

## WUCHUSK LAKE

Areas of the map symbolized as Unconsolidated sand and gravel deposits display underlying rock types) to portray the interpreted contrast of units, based on structural, petrographic, and topographic signatures. Rock types other than those shown may be present in the area.

All data sources collected by the authors are stored using GPS-based coordinates. This map also incorporates pre-GPS field data collected by Fahng (1989), Burner and Mann (1981), Knight (1972), Bangor (1981) and Tomlin (1981, 1983). The subdivision of the geology of the Adirondack Island Formation is based primarily on detailed mapping completed by industry (Gardish, 1972; Murty and Gardish, 1972; and Gardish and Brown, 1975). Some of the units in this formation have been modified and re-interpreted by subsequent mapping as a result of the data collected during this project. The accuracy of field data relative to reported from maps or field notes of these resources is dependent on the original plotting accuracy. Mineral occurrences shown on this map are from the Newfoundland and Labrador Geological Survey Mineral Occurrence Database System (MOCDS) (http://geology.gov.nl.ca/minerals/occur/) and from unpublished assessment reports. MOCDS occurrences that were re-assessed and new mineral indications were localized using GPS-based geographic coordinates.

The map is augmented by follow-up examination of planned rock data, petrographic thin sections and rock geochemical analyses. In many areas, geological boundaries are poorly constrained, approximated and extrapolated on the basis of outcrop distribution, topographic trends, structural observations and aeromagnetic data. Individual outcrops typically consist of several different rock types. The unit patterns depicted is based on the interpreted dominant rock type present. All rock types recorded from an individual outcrop may be determined by consulting the 1:50,000 scale map for that locality given in the digital database. Discrepancies in rock names applied to field outcrops versus those interpreted from standard scale or thin sections have not been recorded in the digital database. These interpreted differences may be the result of more refined identification in the sample, and/or the section may not be representative of the source material.

Field work in 2008, 2009 and 2010 by T. van Nott, D. Lowe, A. MacFarlane and T. Tiede

**Recommended citation**  
van Nott, T.  
2023. Geology of the Wuchusk Lake map area (NTS 13K05), central Labrador. Scale 1:50,000. Geological Survey, Department of Industry, Energy and Technology, Government of Newfoundland and Labrador. Map 2023-18. Open File 13K05/0355.

Geology compiled by T. van Nott  
Geological cartography by S. Mochametz, K. Morgan and T. Tiede

The digital topographic database map NTS 13K05 used here is available from the Surveyor General Branch, Natural Resources, Canada. Magnetic declination at centre of the map is 20°27' West (March 31, 2022).  
Universal Transverse Mercator (UTM) Grid Zone 20, North American Datum (NAD) 83.  
Elevations are in metres above sea level. Contour interval is 20 m.  
Open File 13K05/0355

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Preliminary versions of parts of this map, published in Current Research articles, have evolved so there may be differences between the current and earlier preliminary versions of the map, unit designations and the legends (see van Nott, 2008, van Nott and Lowe, 2010 and van Nott and MacFarlane, 2011).  
Map 2023-18 is a five of twenty (20) maps on the geology of the Seal Lake Group, and includes adjacent north of older tectonic provinces in central Labrador.

