

BEDROCK GEOLOGY OF THE LOWVILLE 7.5-MINUTE QUADRANGLE, LEWIS COUNTY, NEW YORK

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2024

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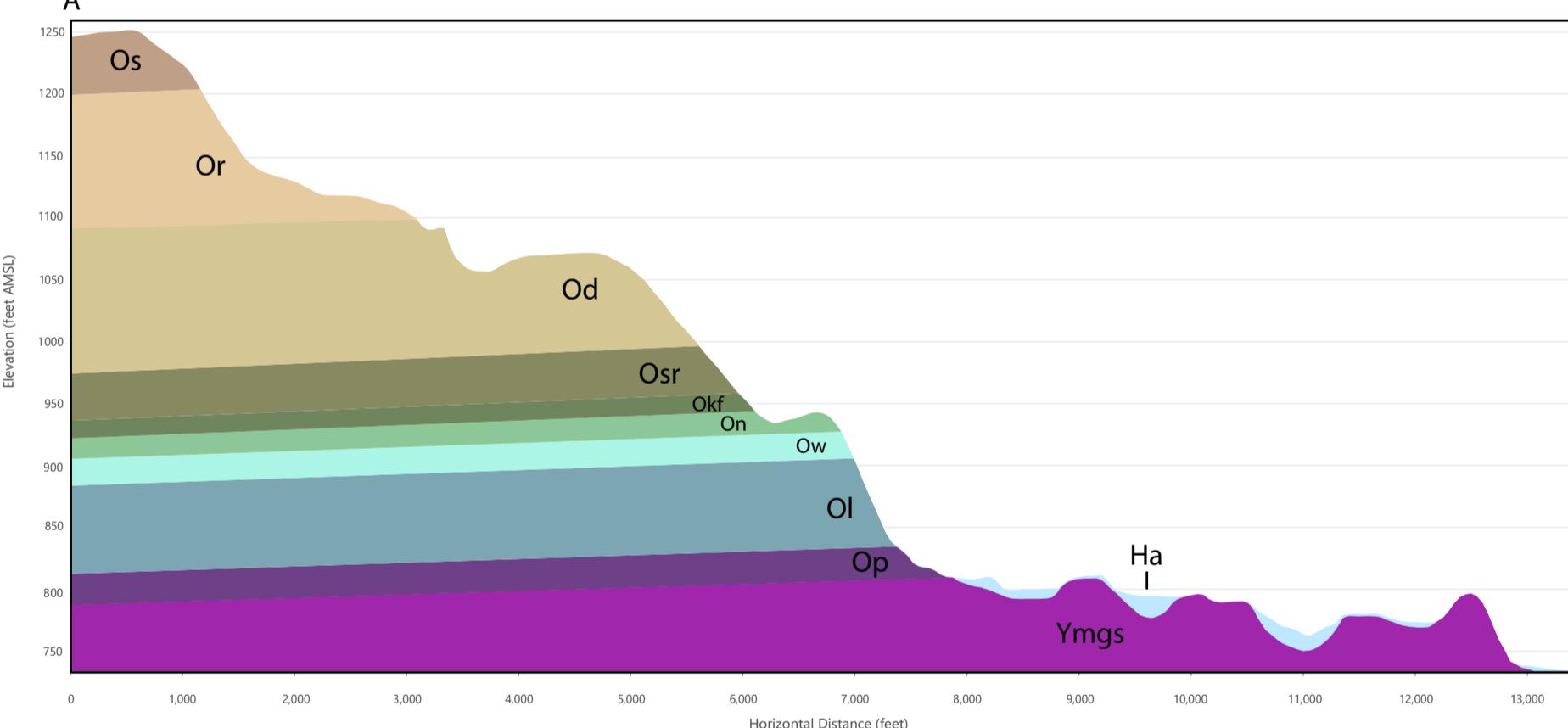
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Supported in part by the U.S. Geological Survey's
National Cooperative Geologic Mapping Program STATEMAP Award Number G22AC00366

