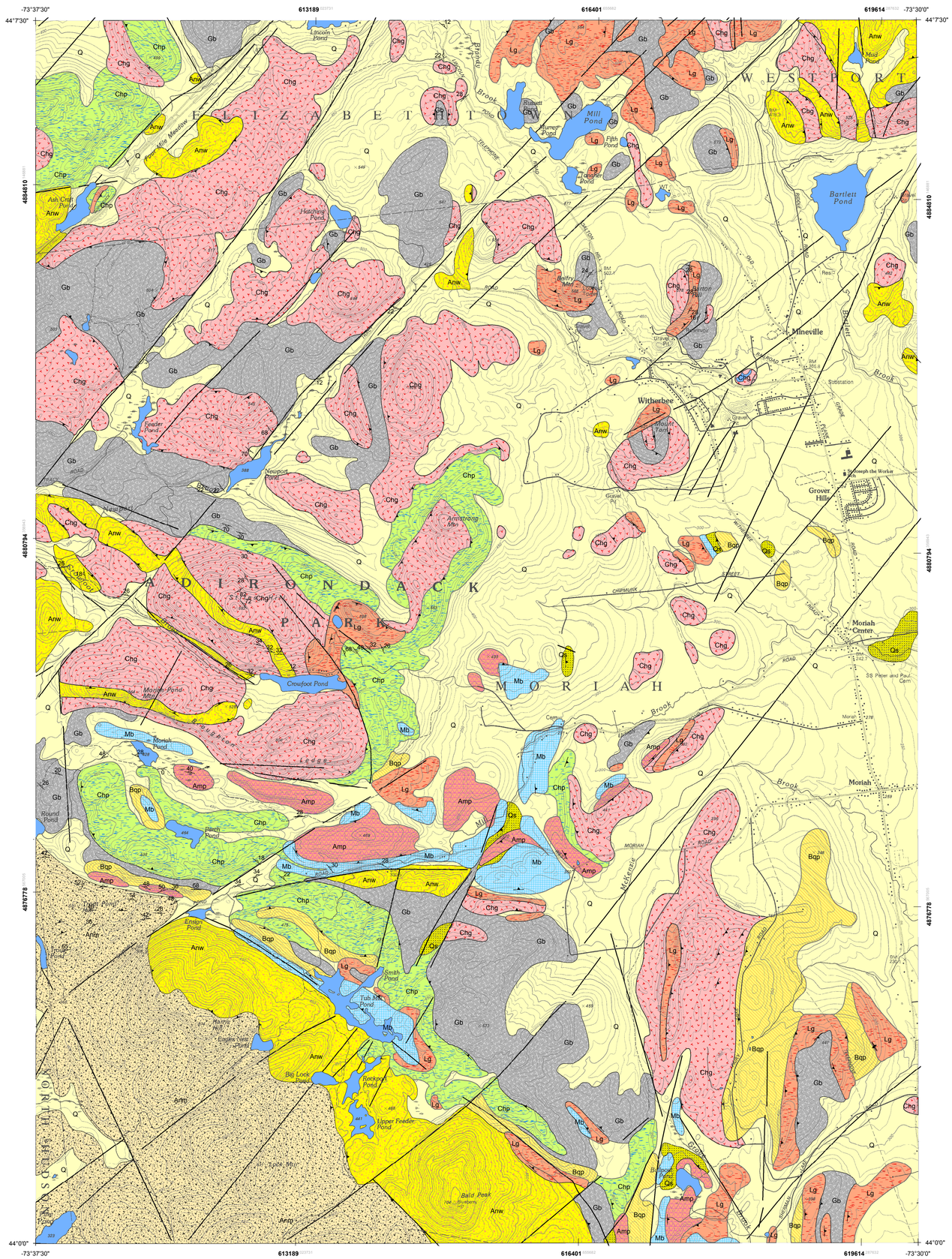
New York State Museum
Mark Schaming, Director

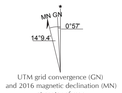
New York State Geological Survey



Universal Transverse Mercator, Zone 18 N
North American Datum of 1983

Elevation contours and planimetry layers from the New York State Dept. of Transportation Raster Quadrangle separates for Witherbee 7½ minute quad. DOT edition date 1969, USGS contour dates 1978. Hydrography from the National Hydrography Dataset, U.S. Geological Survey.

Magnetic declination from the NOAA online Declination Calculator: http://www.ngdc.noaa.gov/geomag-web/#declination



UTM grid convergence (GN) and 2016 magnetic declination (MN) at center of map

Scale 1:24 000

1 ½ 0 1 Miles

0.95 0.475 0 0.95 Kilometers

Contour interval 10 feet

Geologic mapping by Walton 1961, Chiarenzelli, Lupulescu, Grohn, de Santans do Nascimento 2016
Digital data and cartography by B. Bird 2015

BEDROCK GEOLOGY OF THE WITHERBEE QUADRANGLE, ESSEX COUNTY, NEW YORK

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2016

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National Cooperative Geologic Mapping Program (STATEMAP)

EXPLANATION

Q — Quaternary material

LYON MOUNTAIN GRANITE (ca. 1040-1050 Ma)

Lg — Leucogranite and associated pegmatite: Pink, k-feldspar-rich leucogranite with magnetite as the dominant mafic mineral. Often associated with iron ore deposits. Lacks a deformational fabric and granulite facies metamorphism. Compositional layered in some occurrences. Magma mixing with younger gabbroic units noted.

