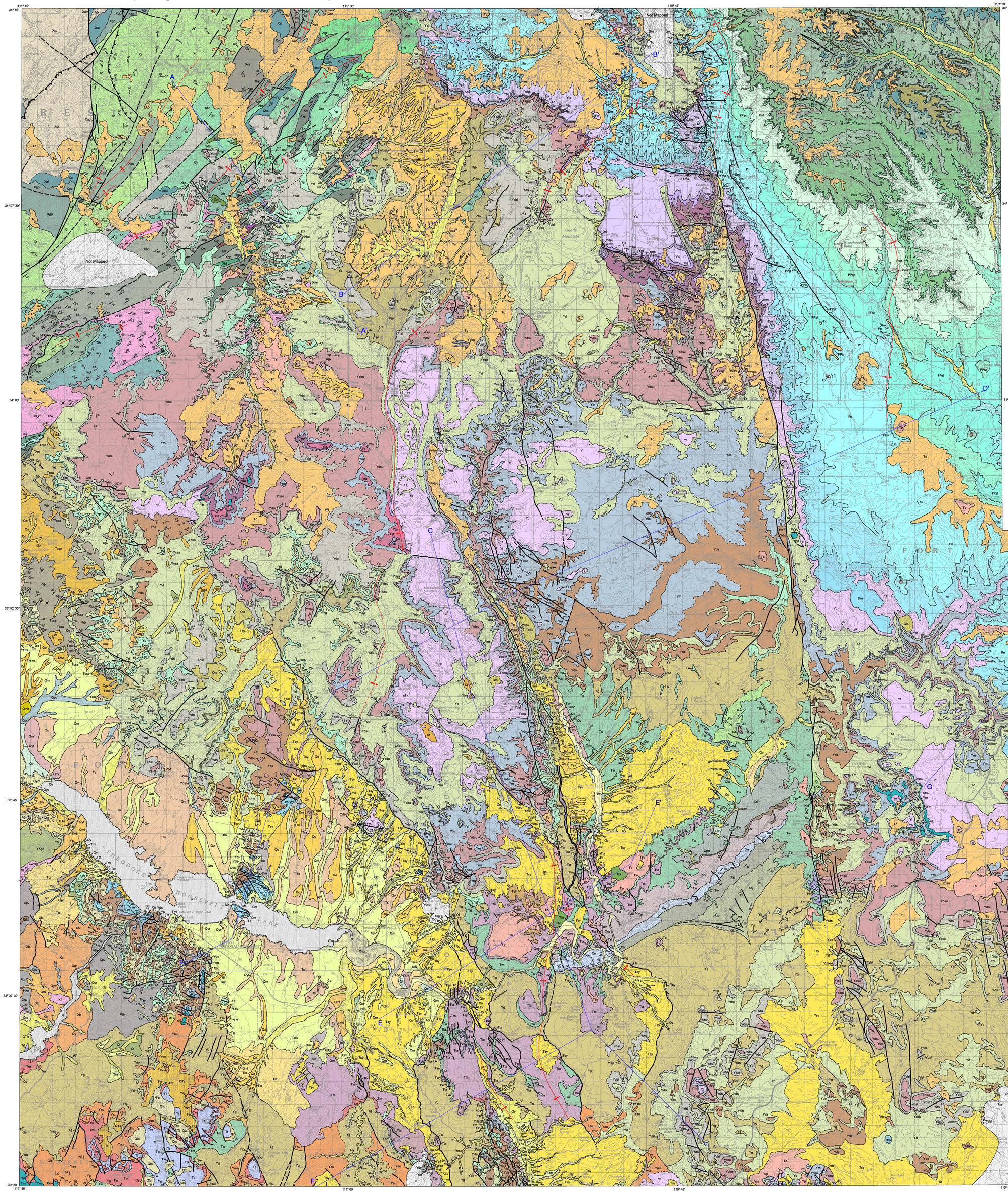
Arizona Geological Survey
Digital Geologic Map 24, sheet 1 of 2

Geologic Map of the Sierra Ancha, central Arizona

Compiled by Steven J. Skotnicki **September, 2002**

Layout Scale 1:100,000

3 0 3 6 9 12 15 Kilometers
3000 0 3000 6000 9000 12000 15000 meters
2 0 2 4 6 8 10 Miles



