

# Geology of the Precambrian Surface of Iowa and surrounding area

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## LEGEND

(ages given in millions of years - Ma)

### PROTEROZOIC (2500 - 530 Ma)

#### GRENVILLE INTERVAL (1350-1000 Ma)

- Mks Keweenaw Clastic Sedimentary Rocks
- Mkur Keweenaw Upper Red Clastic Group
- Mklr Keweenaw Lower Red Clastic Group
- Mkv Keweenaw Volcanic / Plutonic Rocks
- Mkt Keweenaw Thor Volcanic Group
- Mhp Northeast Iowa Plutonic Complex
- Mko Osborne Mafic Complex

#### SOUTHERN GRANITE / RHYOLITE INTERVAL (1380 - 1310 Ma)

- Mp2 Granitic plutons

#### EASTERN GRANITE / RHYOLITE INTERVAL (1500 - 1430 Ma)

- Mgr Rhyolite and granitic plutons
- Mp Granitic plutons
- Mq Quimby granite (1433 ± 6 Ma)
- Mgi Green Island Plutonic Group (1485 ± 10 Ma)
- Msn Spencer Norite
- Msg Spencer Granite (1373 ± 7 Ma)
- Mcia Central Iowa Arch Granites

#### Mazatzal Orogenic Belt (1650-1620 Ma)

- Eg3 granitic plutons dominant
- Egn3 gneiss dominant

#### BARABOO INTERVAL (1700 - 1500 Ma)

- Eq quartzite dominant
- Ep3 Baraboo Quartzite
- Ep3 Sioux Quartzite
- Ep3 Cedar Rapids Quartzite
- Ep3 Washington County Quartzite

#### CENTRAL PLAINS INTERVAL (1800-1700 Ma)

- Yavapai Orogenic Belt
- Egn1 orogenic gneiss and granite
- Eqq Camp Quest Gneiss (2065 ± 10 Ma)
- Ep2 post-orogenic granitic plutons
- Ehk Hull Keratophyre (1782 ± 4 Ma)

#### PENOKEAN INTERVAL (2100-1800 Ma)

- Ep late-stage granitic plutons
- Eh Harris Granite (1804 ± 17 Ma)
- Ehw Hawarden Granite

#### Trans-Hudson Orogenic Belt

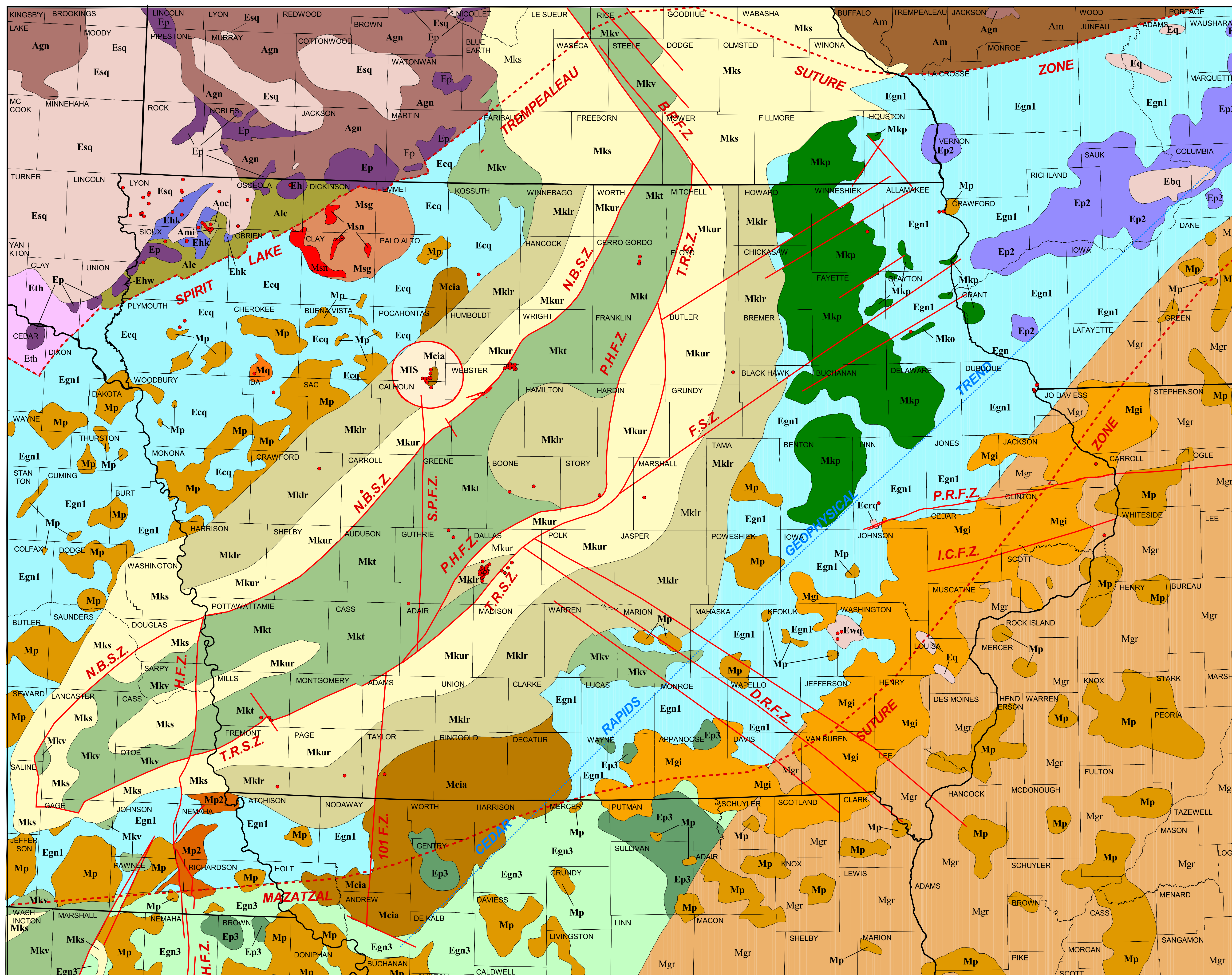
- Eth Granite and gneiss dominant

### ARCHEAN (>2500 Ma)

- Alc Lyon County Gneiss (2523 ± 5 Ma)
- Ami Matlock Banded Iron Formation
- Aoc Otter Creek Mafic Complex (2890 ± 90 Ma)
- Agn Early to Middle Archean gneiss and migmatite terrane
- Am Marshfield exotic terrane

- MIS Late Cretaceous (73.8 ± 3 Ma) Manson Impact Structure

- known or inferred faults
- - - Proterozoic sutures
- ... geophysical trend
- well penetrating Precambrian rocks



### key to mapped faults and structural zones

- 101 F.Z.** 101 Fault Zone
- B.P.F.Z.** Belle Plaine Fault Zone
- D.R.F.Z.** Des Moines River Fault Zone
- F.S.Z.** Fayette Structural Zone
- H.F.Z.** Humboldt Fault Zone
- I.C.F.Z.** Iowa City-Clinton Fault Zone
- N.B.F.Z.** Northern Boundary Fault Zone
- P.H.F.Z.** Pery-Hampton Fault Zone
- P.R.F.Z.** Plum River Fault Zone
- S.P.F.Z.** Sheeder Prairie Fault Zone
- T.R.S.Z.** Thurman-Redfield Structural Zone