Department website: <http://www.gov.nl.ca/geol>  
Geological Survey website: <http://www.gov.nl.ca/minerals/geoscience>  
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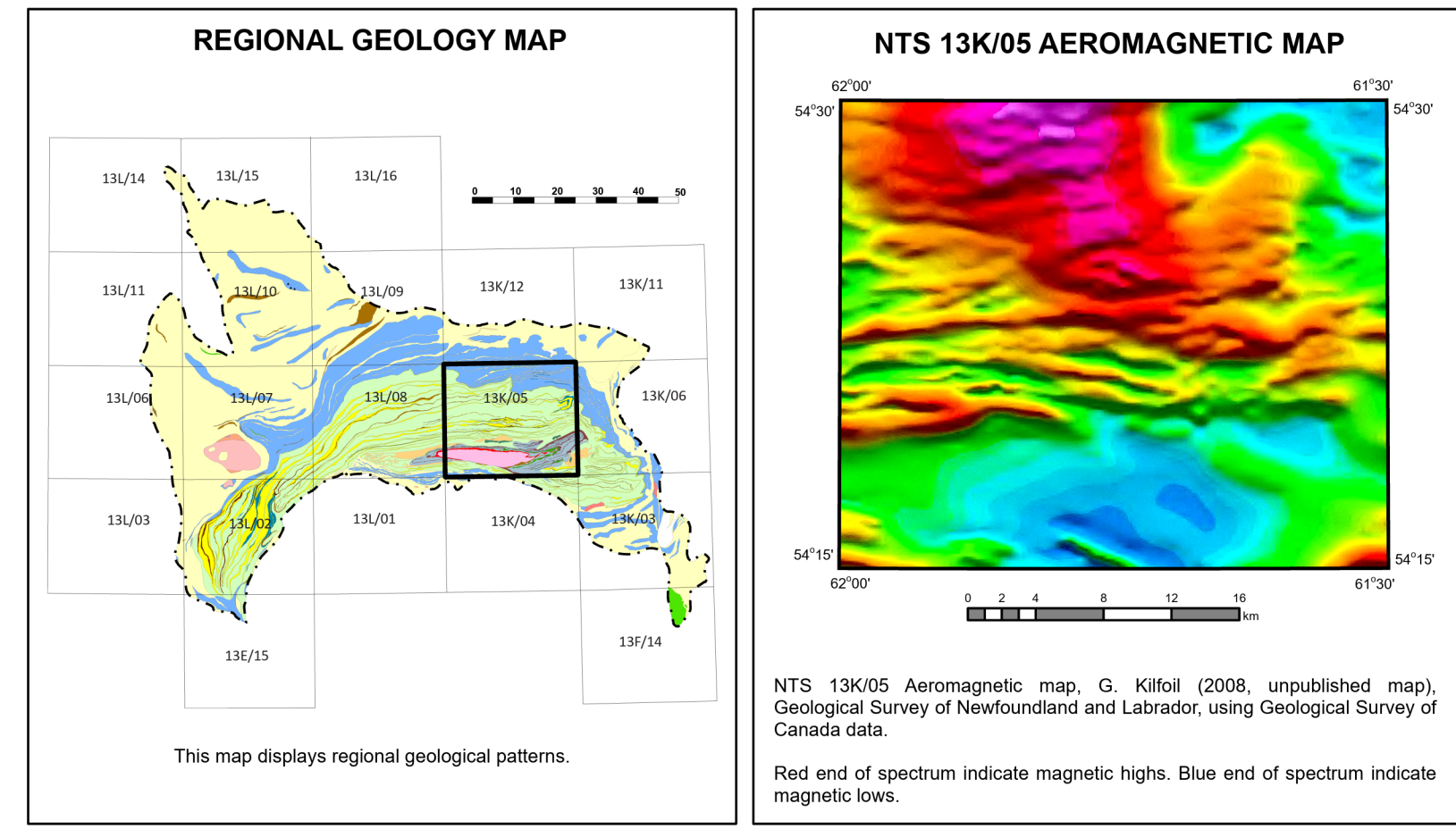
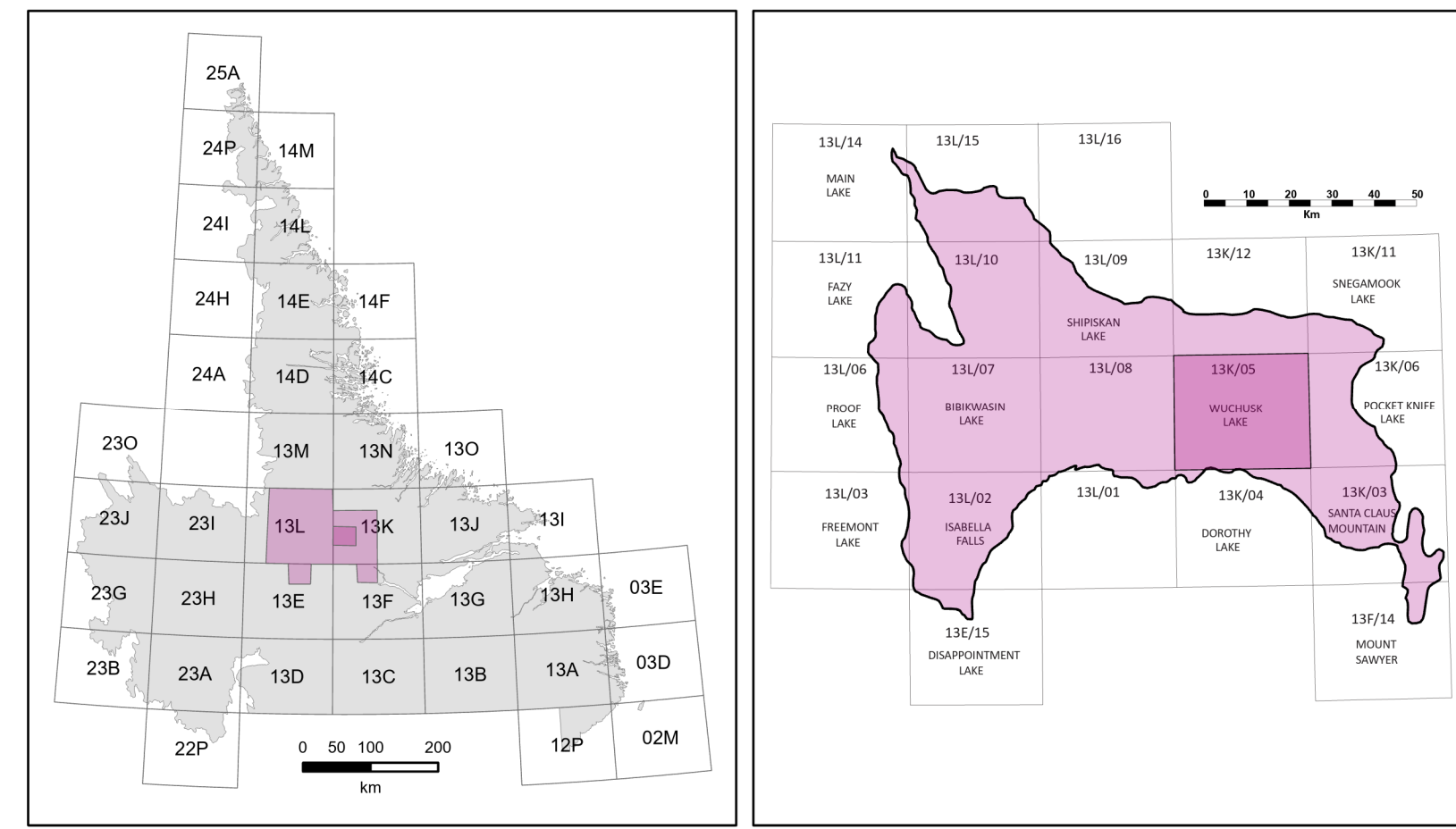
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**Note**  
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## INDEX MAPS



