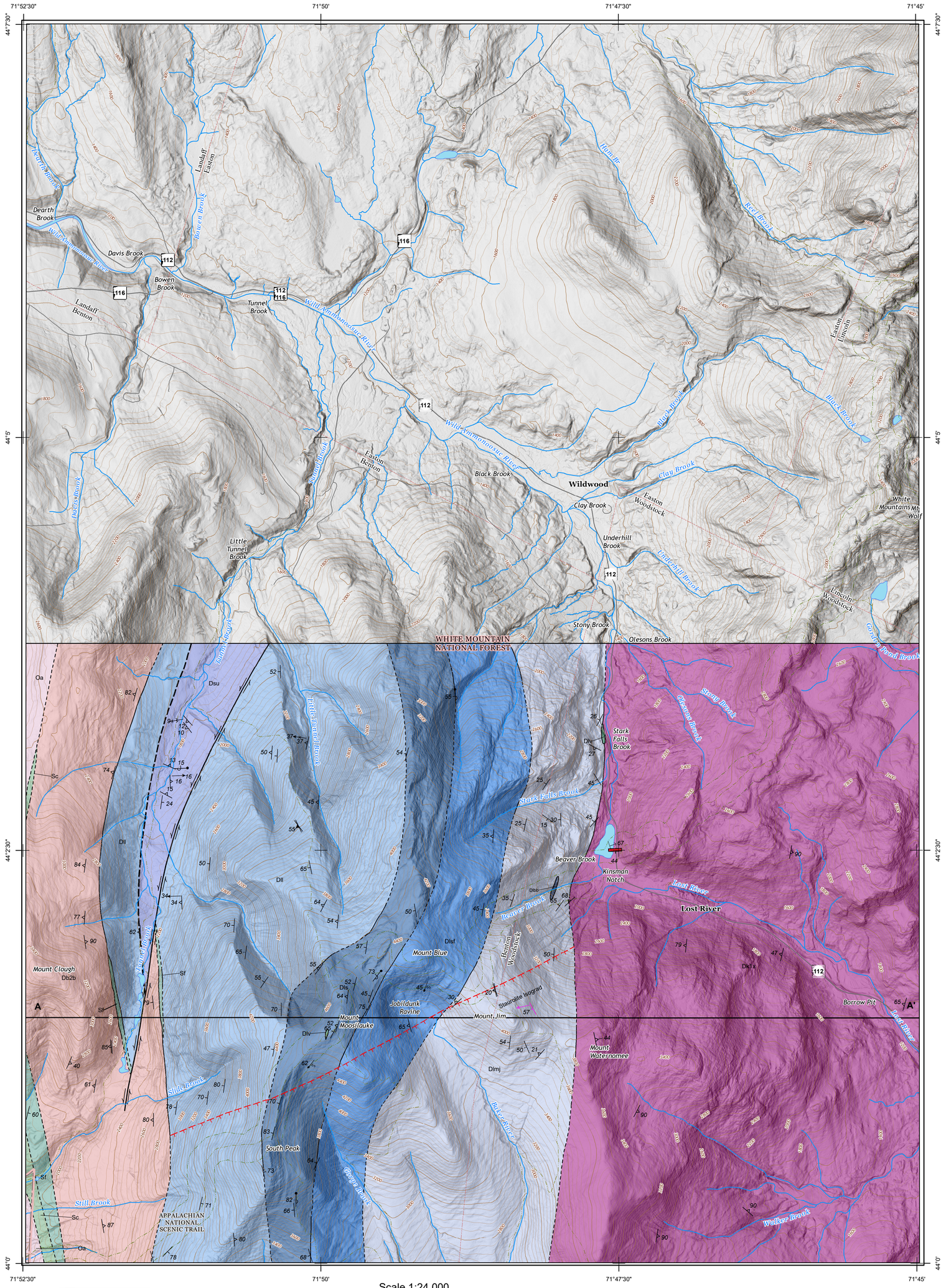
Bedrock Geologic Map of the Mount Moosilauke 7.5' Quadrangle, New Hampshire, 2021



