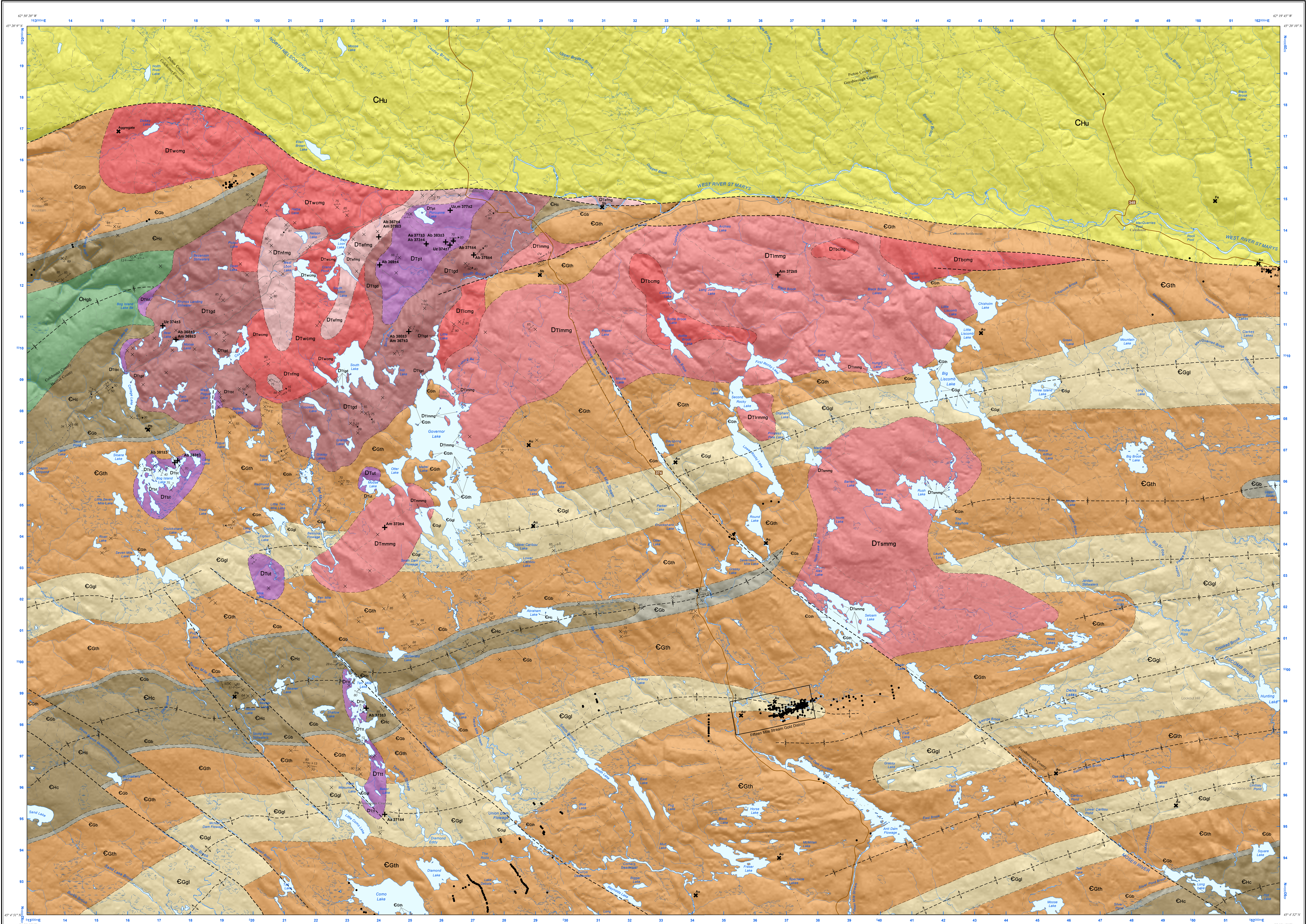


LEGEND

PALEOZOIC

CARBONIFEROUS

HORTON GROUP (undivided)

CHu — (CHu): sandstone, shale and conglomerate

DEVONIAN

TRAFALGAR PLUTONIC SUITE

DTnfmg, DTefmg — NELSON LAKE (DTnfmg) and EAST LOON LAKE (DTefmg) MONZOGRANITE: pink to grey, fine- to medium-grained, equigranular, muscovite monzogranite to syenogranite

DTlmmg, DTmmmg, DTsmmg, DTlrmmg — LONG JOHN LAKE (DTlmmg), MOOSE LAKE (DTmmmg), SELOAM LAKE (DTsmmg) and LOWER ROCKY LAKE (DTlrmmg) MONZOGRANITE: pink to buff, medium- to coarse-grained, equigranular, muscovite monzogranite to syenogranite

