

## NewsInsights

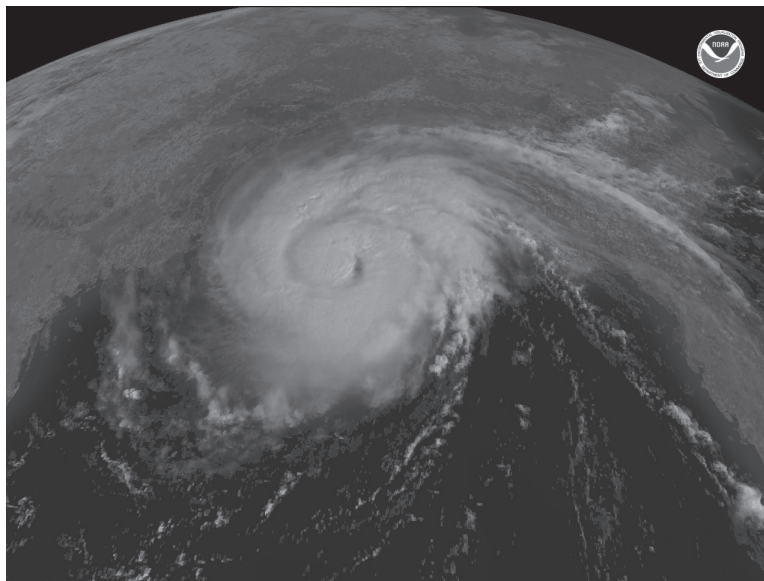
Fall 2008 • Volume 18, Number 2

### LGS provides emergency hurricane support

The LGS provided emergency technical support to the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) before, during, and after Hurricanes Gustav and Ike. The LGS emergency support team consisted of John E. Johnston III, R. Hampton Peele, Thomas van Biersel, Marty Horn and Richard McCulloh and they provided GOHSEP with emergency scientific and mapping support.

Prior to the arrival of this year's hurricanes the LGS provided assistance with impact, rainfall, flood and storm surge estimates. The LGS also deployed mapping equipment to the Louisiana Emergency Operations Center (LAEOC), at GOHSEP's request. During and after the hurricanes the LGS provided GIS mapping products in support of a variety of state and federal agencies and Non-Governmental Organizations (NGO's). Examples of LGS support include search and rescue maps with surge model data, locations of "sheltered in place" (SIP) hospitals, nursing homes, and adult care facilities, maps of emergency evacuation routes with "points of distribution" (PODs) for emergency supplies and generators, maps depicting the locations of Red Cross shelters, military base maps for field damage assessment, and latitude and longitude coordinates of specific features upon request. Much effort went into locating and mapping open gas stations for the Governor's office.

The LGS has provided emergency technical support to the state since the early eighties. When a crisis is imminent, an LGS team is detached from regular duties and reports to the state Emergency Operations Center. LGS emergency support teams, under the leadership of LGS assistant director John E. Johnston III since the eighties, have been commended for their emergency scientific and mapping support for search and rescue efforts for hurricanes such as Andrew, Katrina, Rita, Gustav, and Ike, and have been credited for their assistance in saving the lives of Louisiana citizens.



*Hurricane Gustav approaches the Louisiana coast September 2008.*

# The Louisiana Geological Survey

## LOUISIANA GEOLOGICAL SURVEY

Chacko J. John, *Director and State Geologist*

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The LGS NewsInsights is published semiannually and distributed to professionals, state agencies, federal agencies, companies, and other organizations associated with geological research and applications. Call the main office for extra copies. It is also accessible on the website.

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### LGS Mission Statement

*The goals of the Geological Survey are to perform geological investigations that benefit the state of Louisiana by:*

- (1) *encouraging the economic development of the natural resources of the state (energy, mineral, water, and environmental);*
- (2) *providing unbiased geologic information on natural and environmental hazards; and*
- (3) *ensuring the effective transfer of geological information.*

The Louisiana Geological Survey was created by Act 131 of the Louisiana Legislature in 1934 to investigate the geology and resources of the State. LGS is presently a research unit affiliated with the Louisiana State University and reports through the Executive Director of the Center for Energy Studies to the Vice Chancellor for Research and Graduate Studies.

