Montana Bureau of Mines and Geology
STATEMAP Program 2023

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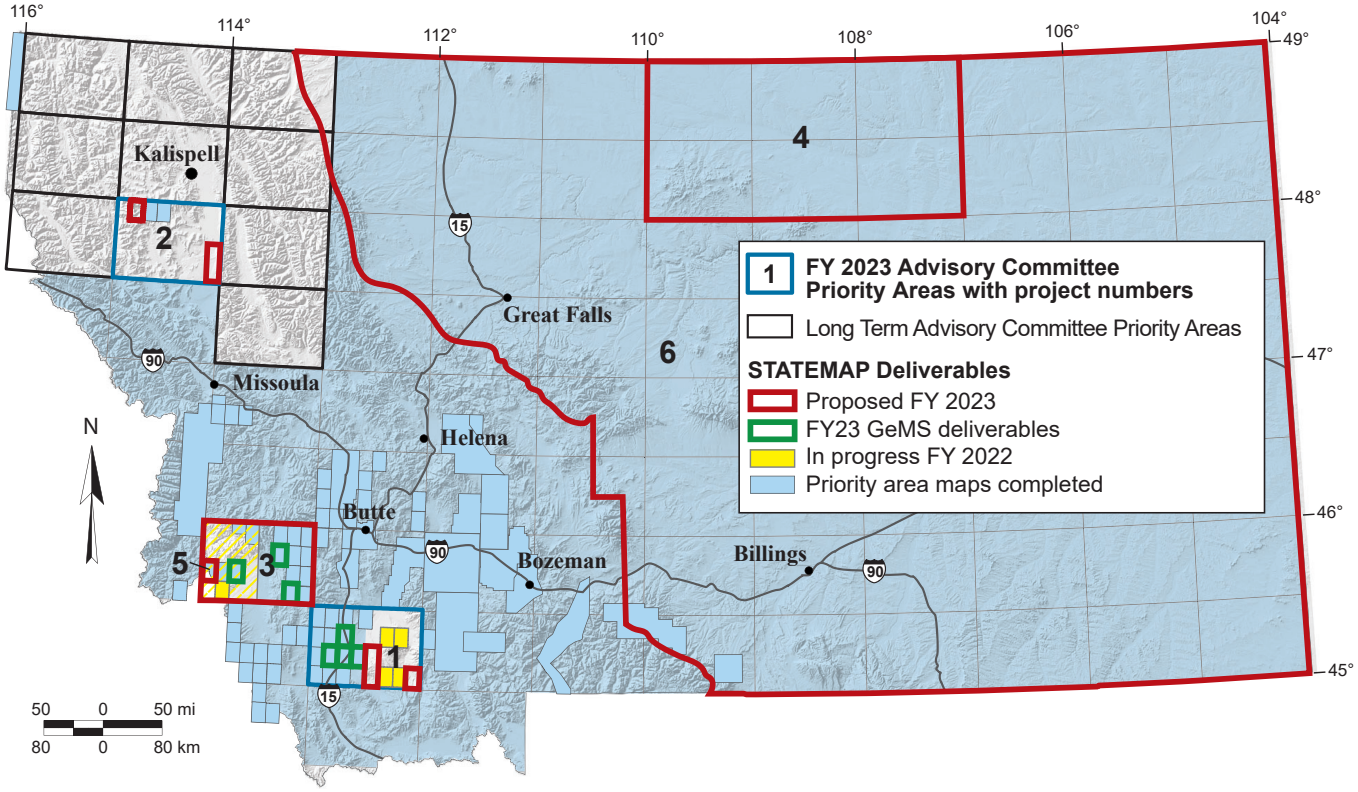


The primary objective of the **USGS STATEMAP** program is to establish the geologic framework of areas determined to be vital to the economic, social, or scientific welfare of individual States. Mapping priorities are established by State Geological Surveys in consultation with a multi-representational **State Mapping Advisory Committee** (SMAC).

