



Vol. 26, No. 1
Spring 1996

Arizona Geology

Published Quarterly by the Arizona Geological Survey

**ARIZONA
GEOLOGICAL SURVEY**
INFORMATION TO
ARIZONANS SINCE 1889

MISSION

To provide unbiased geologic information to assist the public, businesses, and government agencies in developing policies and courses of action for prudently managing Arizona's land, water, mineral, and energy resources.

FUNCTIONS

- Information about Arizona geology
- Geologic maps and reports
- Databases and files
- Geology library
- Rock cuttings and core repository
- Geologic mapping and framework investigations
- Geologic hazards investigations
- Mineral and energy resources investigations
- Administrative and staff support for Oil and Gas Conservation Commission

A.R.S. § 27-152

National Cooperative Geologic Mapping Program 1996 Awards Announced

Larry D. Fellows
Arizona Geological Survey

The Arizona Geological Survey (AZGS) has been awarded \$136,247 from the National Geologic Mapping Program, administered by the U.S. Geological Survey (USGS), for Fiscal Year (FY) 1996. The contract provides for AZGS geologists to continue geologic mapping in eastern Maricopa and northern Pinal Counties (see map below) and begin digitizing geologic maps and compiling data in the Phoenix area. Mapping will begin in September if a permissible budget or continuing resolution has been enacted for the Department of the Interior, within which the USGS is housed. The National Geologic Mapping Act (NGMA) became Public Law 102-285 in May 1992 to expedite production of a geologic-map database for the Nation that can be applied to land-use management, conservation

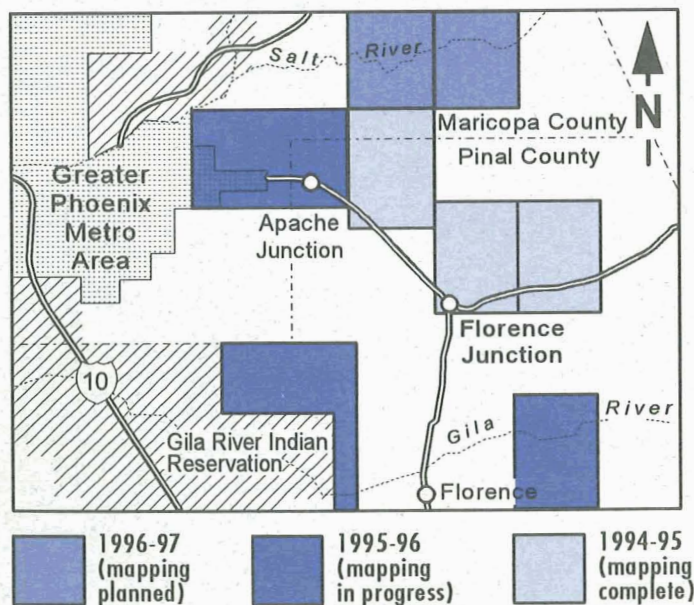
of natural resources, groundwater management, and environmental protection. The database is located within the USGS.

Passage of the NGMA was promoted by the Association of American State Geologists, composed of the directors of the Nation's State geological surveys, with widespread support from Congress, the National Governors Association, the USGS, many Federal land-

and resource-management agencies, and a host of private-sector users of geologic maps and data. Appropriations were authorized for fiscal years 1993-1996. Action is now being taken to reauthorize and amend the act for fiscal years 1997-2000.

The NGMA has four components: Federal mapping (FEDMAP), Federal support (SUPPORTMAP), State

see 1996 AWARDS, page 2



1996 Awards *(from page 1)*

GOVERNOR FIFE SYMINGTON

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Arizona Geology

is published quarterly by the Arizona Geological Survey (AZGS) to provide information about geologic materials and processes and their impacts on the development and use of Arizona's land, water, mineral and energy resources. We encourage your comments and suggestions.

Design and layout:

Peter F. Corrao

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mapping (STATEMAP), and education (EDMAP). FEDMAP is the USGS geologic mapping program; SUPPORTMAP includes USGS staff members, formerly assigned to the Branch of Isotope Geology and the Branch of Paleontology and Stratigraphy, who provide information needed by USGS mappers to determine ages of map units. STATEMAP is a cooperative program between the USGS and State geological surveys, which are required to match State General Revenue funds with funds from the NGMA on a dollar-for-dollar basis. EDMAP is for universities to train field geologists to do mapping.

The appropriation for the NGMA for FY 1996 is \$21.9 million, which includes \$17.2 million for FEDMAP and SUPPORTMAP, \$4.4 million for STATEMAP, and \$0.3 million for EDMAP. The USGS levies an 18 percent overhead charge to administer STATEMAP, leaving a balance of \$3.6 million to be competitively distributed among the 50 states. Forty-five states submitted 66 project proposals, with funding requests totalling \$5.2 million. The total expenditure for STATEMAP for FY 1996, including matching funds provided by the states, will be \$7.2 million.