DESCRIPTION OF MAP UNITS

Holocene	
Af	Artificial fill (Af) This unit is generally comprised of coarse-to-fine materials, such as large cement mounds and/or crushed rock, which have been transported anthropogenically and used for construction purposes.
Ha	Holocene alluvium (Ha) Sorted and stratified silt, sand, and gravel, deposited by rivers and streams. May include cobbles and boulders. Inferred to be post-glacial alluvium and includes modern channel, over-bank and fan deposits.
Pleistocene	
Pcc	Pleistocene cover over Adirondack Province crystalline rock (Pcc) Uncrossdated glacial sediments covering and obscuring direct observation of buried Adirondack-related metamorphic and igneous rock. May include various glacial deposits such as sand, sand and gravel, diamictite, and silt and clay.
Late Ordovician	
Trenton Group	
Oh	Hillier Limestone (Oh) Wavy-bedded argillaceous calcarenous and nodular wackestones with interbedded shales.
Os	Steuben Formation (Os) Dark gray, medium-to-coarse-grained, massive nodoidal limestone with minor shale partings. Up to 8m thick. May contain abundant crinoids, brachiopods, gastropods, and trilobites, as well as corals somewhat less commonly. Deposited within range of wave base, in a subtidal, energetic environment.
Or	Rust Formation (Or) Formerly the Rust Member of the Cobourg Formation. Nodular-to-wavy-bedded coarse-grained packstones and grainstones. Includes a wide variety of fauna, such as trilobites, echinoderms, crinoids, and brachiopods, among others. Within the Mill Dam member, large-scale ripple marks can be observed. Deposition of the Rust Formation is at a shallower depth than the underlying Denley Formation, but it includes several internal shallowing-upward cycles.
Od	Denley Formation (Od) Sequence of dark gray-to-lightly bedded, fine-to-medium-grained fossiliferous limestones interlayered with dark gray, laminated calcareous shales. Up to 70m thick. Brachiopods, bryozoans, trilobites, cephalopods, and crinoids present. Deposited in a deep shelf, subtidal environment; possibly turbiditic or storm-influenced sedimentation.
OsR	Sugar River Formation (OsR) Dark gray to black, thinly-to-thickly bedded, fine-to-medium-grained fossiliferous limestones; dark gray, finely-laminated calcareous shales. Up to 16m thick. Diverse fauna include bryozoans, crinoids, trilobites, and brachiopods. Interpreted as having been deposited in a subtidal, quiet shelf environment.
Okf	Kings Falls Formation (Okf) Dark gray, thickly bedded, coarse-grained fossiliferous limestones with a primarily mica matrix; thinly-bedded calcareous shales; interlayered fossiliferous limestone and dolomite. Up to 20m thick. Lower portion brachiopod dominated including some corals; upper portion bryozoan dominated including trilobites, gastropods, and crinoids. Depositional environment transitions from subtidal offshore shoal (concentrating fossil fragments) to a shallow shelf.
On	Napaneo Formation (On) Unconformably overlying top of Black River Group formations. Interbedded fine-grained limestones with dark gray, thinly-laminated calcareous shale. Up to 6m thick. Fossil fragments sparse, with low diversity. Deposited in a subtidal, shallow shelf to lagoonal environment.
Black River Group	
Ow	Watertown Limestone (Ow) Dark gray, thickly-bedded, fine-grained limestone including fossil fragments floating in a matrix. Often includes chert nodules. Up to 3m thick. Fossils abundant; nautiloids, stromatolites, and coral fragments reworked by biogenic activity as indicated by the presence of horizontal burrows. Deposited in a subtidal, flat-bottomed marine environment.
Ol	Lowville Formation (Ol) Pale to medium gray, thickly-bedded, fine to coarse limestones interbedded with dark gray, fine-grained stylitic or fossiliferous limestones; medium to dark gray, lumpy-bedded, coarse bioclastic limestones; and fine-to-medium-grained dolomitic sandstones. Up to 18m thick. Fossiliferous intervals include trilobites, ostracodes, corals, gastropods, bryozoans, and cephalopods. Interpreted as having been deposited in oscillating environments, including restricted intertidal mudflats, protects subtidal lagoons and other marine areas seaward of the lagoons.
Op	Pamelia Formation (Op) Primarily fine-to-medium-grained dolomitic sandstone. Thinly- to medium-bedded, wavy- to thinly-laminated and can include mudcracks. Up to 6m thick. Fossils rare; ostracodes, trilobites, and vertical burrow trace fossils have been observed. Deposited in a supratidal dolomitic mudflat environment along a passive paleo-shoreline. In the Black River Valley, thin to the south where it pinches out and the overlying Lowville Formation directly overlies Precambrian basement.
Middle Proterozoic	
Ymgs	Metagranite and Metasyenites (Ymgs) Light gray to pinkish, fine-to-coarse-grained, mesoperthite + quartz + hornblende + biotite + plagioclase + clinozoisite gneiss. Foliation is highly variable, non-isolated to strongly foliated. Foliation development depends on modal abundance of mafic minerals. Metacalcic lithologies are strongly foliated, mafic-free rocks show no obvious foliation, and are described as aslastites or leucogranites. Modal abundance of quartz varies from less than 5% (metasyenite) to 50-70% (meta-quartz syenite), to greater than 20% (metagranite). Commonly contains layers of amphibolite ranging in width from a few centimeters to 10m; not mappable at this scale. Contacts with amphibolite are sharp. Foliation-parallel milky quartz veins and granitic pegmatites common. Cross-cutting granitic pegmatites occur locally.
Ych	Charnockite gneiss (Ych) Light brown to rusty brown, fine- to medium-grained, mesoperthite + quartz + hornblende + hypersthene gneiss. Weakly-foliated as mafic minerals are lacking. Hornblende is dominant mafic phase.

