

GEOLOGIC MAP OF THE HANNA BASIN, WYOMING

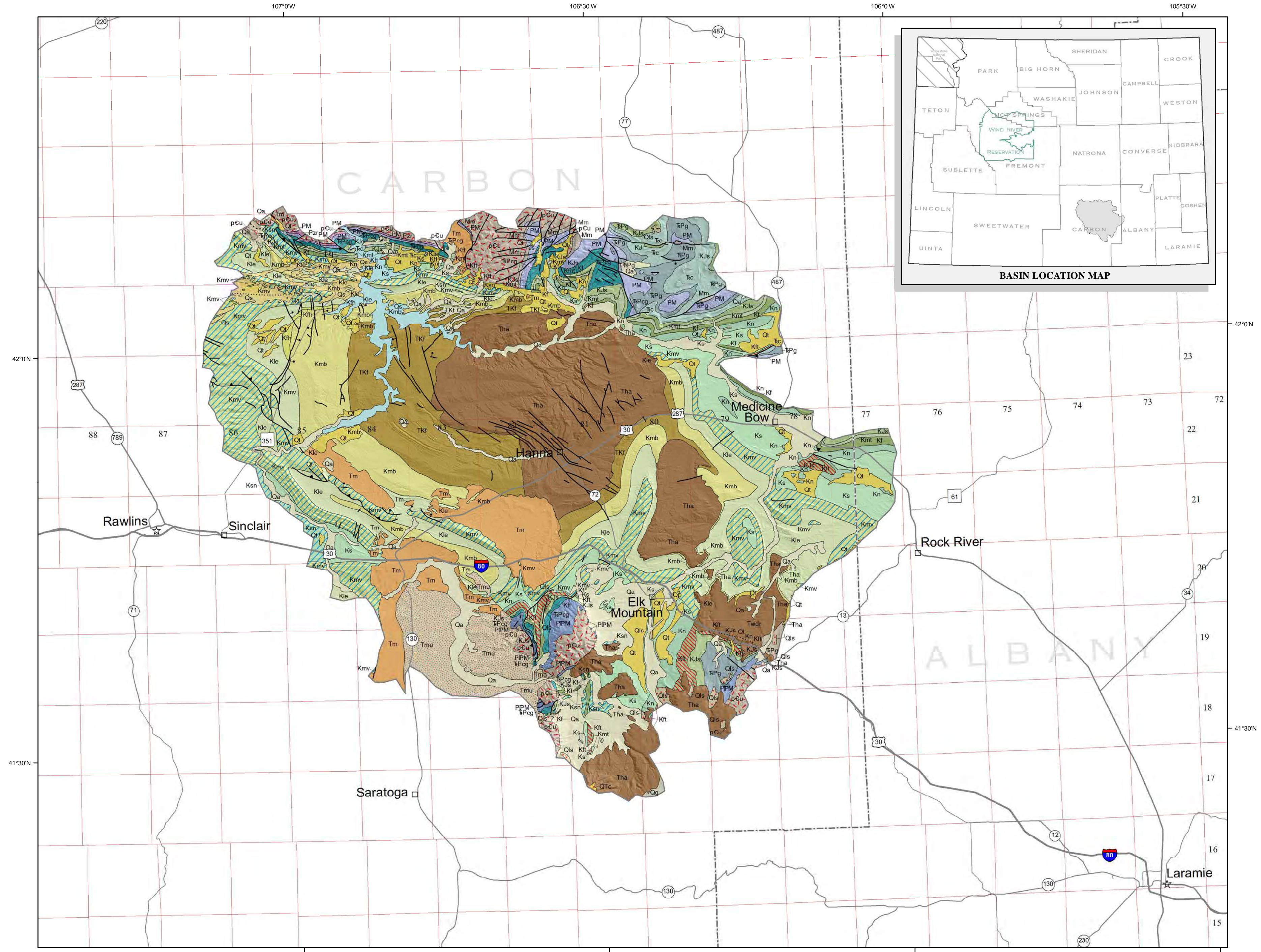


EXPLANATION

- MAP SYMBOLS**
- Formation contact
 - Normal fault—Dotted where concealed; bar and ball on downthrown block; no designation on fault trace indicates undetermined motion
 - Thrust fault—Dotted where concealed; sawteeth 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

