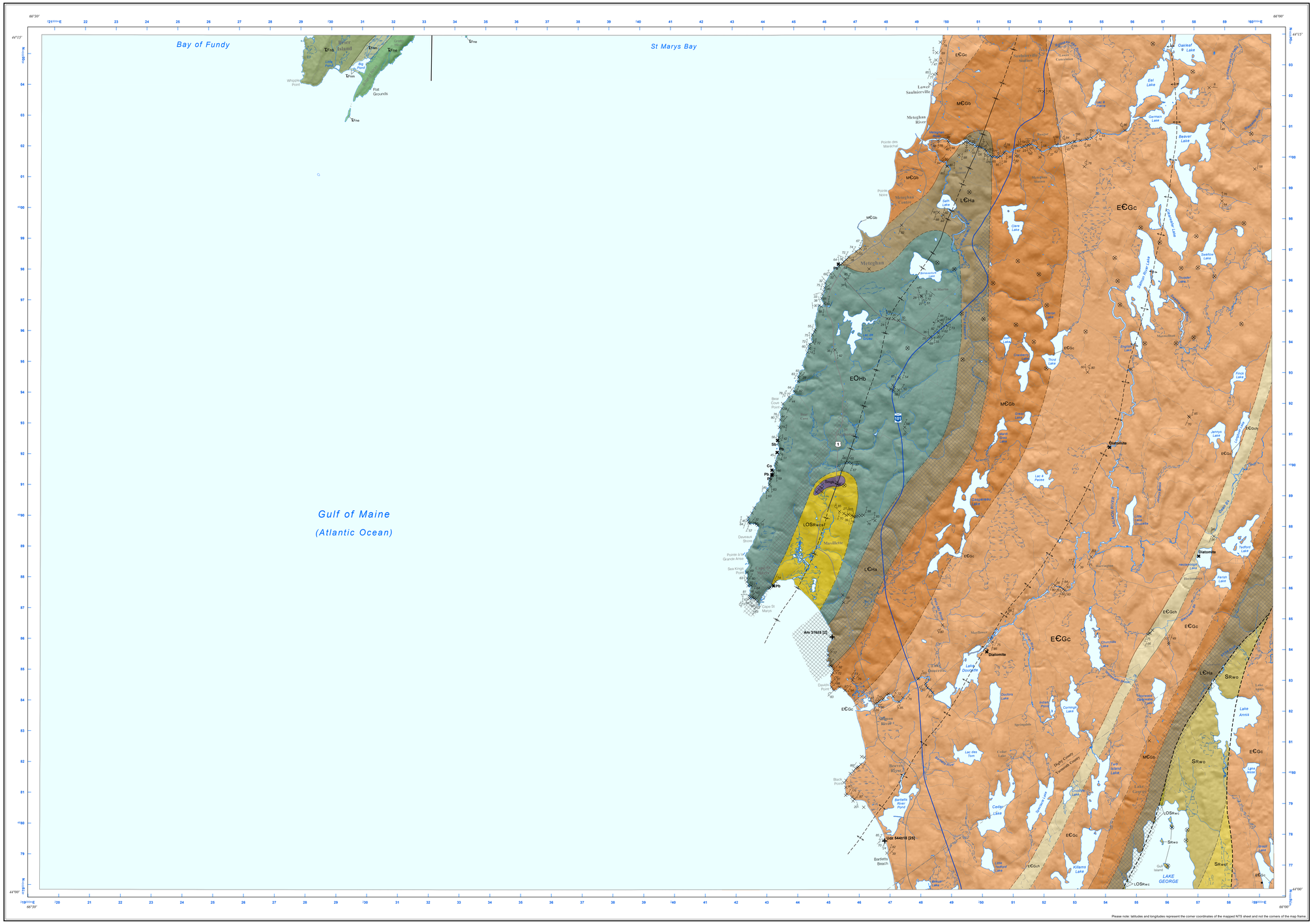


Please note: latitudes and longitudes represent the corner coordinates of the mapped NTS sheet and not the corners of the map frame.