## International Year of Planet Earth (IYPE) 2007 - 2009 (<http://yearofplanetearth.org/index.html>)



The International Year of the Planet Earth (IYPE) is a global initiative of the International Union of Geological Sciences (IUGS) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to bring all nations together to focus on the geosciences.

### GLOBAL EFFORTS INCLUDE:

- Science program—focused on complex interactions within the earth system and its long-term sustainability;
- Outreach program—includes earth science educational ventures at all levels.

The goal of the Year is to recognize and draw attention to the benefits of the earth sciences for society. The United Nations proclaimed the year 2008 as the official International Year of Planet Earth with science and outreach activities spanning through 2009. The IYPE initiative is the largest international effort of its kind to promote the Earth sciences.

### THE OVERALL THEME FOR IYPE IS EARTH SCIENCES FOR SOCIETY,

#### WITH A PURPOSE TO:

- Reduce risks to society caused by natural and human-induced hazards
- Reduce health problems by improving the understanding of the medical aspects of Earth science
- Discover new natural resources and make available in a sustainable manner
- Build safer structures and expand urban areas utilizing subsurface conditions
- Determine the non-human factors in climate change
- Enhance the understanding of occurrences of natural resources in order to contribute to efforts to reduce political tension
- Detect deep and poorly accessible ground-water resources
- Improve the understanding of the evolution of life
- Increase interest in the Earth sciences in society at large
- Encourage more young people to study the Earth sciences at universities

### EDUCATION & RESEARCH THEMES OF THE IYPE

- Groundwater—Toward sustainable use
- Hazards—Minimizing risk, maximizing awareness
- Earth & Health—Building a safer environment
- Climate—The “stone tape”
- Resources—Toward sustainable use
- Megacities—Going deeper, building safer
- Deep Earth—From crust to core
- Ocean—Abyss of time
- Soils—Earth’s living skin
- Earth & Life—Origins of diversity

### PARTICIPATING ORGANIZATIONS AND MEMBERS OF THE U.S. NATIONAL COMMITTEE FOR THE IYPE

American Association of Petroleum Geologists (AAPG) • American Association of State Geologists (AASG) • American Geological Institute (AGI)  
 American Geophysical Union (AGU) • American Institute of Professional Geologists (AIPG) • Association of Environmental and Engineering Geologists (AEG)  
 Geological Society of America (GSA) • International Union of Geological Sciences (IUGS)  
 National Aeronautics and Space Administration (NASA) • National Ground Water Association (NGWA) • North American Committee for Stratigraphic Nomenclature (NACSN) • Northeastern Science Foundation (NESF)  
 Society of Sedimentary Geology (SEPM) • Soil Science Society of America (SSSA)  
 United States Geological Survey (USGS) • Bruce Museum of Arts and Science

(From website <http://www.geosociety.org/IYPE/index.htm>)

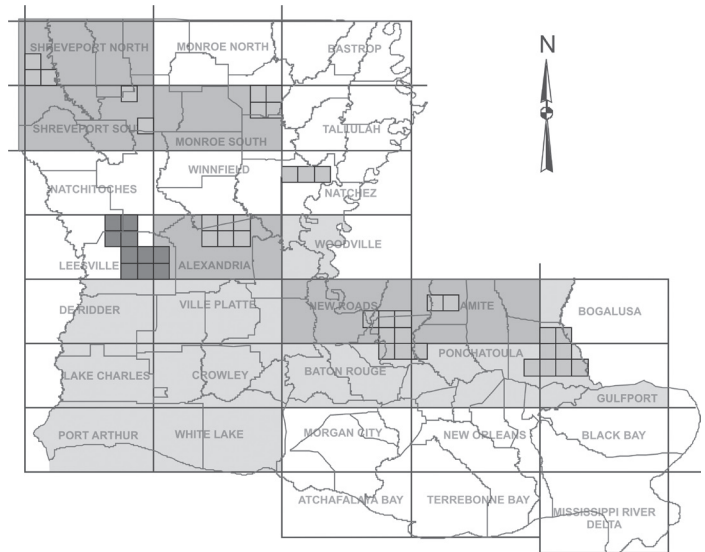
## Status of Geologic Mapping by the Louisiana Geological Survey