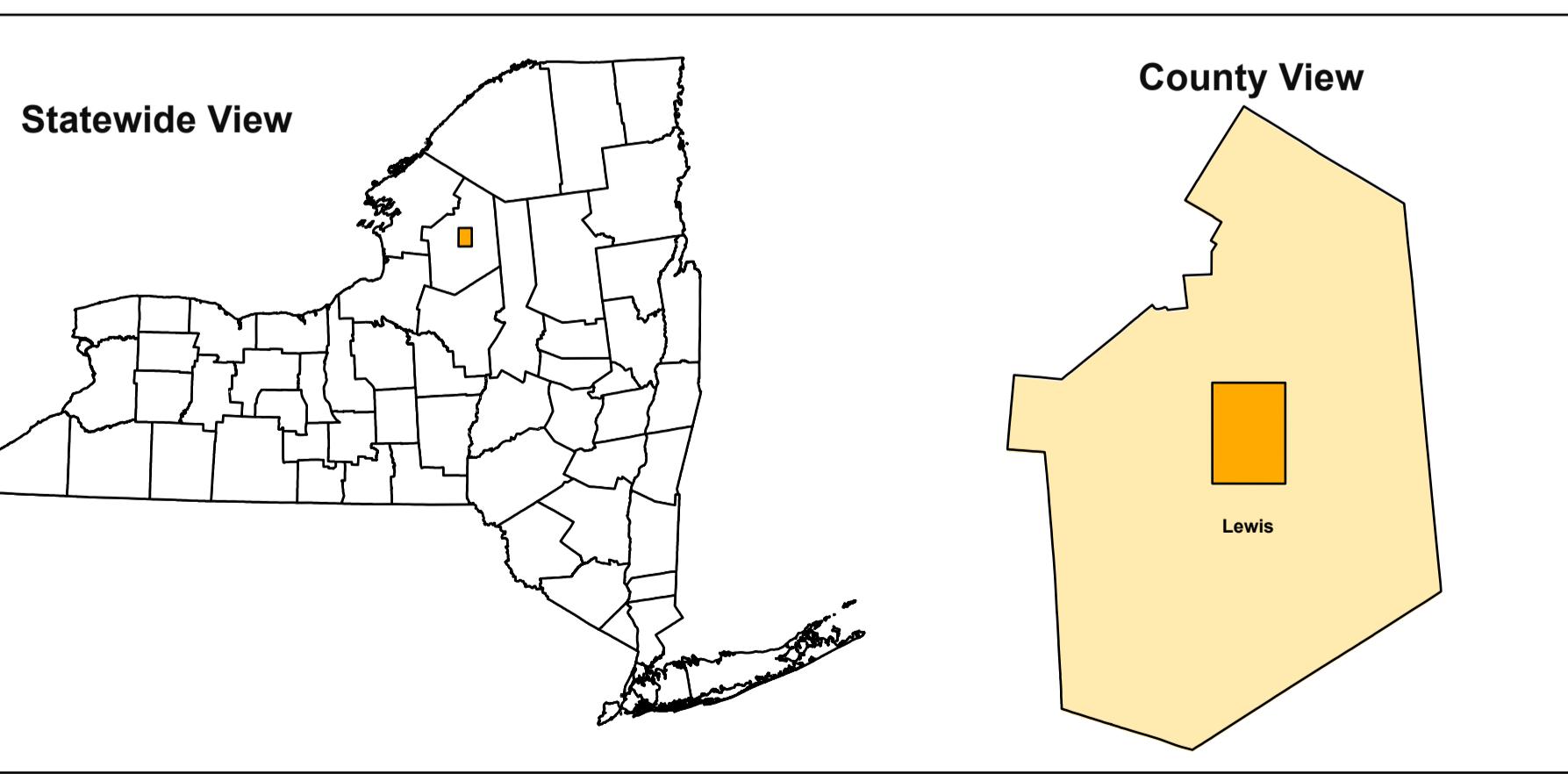
CROSS-SECTION A-A'



