

EXPLANATION
MAJOR PRECAMBRIAN TERRANES

TECTONIC ELEMENT

Midcontinent rift system (1,100 Ma)

- Late- and post-rift: Fluvial and lacustrine clastic sedimentary rocks (Ysg)
- Syn-rift: Basalt, rhyolite, minor interflow sedimentary rocks, and gabbroic intrusions (Duluth Complex, Mellen Intrusive Complex) (Yv)
- Pre-rift: Sedimentary rocks of Sibley Group (Ysg)

Intrusive rocks of Transcontinental anorogenic province

- Anorogenic intrusions: Wolf River batholith (1,470 Ma) (Yw)
- Anorogenic magmatism: Granitic rocks (Ygr)
- Rhyolite and cogenetic epizonal granite (~1,760 Ma) (Xrg)

Quartzite basins

- Fluvial sand-dominated redbed sequences, mainly between 1,630 Ma and 1,760 Ma (Xq)

Penokean orogen

- Foredeeps: Turbiditic graywacke-shale sequences overlying passive-margin metasedimentary and metavolcanic rocks (parautochthonous) (Xpg)
- Cratonic sediment source: Passive-margin metasedimentary rocks (parautochthonous) (Xpm2)
- Fold-and-thrust belt: Passive-margin metasedimentary and metavolcanic rocks, tectonically imbricated (Xpm)
- Passive-margin metasedimentary and metavolcanic rocks and overlying turbiditic (foredeep) sequences, tectonically imbricated (Xpm1)

Magmatic terranes

- Island-arc-related metavolcanic and granitoid rocks (1,835–1,890 Ma) and post-tectonic granitoid intrusions (~1,760 Ma) of Pembine-Wausau terrane (Xvg)
- Syn- to post-tectonic granitoid rocks intruded into complex metamorphic terrane in part of Archean age (XAi)
- Island-arc-related metavolcanic and granitoid rocks (~1,835–1,892 Ma) on Late Archean basement (Marshfield terrane) (XAr)

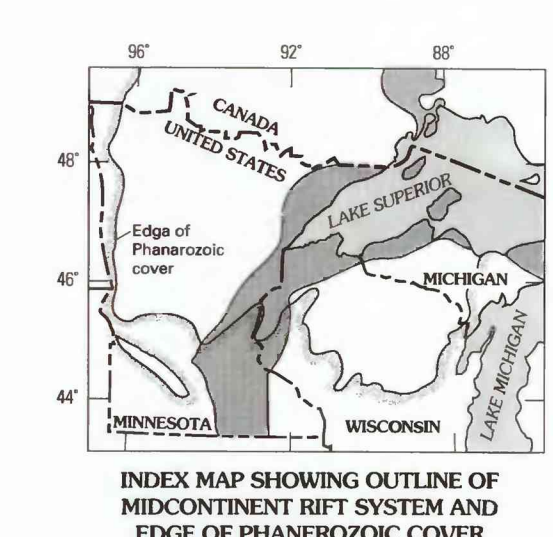
Superior province

- Wabigoon subprovince: Arc-related metavolcanic, metasedimentary, and syn-tectonic to late-tectonic granitoid rocks (2,680–2,730 Ma) (Wvgg)
- Quetico subprovince: Turbidite-dominated metasedimentary rocks and granitoid intrusions (2,650–2,690 Ma) (Wsg)
- Wawa subprovince: Arc-related metavolcanic, metasedimentary, and syntectonic to late-tectonic granitoid rocks (2,650–2,730 Ma) (Wvg)
- Minnesota River Valley subprovince (formerly gneiss terrane): Migmatitic gneiss and amphibolite of amphibolite to granulite metamorphic grade (2,700–3,600 Ma) intruded by late-tectonic to post-tectonic granite (~2,600 Ma). Includes supracrustal rocks in Dickinson County, Michigan (Agn)

Legend for Tectonic Elements:

- Contact—Approximately located, dashed across water
- Fault of known or inferred Middle Proterozoic age (Midcontinent rift system)
- Fault or shear zone of known or inferred Early Proterozoic age
- Fault or shear zone of known or inferred Late Archean age—Dashed where inferred; in part reactivated during the Proterozoic
- High-angle fault—Age of movement not known
- High-angle fault—Bar and ball on downthrown side where sense of movement known
- Transcurrent (strike-slip or oblique-slip) fault—Showing relative horizontal movement
- High-angle reverse fault of Middle Proterozoic (Keweenaw) age—Dashed where covered by water; ticks on downthrown side
- Thrust fault of Early Proterozoic (Penokean) age—Steep at surface; inferred to flatten at depth. Dashed where covered by Proterozoic rocks; sawteeth on upper plate
- Thrust fault of Late Archean (W) age—Sawteeth on upper plate
- Intensely sheared rock; wrench zone
- Stratotectonic discontinuity—Queried where extent uncertain
- Agl: Appleton geophysical lineament
- GLTZ: Great Lakes tectonic zone
- IF: International Falls, Minnesota

Note: Proterozoic Y (Middle Proterozoic) 900–1,600 Ma
Proterozoic X (Early Proterozoic) 1,600–2,500 Ma
Archean, A, 2,500–3,800 Ma; W, 2,500–2,800 Ma



Compiled by P.K. Sims, 1991 with contributions from Chandler and Southwick (1990), J.A. Percival (1989), and W.C. Day

TECTONIC MAP OF PRECAMBRIAN ROCKS, LAKE SUPERIOR REGION, UNITED STATES, AND ADJOINING ONTARIO, CANADA

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