Since the early 1990s the Louisiana Geological Survey (LGS) has been engaged in a program of geologic mapping designed to cover the entire state at 1:100,000 scale in 30 x 60 minute quadrangle format. For most of the existing geologic quadrangle sheets, original compilation of the surface geology was supported by the National Cooperative Geologic Mapping Program, under its STATEMAP state component. Some 7.5-minute quadrangles also have been mapped with STATEMAP support at 1:24,000 scale. Participation in the STATEMAP program requires submitting proposals annually for support for geologic mapping projects in cooperative agreements with the U.S. Geological Survey (USGS).

Surface geology compilations, once delivered to the USGS at the end of each project, are open-filed at LGS where copies may be purchased (links to 1:100,000- and 1:24,000-scale open-file maps from the main publications catalog may be found at <http://www.lgs.lsu.edu/depoy/publications/publicationcatalog.php>). They thus are available for reference by members of the public, and to aid in applied research by consultants and other investigators in geotechnical, archaeological, and other earth-science subdisciplines.

One part of each year's STATEMAP proposal is a testimony from government or the private sector that sets forth how the use of a geologic map originally compiled with STATEMAP support was essential in the analysis used to solve an important technical problem. Accounts of this type historically have been scarce in Louisiana, and for the first several years that these statements were required in proposals LGS has depended on a small group of consultants to provide them.

Garnering more accounts that can be related to the USGS in annual proposals for STATEMAP support for new geologic mapping projects in Louisiana depends on fostering more use of the available geologic maps in planning, consulting, and research activities. This in turn depends on increased awareness among consultants and researchers of the STATEMAP-supported geologic map coverage in the state.



### 1:24,000-Scale Compilations (GIS)

- ☐ STATEMAP
- ☐ NonSTATEMAP

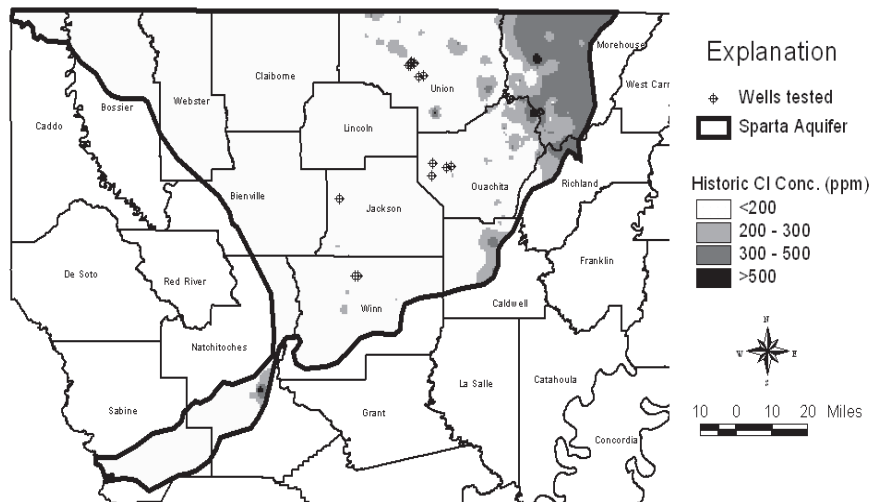
### 1:100,000-Scale Compilations

- ☐ GIS Compilation
- ☐ Printed Lithograph

*Geologic map coverage generated in Louisiana at 1:100,000 and 1:24,000 scales since the advent of the STATEMAP program in the early 1990s.*

## Sparta Saltwater study

Louisiana Geological Survey (LGS) staff members Douglas Carlson and Thomas Van Biersel started the first phase of water sample collection for the Sparta Saltwater study. This study is supported by LGS and a grant from Louisiana Department of Transportation and Development. The study includes quarterly collection of water samples from approximately 60 wells owned by approximately 20 public water utilities in north central Louisiana and screened in the Sparta Aquifers. The utilities are located in Jackson, Ouachita, Union and Winn Parishes. Each water sample is analyzed for chloride, bromide, fluoride, nitrate, nitrite and sulfate and additional common metals using LGS's Dionex ICS-1000 Ion Chromatography System and Louisiana State University Wetland Biogeochemistry's Inductively Coupled Plasma-Optical Emission Spectrometer. In addition to sample collection, this study includes the development of an updated chloride map of the Sparta Aquifer. Preliminary results show that chloride concentrations are increasing along the eastern edge of the Sparta Aquifer.



