

EXPLANATION OF LEGEND CODE

This map uses codes that are to be read from right to left. An example is given below.
Format of legend code from the RIGHT:

- ④ ②
|
Tan2li
|
③ ①
- ① The **lithology** code (li) identifies the dominant rock type in map units. See lithology list below. More detail on lithologic constituents is located in the unit descriptors in the Legend.
- ② The **age** code (2) indicates the age of the unit, inferred from U-Pb zircon dates of individual samples. In areas with abundant geochronology, a unit can be assigned an age within a 5 million year interval (code numbers 63–76), whereas other units of less certain age may be constrained only to within 10 m.y. (26–62), 100 m.y. (10–15) or larger (1–7) age intervals. See age list below and corresponding range in Figure 4: Lithology and age chart.
- ③ The tectonostratigraphic **assemblage name** (an) for supracrustal units or suite name for plutonic rocks identifies packages of stratigraphically or magmatically related lithologic units of similar age. See list of assemblages and suite names below.
- ④ The **tectonic affinity** (T) describes the environment of deposition or crystallization of a map unit based on all available lithologic and geochemical information. See tectonic affinity list below.

LEGEND

PROTEROZOIC (544–2499 Ma)
NEOPROTEROZOIC (544–999 Ma)
MESOPROTEROZOIC (1000–1599 Ma)
PALEOPROTEROZOIC (1600–2499 Ma)

Rmw5db Matachewan diabase dykes (2454 Ma); medium- to coarse-grained, massive, plagioclase porphyritic mafic dyke

ARCHEAN (Unsubdivided) (2500–4000 Ma)

Umu2gb Gabbroic rocks

Ube2gr Granite to granodiorite: medium-grained, variably foliated, biotite and biotite-hornblende granite and associated rocks

Ube2gd Granodiorite to quartz monzonite: medium-grained, variably foliated biotite- and hornblende-biotite granodiorite, quartz monzonite; tonalite of the Fairchild Lake intrusion. Locally porphyritic with xenoliths of mafic and ultramafic rock, and occurring as clasts within the Warclub conglomerate facies

Kbe2tn Tonalite to granodiorite: medium-grained, variably foliated biotite- and hornblende-biotite tonalite and associated rocks spatially associated with the interface between Winnipeg River continental crust and the western Wabigoon oceanic to transitional arc terrane (ie., the central granitoid complex)

Khn2tn Tonalite: medium-grained hornblende tonalite of the central granitoid complex

Ube2tn Tonalite to granodiorite: medium-grained, variably foliated biotite- and hornblende-biotite tonalite and associated rocks

Kgc2tg Tonalite to granodiorite gneiss

Supracrustal assemblages of unknown affinity

Uus2sm Paragneiss, migmatite on Hill Lake, Winnipeg River Subprovince

Uus2mv Mafic volcanics, amphibolite, gabbro

Uus2am Amphibolite: medium-grained, foliated to gneissic, typically as rafts and screens intruded by younger plutonic suites

NEOARCHEAN (Unsubdivided)

Uup6pr Porphyritic rocks: quartz-feldspar porphyry, feldspar porphyry, magnetite bearing

Gak6mz Coarse-grained syenite, nepheline syenite, monzonite and associated pegmatite, Sturgeon Narrows Complex, Bell Lake, and Squaw Lake stocks

Gbe6gr Granite to granodiorite: foliated to massive biotite- and hornblende-biotite granite to granodiorite and associated pegmatite/aplite

Ghn6gr Granite to granodiorite: foliated hornblende granite to granodiorite, near Granite Bay, southwest Sturgeon Lake

Gbe6gd Granodiorite to quartz monzonite of the Dickson Lake stock

Kbe6tn Tonalite to quartz diorite: weakly to strongly foliated, locally gneissic biotite and hornblende-biotite, may include some granodiorite

Gbe12gd Granodiorite to quartz monzonite: foliated biotite and hornblende-biotite granodiorite to quartz monzonite; monzogranite, east of Vista Lake and throughout the central Wabigoon granitoid complex