Under STATEMAP, each State geological survey that chooses to participate submits geologic mapping proposals to the USGS. Each state is required to have a mapping advisory committee to determine

priorities of areas to be mapped. A review panel composed of State geological survey directors and USGS staff evaluates all proposals and recommends which will be funded.

Each state and region has special needs for new, detailed geologic maps. This is especially true of the West, which includes most of the Nation's federally-managed land. The West is rugged, scenic, highly mineralized, generally arid, and is fraught with geologic hazards, including earthquakes, volcanoes, and landslides. The geology is complex and poorly mapped. Rapid population growth since the end of World War II has resulted in increased demand for land, water, and mineral resources by a wide variety of users. It is important to know about geologic hazards; water, mineral, and energy resources; and the general geologic character of these lands in order to assist those who

are responsible for making informed land- and resource-management decisions. Most of the Western State geological surveys have active geologic mapping programs, as attested by STATEMAP contracts awarded during fiscal years 1993-1996 (see table below).

During fiscal years 1993-1995, AZGS geologists completed and released 38 geologic maps and a number of reports in which rock formations and surficial material units are described and characterized. These maps and reports are available for review in our library, or may be purchased. Please call or write to determine what areas are covered by these and other maps or reports. Do you have, or know of, any geologic maps that have been completed within the area shown on page 1? We would be pleased to incorporate information from them.

State	1993	1994	1995	1996
Alaska	52.0	50.0	30.0	138.7
Arizona	80.2	80.0	55.0	136.3
California	80.0	55.0	50.0	127.8
Colorado	10.0	35.0	25.0	85.9
Idaho	15.0	50.0	35.0	105.9
Montana	105.0	110.0	40.0	120.0
Nevada	20.0	20.0	10.0	123.8
New Mexico	20.0	50.0	50.0	165.3
Oregon	39.0	45.0	35.0	130.0
Utah	30.0	38.0	30.0	125.0
Washington	25.0	30.0	30.0	120.5
Wyoming	0.0	12.0	10.0	8.5

Each state matched the STATEMAP funds with an equal amount from their state general fund.

StateMap awards to the Western State geological surveys, 1993-1996 (\$1,000)

New Publications

NEW PUBLICATIONS

The Arizona Geological Survey released the following maps and reports since December 1995:

Geologic map of the Agua Caliente Mountains, Baragan Mountain, and Turtleback Mountain, Maricopa and Yuma Counties, Arizona:

S. J. Skotnicki, 1995, Open-File Report 95-17 (Pub. number OFR 95-17), 1 sheet, scale 1:24,000. \$3.00

These bedrock areas, each of which covers 2-4 square miles, are located along the Maricopa-Yuma County line near Hyder. Tertiary-age volcanic rocks are exposed. The Agua Caliente Mountains and Baragan Mountain consist largely of basalt. Rhyolite and dacite crop out on Turtleback Mountain.

Annual report of the Arizona Geological Survey for FY 1994-95:

L. D. Fellows, 1995, Open-File Report 95-19 (Pub. number OFR 95-19), 31 p. \$5.25

This report is a description of the projects and activities of the Arizona Geological Survey (AZGS). The AZGS has a Geologic Information and Investigations Program and an Oil and Gas Program. The report includes information about the organization, professional and support staff, General Fund appropriation, contracted projects, and constituents of the agency. It also includes a list of the maps and reports that were released during the year.

Hydrologic and paleohydrologic assessment of the 1993 floods on the Verde River, central Arizona:

P. K. House, P. A. Pearthree, and J. E. Fuller, 1995, Open-File Report 95-20 (Pub. number OFR 95-20), 39 p. \$6.50

The combined hydroclimatological and hydrological characteristics of the floods of January and February 1993 establish a general framework that substantiates the stratigraphic evidence for the occurrence of considerably larger floods. The peak discharge of the January 1993 flood on the lower Verde River was the largest since 1891 and the February 1993 peak flood was the second largest.

AZGEOBIB, Version 2.1: A list of references on the geology of Arizona:

R. A. Trapp, Nancy Schmidt, S. J. Reynolds, and K. C. Horstman, 1995, Open-File Report 96-1 (Pub. number OFR 96-1), 336 p. and four 1.44Mb, 3.5-inch MS-DOS floppy disks. \$34.00

This is an alphabetical list, by author, of the 11,500 citations currently in the bibliographic database on Arizona geology. Each citation has been keyworded by subject and location. The list is not indexed. The disks include ASCII files of all the citations in a standard reference-list format and in tab-delimited format for database use. This publication supersedes Open-File Report 95-4 and AZGEOBIB V. 2.0.

