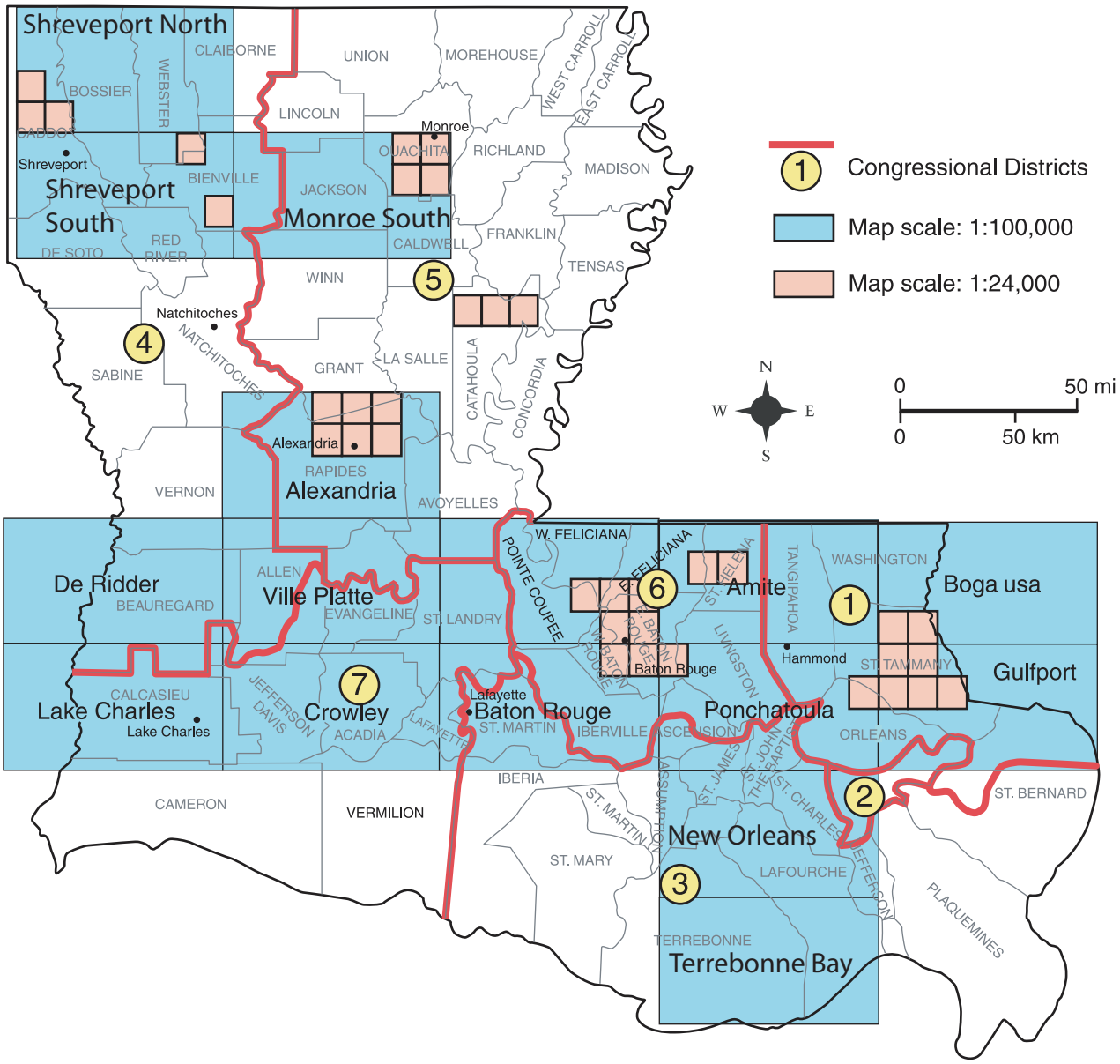
Associaton of American State Geologists

United States Geological Survey

National Cooperative Geologic Mapping Program

STATEMAP Component: States compete for federal matching funds for geologic mapping

LOUISIANA



STATEMAP Quadrangles 1993 - Present

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National Cooperative Geologic Mapping Program

LOUISIANA

Cooperative agreements between the USGS and LGS under the STATEMAP program have driven the bulk of the geologic mapping conducted in the state since the program's inception. STATEMAP projects have permitted LGS to complete initial compilation of new intermediate-scale coverage of the state's upland landscapes and alluvial bottoms above the coastal zone, and to follow this with a program of finalized compilations of 30 x 60 minute quadrangles and of large-scale new mapping of selected 7.5-minute quadrangles. The NCGMP-supported geologic mapping in Louisiana has a multitude of uses of importance to many timely issues. The mapping generates basic geologic data that in urbanized and rapidly urbanizing areas are essential to planners, and in more rural settings are essential to ongoing maintenance and preservation efforts in wildlife-management areas and national forests.