LEGEND

MESOZOIC

LATE TRIASSIC

FUNDY GROUP

NORTH MOUNTAIN FORMATION (adapted from Kontak and Webster, 2010)

- TRnb — BRIER ISLAND MEMBER (Upper Flow Unit) (TRnb): dark grey to grey-green, medium-grained, ophitic basalt with plagioclase and pyroxene microcrysts
- TRnm — MARGARETSVILLE MEMBER (Middle Flow Unit) (TRnm): dark grey to grey-green and red-brown, massive to vesiculated, fine-grained basalt; abundant zeolite phases
- TRne — EAST FERRY MEMBER (Lower Flow Unit) (TRne): grey-green, fine- to medium-grained, massive basalt with microcrysts of plagioclase and pyroxene; gabbroic pegmatite common

PALEOZOIC

SILURIAN

- Smgb — MAVILLETTE GABBRO (Smgb): dark green to grey, medium-grained, subophitic to ophitic leuco-gabbronorite to gabbronorite to mela-gabbronorite; locally fine-grained and equigranular

LATE ORDOVICIAN TO EARLY DEVONIAN

ROCKVILLE NOTCH GROUP

WHITE ROCK FORMATION

- SRwcf — CAPE FORCHU MEMBER (SRwcf): green to dark grey, massive mafic flows and lithic to crystal lithic metatuff interlayered with actinolite-bearing tuffaceous metasandstone and calc-silicate nodules; rare pillow basalt flows
- SRwo — OVERTON MEMBER (SRwo): dark green and pink, mafic to felsic, crystal to crystal lithic metatuff and mafic flows interlayered with grey, actinolite-bearing tuffaceous metasandstone, metasiltstone, and minor quartzite; calc-silicate beds common; minor amphibolite and conglomerate; trace and shelly fossils locally abundant
- LOSRwc — CHEGOGGIN POINT MEMBER (LOSRwc): grey, tuffaceous metasandstone, metasiltstone, slate and quartzite, locally chloritoid- and garnet-bearing; calc-silicate beds and nodules common; minor amphibolite; rare trace fossils
- OSRwcs — CAPE ST. MARYS MEMBER (OSRwcs): green, massive mafic flows and lithic tuff with grey metasandstone, metasiltstone and minor quartzite; minor metaconglomerate; rare trace fossils

EARLY CAMBRIAN TO EARLY ORDOVICIAN

HALIFAX GROUP

- EOHb — *BEAR RIVER FORMATION* (EOHb): light to dark grey, well-laminated, cleaved metasiltstone with thin beds of slate; minor medium-bedded, fine-grained metasandstone; trace fossils and bioturbated beds common; minor mafic sills
- LCHa — *ACACIA BROOK FORMATION* (LCHa): grey to dark grey, laminated slate with minor, thin beds and lenses of light grey metasiltstone; medium-bedded, crosslaminated, fine- to medium-grained metasandstone; sulphide minerals common; minor mafic sills

GOLDENVILLE GROUP

- MCGb — *BLOOMFIELD FORMATION* (MCGb): maroon and green to grey, thin- to medium-bedded metasiltstone to slate; rare thin-bedded, fine-grained metasandstone; minor mafic sills
- ECGc — *CHURCH POINT FORMATION* (ECGc): grey, medium- to thick-bedded, very fine- to medium-grained metasandstone locally interlayered with green, cleaved metasiltstone, and rare black slate; calc-silicate nodules common; minor mafic sills
  - ECGch — HIGH HEAD MEMBER (ECGch): greyish-green, parallel-laminated, magnetite-rich, metasiltstone to slate; abundant trace fossils; minor, very thick-bedded, fine- to coarse-grained metasandstone; minor mafic sills