## MIDDLE MESOPROTEROZOIC

### Seal Lake Group (1270-1225 Ma)

#### Upper Red Quartzite Formation

**Maq** Medium- to fine-grained, well-sorted quartzite, arenite, and felsophic arenite. Contains light brown to pinkish-grey, fine-grained sandstone and siltstone. Occurs as thin lenses and beds. Interbedded with mafic and felsic rocks. The base of the formation is marked by a distinctively bedded quartzite.

#### Adeline Island Formation

##### Upper Member

**Mq** Medium- to red-weathering, fine-grained shale, locally grades to slate. Grey to green-weathering, fine-grained slate. Grey to green-weathering, fine-grained slate, locally gradational to phyllite. Red to purple-weathering slate. Grey-weathering, fine-grained sandy shale to slate. Maroon- to purple-weathering, fine-grained slate. Grey, shaly to green-weathering, fine-grained slate, gradational to phyllite. This unit exhibits a distinctive 'vine-grey' shaly and hosts most of the copper sulfide mineralization within the Seal Lake Group.

**Mq** Maroon- to purple-weathering, fine-grained slate.

**Mq** Middle Member

**Maq** Pink, red- to locally white-weathering variably recrystallized quartz arenite to arenite. This unit also contains local, thin layers and lenses of slate.

**Maq** Lower Member

**Mq** Maroon- to red-weathering, fine-grained slate. Base of the Adeline Island Formation is locally intercalated with layers and lenses of fine-grained quartz arenite.

#### Salmon Lake Formation

**Mq** Green- to brown-weathering, fine-grained, massive amygdaloidal basalt flows. Flows are 1- to 5-m thick, and intercalated with shaly, sandstone, and siltstone.

**Mq** Maroon- to red-weathering, fine-grained slate. Locally contains thin, fine-grained interbedded siltstone and quartz arenite.

**Mq** Grey to green-weathering, fine-grained phyllite to slate.

**Mq** Grey to brown-weathering, fine-grained brecciated, well-sorted arenite, and mafic breccia. Also occurs as thin lenses and layers interbedded with other sedimentary rock units.

