U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Geologic maps of the northern and western parts of Gallatin National Forest, Montana-- Digital and hard copy formats

compiled by
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Open-File Report
OF 95-11-A Maps and text (paper copy)
OF 95-11-B Digital map files (diskette)

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Gallatin National Forest is currently being studied for its mineral resource potential by the U.S. Geological Survey. For purposes of the study, the Forest was evaluated in three parts: (1) the northern portion, including the Bridger Range and Crazy Mountains, located north of Interstate highway 90 (I-90); (2) the western portion, including the Gallatin and Madison Ranges and the West Yellowstone area, located south of I-90 and west of the Yellowstone River; and (3) the eastern portion, located south of I-90 and east of the Yellowstone River. The maps in this report cover the northern and western portions. The eastern part was examined previously by the U.S. Geological Survey (USGS) and referred to as the Absaroka-Beartooth study area (Hammarstrom and others, 1993).

This report is in two parts. OF 95-11-A includes geologic maps and supporting explanations and references of the northern (plate 1) and western (plate 2) parts of Gallatin National Forest. Rock units have been combined with mineral resource potential in mind, not because of map scale or available mapping. Both maps were digitized, compiled, and produced using the U.S. Geological Survey's in-house software, GSMAP[1] (Selner and Taylor, 1993). All data sources were digitized at their original scales and map projections, then merged into the final digital map formats. After editing, the digital maps were filtered to remove extra points at the scale of 1:126,720 (2 miles per inch, the scale used by the U.S. Forest Service). These maps are produced directly from the files contained on the OF 95-11-B diskette.

OF 95-11-B is an IBM-compatible 1.44 Mb diskette containing the geologic maps of the northern and western parts of Gallatin National Forest in digital (GSMAP) format. Due to the final filtering the maps should not be plotted at larger scales as they will not be accurate. Plotting at smaller scales is possible--with one caveat: in geodetic coordinates, the size of the unit labels is fixed in GSMAP. Therefore, only the lower lefthand corner of the labels may plot in the correct unit. With slight modification of the plot files (.PLT) any area of interest may be plotted or subsets of the data may be obtained using some of the utilities provided with GSMAP. The maps may be readily imported into other digital mapping and Geographic Information System (i.e. ARC/Info) programs. Refer to the GSMAP system 9 documentation (Selner and Taylor, 1993) for an in-depth explanation of this software.

GSMAP requires six files to plot each map. The six data files corresponding to each map are indicated by the following extensions: .LSF, .NDX, .NOD, .PRJ, .PLT, and .RU. Data files for the northern map (plate 1) are named PL1-GEOL.*; files for the western map (plate 2) are named PL2-GEOL.*.

Also included on the disk are the explanation of rock units and references in both WordPerfect 5.1 (.WP) and DOS text (.TXT) files. Explanations of rock units are in PL1-UNIT.* and PL2-UNIT.*. References are in PL1-REFS.* and PL2-REFS.*.

References cited

Hammarstrom, J.M., Zientek, M.L., and Elliott, J.E., eds., 1993, Mineral resource assessment of the Absaroka-Beartooth study area, Custer and Gallatin National Forests, Montana: U.S. Geological Survey Open-File Report 93-207, 296 p., 19 plates.

Selner, G.I., and Taylor, R.B., 1993, System 9, GSMAP, and other programs for the IBM PC and compatible microcomputers, to assist workers in the earth sciences: U.S. Geological Survey Open-File Report 93-511, 363 p., 2 diskettes.

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[1]GSMAP is available from U.S. Geological Survey Books and Open Files Service Section, P.O. Box 25425, Denver Federal Center, Denver, CO 80225. (For information, call 1-800-USA-MAPS.)