AMCG (Anorthosite-mangerite-charnockite-granite) Suite (ca. 1155-1165 Ma)

Gb — Gabbro: Dark colored mafic rock composed chiefly of clinopyroxene and plagioclase, generally oxide-rich. It ranges from pegmatitic to fine-grained in size. It grades, with increasing garnet development and smaller grain-size, to ferrodioritic compositions. It has a variable and locally developed foliation; coronitic texture is seen in a few exposures. Gabbroic rocks of several ages may be included in this unit; some are associated with the Lg unit and iron ores.

Chg — Granitic rocks: Pink, hornblende and oxide-rich, medium to coarse-grained, granitic rocks ranging in composition from syenite, monzonite, granite, and granodiorite. The unit is often spatially associated with gabbro bodies and Unit Chp. Foliation is well-developed but variable.

Chp — Charnockitic rocks: Pink to grey to greenish orthopyroxene-bearing, medium to coarse-grained, rocks ranging in composition from mangerite to charnockite. With increasing garnet content grades into ferrodioritic compositions. Foliation is well-developed but variable

Anw — Gabbroic Anorthosite to Anorthositic Gabbroic gneiss: White and black, coarse-grained, leucocratic to moderately mafic (< 35%) anorthositic to gabbroic rock. Variably deformed and with variable garnet development. Generally oxide-rich.

Amp — Anorthosite: Blue-grey, coarse-grained to pegmatitic rock composed almost exclusively of andesine feldspar and minor pyroxene, hornblende, and oxides (< 10%). Sparse, necklace-like garnet coronas on oxides and pyroxenes indicate metamorphism but rock is undeformed.

Rocks of the GRENVILLE SUPERGROUP (ca. 1250-1300 Ma)

Bqp — Biotite-Quartz-Plagioclase gneiss: Pelitic to psammitic gneiss composed of biotite-quartz-plagioclase ± garnet ± sillimanite. Strong foliation, variable modal mineral content, leucosome development, isoclinal folding. Potentially equivalent with the Popple Hill Gneiss of the Adirondack Lowlands.

Qs — Quartzose metasedimentary rocks: Quartz-rich metasedimentary rocks with feldspar, biotite, muscovite, sillimanite, and/or garnet. Strong foliation, variable model mineral content, isoclinal folding. Gradational into calc-silicate gneiss and/or Bqp.

Mb — Marble and Calc-silicate gneiss: White to tan, Calcitic marble of exceptional coarse grain-size (up to 2 cm over more) with graphite, diopside, phlogopite , and/or orange tourmaline accessory minerals. Commonly with calc-silicate-rich knots or broken, discontinuous layers. Grades into calc-silicate gneisses and commonly interlayered with amphibolite. Strongly deformed and folded, but calcite recrystallized.

Amp — Amphibolite: Black and white, Hornblende-plagioclase amphibolite. Typically medium-grained, sometimes with white, plagioclase-rich segregations or leucosome containing orthopyroxene. Thicker bodies often grade into gabbroic rocks with their cores. Commonly found within marble and calc-silicate rich units and other rocks of the GSG. Intrusive and/or metasedimentary origin.

SYMBOLS

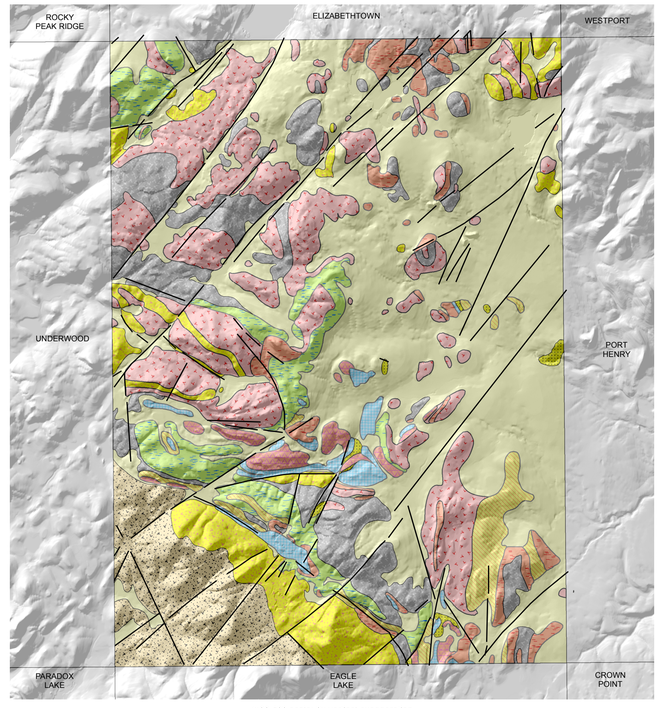
10 — **Foliation with Dip**

Foliation from Walton*

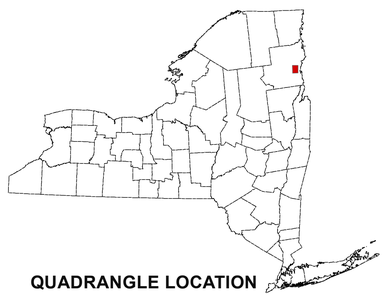
Fault

* Walton, M., 1961. Eastern Adirondacks Geology. NYSGS Open File # 1g235

SHADED TERRAIN MAP AND SURROUNDING QUADRANGLES



1:62 500 scale; 2x vertical exaggeration
Shaded relief generated from the National Elevation Dataset 1/3 arc-second data from the US Geological Survey.



QUADRANGLE LOCATION

New York State Museum Map & Chart No. 93
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