Water quality investigations in the historic mining district of Chloride and adjacent areas in the Cerbat Mountains (Mohave County, Arizona):

Ulrike Rösner, 1995, Contributed Report 95-I (Pub. number CR 95-I), 34 p. \$5.25

Ground water near the Tennessee mine has high quantities of heavy metals. Ground water in neither the town of Chloride nor the Cerbat Wash watershed showed evidence of contamination by subsurface or surface water flow from the upstream mining areas. Nitrogen contamination in Chloride wells could be attributed to private septic tanks.

NEW PRICE LIST

A new catalog of publications available for purchase was released in December 1995. It supersedes all previous lists. More than 480 reports and maps, mainly publications of the Arizona Geological Survey (AZGS), are included. As a service to the public, the AZGS also sells publications that are produced by the Arizona Geological Society, as well as selected items that are deemed to be of special interest to geologic data users.

How to Order Them

You may purchase publications at the AZGS office or by mail. Address mail orders to AZGS Publications, 416 W. Congress St., Suite 100, Tucson, AZ 85701. Orders are shipped by UPS, which requires a street address for delivery. All mail orders must be prepaid by a check or money order payable in U.S. dollars to the Arizona Geological Survey or by Master Card or VISA. Do not send cash. Order by publication number and add these shipping and handling charges to your total order:

Shipping & Handling CHARGES

In the United States:

Less than \$1.01, add \$1.00
1.01- 10.00, add 3.00
10.01- 20.00, add 4.50
20.01- 30.00, add 5.75
30.01- 40.00, add 6.50
40.01- 50.00, add 8.00
50.01- 100.00, add 10.25
Over 100.00, add 12%

Other countries, request price quotation.

Shipping and handling charges include insurance. For rolled maps, add \$1.00 for a mailing tube.

If you purchase Open-File Reports, Contributed Maps, or Contributed Reports at the AZGS office, allow up to two days for photocopying.

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BILLS IN THE ARIZONA LEGISLATURE - Status 09 February 1996

SB 1075: Legislative oversight committees held Sunset reviews of the Oil and Gas Conservation Commission, Department of Mines and Mineral Resources, Power Authority, and Outdoor Recreation Commission in 1995 and recommended that they be continued. This is the continuation bill, which has been passed by the Senate and the House Natural Resources and Agriculture Committee.

SB 1126: This bill reclassifies producing oil, gas, helium, and geothermal properties from Class C

(with a 100 percent assessment ratio) to Class 1 (with a tax year 1997 assessment ratio of 27 percent). The Senate Finance Committee passed the bill.

SB 1144: Every mineral lease of State land shall require the lessee to provide specific records annually. Such information and "trade secrets" are confidential. This bill, which defines trade secrets, has been passed by the Senate.

SB 1155: A legislative oversight committee conducted a Sunset Review

of the State Board of Technical Registration and recommended that it be continued. This is the continuation bill. It has been passed by the Senate Professions and Employment Committee and Rules Committee and is ready to be voted on by the full Senate.

SB 1380: This bill assigns responsibility for administering the Mined Land Reclamation act to the State Mine Inspector. It was passed by the Senate Natural Resources, Agriculture, and Environment Committee.

HB 2316: This bill defines radioactive waste and radioactive-waste management and lists requirements for storing radioactive waste. No hearings have been held.

HB 2420: If a significant bat population is present or is indicated in an inactive or abandoned mine, provision shall be made to give the bats continued access if the mine is closed or entry to it is restricted. Bill was passed by the House Environment Committee but died in the Natural Resources and Agriculture Committee.

OIL AND GAS

• Governor Fife Symington reappointed Dr. J. Dale Nations, Flagstaff, to the Oil and Gas Conservation Commission. The other Commission members are Donald W. Clay, Yuma;

James C. Lanshe, Paradise Valley; Zed Veale, Flagstaff; and Lisa C. Worthington, Phoenix. M. J. Hassell, State Land Commissioner, is an ex officio member.

• Arizona Resources Industries announced that it will lease an additional

144,000 acres near its carbon dioxide and helium prospect near St. Johns. Ridgeway Arizona Oil Corporation completed two wells on the prospect and plans to begin a five-well drilling program within the next three months.

• Premco Western, Inc., Garland, Texas, is drilling at its Mohave County #1-10, 14 mi south of St. George, Utah. Plans are to test Paleozoic units to a total depth of 8,500 ft. The current drilling depth is 1,050 ft.



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