Kbe12tn Tonalite to quartz diorite: weakly to strongly foliated, locally gneissic biotite and hornblende-biotite, may include some granodiorite

Kgc12tg Tonalite to granodiorite orthogneiss: layered to migmatitic biotite- and hornblende-biotite tonalite and granodiorite, includes up to 20% leucosome

Neoarchean supracrustal assemblages of unknown affinity

Uus6md Mudstone, siltstone with oxide facies iron-formation southwest of Hilltop Lake and conglomerate south of Hilltop Lake

Ous12fh Felsic to intermediate volcanic rocks: strongly foliated to phyllonitic felsic to intermediate volcanic rocks, exposed east of Sioux Lookout

Ous12fv Unsubdivided felsic to intermediate flows and pyroclastic rocks, known to be part of Neoarchean volcanic complex

Ous12am Amphibolitized mafic volcanics, known to be part of the Neoarchean complex

Ous12mv Unsubdivided mafic volcanic rocks, known to be part of Neoarchean volcanic complex

NEOARCHEAN (2500–2800 Ma)

Gbe10gr Granite: post-tectonic, post metamorphic granite, and associated pegmatite intrusive into migmatitic rocks of the English River/Winnipeg River, dated on Sen Bay at 2560 ± 40 Ma

Gbe11pr Porphyritic rocks: plagioclase feldspar; quartz porphyritic subvolcanic intrusions cutting Jutten assemblage north of Sioux Lookout

Gbe11gr Granite to granodiorite: late to post-tectonic biotite- and hornblende-biotite granite and granodiorite, dated at 2660 ± 20 Ma where intrusive into English River

Gbe11tn Tonalite to granodiorite: foliated, hornblende-biotite and biotite-tonalite to granodiorite

Gbe27gr Granite to granodiorite: massive, coarse-grained granite to granodiorite pegmatite, cuts migmatite near Dagny Lake, Winnipeg River

Gbe64gr Granite to granodiorite: foliated to massive biotite- and hornblende-biotite granite to granodiorite and associated pegmatite/aplite

Gsk64gd Monzonite, monzosyenite, quartz diorite: foliated, equigranular to K-feldspar porphyritic hornblende-biotite monzonite, monzosyenite, quartz diorite of the Vista Lake complex and rocks southeast of Hilltop Lake

Migmatitic leucosome ca. 2690 Ma

Gms65gr Peraluminous granite to granodiorite: homogeneous diatexite with generally 95% medium-grained to pegmatitic granitoid mobilizate, typically garnet and muscovite bearing, commonly contains inclusions and rafts of inhomogeneous diatexite

Gms65gg Inhomogeneous diatexite with 70–95% medium-grained to pegmatitic granitoid mobilizate, typically garnet and muscovite bearing, commonly contains inclusions and rafts of metatexite

English River sedimentary assemblage >2695 Ma <2710 Ma

Feg6sm Metasedimentary migmatite: garnet-biotite-feldspar-quartz gneiss, generally metatexite with 10–40% interbanded granitoid mobilizate

Gbe30gr Granite to granodiorite: massive, medium-grained granite and granodiorite, locally K-feldspar porphyritic, ca. 2696 Ma Grebe Lake stock

Gbe66tn Tonalite: granulitic tonalite, ca. 2697 Ma Adamhay Lake pluton

Gbe11gd Quartz monzonite: weakly foliated to massive, medium- to coarse-grained quartz monzonite; tonalite, Smye stock and Jigger Lake pluton

Gmu11gb Gabbro rocks: fine- to medium-grained hornblende gabbro, intrusive into Warclub assemblage

Kbe67pr Porphyritic rocks: plagioclase feldspar; quartz porphyritic subvolcanic intrusions cutting Warclub assemblage, dated at ca. 2703 Ma immediately west of map sheet (Davis et al., 1988)

Oup12pr Porphyritic rocks: plagioclase feldspar; quartz porphyritic subvolcanic intrusions cutting Handy Lake assemblage

Kbe31gr Granodiorite to tonalite: foliated biotite- and hornblende-biotite granodiorite and tonalite, Sesaganaga Lake