Symbols*

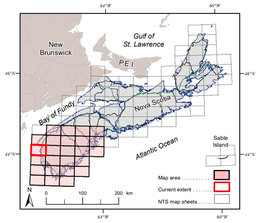
- Outcrop, Float, Felsenmeer
- Quarry (operating, abandoned)
- Mine (abandoned)
- Shaft
- Fossil
- Drillhole (after Fisher, 2006)
- Mineral occurrence (modified after O'Reilly et al., 2009)
  Ag - silver, As - arsenic, Au - gold, Be - beryllium, Bi - bismuth, Cu - cobalt, Cu - copper, F - fluorine, Fe - iron, Li - lithium, Mo - molybdenum, Pb - lead, Sb - antimony, Si - silicon, Sn - tin, U - uranium, V - vanadium, W - tungsten, Zn - zinc
- Radiometric date (Ma) [reference]**
  U-Pb (z - zircon, m - monazite, d2 - detrital zircon, zm - zircon monazite, t - titanite, wr - whole rock) — Uz 37484 [1]
  $^{40}Ar/^{39}Ar$ (b - biotite, h - hornblende, m - muscovite, p - phlogopite, wr - whole rock) — Ab 37484 [1]
  $^{207}Pb/^{206}Pb$ (wr - whole rock) — Pwr 37484 [1]
- Bedding; tops known (inclined, vertical, overturned)
- Bedding; tops unknown (inclined, vertical)
- Fold axis; first generation (fold style unknown, m fold, z fold)
- Fold axis; second generation (fold style unknown, m fold, horizontal)
- Fold axis; third generation (fold style unknown)
- Fold axis; unknown generation (fold style unknown, horizontal)
- Cleavage; first generation (inclined, vertical)
- Cleavage; second generation (inclined, vertical)
- Kink band; first generation, inclined (pinstriped)
- Geological contact (assumed, approximate, defined)
- Fault (assumed, approximate, defined)
- Anticline (assumed, approximate, defined)
- Overturned anticline (approximate, defined)
- Syncline (assumed, approximate, defined)
- Overturned syncline (approximate)
- Shear zone
- Historical gold district (after Fisher, unpublished)
- Area of concentrated drilling
- Rock in water
- Arterial highway
- Trunk highway
- Collector highway
- Hard surface road
- Loose surface/resource access road
- Trail, footpath, cart track
- Railway (active, inactive)
- Coastline
- River, stream
- County boundary
- Transmission line (multi, single line)
- National Park
- Wetlands
- Lake/ocean

* **Note:** Compiled symbols list for Open File Maps ME 2012-077 to 2012-101. All symbols may not appear on each map.

** **References for Selected Radiometric Age Dates**

[2] Culshaw, N. and Reynolds, P. 1997: $^{40}Ar/^{39}Ar$ age of shear zones in the southwest Meguma Zone between Yarmouth and Meteghan, Nova Scotia; Canadian Journal of Earth Sciences, v. 34, p. 848-853.

[25] Waldron, J. W. F., White, C. E., Barr, S. M., Simonetti, A. and Heaman, L. M. 2009: Provenance of the Meguma Terrane, Nova Scotia: rifted margin of early Paleozoic Gondwana; Canadian Journal of Earth Sciences, v. 46, p. 1-8.



Descriptive Text

In 1998 the Nova Scotia Department of Natural Resources initiated a program of geological mapping of the Meguma Terrane of southwestern Nova Scotia. The principal goals of this project are to produce a series of 1:50 000 scale geological bedrock maps of the area, to describe and interpret the sedimentary, igneous, metamorphic and deformational history of the Cambrian to Early Devonian metamorphic rocks, and to evaluate the area's economic potential. This map represents the tenth in a series of 25 maps highlighting the bedrock geology of southwestern Nova Scotia.

These new maps, combined with stratigraphic, geochemical, geochronological, paleontological and isotopic data (White, 2010; White and Barr, 2010), have highlighted the need to produce a new stratigraphic paradigm together with the 1:50 000 scale geological maps for the Meguma Terrane.

Acknowledgments

The geology of the Cambrian to Early Devonian metamorphic rocks is interpreted by C.E. White based on the mapping completed by C.E. White and R.J. Horne. Summer students P.Ténière and M. Jodrey contributed to the mapping on this sheet. S. Barr, R. Raeside and G. O'Reilly are thanked for numerous discussions regarding the geology of southwestern Nova Scotia and the use of samples and unpublished information. T. Lenfesty and J. Brenton are thanked for their help in the departmental library. Map was critically reviewed by S. Barr.

Map Notes

GIS databases, cartography and reproduction by Angie Ehler, Brian Fisher and Jeff McKinnon of the Nova Scotia Department of Natural Resources, Geoscience Information Services Section, 2009-2012. The GIS databases and map were developed using ArcGIS® 9.3.

Universal Transverse Mercator Projection (UTM), Zone 20, Central Meridian 63°00' West.