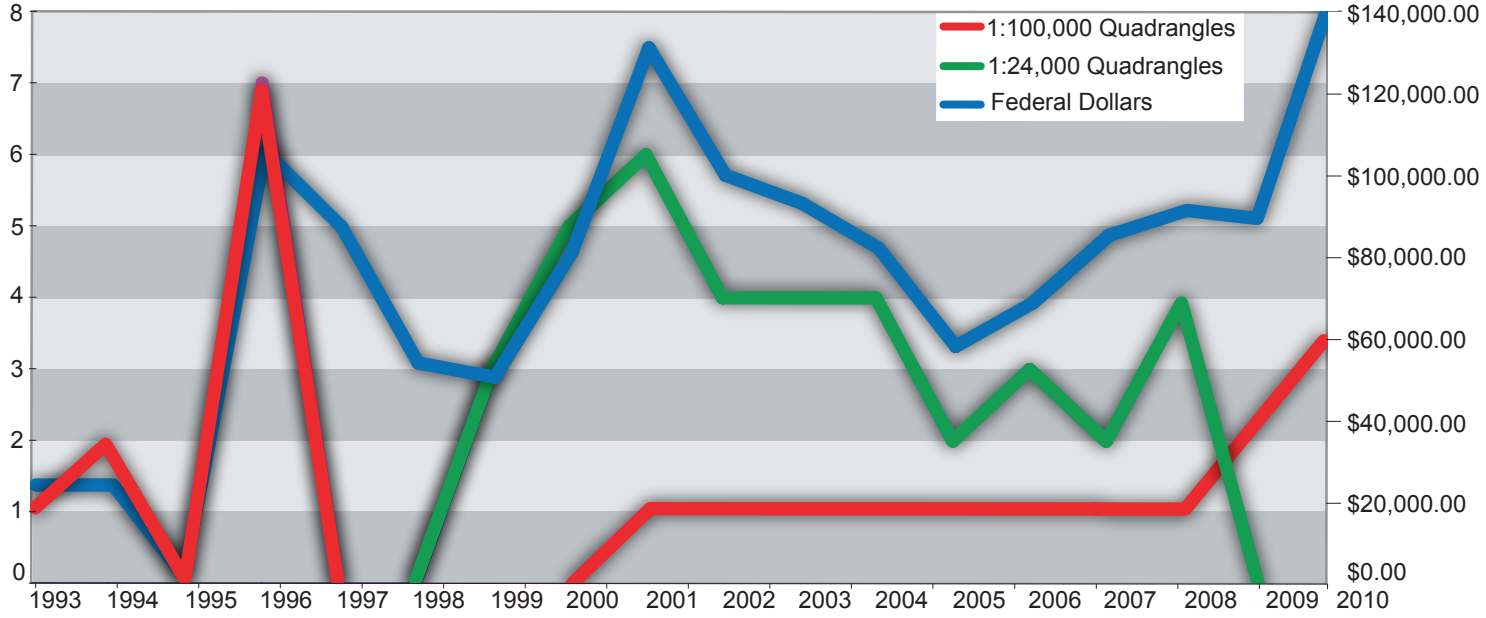
The availability of up-to-date geologic maps has myriad economic implications in Louisiana as in other areas. Geologic maps are invaluable in the effort to rationally plan the permitting of activities in the coastal zone in ways that minimize the threat of land loss. They are also essential to the proper siting of waste-treatment facilities relative to the recharge zones of aquifers that are important sources of drinking water (such as for the surface unit corresponding to the outcrop of the uppermost portion of the Chicot aquifer, the principal source of ground water for 13 parishes in southwestern Louisiana, which historically has been a setting favored for the location of solid-waste repositories). New and increasingly detailed map renderings of active, but apparently non-earthquake-producing, surface faults of the south Louisiana coastal plain provide a framework for assessment of fault-related damage potential and damage-reduction strategies.

Preparation of geologic maps with STATEMAP support in Louisiana may lead to favorable economic outcomes in ways that otherwise would not have been possible. For example, Shaw Environmental, Inc., an environmental consulting firm in Baton Rouge, Louisiana, was working for a national client with a local presence in the Geismar-St. Gabriel area, which overlaps the western edge of the Ponchatoula 30 x 60 minute quadrangle. The technical questions addressed by the project involved 1) a discussion of whether there were any faults in the area of concern and 2) potential aquifer recharge and surficial sediments. The *Ponchatoula 30 x 60 Minute Geologic Quadrangle* provided key supporting information in that there are no mapped surface expressions of faults within a two mile radius of the site. Secondly, it had been noted by the Louisiana Department of Environmental Quality, in a Notice of Deficiencies for this particular client, that the above-referenced geologic quadrangle showed Mississippi River meander-belt No. 1 (Hmm_1) deposits, described as point bar channel deposits and abandoned channel deposits, mapped to the east of the facility. While the Hmm_1 deposits are mapped in the southeastern portion of the facility, the area of concern was just to the north and located on what is mapped as Hml_1 natural levee deposits. The mapped natural levee deposits matched the shallow subsurface soils that had been encountered during previous field activities and made it possible to support the argument that those soils could have a limited recharge potential.

There can be little doubt that basic geologic information of the kind presented on geologic maps will figure prominently in the addressing of a host of environmental and economic issues of increasing importance in the state in years to come.

McCulloh, R. P., Heinrich, P. V., and Snead, J. (compilers), 2003, Ponchatoula 30 x 60 Minute Geologic Quadrangle: Louisiana Geological Survey, Baton Rouge, Scale 1:100,000.

Summary of STATEMAP Geologic Mapping Program in Louisiana



Louisiana quadrangles geologically mapped with support of STATEMAP component of National Cooperative Geological Mapping Program (NCGMP).

The graph of LGS geologic mapping activities conducted as part of the NCGMP shows the importance of the program to geologic mapping efforts in the state. To date, LGS has published thirteen 30 x 60 minute geologic quadrangles at 1:100,000 scale as cartographic products for sale to the public, of which ten originally were compiled with STATEMAP support.

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