Kbe31tn Tonalite to granodiorite: foliated to locally gneissic biotite- and hornblende-biotite tonalite and granodiorite, Sesaganaga Lake, Shikag Lake, and Tersha Lake and Heron Lake stocks

Kbe33tn Tonalite: foliated biotite tonalite dated at ca. 2723 Ma north of Metionga Lake (U-Pb site #37)

Ament Bay assemblage < ca. 2698 Ma

Fam66wk Crossbedded quartzose wacke exposed on Post Lake, Sturgeon Narrows and Minnitaki Lake

Fam66co Conglomerate: clast-supported, pebble to cobble conglomerate dominated at base by gabbroic and basaltic clasts with upper polymictic conglomerate including felsic volcanic, sulphide, and metasedimentary clasts, minor wacke

unconformity

Warclub sedimentary assemblage ca. 2700–2704 Ma (<2716 Ma west of map sheet)

Ywc67ft Intermediate to felsic; mafic volcanic rocks, dominantly pyroclastic: Whimbrel Lake formation at Savant Lake; Daredevil formation at Sioux Lookout

Fwc67wk West Shore formation: turbiditic interbedded feldspathic and lithic wacke; with chert-magnetite ironstone, includes Minnitaki and Abram groups, Sioux Lookout

Fwc67co Polymictic conglomerate: varying proportion of volcanic and plutonic clasts, includes the Narrows formation at Savant Lake, Patara formation at Sioux Lookout

unconformity

Omu12gb Gabbro intrusive into Neoarchean (2720–2775 Ma) volcanic assemblages

Yms31fp Felsic sill: strongly foliated to phyllonitic felsic sill intrusive into amphibolite, south of Hilltop Lake (U-Pb site #34)

Central Sturgeon plutonic suites ca. 2720 Ma

Zgc32tg Tonalite to granodiorite orthogneiss: foliated to gneissic biotite- and hornblende-biotite tonalite with up to 20% leucosome exposed on Rude Lake, southeast of Hilltop Lake

Zcs70pr U-Mo-bearing porphyry, Beidelman Bay dated at 2720.5 ± 3/-2 Ma (U-Pb site #46) and porphyritic dikes on Quest Lake dated at 2720–2718 Ma (U-Pb site #28)

Zmu32di Diorite to quartz diorite: foliated diorite, quartz diorite; tonalite to granodiorite intrusive into, and likely linked to Central Sturgeon assemblage, with associated Cu-Mo mineralization

Zmu12gb Gabbroic rocks, intrusive into, and likely linked to Central Sturgeon assemblage

Zmu12up Ultramafic rocks, intrusive into, and likely linked to Central Sturgeon assemblage

Central Sturgeon assemblage ca. 2720 Ma

Zcs70fv Felsic tuff

Zcs70mv Calc-alkaline basalt and andesite: pillowed to massive, low Ti, locally plagioclase-phyric

Zcs70th High-Ti tholeiitic basalt, tholeiitic basalt and andesite: pillowed to massive flows, pillow breccia and hyaloclastite, locally high Mg

Quest Lake sedimentary assemblage >2718 Ma <2735 Ma

Hqt33wk Wacke, siltstone with minor graphic; pyrrhotitic shale

unconformity

South Sturgeon plutonic suites ca. 2730–2735 Ma

Ybe73gr Foliated trondhjemite and leucogranodiorite (Robinson pluton, central Lewis Lake batholith)

Ymu12gb Gabbroic rocks: medium-grained gabbro, intrusive into, and likely linked to South Sturgeon volcanic rocks

Ymu73gb Gabbroic rocks: melanogabbro to quartz gabbro with associated granophyre and pegmatite of the layered Pike Lake intrusion

Yss73pr Porphyries: plagioclase feldspar and quartz-feldspar porphyritic dykes and sills, includes Conant and Handy Lake porphyries, central Savant Lake belt

Ybe73tn Tonalite: fine- to medium-grained, biotite tonalite and xenolithic tonalite of the Beidelman Bay pluton

