

BEDROCK GEOLOGY OF MARATHON COUNTY, WISCONSIN

by
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DESCRIPTION OF MAP UNITS

Locations of good exposures of units are indicated in parentheses as follows:
(section number, north township number, east range number).
See text for discussion of units.

- Alluvium.** Stream-deposited sand and gravel.
- Glacial deposits.** Till and outwash; shown only in areas where geology of underlying units cannot be determined.
- Sandstone outcrops.** Upper Cambrian, undifferentiated.
- Diabase dikes.** Microgabbro with or without olivine occurring as dikes.
- Porphyritic quartz monzonite.** 10 to 15 mm euhedral potassium feldspar phenocrysts and 2 to 4 mm grains of corroded quartz set in an aplitic matrix composed of plagioclase, quartz, amphibole, and biotite.
- Red River quartz monzonite.** Medium-grained, porphyritic quartz monzonite with scattered euhedral microcline phenocrysts, some of which are mantled by oligoclase.
- Wolf River granite.** Coarse-grained, porphyritic hornblende-biotite granite to quartz monzonite.
- Leucocratic quartz monzonite.** Pale orange-pink, fine-grained, porphyritic aplite occurring as bosses up to 40 km² in size. The rock consists of 20 to 30 percent quartz, 20 to 25 percent microcline, and 40 to 50 percent plagioclase (An₄₀).
- Granite and quartz monzonite.** Moderate orange to pink, coarse-grained granite and quartz monzonite near Nine Mile Swamp consisting of alkali feldspars, quartz, and biotite (s21,T28,R7).
- Tabular syenite.** Pyroxene- and amphibole-bearing syenite with alkali feldspar laths and lensoidal mafic inclusions forming a tabular fabric (s22,T29,R6).
- Nepheline syenite.** Coarse-grained to pegmatitic gneissic amphibole-biotite-nepheline syenite (sE 1/2 s22,T29,R6).
- Amphibole syenite.** Pink to gray, amphibole-bearing syenite with texture varying from aplitic to pegmatitic (s23,T29,R6).
- Pyroxene syenite.** Moderate olive gray, coarse-grained, flow-lined, pyroxene-bearing syenite (s14,T29,R6).
- Lensoidal syenite.** Pyroxene- and amphibole-bearing syenite with flow-oriented lensoidal xenoliths (s27,T29,R7).
- Quartz syenite.** Quartz syenite with abundant flow-oriented metasedimentary and metavolcanic xenoliths (s7,T28,R7).
- Syenitized metavolcanics.** Fine- to medium-grained metavolcanics with masses and veinlets of potassium feldspar and biotite (s30,T30,R7).
- Aplitic syenite.** Pink, fine-grained aplitic syenite with inclusions and streaks of biotite; commonly this rock is foliated or banded or both (s4,T28,R7).
- Biotite schist.** Dark gray, medium-grained biotite schist occurring as xenoliths in the Wausau syenite. The age of this unit is unknown (s34,T28,R7).

- Quartzite.** White to gray, coarse-grained quartzite which locally shows relic stratification, ripple marks, and cross bedding. This unit occurs as xenoliths in the Wausau syenite and its age is unknown (s6,T28,R7).
- Felsic mylonite.** Felsic cataclitized rock consisting of flaser gneiss, mylonite, blastomylonite, and phyllonite. Several different ages of cataclasis are present.
- Hornblende schist.** Hornblende schist present as lensoidal masses along cataclastic zones and near some granite contacts.
- Leucogranite.** Leucogranite with texture varying from aplitic to pegmatitic with common graphic granite texture and consisting mainly of potassium feldspar and quartz.
- Granite.** Brownish red, medium-grained leucocratic granite near Granite Heights with a homogeneous, allotriomorphic granular texture and consisting of 25 to 35 percent quartz, 45 to 60 percent perthitic microcline, 15 to 20 percent plagioclase (An₄₀₋₅₀), and less than 5 percent green biotite (s26,T30,R7).
- Granite.** Brownish red, medium-grained leucocratic granite near Wein. Virtually indistinguishable from gng (s21,T28,R4).
- Granite.** Brownish red, medium-grained leucocratic granite northeast of Stratford. Virtually indistinguishable from gng (s22,T27,R4).
- Granite.** Pink, medium-grained leucocratic granite near Little Rose consisting of 20 to 30 percent quartz, 50 to 60 percent microcline, 10 to 15 percent plagioclase (An₄₀), and trace amounts of biotite (s29,T27,R3).
- Granite.** Pink, medium-grained leucocratic granite east of Abbotsford. Similar to lg (s11,T28,R2).
- Granite.** Pink, medium-grained leucocratic granite with prominent cataclastic foliation east of Lake Du Bay. Similar to lg except for pronounced foliation (T36,R7 and 8).
- Granite.** Pink to red, medium- to fine-grained, biotite granite along the banks of the Eau Claire Reservoir consisting of 20 to 30 percent quartz, 40 to 50 percent perthitic microcline, 20 to 25 percent plagioclase (An₄₀), and 5 to 10 percent biotite (s27,T26,R7).
- Quartz monzonite.** Medium-grained, biotite-bearing, porphyritic quartz monzonite near Kaline consisting of sericitized subhedral phenocrysts of microcline ranging in size from 0.5 to 1.5 cm and subhedral phenocrysts of oligoclase (An₄₀) about half as large as the microcline set in a fine-grained, granophyric matrix. The rock consists of 20 to 30 percent quartz, 35 to 60 percent microcline, 25 to 40 percent plagioclase (An₄₀), and 5 to 10 percent hornblende or biotite or both (s14,T28,R2).
- Quartz monzonite.** Pink to red, coarse-grained, biotite granite to quartz monzonite near Cherokee County Park consisting of microcline and plagioclase phenocrysts up to 8 mm in diameter set in a matrix consisting of crystals 1 to 2 mm in diameter. The texture varies from hypidiomorphic granular to alioctomorphic granular. A faint but pervasive cataclastic foliation is present. The rock consists of 20 to 30 percent quartz, 35 to 60 percent microcline, 25 to 40 percent plagioclase (An₄₀), and 5 to 10 percent hornblende or biotite or both (s14,T28,R2).
- Quartz monzonite.** Pink to red, coarse-grained, biotite granite to quartz monzonite east and southeast of Wausau with an alioctomorphic granular texture. The rock consists of 10 to 30 percent quartz, 30 to 50 percent microcline, 30 to 50 percent plagioclase, and 10 to 20 percent biotite or hornblende or both.

