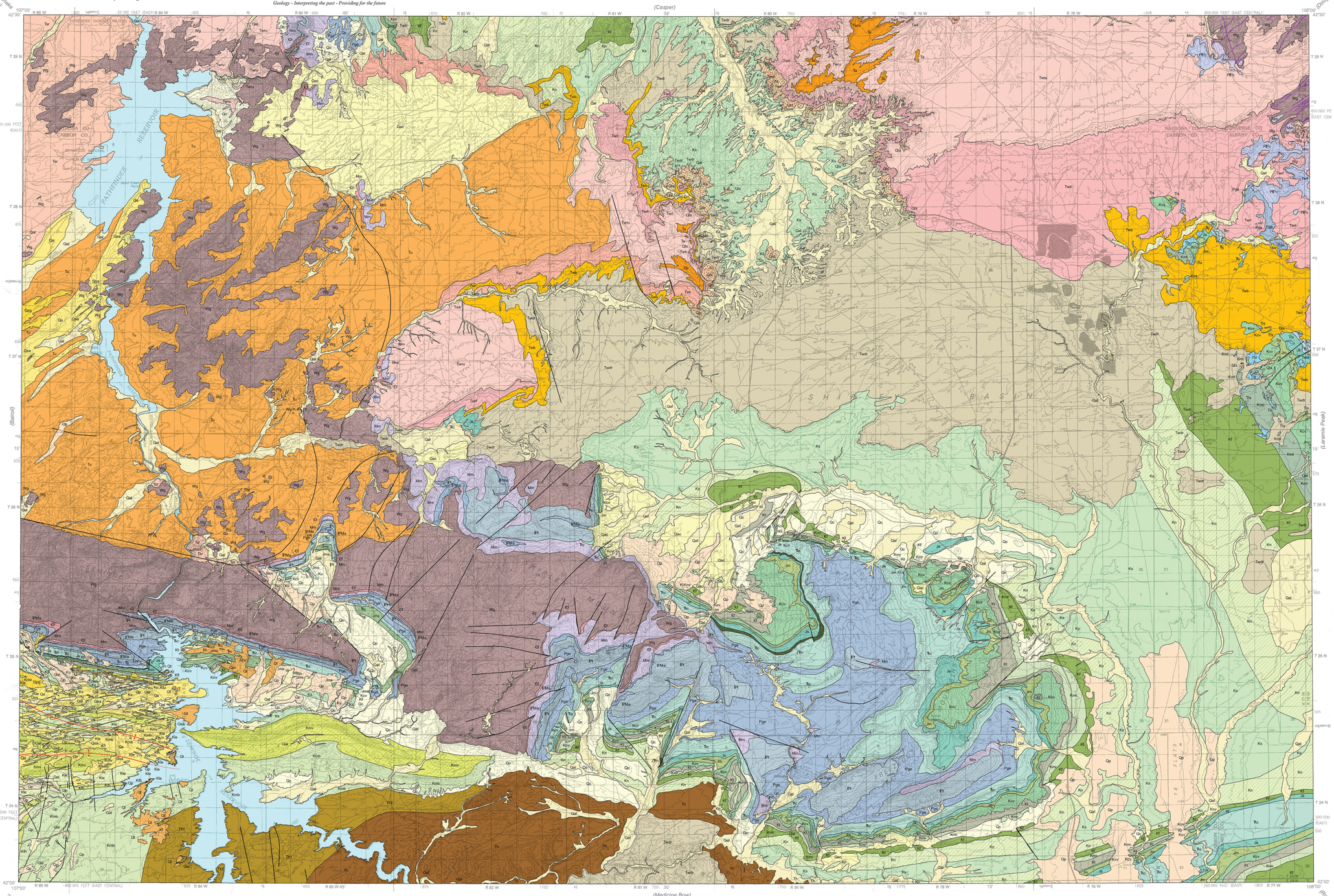
WYOMING STATE GEOLOGICAL SURVEY
Wallace L. Ulrich
Director and State Geologist
Laramie, Wyoming

Geology - Interpreting the past - Providing for the future

Prepared in cooperation with the U.S. GEOLOGICAL SURVEY

OPEN FILE REPORT 11-8
Shirley Basin 1:100,000 - scale Bedrock Geologic Map



LIST OF MAP UNITS

Quaternary

- Qal Alluvium
- Qsa Active sand dune
- Qs Windblown sand deposits
- Qac Alluvium, colluvium, terrace, and pediment
- Qc Colluvium
- Qls Landslide block or debris
- Qt Terrace gravels
- Qp Pediment boulders, cobbles, pebbles, and gravel
- Qpg Pediment gravel