Ybe74gr Granodiorite to tonalite: foliated, quartz-porphyritic hornblende-biotite granodiorite to tonalite of the Yett Lake stock and associated phases

Ymu74di Diorite, quartz diorite: hornblende-biotite dioritic dykes and inclusions interpreted as co-magmatic with Lewis Lake and Yett Lake tonalite-granodiorite

Ybe74tn Tonalite to granodiorite: biotite; hornblende-biotite tonalite, granodiorite; quartz diorite of the Lewis Lake batholith, locally quartz-biotite and/or hornblende porphyritic, cut by pink granitic aplite-pegmatite veins and dykes

South Sturgeon assemblage ca. 2735 Ma

Yss34sv Epiclastic rocks, in part associated with South Sturgeon dacite domes

Yss73fv Felsic pyroclastic rocks of the Neepawa formation, Sioux Lookout

Yss74fv Felsic to intermediate pyroclastic rocks: includes rhyolitic ash flows and dacite domes, host to Cu-Zn volcanogenic massive sulphide deposits and minor scoria-tuff cone

Yss34fv Andesite: andesitic lava flows of the No Name and Lyon Lake formations

Yss34th Tholeiitic basalt: massive to pillowed (pre-caldera Darkwater formation)

Handy Lake plutonic suites ca. 2745 Ma

Mhl12tn Tonalite: foliated, hornblende-biotite tonalite with quartz dioritic xenoliths (Patterson Lake stock)

Handy Lake assemblage ca. 2745 Ma

Hhl35th Thin tholeiitic basalt flows interstratified with upper calc-alkaline volcanic rocks

Mhl35fv Intermediate to felsic pyroclastic rocks: minor rhyolite flows with widespread effects of intense hydrothermal alteration near Savant Lake, and locally intense ferroan carbonatization throughout Northeast Arm, Sturgeon Lake

lhl35mv Basalt: mixed pillowed to massive tholeiitic to calc-alkaline flows

lhl35th Basalt: lower pillowed to massive tholeiitic flows and associated gabbro

Omu36gb Gabbroic rocks: gabbro, leucogabbro, and associated pegmatitic rocks, Northeast Arm Savant Lake

Fourbay Lake assemblage ca. 2775 Ma

Ntb38fv Rhyodacite to dacite lapilli tuff: quartz phyric

Ntb38th Tholeiitic basalt: massive to pillowed, strongly foliated to gneissic

MESOARCHEAN (2800–3200 Ma)

Jutten assemblage >2750 <2880 Ma

Xju2fv Intermediate to felsic volcanic rocks: dominantly pyroclastic tuff and breccia, exposed north of Kashaweogama Lake

Xju2us Schistose ultramafic rocks, north of Kashaweogama Lake and near Armit Lake

Xju2am Amphibolitized mafic volcanic rocks of the Jutten assemblage

Xju2th Massive to pillowed tholeiitic basalt with minor oxide facies ironstone, chert; Jasper

Xju2wk Garnet-bearing semipelite exposed on Dickson Lake

Xju2qz Quartzose clastic rocks: fuchsitic quartzose arenite, feldspathic wacke, conglomerate containing trondhjemite, fuchsitic schist, ultramafic and fine-grained felsic volcanic clasts

unconformity

Northeast Arm assemblage ca. 2880 Ma

Rna13it Rhyodacite tuff, ultramafic schist, fuchsitic siltstone, ultramafic-derived siltstone exposed on Northeast Arm, Savant Lake: denoted (N) on map face

Kbe49tn Tonalite to granodiorite: foliated tonalite, granite, granodiorite; trondhjemite dated at ca. 2890 Ma north of Sioux Lookout

Vanessa Lake assemblage ca. 2926 Ma

Rvl53lv Tectonized rhyodacite tuff, garnetiferous amphibolite

Kgc58tg Tonalite to quartz diorite gneiss dated at ca. 2970 Ma

Kgc15tg Tonalite to quartz diorite gneiss: medium-grained, grey, foliated to strongly gneissic tonalite to quartz diorite dated at ca. 3040 Ma. Locally augen structure due to plagioclase phenocrysts. Commonly intruded by granitic dykes or occurring as rafts within granite and containing xenoliths of mafic amphibolite gneiss. Porphyroclastic mylonitic gneiss in proximity to the Miniss River fault zone