DTwcmg, DTlcmg, DTbcmg — WEST LOON LAKE (DTwcmg), LITTLE LAKE (DTlcmg) and BOTTLE BROOK LAKE (DTbcmg) MONZOGRANITE: grey, coarse-grained to megacrystic, biotite-muscovite monzogranite to granodiorite

DTtgd, DTtbt — TWIN LAKES (DTtgd) GRANODIORITE: dark grey, medium- to coarse-grained, equigranular to locally megacrystic, biotite granodiorite, locally displays magma-mingling textures; biotite-tonalite (DTtbt) enclaves common

DTtt, DTbt, DTpt, DTut — TEN MILE LAKE (DTtt), BOG ISLAND LAKE (DTbt) and PORCUPINE LAKE (DTpt) TONALITE; smaller unnamed bodies of tonalite (DTut): dark grey, fine- to coarse-grained, biotite tonalite to quartz diorite to minor gabbro

ORDOVICIAN

HALIFAX GROUP

OHgb — *GLEN BROOK FORMATION* (OHgb): grey, laminated metasiltstone; locally abundant trace fossils

CAMBRIAN

HALIFAX GROUP

ЄHc — *CUNARD FORMATION* (ЄHc): grey to black, laminated slate to metasiltstone interbedded with thin metasandstone; abundant sulphide minerals

GOLDENVILLE GROUP

ЄGb — *BEAVERBANK FORMATION* (ЄGb): grey to pink, coticule-bearing metasiltstone

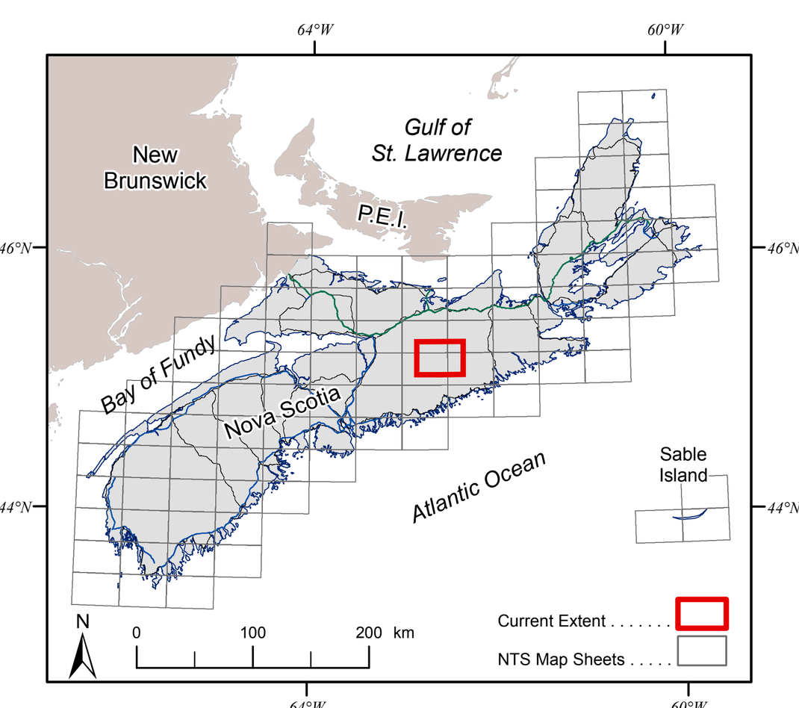
ЄGth — *TAYLOR HEAD FORMATION* (ЄGth): grey, thickly bedded metasandstone

ЄGgl — *GOVERNOR LAKE FORMATION* (ЄGgl): grey, thickly bedded metasandstone with minor siltstone; very magnetic

Symbols

- Outcrop
- Drillhole (after Fisher, 2006)
- Mineral occurrence (Au - gold, Be - beryllium, Fe - Iron, Pb - lead, Sb - antimony, Zn - zinc) (after O'Reilly *et al.*, 2009) — Au
- Radiometric date (Ma)
  - U-Pb; z - zircon, m - monazite (after Dostal *et al.*, 2006) — Uz 374±4
  - $^{40}Ar/^{39}Ar$; b - biotite, m - muscovite, a - amphibole (after Kontak and Reynolds, 1994) — Ab 374±4
- Bedding; tops known (inclined, overturned)
- Bedding; tops unknown (inclined, vertical)
- Cleavage; first generation (inclined, vertical)
- Cleavage; second generation (inclined)
- Fold axis; first generation (fold style unknown)
- Intersection lineation; first generation
- Intersection lineation: second generation
- Mineral lineation or boudinage axis; first generation
- Geological contact (approximate)
- Fault (approximate)
- Anticline, syncline (approximate)
- Gold district outline