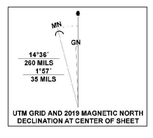
Scale 1:24,000

0 0.25 0.5 1 Kilometers

0 1,000 2,000 4,000 Feet

0 0.25 0.5 1 Miles

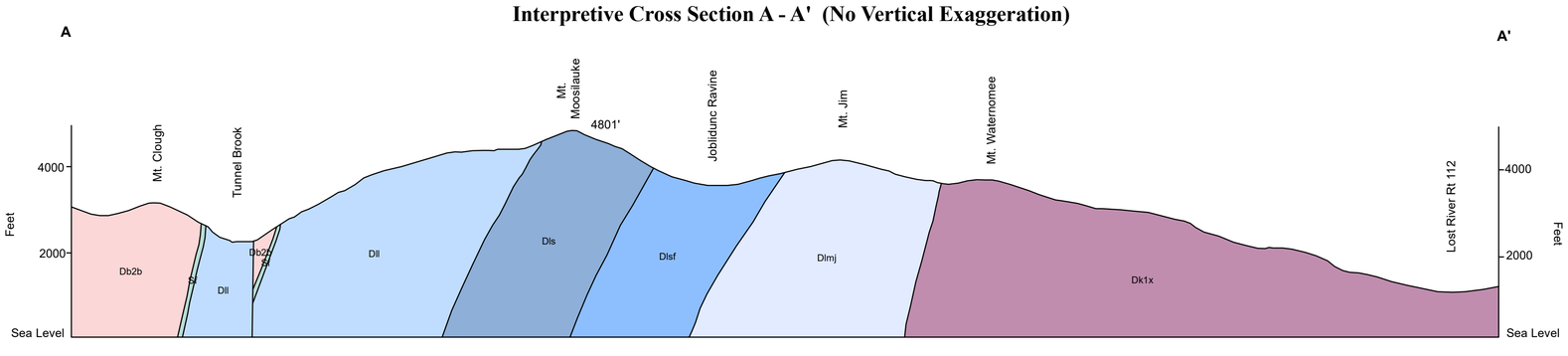
Lisbon	Sugar Hill	Franconia
East Haverhill	Mt. Moosilauke	Lincoln
Warren	Mount Kineo	Woodstock



Topographic basemap from the USGS 1998 Mount Moosilauke 7.5' quadrangle
Projection: North American Datum 1983 New Hampshire State Plane Feet.
1000 meter grid in UTM zone 19 North, Contour Interval 40 ft

Hillshade produced from high resolution (1 meter) LiDAR data

Interpretive Cross Section A - A' (No Vertical Exaggeration)



DESCRIPTION OF MAP UNITS

INTRUSIVE ROCKS

KJd — **Post-tectonic sills and dikes (Mesozoic) —** A variety of mafic rocks (diabase, gabbro, diorite, quartz-diorite and camptonite) and silicic rocks (bostonite, syenite). A 2 m-thick aphyric basalt dike, striking due east and dipping 46 degrees south, is well exposed cutting Kinsman Granite in a road cut on the east side of Rt. 112. Details on many of the dikes were reported by Billings (1937).

Db2b — **Bethlehem Gneiss (Devonian)** — Coarse- to medium-grained quartz-feldspar-biotite-muscovite granodiorite gneiss, strongly foliated near contacts with older units. Locally contains biotite schist xenoliths parallel to foliation. Well exposed in slides and brooks on east slope of Mt. Clough. Lyons et al., 1997, cite a U/Pb zircon age of 410 +/- 5 Ma.

Dk1x — **Kinsman Granite (Devonian) —** Coarse porphyritic quartz-feldspar-biotite-muscovite-garnet granite gneiss with K-feldspars up to 7 cm in length. Locally with schist and hornblende gneiss xenoliths near contact with Littleton Formation. Type locality in Kinsman Notch. Barreiro and Aleinikoff (1985) estimated the U/Pb zircon age at 413 +/- 5 Ma.