GEOLOGIC MAP SYMBOLS

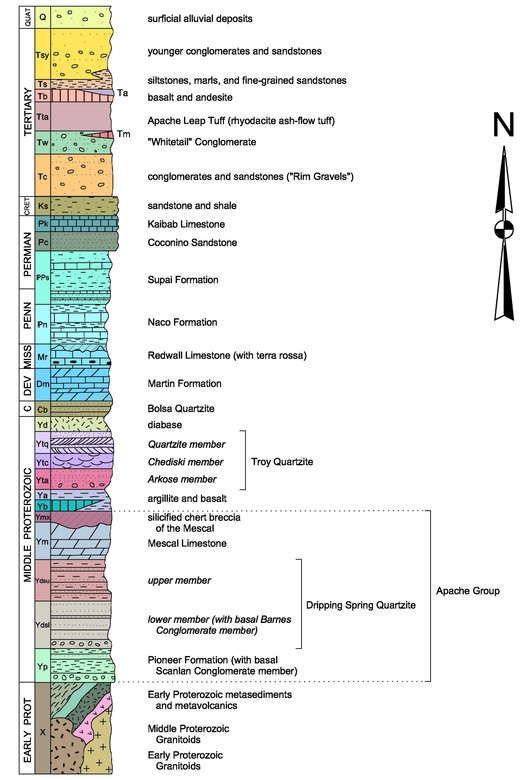
Line Symbols

- Contact (dashed where approximately located, querried where location guessed, dotted where concealed)
- Normal fault (dashed where approximately located, queried where location guessed, dotted where concealed)
- Thrust fault, teeth on upthrown side (dashed where approximately located)
- Intrformational contact or marker bed
- Shear zone
- Mafic dikes
- Syncline (dashed where approximately located, dotted where concealed)
- Monocline (dashed where approximately located, dotted where concealed)

Attitude Symbols

- Horizontal bedding
- Inclined bedding
- Overturned bedding
- Inclined tectonic foliation with mineral-elongation lineation
- Vertical tectonic foliation
- Eutaxitic foliation in welded tuff
- Plunge of columnar jointing preserved in metamhyolite
- Inclined bedding with up-direction defined by cross-bedding
- Inclined gneissic foliation
- Vertical gneissic foliation

Generalized Stratigraphic Section



surficial alluvial deposits
younger conglomerates and sandstones
siltstones, marls, and fine-grained sandstones
basalt and andesite
Apache Leap Tuff (rhyodacite ash-flow tuff)
"Whitetail" Conglomerate
conglomerates and sandstones ("Rim Gravels")
sandstone and shale
Kaibab Limestone
Coconino Sandstone
Supai Formation
Naco Formation
Redwall Limestone (with terra rossa)
Martin Formation
Bolsa Quartzite
diabase
Quartzite member
Chediski member
Arkose member
argillite and basalt
silicified chert breccia of the Mescal
Mescal Limestone
upper member
lower member (with basal Barnes Conglomerate member)
Pioneer Formation (with basal Scanlan Conglomerate member)
Early Proterozoic metasediments and metavolcanics
Middle Proterozoic Granitoids
Early Proterozoic Granitoids

Cenozoic	896 m
Mesozoic	64 m
Paleozoic	1240 m
Middle Proterozoic	771 m (not including diabase)
Total	2971 m

GEOLOGIC MAP UNITS

Anthropogenic Units

- h Not mapped
- w Water
- d Disturbed

Quaternary and Tertiary Sedimentary Deposits

Piedmont Deposits

- Qs Quaternary alluvium, undivided
- Qyc Active channel deposits (<100 yrs)
- Qy Holocene alluvium (<10 ka)
- Qls Landslide deposits
- Qtc Talus and hillslope alluvium
- Ql Late Pleistocene alluvium (10 to 250 ka)
- Qml Late to middle Pleistocene alluvium, undivided (10 to 750 ka)
- Qm Middle Pleistocene alluvium (250 to 750 ka)
- Qo Early Pleistocene alluvium (750 ka to 2 Ma)

Major River Deposits

- Qyr Active river channel deposits (<100 yrs)
- Qyr Holocene river deposits (<10 ka)
- Qlr Late Pleistocene river deposits (10 to 250 ka)
- Qmr Middle to Late Pleistocene river deposits, undivided (10 to 750 ka)
- Qmr Middle Pleistocene river deposits (250 to 750 ka)
- Qor Early Pleistocene river deposits (750 ka to 2 Ma)
- QTls Quaternary or Tertiary landslide deposits
- QTs Quaternary and Tertiary alluvium and colluvium, undivided

Clastic Sedimentary Rocks associated with the Tonto Basin and areas south

- Tsy Younger clastic sedimentary rocks
- Ts Siltstone, sandstone, and conglomerate
- Tcsa Conglomerate on southwest side of the Sierra Ancha
- Tmd Mudstone
- Tsl Sandstone
- Tcd Conglomerate

Volcanic and Sedimentary rocks associated with Black Mesa and the Superstition Mountains (Middle Miocene)

