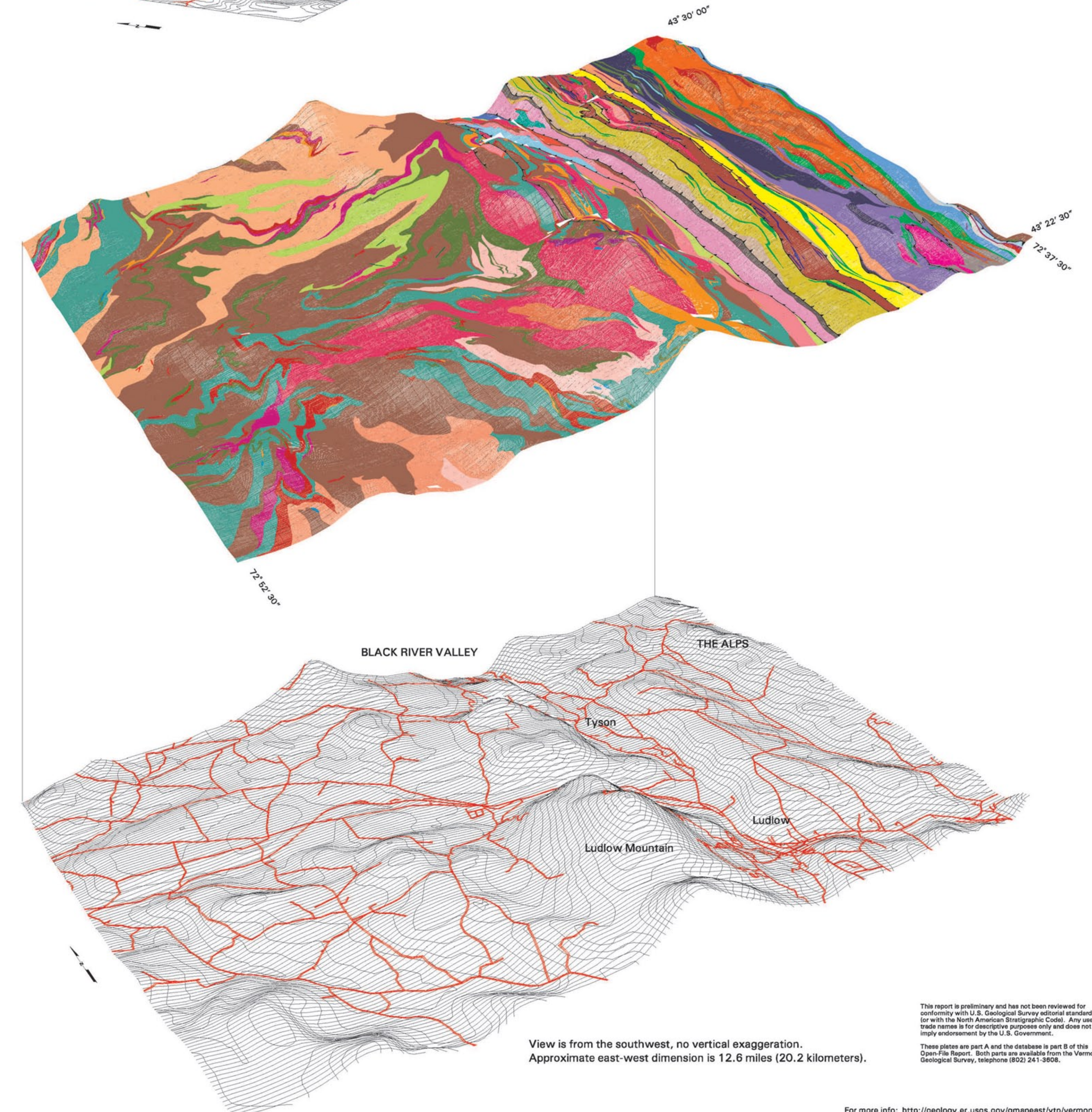


FIGURE 2.

The diagrams in figure 2 illustrate visual perspectives of three of the data layers from the Mount Holly and Ludlow quadrangles as viewed from the southwest. The topography data layer is based on USGS Digital Elevation Model (DEM) data and was used to generate the three-dimensional topography to produce the diagram shown below. The combination of these three layers shows how the digital database can be used to provide a unique look at how bedrock geology influences topography. Resistant gneisses and quartzites of the Middle Proterozoic Mount Holly Complex in magenta and gold underlie much of Ludlow Mountain (Okemo Mountain Ski Area). Less resistant black schists and interlayered carbonate rocks of the Plymouth Formation in gray, pink, and blue underlie the Black River Valley. Just to the east, however, the resistant muscovite-quartz schists of the Pinney Hollow Formation in greenish yellow support a prominent ridge where they have been thrust over the Plymouth Formation rocks. Still farther east, resistant rocks of the Barnard Gneiss in red and orange form the ridge known as "The Alps" between the villages of Tyson and Feichville.



View is from the southwest, no vertical exaggeration.
Approximate east-west dimension is 12.6 miles (20.2 kilometers).

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S. Government.
These plates are part A and the database is part B of this Open-File Report. Both parts are available from the Vermont Geological Survey, telephone (802) 241-3506.