Project Summaries—2022

In progress for July 30, 2023 USGS submittal deadline:

Project 1:	Detailed geologic mapping of the Beaverhead Rock SE, Laurin Canyon, Red Canyon, and Belmont Park Ranch 7.5' quadrangles within the Dillon 30' x 60' quadrangle. Mosolf (PI)
Project 2:	Detailed geologic mapping of the Big Hole Pass 7.5' quadrangle on the Montana–Idaho border. Lonn (PI) in collaboration with the Idaho Geological Survey
Project 3:	Mapping and compilation of the west half of the Wisdom 30' x 60' quadrangle. Elliott (PI)
Project 4:	Resolution of intrastate stratigraphic correlation and updated stratigraphic chart for Montana. McDonald and Vuke (PIs)

Projects Starting July 1, 2023:

Project 1: Detailed geologic mapping of the Christensen Ranch, Elk Gulch, and Home Park 7.5' quadrangles within the Dillon 30' x 60' quadrangle. Mosolf (PI)

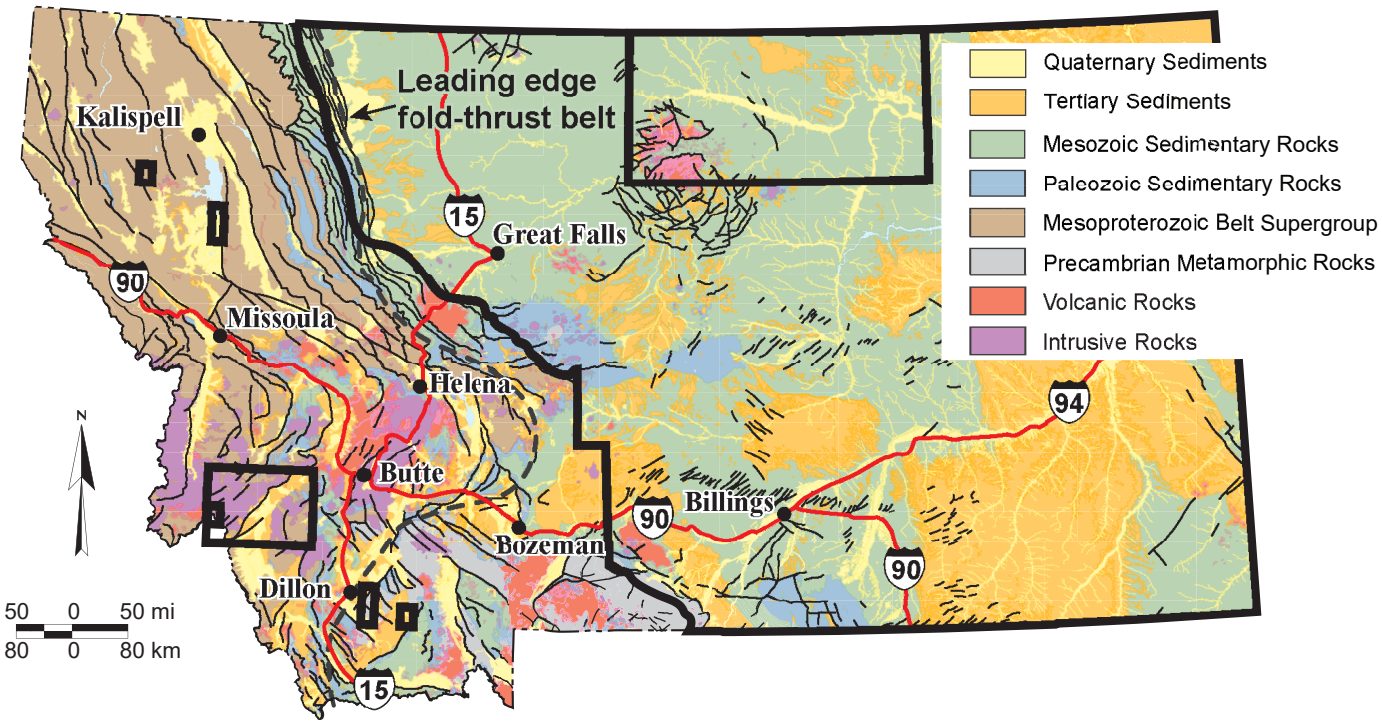
Project 2: Detailed geologic mapping of the Murr Peak, East Bay, and Ronan 7.5' quadrangles in the Polson 30' x 60' quadrangle. Gavillot (PI)

