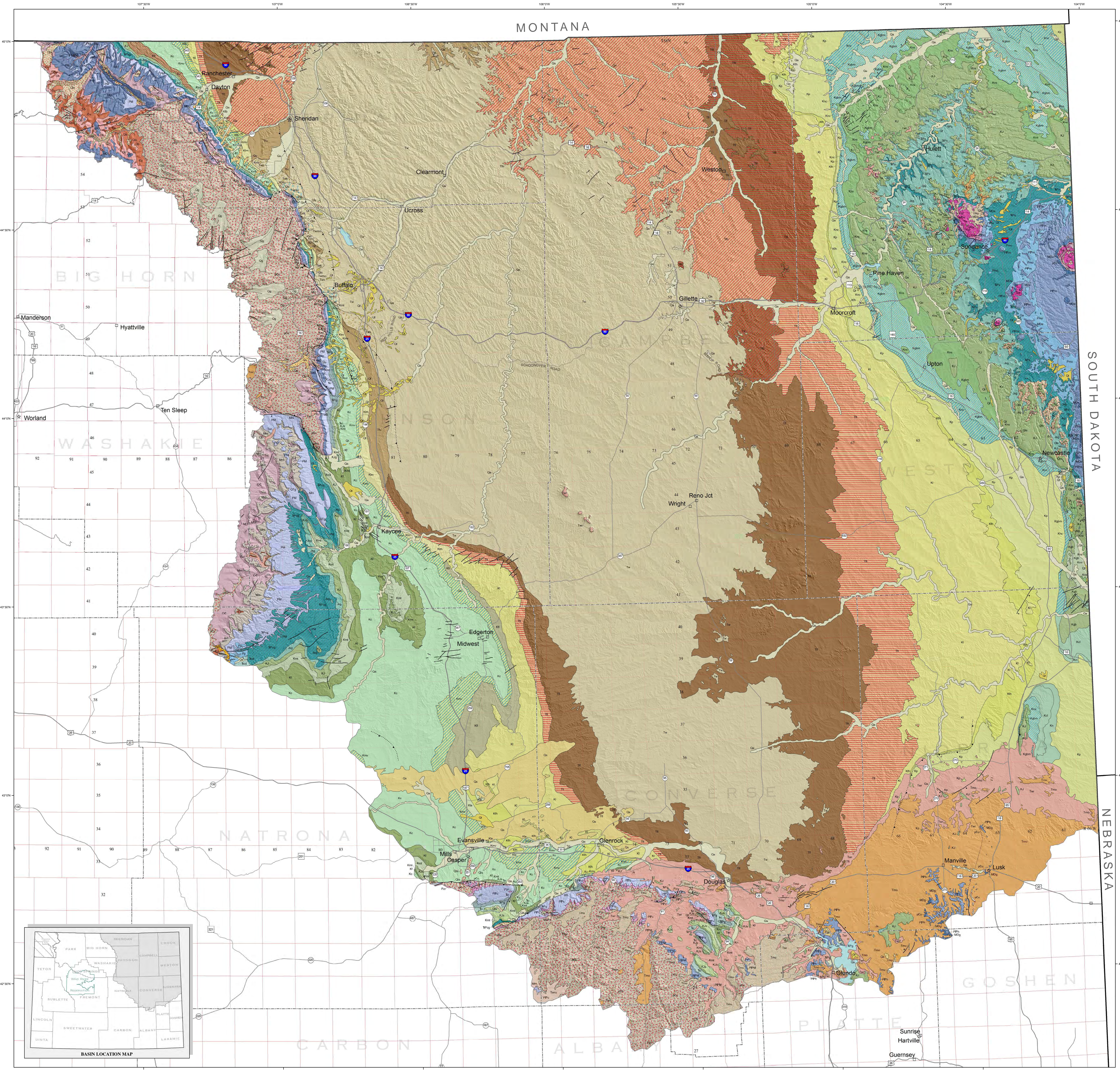


# GEOLOGIC MAP OF THE POWDER RIVER BASIN, WYOMING



## EXPLANATION

- MAP SYMBOLS**
- Formation contact
  - Normal fault - Dotted where concealed, full and bar on downthrown block, no designation on full trace indicates underformed motion
  - Thrust fault - Dotted where concealed, sawtooth on upthrown (tectonically higher) block
  - County seat
  - City or town
  - Lake or reservoir
  - Interstate highway
  - U.S. highway
  - State highway
  - County or other road
  - County boundary
  - State boundary
- GEOLOGIC UNITS**  
 (Geology enlarged from 1:500,000 scale to improve readability)
- CENOZOIC**
- Quaternary**
    - Qa Alluvium and colluvium
    - Qg Gravel, silt, and fine deposits
    - Ql Glacial deposits
    - Qd Landslide deposits
    - Qs Dune sand and loess
    - Qt Surficial deposits, undifferentiated
    - Qv Terrace gravel
  - Tertiary**
    - Tm Upper Miocene rocks
    - Tl Lower Miocene rocks
    - Tu Lower Miocene and upper Oligocene rocks or rocks equivalent to upper and lower Miocene rocks and White River Formation
    - Tw Wagon field Formation
    - Ts White River Formation
    - Tu Upper conglomerate member
    - Ti Intrusive and extrusive igneous rocks - intrusives masses of Mississippian through Carboniferous formations
    - Ta Waatch Formation
    - Tm Member
    - Tk Kingsbury Conglomerate Member
    - Tu Fort Union Formation
    - Tu Tongue River Member
    - Tu Tongue River and Lebo Members
    - Tu Lebo Member
    - Tu Lebo and Tullock Members
    - Tu Tullock Member
- MESOZOIC**
- Cretaceous**
    - Cr Lance Formation
    - Cr Lance Formation, Fox Hills Sandstone, Menoche Formation, and Bearpaw and Lewis Shales
    - Cr Fox Hills Sandstone
    - Cr Fox Hills Sandstone and Lewis Shale
    - Cr Fox Hills Sandstone and Bearpaw Shale
    - Cr Mesaverde Formation
    - Cr Cody Shale
    - Cr Pierre Shale
    - Cr Niobrara Formation
    - Cr Niobrara Formation and Carlile Shale
    - Cr Carlile Shale
    - Cr Greenhorn Formation and Belle Fourche Shale
    - Cr Greenhorn Formation, and Belle Fourche and Mowry Shales
    - Cr Frontier Formation
    - Cr Frontier Formation, and Mowry and Thermopsis Shales