**Mq** Pink, white to grey-weathering, fine- to medium-grained variably recrystallized quartz arenite to arenite.

**Mq** Green, red- to brown-weathering, fine- to medium-grained, moderate to strongly foliated, massive and amygdaloidal basalt flows.

**Mq** Green, brown- to grey-weathering, fine- to medium-grained gabbro to equigranular gabbro. Occurs as tabular-shaped sills and small, irregular intrusions.

#### Whiskey Lake Formation

**Mq** Brown, maroon- to red-weathering, thin-bedded to laminated slate, arenite, siltstone and subordinate calcareous rocks and chert.

**Mq** Maroon-weathering, thin-bedded to laminated slate. Occurs predominantly as thin lenses and layers.

#### Wuchusk Lake Formation

**Mq** Protonomerally pink-, white-, grey- to red-weathering variably recrystallized quartz arenite and arenite occurring as layers of variable thickness interbedded with gabbro sills and basalt flows. Contains thin- and medium-scale lenses of quartz arenite, arenite and minor fine-grained gabbro.

**Mq** Brown to tan-weathering, fine-grained, thin-bedded to laminated siltstone. Also contains thin quartz arenite, arenite, chert, and calcareous layers.

**Mq** Fine-grained, red-, maroon- to brown-weathering mudstone, grading to shale and slate and having a weak to strongly developed S, and/or cleavage.

**Mq** Black- to grey-weathering, fine-grained shale interbedded with siltstone and quartz arenite units. Exhibits localized and interbedded elevated radioactive signatures (recorded by scintillometer on outcrop surface).

**Mq** Brown- to grey-weathering, fine- to medium-grained, well-bedded to massive limestone. Occurs as thin- to 10-m scale lenses and beds interbedded with other sedimentary rock units.

**Mq** Green-grey, brown- to red-weathering, fine- to medium-grained gabbroic-olivine-magnetite basalt. Thinners range from homogeneous, massive, amygdaloidal, vesicular and porphyritic. May contain intercalated layers of volcanic tuffaceous rocks, sedimentary rocks and gabbro.

**Mq** Brown- to grey-weathering volcaniclastic tuff containing 5-15% felsic clasts. Occurs as less than 25-m-thick lenses intercalated with fine-grained basaltic shale. Locally records elevated radioactive signatures.

**Mq** Green-, grey- to rusty-weathering, fine- to very coarse-grained, massive to strongly foliated gabbro. Rocks are composed of tabular shaped sills. Contains local xenocrystic and xenolithic zones. Some sills may consist of composite intrusions.

#### Majors and Basins Lake formations (stratigraphically equivalent formations)

**Mq** Brown- to maroon-weathering, fine-grained slate. Locally interbedded with quartz arenite, arenite and siltstone layers.

**Mq** Brown- to tan-weathering, fine-grained, thin-bedded to laminated siltstone to siltstone. Also contains thin- and medium-scale lenses of quartz arenite, arenite and minor fine-grained gabbro.

**Mq** White-, pink-, red- to grey-weathering, fine- to coarse-grained variably recrystallized quartz arenite and arenite. Protonomerally pink-, white-, grey- to red-weathering, fine- to medium-grained, moderate to strongly foliated, massive and amygdaloidal basalt flows.

**Mq** White-, pink-, red- to grey-weathering, medium- to coarse-grained, pebble- and cobble-bearing arenaceous sandstone, and arenaceous conglomerate. Contains quartz-veined felsophic sandstone and siltstone.

**Mq** Green-grey, brown- to red-weathering, fine- to medium-grained gabbroic-olivine-magnetite basalt. May contain intercalated layers of volcanic tuffaceous rocks, sedimentary rocks and gabbro (as thin sills).

**Mq** Green-grey, brown- to red-weathering, fine- to medium-grained gabbroic-olivine-magnetite basalt. Locally contains a diffuse layer that may include volcaniclastic breccia and interbedded beds. May also include fine-grained, homogeneous basaltic and gabbroic rocks.

**Mq** Green- to brown-weathering, medium-grained, volcanic and intrusive breccia. Occurs as localized layers within thick sequences of basalt flows. Contains clasts and fragments of basalt, volcaniclastic, gabbro and sedimentary rocks in basaltic and gabbroic matrices.

**Mq** Green- to brown-weathering, fine- to medium-grained basalt flow containing local pillow structures.

**Mq** Green- to grey-weathering, fine-grained, very strongly foliated, massive, and/or highly crystalline slate. Occurs as thin zones adjacent to north and northeast striking thrust fault.