- Tri Intrusive rhyolite
- Tbi Intrusive basalt
- Tb Basalt
- Tsl Lacustrine sedimentary rocks
- Ta Andesite
- Tt Unwelded, bedded tuff
- Tla Apache Leap Tuff (welded ash-flow tuff)
- Tfu Felsic lava flows
- Tfa Felsic to intermediate domes, dikes, and intrusions
- Tm Mafic volcanic rocks
- Td Dacite
- Tw Conglomerate and sandstone ("Whitetail" conglomerate)

Eocene? to Miocene clastic sedimentary rocks

- Tc Conglomerate and sandstone ("Rim Gravels")

Cretaceous Sedimentary Rocks

- Ks Sandstone and shale

Paleozoic Sedimentary Rocks

- Pk Kaibab Formation
- Pc Coconino Sandstone

Supai Formation

- PPsl Limestone and siltstone member
- PPfa Fort Apache member
- PPss sandstone and siltstone member
- PPsc Cibeque member
- PPsl Limestone and sandstone member
- Pn Naco Formation
- Mr Redwall Limestone
- Dm Martin Formation
- Cb Bolsa Quartzite
- Ct Tapeats Sandstone
- PzYu Paleozoic and Middle Proterozoic sedimentary rocks, undivided

Middle Proterozoic Rocks

Diabase

- Yd Diabase

Troy Quartzite

- Yt Troy Quartzite, undivided
  - Ytq Quartzite member
  - Ytc Chediski member
  - Yta Argillite member

Apache Group

- Yau Apache Group, undivided
- Yb Basalt
- Ya Argillite
- Ymx Silicified chert-breccia of the Mescal limestone
- Ym Mescal limestone
- Yds Dripping Spring Quartzite, undivided
- Ydsu Upper member of the Dripping Spring Quartzite
- Ydsl Lower member of the Dripping Spring Quartzite
- Ydsp Dripping Spring Quartzite and Pioneer Formation, undivided (shown only in cross-sections)
- Yp Pioneer Formation

Early and Middle Proterozoic Intrusive and Gneissic Rocks

- Ygx Hematite-stained, microbrecciated granite
- Yg Coarse-grained, porphyritic biotite granite
- YXg Granitic rocks, undivided
- YXgo Porphyritic granite of El Oso
- Xg Early Proterozoic granite, undivided
- Xgt Granitic rocks in the Mills Canyon area
- Xgu Granitic rocks in the Rock Creek area
- Xgs Granitic rocks of Cottonwood Creek
- Xgm Granite porphyry in the Marsh Creek area
- Xgy Young Granite
- Xgk Granitic rocks near Klondike Mountain
- Xgp Payson Granite
- Xgb Medium to coarse-grained porphyritic granite south of Del Shay Basin
- Xb Buckhorn Creek crystalline complex
- Xd Dioritic rocks, undivided

Early and Middle Proterozoic Rocks, undivided

- YX Early and Middle Proterozoic Rocks, undivided (only shown on cross-sections)

Early and Middle Proterozoic Metamorphic Rocks

Early Proterozoic Metamorphic Rocks in the Tonto Basin area

- Xms Metasedimentary rocks, undivided
- Xss Metasandstone (psammite), undivided
- Xf Felsic volcanic rocks

Early Proterozoic Metamorphic Rocks in the NW Sierra Ancha

- Xal Fine- to medium-grained leucocratic biotite granite (Alaskite)
- Xgp Granophyre and aplite
- Xqr Quartzite and metarhyolite, undivided

Haigler Group

- Xr Metarhyolite, undivided
- Xhr Haigler Rhyolite
- Xor Oxbow Rhyolite
- Xhc Winter Camp Formation

Intrusive Rocks

- Xri Intrusive rhyolite
- Xbi Basic intrusive rocks
- Xub Ultrabasic rocks
- Xui Unassigned intrusive rocks

Alder Group

- Xbc Board Cabin Formation
- Xqu Upper quartzite near Sheep Basin Mountain
- Xh Houden Formation
- Xql Lower quartzite near Sheep Basin Mountain
- Xfw Flying W Formation
- Xsl Unassained slate and minor limestone
- Xbo Breadpan Formation
- Xsv Slate and volcaniclastic metasedimentary rocks
- Xq Quartzite, undivided
- Xm Mafic volcanic rocks

Early Proterozoic metamorphic rocks of the Hess Canyon Group

- Xbj Blackjack Formation
- Xyj Yankee Joe Formation
- Xw White Ledges Formation
- Xru Upper rhyolite
- Xrm Middle rhyolite
- Xrl Lower rhyolite

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