



Association of American State Geologists



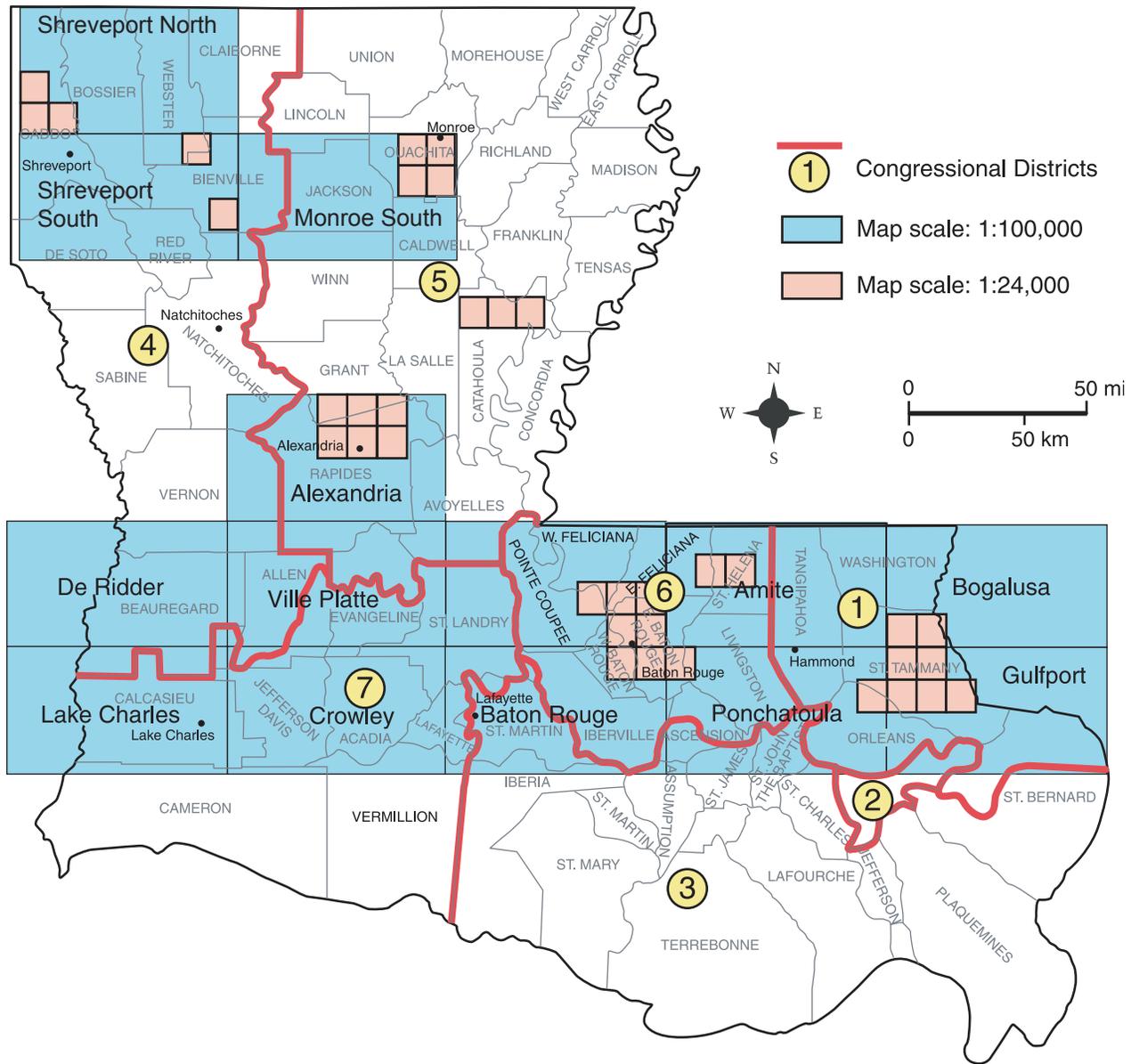
United States Geological Survey



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.