North American Datum (NAD) 1983 Canadian Spatial Reference System (CSRS) 98.

Base and digital data derived from the Nova Scotia Topographic Database (NSTDB). Copyright Her Majesty the Queen in Right of the Province of Nova Scotia. The NSTDB is available from Service Nova Scotia and Municipal Relations (SNSMR), Land Information Services Division (LIS), Nova Scotia Geomatics Centre (NSGC), Amherst, Nova Scotia.

Shaded relief image derived from a 25 m Digital Elevation Model of the Province of Nova Scotia, DP ME 56, version 2, 2006. Azimuth of 0°, sun angle of 45° and a vertical exaggeration of 5.

Nova Scotia Department of Natural Resources
Mineral Resources Branch

Open File Map ME 2012-086

Bedrock Geology Map of the Meteghan Area, NTS Sheet 21B/01, Digby and Yarmouth Counties, Nova Scotia

C. E. White

Scale 1:50 000

1 0 1 2 3 4 km

Halifax, Nova Scotia
2012

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Disclaimer

The information on this map may have come from a variety of government and nongovernment sources. The Nova Scotia Department of Natural Resources does not assume any liability for errors that may occur. This map is intended for use at the published scale of 1:50 000.

Recommended Citation

White, C. E. 2012: Bedrock geology map of the Meteghan area, NTS sheet 21B/01, Digby and Yarmouth counties, Nova Scotia; Nova Scotia Department of Natural Resources, Mineral Resources Branch, Open File Map ME 2012-086, scale 1:50 000.

Selected References

Fisher, B. E. 2006: Nova Scotia drillholes database; Nova Scotia Department of Natural Resources, Digital Product ME 3; http://www.gov.ns.ca/natr/meb/download/dp003.asp [ISN:18535][1].

Fisher, B. E. unpublished: Nova Scotia historical gold district boundaries; Nova Scotia Department of Natural Resources, Digital Product ME 384.

Kontak, D. J. and Webster, T. L. 2010: Bedrock geology map of basaltic rocks of the North Mountain Formation from Brier Island to Sandy Cove, part of NTS sheets 21A/05, 21B/01, 21B/08 and 21B/09, Digby County, Nova Scotia; Nova Scotia Department of Natural Resources, Mineral Resources Branch, Open File Map ME 2010-8, scale 1:50 000. [ISN:22614].

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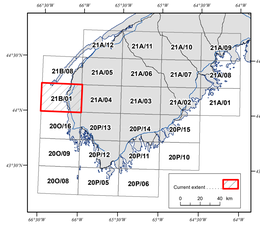
O'Reilly, G. A., DeMont, G. J., Fisher, B. E. and Poole, J. C. 2009: Nova Scotia mineral occurrence database; Nova Scotia Department of Natural Resources, Digital Product ME 2; http://www.gov.ns.ca/natr/meb/download/dp002.asp [ISN:18752]

White, C. E. 2010: Stratigraphy of the lower Paleozoic Goldenville and Halifax groups in southwestern Nova Scotia; Atlantic Geology, v. 46, p. 136-154.

White, C. E. and Barr, S. M. 2010: Lithochemistry of the lower Paleozoic Goldenville and Halifax groups, southwestern Nova Scotia, Canada: implications for stratigraphy, provenance, and tectonic setting of the Meguma Terrane; *in* From Rodinia to Pangea: the Lithotectonic Record of the Appalachian Region, eds. R. P. Tollo, M. J. Bartholomew, J. P. Hibbard and P. M. Karabinos; Geological Society of America, Memoir 206, p. 347-366.

[1] Internal Search Number (ISN) is a unique identifier used in NovaScan - the Nova Scotia Geoscience Maps and Publications Database. The ISN can be used to retrieve a digital version of the listed citation - http://www.gov.ns.ca/natr/meb/default.asp



NOVA SCOTIA

Open File Map ME 2012-086

Oct 15, 2012

Erratum note: R.J. Horne was accidently credited as an author of this map. At Mr. Horne's request, his name has been removed from the author credits and the acknowledgments adjusted to reflect his contributions to the map. The original version of the map with Mr. Horne credited as an author is archived for reference at the Geoscience and Mines Branch. (March 2025)