    - Cr Mowry Shale
    - Cr Mowry and Thermopsis Shales
    - Cr Newcastle Sandstone and Skull Creek Shale
    - Cr Lewis Shale
  - Permian and Pennsylvanian**
    - Pp Phosphoria Formation and related rocks
    - Pw Minicokata Limestone and Ophee Shale
    - Cp Casper Formation
    - Hv Hartville Formation - lowermost unit may be Late Mississippian
    - Mm Minnecha Formation
    - Ts Tongue River and Lebo Members
    - Lebo Member
    - Lebo and Tullock Members
    - Tullock Member
  - Mississippian**
    - Mm Madison Limestone or Group - includes wedge edge of Big Horn Dolomite in Tps. 43 and 44 N., Rgs. 85 and 86 W.
  - Mississippian and Devonian**
    - Mm Madison Limestone and Darby Formation
    - Pu Pahupah and Eaglewood Limestones
    - Gm Geomys Egg Formation
    - Sf Squawfish Formation
  - Mississippian and Ordovician**
    - Mm Madison Limestone and Big Horn Dolomite - east side of Big Horn Mountains
  - Mississippian, Devonian, Ordovician, and Cambrian**
    - Mm Minicokata Limestone, Ophee Shale, Minnecha Formation, Pahupah and Eaglewood Limestones, Whitewood Dolomite, and Wimping and Deadwood Formations - various combinations
  - Ordovician**
    - Od Big Horn Dolomite
  - Ordovician and Cambrian**
    - Od Big Horn Dolomite, Gallatin Limestone, Gros Ventre Formation, and Flathead Sandstone
  - Cambrian**
    - Ca Gallatin Limestone, Gros Ventre Formation and equivalents, and Flathead Sandstone
- PRECAMBRIAN**
- Pc Precambrian rocks, undifferentiated

## DATA REFERENCE

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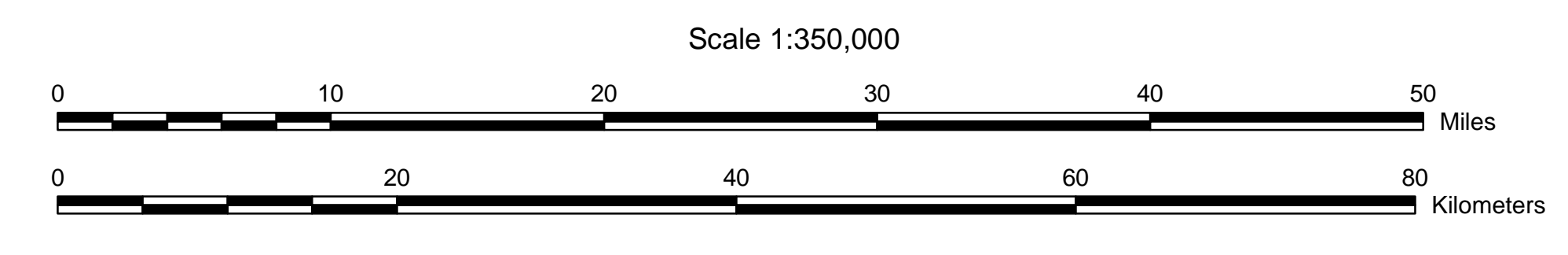
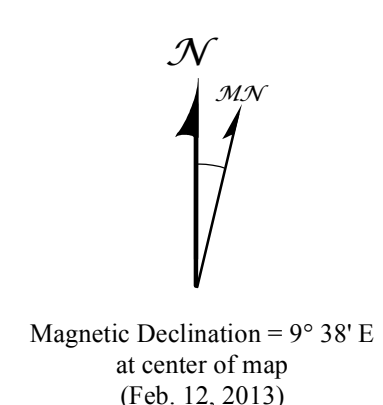
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Map Projection: Lambert Conformal Conic  
 False Easting: 500000, False Northing: 200000  
 Central Meridian: 107° 5' degrees West  
 Standard Parallel 1: 41 degrees North  
 Standard Parallel 2: 49 degrees North  
 Latitude of Origin: 41 degrees North  
 Linear Unit: Meter  
 Horizontal Datum: North American Datum of 1983 (NAD 83)  
 Ellipsoid: Geocentric Reference System 80



Geology modified from Love and Christiansen (1985)  
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