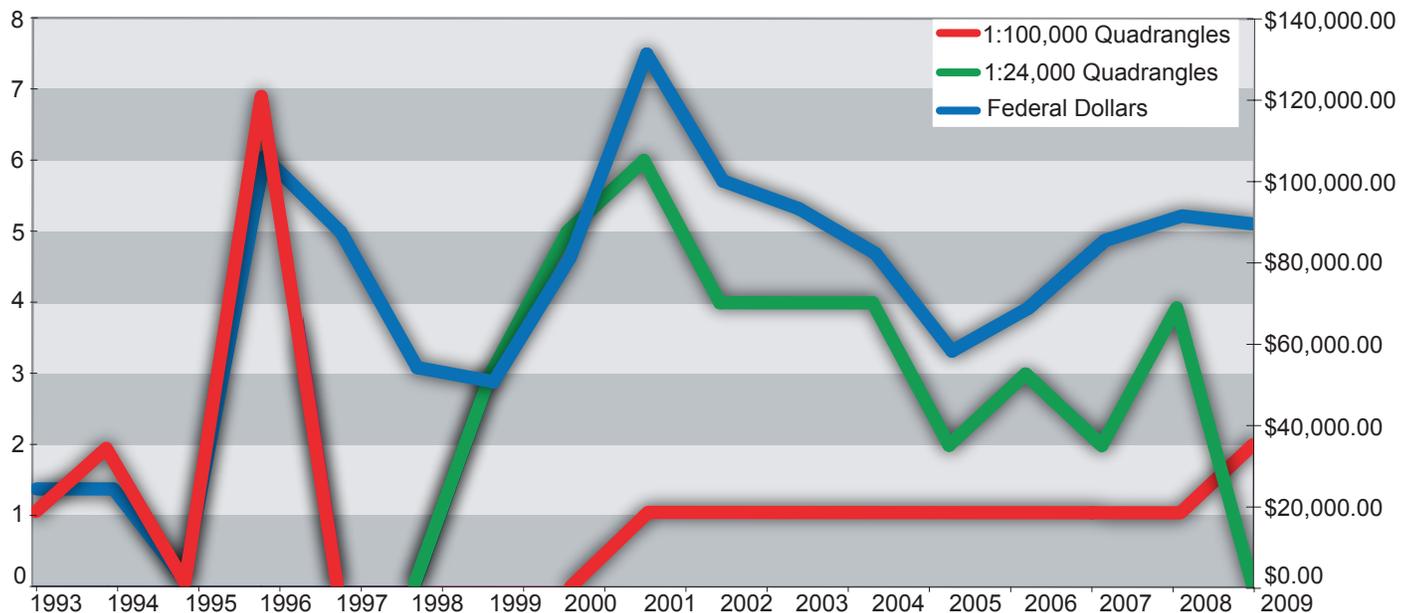
The availability of up-to-date geologic maps has myriad economic implications in Louisiana as in other areas. Geologic maps are invaluable in the effort to rationally plan the permitting of activities in the coastal zone in ways that minimize the threat of land loss. They are also essential to the proper 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, Kimbrell and Associates, LLC, a consulting petroleum engineering and geology firm in Baton Rouge, Louisiana was working a project in the South Larto Lake oil field area, which impinges on the eastern extent of the Alexandria 30 x 60 minute quadrangle. The problem addressed by the project involved assessing the porosity and permeability of surface and shallow-subsurface strata in the study area for engineering purposes. Shallow-subsurface data were sparse, making inference from surface-geologic information essential to the project. The draft Alexandria 30 x 60 Minute Geologic Quadrangle sheet proved basic to this task. The area hosts a conjunction of crevasse, levee, and meander-belt sediments deposited along former courses of the Arkansas, Red, and Mississippi rivers, at the western edge of the Holocene Mississippi flood plain, which the Alexandria geologic quadrangle sheet differentiates and depicts in detail. The interpretation and rendering of these depositional facies made it possible to plausibly infer and project the surface-geologic units and their engineering properties in the shallow subsurface within the project area. The information presented on this geologic quadrangle sheet was, therefore, integral to the work being performed.

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., and Heinrich, P. (compilers), 2004, Alexandria, Louisiana 30 x 60 minute geologic quadrangle: Open-File Map 2004-05, 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 twelve 30 x 60 minute geologic quadrangles at 1:100,000 scale as cartographic products for sale to the public, of which nine originally were compiled with STATEMAP support.