Project 3: Compilation and integration of the Wisdom 30' x 60' quadrangle into 1:100,000-scale seamless geologic map of Montana. Elliott (PI)

Project 4: Surficial deposit compilation of the Havre, Harlem, Whitewater, Rocky Boy, Dodson, and Malta 30' x 60' quadrangles at 1:100,000-scale. Vuke (PI)

Project 5: Detailed geologic mapping of the Lost Trail Pass 7.5' quadrangle on the Montana–Idaho border. Lonn (PI) in collaboration with the Idaho Geologic Survey

Project 6: New subsurface mapping of the top of the Madison Group, and Swift, Fall River, Kootenai, and Judith River formations in central and eastern Montana. Gunderson (PI)



Other Geology Projects that Involve MBMG Mappers:

Economic Geology

USGS Earth MRI—Collaborative Geologic Mapping across the Montana–Idaho border: Alta and Horse Creek Pass 7.5' quadrangles

Three-year project to characterize potential for critical commodity occurrences in Sheep Creek–ID Cobalt Belt (in conjunction w/ IGS). Scarberry (PI)

USGS Earth MRI—Geologic Mapping in the Radersburg District: Radersburg and Giant Hill 7.5' Quadrangles

Three-year project to characterize potential for critical commodity occurrences in the historic Radersburg Mining District. Scarberry (PI)

Army Research Lab—Rare Earth Element Program

Five-year, multidepartmental study of Rare Earth Element resources currently focused on assessment of abandoned mine lands in the Boulder Batholith region for critical commodity potential. Van Rythoven, Scarberry, and Eastman (PIs)

Geohazards and Earthquake Studies

FEMA-MTDES–Quaternary Fault and Landslide Maps of Ravalli County, and Montana Geohazards Workshop

Identification of faults and landslides using new LiDAR coverage for Ravalli County, creation of geohazard maps for public education, creation of Quaternary Fault and Landslide Databases, annual Montana Geohazards Workshop, and creation of the Montana Earthquake Working Group. Gavillot (PI)

USGS NEHRP–Probabilistic Fault Displacement Hazard Mapping of Montana: Collaborative Research with Cal Poly and Montana Technological University

Constrain seismic source characterization along the Bitterroot fault by collecting new slip rate data and probabilistic fault displacement hazards analysis to generate contour hazard maps of surface fault displacement for the Bitterroot Valley. Gavillot and CalPoly faculty (PIs)

National Earthquake Hazards Reduction Program–Paleoseismic and Seismotectonic Investigations of the Bitterroot Fault

Continuation of Bitterroot fault study involving paleoseismic trenching and Quaternary age dating to obtain Holocene paleo-earthquake chronology, earthquake frequency, slip per events, and slip rates. Gavillot (PI)

MBMG Geology Personnel

Geologists

Mapping
Daniel Brennan
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Jay Gunderson
Jeff Lonn
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Geohazards and Earthquake Studies
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GIS Specialists

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Cartographer

Susan Smith

Map Reviewer

Steve Quane

MBMG Geologic Mapping Facts at a Glance

2022

- $648,547 of federal funding (2nd highest awarded state)
- ~320 square miles of new 1:24,000-scale mapping
- 8 new geologic maps published

2023

- $678,061 of federal funding awarded (largest award to date)
- ~448 square miles of new 1:24,000-scale mapping
- 6 geologic maps from 2022 field season in progress. 8+ maps from previous years in review/revision

MBMG
Montana Bureau of Mines and Geology

Established in 1919, the Montana Bureau of Mines and Geology (MBMG) continues to fulfill its mandate to collect and publish information on Montana's geology to promote orderly and responsible development of the energy, groundwater, and mineral resources of the State. A non-regulatory state agency, the MBMG provides extensive advisory, technical, and informational services on the State's geologic, mineral, energy, and water resources. The MBMG is the principal source of earth science information for the citizens of Montana.