- Rock in water
- Collector highway — 333
- Hard surface road
- Loose surface/resource access road
- Trail, footpath, cart track
- River, stream
- County boundary
- Transmission line (single line)
- Swamp
- Lake



Descriptive Text

In 2008, a detailed (1:10 000 scale) bedrock mapping and sampling project was initiated in the Governor Lake area in Colchester, Guysborough, Halifax and Pictou counties. It includes parts of NTS map sheets 11E/01, 02, 07 and 08 (White *et al.*, 2009). This area was previously included in the 'Liscomb Complex', which was considered to be 'basement' gneissic units with upper amphibolite- to granulite-facies metamorphic assemblages (e.g. Clarke *et al.*, 1993; Kontak and Reynolds, 1994; Dostal *et al.*, 2006; Giles *et al.*, 2008; Owen *et al.*, 2010).

The results of this project do not support this interpretation (White *et al.*, 2009). Units previously identified as gneiss are igneous units with magma-mingling or mylonitic textures. Based on structural studies, the igneous units were intruded synchronously with deformation in the host Goldenville and Halifax groups during the Middle Devonian to Early Carboniferous Neoacadian Orogeny. Therefore, the term 'Liscomb Complex' should be abandoned and models for the tectonic evolution of the Meguma Terrane modified accordingly.

Geological contacts east of highway 374 are largely based on the extrapolation of mapped units and the use of second vertical derivative aeromagnetic data (King, 1997a, b).

Map Notes

GIS databases, cartography and reproduction by Brian Fisher, Angie Ehler and Jeff McKinnon of the Nova Scotia Department of Natural Resources, Geoscience Information Services Section, 2010-2011. 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.

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.

Nova Scotia Department of Natural Resources
Mineral Resources Branch

Open File Map ME 2011-013

Bedrock Geology Map of the Governor Lake Area, Part of NTS Sheets 11E/01, 11E/02, 11E/07 and 11E/08, Colchester, Guysborough, Halifax and Pictou Counties, Nova Scotia

C. E. White and K. L. Scallion

Scale 1:50 000

1 0 1 2 3 4 km

Halifax, Nova Scotia
2011

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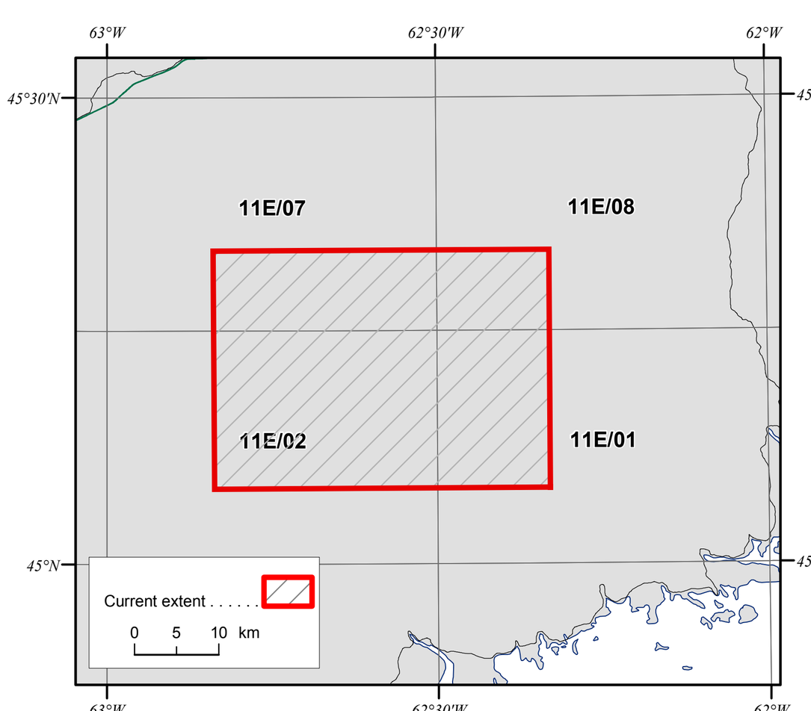
Recommended Citation

White, C. E. and Scallion, K. L. 2011: Bedrock geology map of the Governor Lake area, part of NTS sheets 11E/01, 11E/02, 11E/07 and 11E/08, Colchester, Guysborough, Halifax and Pictou Counties, Nova Scotia; Nova Scotia Department of Natural Resources, Open File Map ME 2011-013, scale 1:50 000.



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