## Mississippi River a Changing River

Douglas Carlson

### INTRODUCTION

The Mississippi River runs through the center of the United States defining either the western or eastern boundary of ten states: Arkansas, Illinois, Iowa, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Tennessee, and Wisconsin. However, it passes through portions of only two states: Louisiana and Minnesota (Figure 1). In addition, the watershed of the Mississippi River, which covers approximately 1,150,000 square miles (U.S. Census, 2006), extends into all of or parts of another 21 states (Figure 1): Alabama, Colorado, Indiana, Georgia, Kansas, Maryland, Montana, Nebraska, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Texas, Virginia, West Virginia, and Wyoming.

The Mississippi River has United States' largest watershed and discharge for rivers and is second longest river in the United States (second to Missouri River). In addition, even the tributaries of the Mississippi River are major rivers. Four of the nine other rivers among ten longest rivers in the United States are tributaries of the Mississippi River (Missouri, Arkansas, Ohio and Red). As with length four Mississippi River tributaries are in the list of the ten rivers with the largest watersheds (Missouri, Ohio, Arkansas and Red). In terms of discharge the Mississippi River has more than twice the discharge of the next river the Ohio River. In addition to the Ohio, two other tributaries to the Mississippi River are in the top ten rivers in terms of discharge (Missouri and Tennessee) (U.S. Department of Interior, 2006).



Figure 1. Mississippi River watershed (Annenberg Media, 1992).

### CHANGING LENGTH

The Mississippi River is 2,340 mile long, from the source in Lake Itasca, Minnesota to its mouth in Louisiana, and changes elevation from 1,475 feet to zero feet above mean sea level. For most of this distance (1,607 miles) the Mississippi River is bordered with levees (U.S. Army Corps of Engineers, 2007). Just as the use of the Mississippi River varies throughout history, so has the character of this river. This dynamic river has responded to the impacts of development in a variety of ways through time. Some of these changes have been directed to aid in the use of the river as a transport artery to move goods and people, and still other changes are the result of modification of the landscape within its drainage basin. One of these changes is the reduction of river's length over the past century. Channelization of the Mississippi River for navigation began in 1878. In mainly the 1930s a series of locks and dams were constructed for navigation between St. Paul, Minnesota and St. Louis, Missouri (Wiener et al., not noted). The lower Mississippi River channel between 1929 and 1942 has been reduced from 550 miles to 380 miles long between Memphis, Tennessee, and Red River Landing, Louisiana, as a result of numerous meander cutoffs. This is a 30% reduction in the length of the rivers channel between these two points (Biedenharn, et al., 2000). The reduction of Mississippi River's channel has increased both its slope and the river's power as a result of work cutting off meanders between 1929 and 1942 (Biedenharn, et al., 2000). The full length of the Mississippi River has been reduced from 3,160 miles in 1910 to 2,340 miles in 2007, a reduction of 820 miles or 26% of the river's original length (The World Almanac, 1910 and 2006).

### CHANGING SEDIMENT LOAD

The Mississippi River has been a transportation life line in the middle of America for the past almost two hundred years. This avenue to transport people and a vast amount of commerce has been aided by a large number of control structures on the Mississippi River and its major tributaries. The locks on the Mississippi River were primarily constructed in the 1930s (Figure 2). By comparison locks on the tributaries are newer [constructed between 1950 and 1979 (US Army Corp, 2008a)].