- Granodiorite.** Pale orange to pink, coarse-grained, hypidiomorphic granular, foliated biotite granodiorite which grades northward into flaser gneiss near Hamburg (s30,T30,R5).
- Quartz diorite.** Quartz diorite occurring as intrusion breccias consisting of chaotic mixtures of felsic intrusive rock and metavolcanic country rock. The rock consists of 20 to 30 percent quartz, 40 to 60 percent strongly zoned plagioclase (An₄₀ average), and 10 to 30 percent hornblende and biotite.
- Quartz diorite.** Quartz diorite with subordinate diorite occurring as intrusion breccia contaminated with metavolcanic country rock. Similar to qd (s3,T29,R6).
- Metagabbro.** Undifferentiated metagabbro with variable textures, mineralogy, and layering. Probably several different ages of gabbro are present. Mineralogy consists of variable amounts of pyroxene, hornblende, biotite, plagioclase, and quartz. Inclusions of pyroxene, anorthosite, gabbro, and diorite are locally abundant.
- Anorthosite.** Gabbroic anorthosite to anorthosite consisting of labradorite, hornblende, pyroxene, and biotite. Probably the western-most occurrence of the Tipton Anorthosite (age unknown).
- Ultramafic rocks.** Talc, serpentine, and actinolite-bearing ultramafic rocks which occur as small intrusions spatially associated with mylonitic zones. Some of the ferromagnesian minerals are pseudomorphous after orthopyroxene and olivine.
- Volcanogenic metasedimentary rocks.** Argillite, graywacke, conglomerate, and iron-formation; locally this unit is strongly foliated.
- Felsic metavolcanic rocks.** Rhyolite to dacite occurring as welded and non-welded felsic tuff, bedded tuff, volcanic breccia, and lava flows, with subordinate interstratified metasedimentary rocks, pyroclastic breccia, flow breccia, massive and flow-banded flows, and conglomerates.
- Intermediate metavolcanic rocks.** Medium-gray to pale-green, andesite and dacite occurring as tufts and porphyritic, massive, and pillowed flows.
- Mafic metavolcanic rocks.** Green to black, chlorite-rich basalt occurring as pillowed and massive flows and tufts.
- Metabasalt and amphibolite.** Fine- to medium-grained, hornblende-bearing basalt occurring as pillowed flows and associated pillow breccia (T30,R8).
- Quartz monzonite gneiss.** Medium-grained quartz monzonite gneiss (s4,T27,R3).
- Granodiorite gneiss.** Medium- to coarse-grained garnetiferous biotite-muscovite, banded and foliated granodiorite with ribbons and lenses of garnet-bearing pegmatite and quartz (s11,T30,R4, s22,T26,R4, and s11,T27,R4).
- Quartzite.** Deformed and recrystallized ferruginous quartzite (s36,T28,R3).
- Quartzofeldspathic gneiss and migmatite.** Medium- to coarse-grained, quartzofeldspathic, biotite- and hornblende-bearing gneiss, amphibole, and migmatite.

MAP SYMBOLS

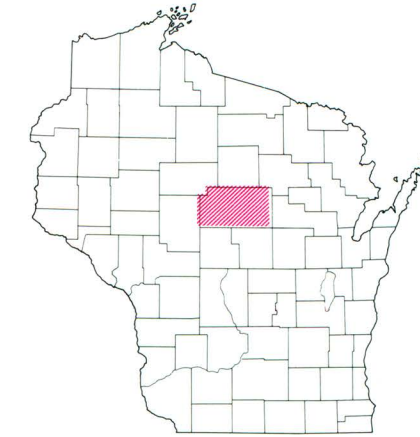
- contact - dashed where approximately located
- dotted where concealed
- fault - dashed where approximately located
- zone of intense cataclasis
- Strike and dip of beds
inclined vertical overturned top of pillow
- Strike and dip of foliation
inclined vertical
- Bearing and plunge of lineation
inclined

Note: Planar symbols (strike and dip of beds, foliation or schistosity) may be combined with linear symbols to record data observed at same locality by superimposed symbols at point of observation.

- shaft quarry gravel pit
- Area of outcrop
large small, isolated

Individual stone piles (not shown separately) have been used extensively to determine the nature and distribution of bedrock. (See figure 1 in text.)

Location Map



Marathon County, Wisconsin

Cartography by M.L. Czechanski and Jon C. Zuiker

MAP NUMBER 83-5