Tertiary

- Tls Tertiary landslide
- Tu Tertiary rocks undivided
- Ta Arikaree Formation
- Tsr Split Rock Formation
- Twr White River Formation
- Twru Upper White River Formation
- Twrl Lower White River Formation
- Twb Wagon Bed Formation
- Twdr Wind River Formation
- Th Hanna Formation

Tertiary/Cretaceous

- TKf Ferris Formation

Cretaceous

- Kmb Medicine Bow Formation
- Kfh Fox Hills Sandstone
- Kle Lewis Shale
- Kmv Mesaverde Formation
- Ku Unnamed shale
- Ks Steele Shale
- Kn Niobrara Formation
- Kf Frontier Formation
- KfU Upper Frontier Formation
- KfL Lower Frontier Formation
- Kmr Mowry Shale
- Kml Mowry and Thermopolis Shales, undivided
- Kt Thermopolis Shale
- Kcv Cloverly Formation

Jurassic

- Jm Morrison Formation
- Jms Morrison and Sundance Formations, undivided
- Js Sundance Formation

Jurassic/Triassic

- JTsn Nugget Sandstone

Triassic

- Tc Chugwater Formation
- Tp Popo Agie Formation

Paleozoic

- Pgo Goose Egg Formation
- PPc Casper Formation
- Pt Tensleep Sandstone
- PMa Amsden Formation
- Mm Madison Limestone

Cambrian

- Cf Flathead Formation

Precambrian

- Wg Precambrian granite and gneiss, undivided
- Mafic dike

- **Fault**—Dotted where concealed
- **Anticline**— Dotted where concealed
- **Syncline**— Dotted where concealed

REFERENCES

Brown, O.P., 1949, The geology of the Difficulty-Little Shirley Basin area, Carbon County, Wyoming: University of Wyoming, scale 1:25,344.

Clarey, K.L., 1984, Geologic investigations of the Shirley fault and vicinity, Carbon County, Wyoming: University of Wyoming, scale 1:24,000.

Dobbin, C.E., Bowen, C.F., and Hoots, H.W., 1929, Geology and coal and oil resources of the Hanna and Carbon Basins, Carbon County, Wyoming: U.S. Geological Survey Bulletin 804, scale 1:62,500.

Ferren, J.E., 1935, The geology of the southeastern part of the Shirley Mountains, Carbon County, Wyoming: University of Wyoming, scale 1:31,680.

Gist, J.G., 1957, Geology of the north Freezeout Hills and adjacent areas, Carbon and Albany Counties, Wyoming: University of Wyoming, scale 1:31,680.

Green, G.N. and Drouillard, P.H., 1994, The digital geologic map of Wyoming in ARC/INFO format: U.S. Geological Survey Open-File Report OF-94-425, scale 1:500,000.

Denson, N.M., and Harshman, E.N., 1969, Map showing areal distribution of Tertiary rocks, Bates Hole-Shirley Basin area, south-central Wyoming: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-570, scale 1:125,000.

Dixon, H.R., 1990, Geologic map of the Seminoe Dam NE quadrangle, Carbon County, Wyoming: U.S. Geological Survey GQ-1673, scale 1:24,000.

Harshman, E.N., 1968, Geologic map of the Shirley Basin area, Albany, Carbon, Converse, and Natrona Counties, Wyoming: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-539, scale 1:48,000.

Harshman, E.N., 1972, Geology and uranium deposits, Shirley Basin area, Wyoming: U.S. Geological Survey Professional Paper 745, 82 p.

Hausel, W.D., 1994, Economic geology of the Seminoe Mountains mining district, Carbon County, Wyoming: Wyoming State Geological Survey Report of Investigations RI-50, 31 p.

Lillegraven, J.A., and Snoke, A.W, 1996, A new look at the Laramide orogeny in the Seminoe and Shirley Mountains, Freezeout Hills, and Hanna Basin, south-central Wyoming: Wyoming State Geological Survey Public Information Circular 36, 52 p.

Love, J.D., 1970, Cenozoic geology of the Granite Mountains area, central Wyoming: U.S. Geological Survey Professional Paper 495-C, 154 p.

Love, J.D. and Christiansen, A.C., 1985, Geologic map of Wyoming: U.S. Geological Survey, scale 1:500,000.

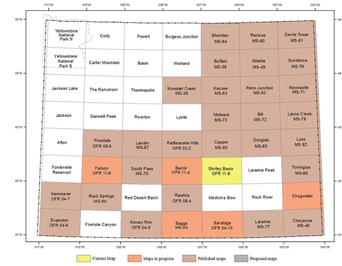
Love, J.D., Christiansen, A.C., Earle, J.L., and Jones, R.W., 1979, compilers, Preliminary geologic map of the Casper 1°x2° quadrangle, central Wyoming: U.S. Geological Survey Open File Report 79-961.