PALEOARCHEAN (3200–3599 Ma)

Kashaweogama Lake assemblage ca. 3254 Ma

Kka17fv Quartz-phyric felsic volcanic rocks infolded with fine-grained intermediate and mafic volcanic rocks and schist

Western Superior NATMAP Legend Key:

Tan2li
li = lithology (see listing below)
2 = age
an = assemblage name (see listing below)
T = tectonic affinity (see listing below)

Using the legend: e.g. Handy Lake rhyodacite tuff, Mhl35fv

M hl 35 fv

Lithology

am amphibolite
co conglomerate
db diabase
di diorite-quartz diorite
fh felsic phyllonite
fp felsic plutonic rock
fy felsic to intermediate volcanic rock
gb gabbro
gd granodiorite-quartz monzonite
gg granodiorite-granite gneiss
gr granite-granodiorite
iv intermediate volcanic rock
li intermediate tuff, tuff breccia
md mudstone, siltstone
mv mafic volcanic rock
mz monzonite-monzodiorite-syenite
pr porphyry
qz quartzite, quartz-rich sedimentary rocks
sm metasedimentary migmatite/paragneiss
sv volcanoclastic sedimentary rocks
tg tonalite-granodiorite gneiss
th tholeiitic basalt
tn tonalite-granodiorite
up ultramafic plutonic rock
us ultramafic schist
wk wacke

Ages

2 Archaean (2500–4000 Ma)
5 Paleoproterozoic (1600–2499)
6 Neoproterozoic (2500–2799 Ma)
10 2500–2599
11 2600–2699
12 2700–2799
13 2800–2899
15 3000–3099
17 3200–3299
27 2690–2699
30 2690–2699
31 2700–2709
32 2710–2719
33 2720–2729
34 2730–2739
35 2740–2749
36 2750–2759
38 2770–2779
49 2880–2889
53 2920–2929
58 2970–2979
64 2685–2689
65 2690–2694
66 2695–2699
67 2700–2704
70 2715–2719
73 2730–2734
74 2735–2739

Assemblage Names

ak alkalic suite
am Ament Bay
be biotite plutonic
cs Central Sturgeon
eg English River
fb Fourbay
gc gneissic plutonic
hl Handy Lake
hn hornblende plutonic
ju Jutten
ka Kashaweogama Lake
ms muscovite plutonic
mu mafic-ultramafic plutonic
mw Matachewan
na Northeast Arm Savant
qt Quest Lake
sk sanukitoid plutonic
ss South Sturgeon
up unknown plutonic/hypabyssal
us unknown supracrustal
vl Vanessa Lake
wc Warclub

Tectonic Affinity

F Orogenic sediments (sediments which source, and are deposited within or adjacent to, an actively deforming terrane)
G Orogenic plutons (includes crustal-derived synorogenic granitoid plutons, and mantle-derived sanukitoids)
H Oceanic arc-rift
I Primitive island arc
K Continental arc
M Mature island arc
N Ocean floor
O Oceanic undivided
R Intracontinental rift
U Unknown tectonic affinity
X Continental margin plume-related
Y Continental margin arc
Z Continental margin arc-rift

Note:
• synvolcanic plutons and intravolcanic clastic and chemical sedimentary sequences use tectonic affinity of associated volcanic suite.
• lithologies for a given polygon are to be listed in the map legend for a given coded colour block.

Geological contact (known, approximate, and/or inferred)

Fault

Shear zone along Kashaweogama Lake

Anticline (upright, overturned)

Syncline (upright, overturned)

Lineament

Iron-formation IF

Unconformity

Stratigraphic younging derived from pillow shapes

Stratigraphic younging derived from graded beds

Sample site for U-Pb age determination with reference to Table 1 (number 1 to 70) □ 2

Sample site for Nd isotopic determination with reference to Table 2 (number 71 to 137) ▲ 75