GEOLOGIC UNITS (Geology enlarged from 1:500,000 scale to improve readability)

- | | | |
|--|--|---|
| CENOZOIC | MESOZOIC | Triassic |
| Quaternary | Cretaceous | PALEOZOIC AND MESOZOIC |
| Qa Alluvium and colluvium | Kmb Medicine Bow Formation | Triassic and Permian |
| Qt Gravel, pediment, and fan deposits | Kfh Fox Hills Sandstone | Spog Chugwater and Goose Egg Formations |
| Qg Glacial deposits | Kle Lewis Shale | TPg Goose Egg Formation |
| Qsd Landslide deposits | Kmv Mesaverde Group | PALEOZOIC |
| Qs Dune sand and loess | Kc Cody Shale | Permian, Pennsylvanian, and Mississippian |
| Quaternary and Tertiary | Ks Steele Shale | PM Tensleep Sandstone and Amsden Formation |
| Qtc Conglomerate (Pleistocene to Miocene) | Kn Niobrara Formation | PPM Wells and Amsden Formations |
| Tertiary | Kf Frontier Formation | Mississippian |
| Tm Miocene rocks | Kft Frontier Formation, and Mowry and Thermopolis Shales | Mm Madison Limestone or Group |
| Tmu Upper Miocene rocks | Kmt Mowry and Thermopolis Shales | Mississippian, Devonian, Ordovician, and Cambrian |
| Twdr Wind River Formation—base locally includes equivalent of Indian Meadows Formation | Cretaceous and Jurassic | Pzz Madison Limestone, Darby Formation, Bighorn Dolomite, Gallatin Limestone, Gros Ventre Formation, and Flathead Sandstone |
| Tha Hanna Formation | Kj Cloverly and Morrison Formations | PRECAMBRIAN |
| Tertiary and Cretaceous | Kjs Cloverly, Morrison, and Sundance Formations | Prc Precambrian rocks, undifferentiated |
| TKf Ferris Formation | Jurassic | |
| | Js Sundance Formation | |



- DATA REFERENCE**
- Love, J.D., and Christiansen, A.C., comps., 1985, Geologic map of Wyoming: U.S. Geological Survey, 3 sheets, scale 1:500,000.
- BASE MAP REFERENCES**
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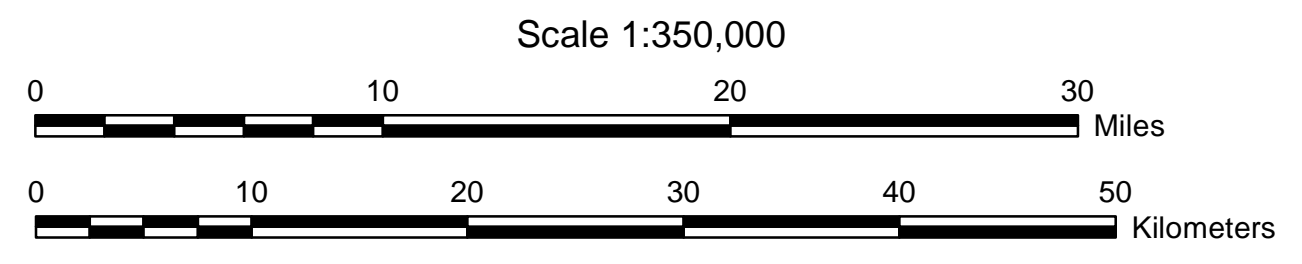
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Map Projection: Lambert Conformal Conic
 False Easting: 500000, False Northing: 200000
 Central Meridian: -107.5 degrees West
 Standard Parallel 1: 41 degrees North
 Standard Parallel 2: 45 degrees North
 Latitude of Origin: 41 degrees North
 Linear Unit: Meter
 Horizontal Datum: North American Datum of 1983 (NAD 83)
 Ellipsoid: Geodetic Reference System 80

Magnetic Declination = 9° 40' E
 at center of map
 (Feb. 12, 2013)



Geology modified from Love and Christiansen (1985)
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