SYMBOLS

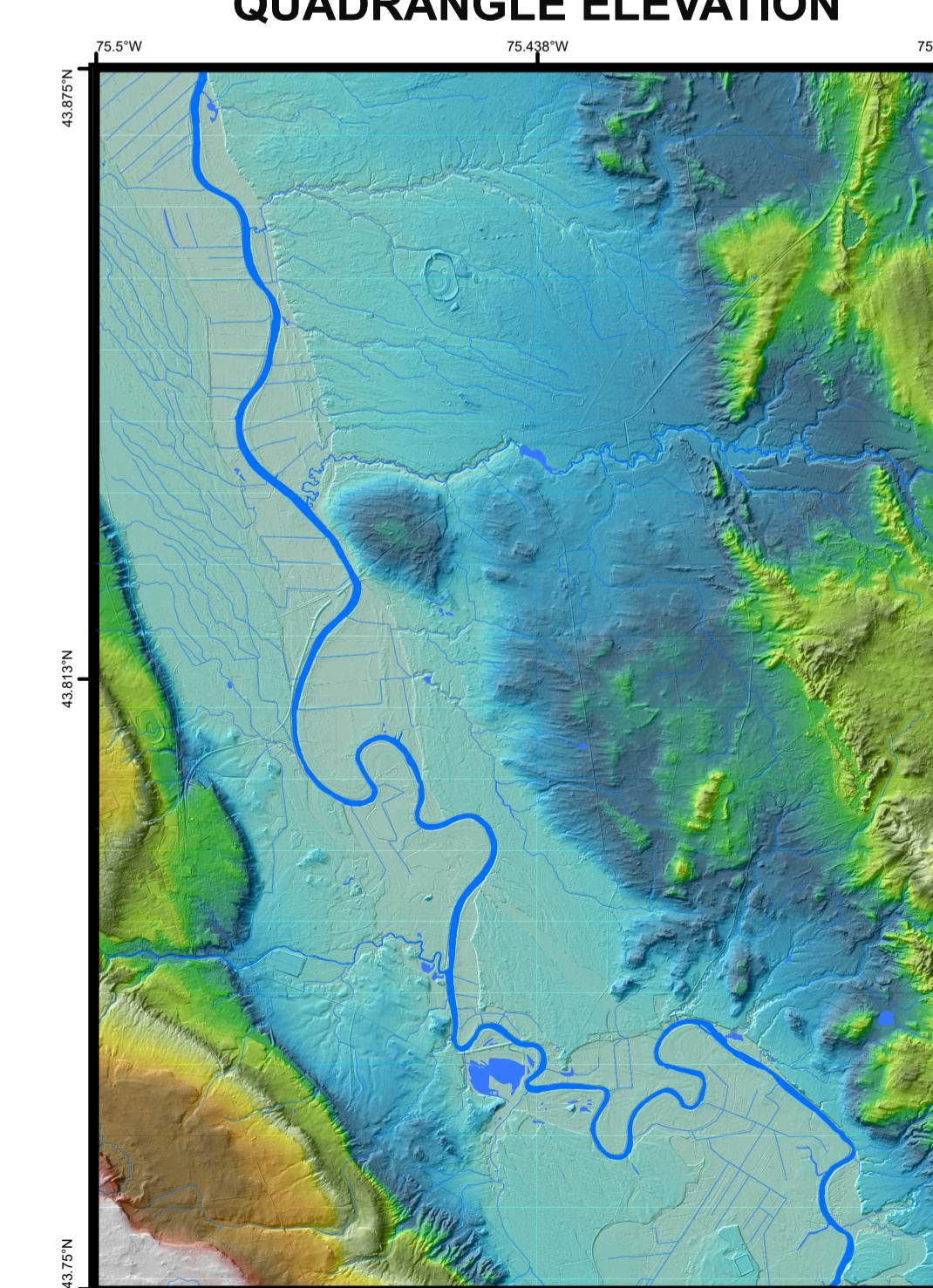
Street	NYSGS Sample Location
Highway	NYS DOT Boring Location
Railroad	NYSDEC Water Well Location
Airport Runway	
Water Body	
Stream	
Cross-Section Line	Definite Contact
Contour	Inferred Contact
Inferred Fault	Foliation
Waterline	Waterline
Vertical Foliation	

QUADRANGLE LOCATION



ADJOINING QUADRANGLES

CHATHAM	CROGHAN	BELPOINT
WEST LOWVILLE	LOWVILLE	CRYSTALDALE
PAGE	GLIMPFIELD	BRAITHWAITE



1:75,000 scale; 2x vertical exaggeration

Shaded relief generated from 2022 Lake Ontario and Hudson River 1m lidar data set

NOTICE
This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program STATEMAP award number G22AC00366 in the year 2024.
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