METASEDIMENTARY AND METAVOLCANIC ROCKS

Littleton Formation (Devonian)

Dlv — **Metavolcanic member of Littleton** — Hornblende gneiss southwest of Moosilauke summit; felsic pyroclastics and hornblende gneiss in Rt. 112 road cut.

Dlmj — **Mt. Jim member of Littleton** — Gray to light gray, laminated biotite +/- sillimanite +/- garnet +/- staurolite schist. Layers are typically less than 2 cm thick.

Dlbb — **Beaver Brook member of Littleton** — Calc-silicate beds and pods in biotite schist. Oriskany brachiopod fossils were described by Boucot and Rumble (1978).

Dlsf — **Stark Falls member of Littleton** — Massive, dark gray biotite-rich schist to granofels. Well exposed along the Appalachian Trail south of Mt. Blue.

Dls — **Summit member of Littleton** — Rusty-weathering, well bedded, 3 to 30 cm, medium-grained biotite +/- sillimanite +/- garnet +/- staurolite granofels.

Dll — **Lower member of Littleton** — Dark gray, fine to medium-grained biotite +/- sillimanite +/- garnet +/- staurolite schist, locally well laminated. Sillimanite is especially conspicuous on the Appalachian Trail west of South Peak.

Dsu — **Rocks of uncertain affinity (Devonian and/or Silurian)** — Fine-grained, gray, well foliated biotite schist, hornblende gneiss, well bedded sulfidic calc-silicate granofels resembling Francestown Formation, and well bedded, gray to white calc-silicate granofels resembling Warner or Fitch Formations. These rocks were shown by Lyons et al. (1997) as Ammonoosuc Volcanics.

Sf — **Fitch Formation (Silurian)** — Massive to thinly bedded, fine-grained gray granofels. Found along the eastern contact between Bethlehem Gneiss and lower Littleton Formation, and at the western contact in a brook at the very edge of the quadrangle.

Sc — **Clough Quartzite (Silurian)** — Massive white to gray quartzite with local conglomerate. Found in the East Haverhill quadrangle, 150 m downstream from Fitch Formation in the SW corner of the map. Clough boulders are common in that part of the Mount Moosilauke quadrangle.

Oa — **Ammonoosuc Volcanics (Ordovician)** — Fine-grained hornblende gneiss or amphibolite with minor felsic layers. Best exposed in Still Brook in the East Haverhill quadrangle, just west of this map. (It occupies a larger area in the northern half of the Mount Moosilauke quadrangle, yet to be mapped.)

EXPLANATION OF MAP SYMBOLS

Contacts and faults
- Contact
- Dashed where approximate
- Fault
- Dashed where approximate
- Fault - Strike/Slip

Strike and dip of S_0 bedding
- Overturned graded beds, S_0
- Inclined

Roads and railroads
- US Route
- State Route
- Local Road
- Not Maintained
- Railroad

Strike and dip of dome (S_2) foliation features
- Inclined S_1 foliation
- Inclined S_2 foliation
- Inclined S_0 foliation or S_1 foliation
- Inclined S_1 foliation or S_2 foliation

Trend and plunge of lineations
- Crenulation lineation (L_2)
- Mineral lineation
- Intersection lineation

Basemap features
- Lidar Contours (20-foot intervals)
- Stream

Planar and linear fold features
- Axial plane of F_3 fold
- Axis of F_1 fold

Other geological features
- Fault, strike and dip
- KJd dike, vertical
- Isograd, Approximate
- Shear zone

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Digital Compilation by Joshua A. Keeley, 2021
Some structural data from Billings (1937) and Konrad (1989)
New Hampshire State Geologist: Shane Csiki, Ph.D.

Bedrock Geologic Map Open-File Series GEO-105-024000-BMOF

Companion document can be found at https://www.des.nh.gov/land/geology

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