Lowry, M.E., Rucker, S.J., and Wahl, K.L., 1973, Water resources of the Laramie, Shirley, Hanna Basins and adjacent areas, southeastern Wyoming: U.S. Geological Survey Hydrological Investigations Atlas HA-471, scale 1:250,000.

Merewether, E.A., 1972, Geologic map of the Seminoe Dam SW quadrangle, Carbon County, Wyoming: U.S. Geological Survey GQ-1017, scale 1:24,000.

Stuckless, J.S., Bunker, C.M., Bush, C.A., Doering, W.P., and Scott, J.H., 1977, Geochemical and petrologic studies of a uraniferous granite from the Granite Mountains, Wyoming: U.S. Geological Survey Journal of Research, v. 5, p. 61-81.

Taft, K.L., 1997, Laramide structural style variations in parts of the Shirley Basin, south-central Wyoming: University of Wyoming M.S. thesis, scale 1:12,000.



KEY TO ABBREVIATIONS
Wyoming State Geological Survey Maps: Map Series (MS), Open File Report (OFR), and unpublished STATEMAP project (SM).

INDEX TO 1:100,000 - SCALE BEDROCK GEOLOGIC MAPS OF WYOMING

DISCLAIMERS

Users of these maps are cautioned against using the data at scales different from those at which the maps were compiled. Using this data at a larger scale will not provide greater accuracy and is, in fact, a misuse of the data.

The Wyoming State Geological Survey (WSGS) and the State of Wyoming make no representation or warranty, expressed or implied, regarding the use, accuracy, or completeness of the data presented herein, or of a map printed from these data. The act of distribution shall not constitute such a warranty. The WSGS does not guarantee the digital data or any map printed from the data to be free of errors or inaccuracies.

The WSGS and the State of Wyoming disclaim any responsibility or liability for interpretations made from these digital data or from any map printed from these digital data, and for any decisions based on the digital data or printed maps. The WSGS and the State of Wyoming retain and do not waive sovereign immunity.

The use of or reference to trademarks, trade names, or other product or company names in this publication is for descriptive or informational purposes only, or is pursuant to licensing agreements between the WSGS or State of Wyoming and software or hardware developers/vendors, and does not imply endorsement of those products by the WSGS or the State of Wyoming.

NOTICE TO USERS OF INFORMATION FROM THE WYOMING STATE GEOLOGICAL SURVEY

The WSGS encourages the fair use of its material. We request that credit be expressly given to the "Wyoming State Geological Survey" when citing information from this publication. Please contact the WSGS at 307-766-2286, ext. 224, or by e-mail at wsgs.sales@wyo.gov if you have questions about citing materials, preparing acknowledgments, or extensive use of this material. We appreciate your cooperation.

Individuals with disabilities who require an alternative form of this publication should contact the WSGS. For the TTY relay operator call 800-877-9975.

For more information about the WSGS or to order publications and maps, go to www.wsgs.uwyo.edu, call 307-766-2286, ext. 224, or e-mail wsgs.sales@wyo.gov

Base map from U.S. Geological Survey 1:100,000-scale metric topographic map of the Shirley Basin, Wyoming Quadrangle, 1981

Projection: Universal Transverse Mercator (UTM), zone 13
North American Datum of 1927 (NAD 27)
10,000-meter grid: UTM, zone 13
25,000-foot grid ticks: Wyoming State Plane Coordinate System, east central and east zones

UTM GRID CONVERGENCE (GN) AND 1981 MAGNETIC DECLINATION (MN) AT CENTER OF SHEET DIAGRAM IS APPROXIMATE

SCALE 1:100,000
Contour Interval 20 meters

Digital cartography by Nick R. Jones and Robin W. Lyons
Map layout and design by Robin W. Lyons
Map editing by Suzanne C. Luhr

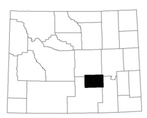
Prepared in cooperation with and research supported by the U.S. Geological Survey, National Cooperative Geologic Mapping Program, under USGS award number G10AC00416.
The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

PRELIMINARY GEOLOGIC MAP OF THE SHIRLEY BASIN 30' X 60' QUADRANGLE, CARBON, NATRONA, ALBANY, AND CONVERSE COUNTIES, WYOMING

compiled and mapped
by

Nick R. Jones and Robert W. Gregory

2011



WYOMING QUADRANGLE LOCATION

NOTICE FOR OPEN FILE REPORTS PUBLISHED BY THE WSGS

This Wyoming State Geological Survey (WSGS) open file report has not been technically reviewed or edited for conformity with WSGS standards or Federal Geographic Data Committee digital cartographic standards. Open file reports are preliminary and usually require additional fieldwork and/or compilation and analysis; they are meant to be a first release of information for public comment and review. The WSGS welcomes any comments, suggestions, and contributions from users of the information. Contact the WSGS.