**Mq** Green- to grey-weathering, fine- to medium-grained, massive, and/or highly crystalline slate. Occurs as thin zones adjacent to north and northeast striking thrust fault.

#### Harp Dykes (1271 ± 1 Ma)

**Mq** Northeast-striking, orthine dykes intrude androite and related rocks of the Harp Lake Intrusive Suite.

#### Letitia Lake Group (ca. 1327 Ma)

**Mq** Fine- to medium-grained, shaly to grey-weathering, strongly foliated and laminated hornblende-bearing mafic-rich schist or volcanic tuff. Interpreted as an uppermost layer of Letitia Lake Group in unconformable contact with quartz-veined schist at the base of the Seal Lake Group.

**Mq** Well-bedded and complexly folded felsic volcanic rocks, volcanic derived sedimentary rocks of the Letitia Lake Group may include quartz-veined felsic volcanic rocks and related breccia.

**Mq** White-, buff- to grey-weathering, weakly foliated to gabbro, medium-grained, recrystallized rhyolite porphyry to trachyte and igneous tuffs. Locally intercalated with unfoliated felsic volcanic rocks.

#### Red Wine Complex (ca. 1337 Ma)

**Mq** Quartz-veined schist.

**Mq** Medium-grained, moderate to strongly foliated mafic to intermediate peraluminous granitoid intrusions. Includes quartz-veined, shaly-foliated granites and shaly-foliated quartz gneiss.

**Mq** Quartz-veined schist.

**Mq** Alkal syenite and melanocratic equivalents.

## LEGEND

## EARLY MESOPROTEROZOIC

### Harp Lake Intrusive Suite (ca. 1490 Ma)

**Mq** Grey- to grey-white-weathering, medium- to coarse-grained, massive to layered, orthopyroxene- and/or hornblende-bearing androite, orthopyroxene and hornblende. The predominant rock type is orthopyroxene-bearing androite. Occurs as massive and/or tabular, with zones of hornblende.

**Mq** Light brown- to red-weathering, medium- to coarse-grained, massive hornblende-bearing gabbro, locally gradational to quartz monzonite.

## LATE PALEOPROTEROZOIC

### LATE LABRADORIAN ROCKS (1650 - 1650 Ma, reworked during Grenville Orogeny)

#### North Pole Brook Intrusive Suite (Trans-Labrador batholith, ca. 1650 Ma)

**Pqm** White- to pink-weathering, fine- to medium-grained, recrystallized, weakly foliated to mylonitic, K-feldspar porphyry.

**Pqd** Grey- to green-grey-weathering, massive to foliated hornblende-biotite quartz diorite to diorite.

**Pqd** Unassigned intrusions

**Pqb** Unassigned gabbro to gabbroite

#### Bruce River Group (ca. 1650 Ma)

##### Shiva Lake Formation

**Pqd** Rhyolite, andesite, trachyandesite and basalt. Occurs as massive to brecciated flows, agglomerate and locally bedded tuffaceous rocks.

##### Brown Lake Formation

**Pqd** Volcaniclastic sandstone, tuff, minor conglomerate and arkose

## MIDDLE PALEOPROTEROZOIC

### Moran Lake Group (ca. 1800 Ma)

#### Warren Creek Formation

**Pqm** Grey- to black-weathering mudstone, slate, siltstone and minor intrusions, dolomite and chert.

## ARCHAEO-PALEOPROTEROZOIC

### Southeastern Churchill Province (reworked during Grenville Orogeny)

**Agd** Unfoliated foliated gabbro and orthogneiss. May be correlative with rocks of the Seal Lake Intrusive Suite.

**Agd** Fine- to medium-grained, weak to moderately foliated, biotite-hornblende granite to quartz monzonite.

**Agd** Medium-grained, weakly foliated, hornblende-biotite quartz diorite to diorite. May be correlative with rocks of the Seal Lake Intrusive Suite.

**Amz** Medium-grained, weakly to strongly foliated hornblende-biotite monzonite. May be correlative with rocks of the Seal Lake Intrusive Suite.

**Avl** Seal Lake Intrusive Suite, includes foliated to gneissic granite, quartz monzonite, gabbroite, quartz diorite and diorite.

## Southern Nain and Makkovik provinces

**Agd** Granodiorite, tonalite orthogneiss and abundant mafic intrusions

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