The presences of this network of rivers in the center of the United States has made the transport of bulk products by water far more affordable than other means of transport (Mississippi River Resource Page, unknown). For example: to move 1,000 tons of goods 1,000 miles by truck it takes approximately 16,700 gallons of fuel; the same trip was completed by rail approximately 4,950 gallons of fuel are consumed; in comparison it will take only 1,945 gallons of fuel by barge (Mississippi River Resource Page, unknown). This efficiency is a benefit to the economy of the central United States, including Louisiana, and it has been estimated that it adds approximately 5 billion dollars to the U.S. economy (American Waterway Operators, 2007).

The Mississippi River's discharge starts at an average of 6 cubic feet per second (cfs) at Lake Itasca to an average of approximately 600,000 cfs in New Orleans, Louisiana (National Park Service, 2004). The vast discharge is not only moving water into the Gulf of Mexico but sediment as well. On average the Mississippi River discharges 436,000 tons of sediment each day into the Gulf of Mexico (National Park Service, 2004), which is the equivalent of approximately 11,000 dump trucks carrying 40 tons of sediment each day. Approximately 7 dump trucks full of sediment passes by New Orleans every minute. The river's load of sediment has been impacted by navigation structures which tend to trap sediments. As time passes throughout the century there has been an increase in the number of navigation

structures which has caused a significant decrease in the sediment load (Figure 3).

The construction of hydroelectric dams across the upper Missouri River during the 1950s and 1960s has reduced the Missouri River's sediment contribution to the Mississippi River by approximately 75% (Walling and Fang, 2003). For example between 1950 and 1975 the annual sediment load passing Baton Rouge, Louisiana has decreased by approximately 50% while the discharge over the same interval time has increased approximately 10% (Walling and Fang, 2003). Results for sediment load can be expressed by Total Suspended Solids (TSS) values in New Orleans, Louisiana.

These values have decreased from approximately 650 parts per million (ppm) in 1910s to approximately 120 ppm in 1990s, an approximately 80% decrease. There appears to be two major decrease of TSS values, one in 1930s as a result of many navigation locks and dams being constructed along the Mississippi, Illinois and Ohio Rivers (US Army Corp of Engineers, 2007). These structures appeared to have reduced TSS values from approximately 650 ppm in 1910s to approximately 450 ppm in 1940s (Figure 3). The construction of major hydroelectric dams along the Missouri River in Montana, North Dakota and South Dakota (US Army Corps of Engineers, 2008b), which furthered reduced TSS values to approximately 150 ppm in 1960s (Figure 3). The decline of TSS values from the 1970s to the 1990s (from approximately 150 ppm to 120 ppm) is probably a result of additional navigation structures in the 1960s through 1980s (Figure 2), which were largely constructed along the Arkansas, Ouachita and Tennessee Rivers (US Army Corps of Engineers, 2007)

#### CHANGING DISCHARGE

The discharge of the Mississippi River at Vicksburg, Mississippi, is seasonally variable. Usually April is on average the month with the peak discharge. This is consistent with values measured farther north on the Mississippi River at: Anoka, Minnesota; Keokuk, Iowa; Memphis, Tennessee; St. Louis, Missouri; St. Paul, Minnesota; and Winona, Minnesota. This is a result of the dominance of spring snow melt in the northern portions of the Mississippi River watershed. Usually the month of September is the lowest flow month for the Mississippi River at Vicksburg, Mississippi. This is also typical for the Mississippi River south of the confluence with the Ohio River, as shown by discharge at Memphis, Tennessee. By contrast north of the confluence with the Ohio River the minimum flow occurs not in late summer but in the winter, usually January. The changes in the timing of peaks and lows in river discharge are clearly a result of climate changes from north to south across the Mississippi River watershed from a climate that has long severe winters and cool summers to mild winters and long hot summers as defined by Koppen climatic system (Ahrens, 1991). Most of the Mississippi River watershed area lies in humid climate regions, but the western edges lie in a semi-arid region that is cool and dry (Ahrens, 1991).

The Mississippi River discharge extremes are similar to yearly averages yearly peak discharges which occur mainly in the spring and in particular the month of April (Figure 4). In general, the lowest 5% and highest 5% of discharge extremes are similar to averages in terms of when they occur. Approximately 80% of the top 5% of discharge days occur in the spring. Approximately 65% of the bottom 5% of discharge days occur in the fall.

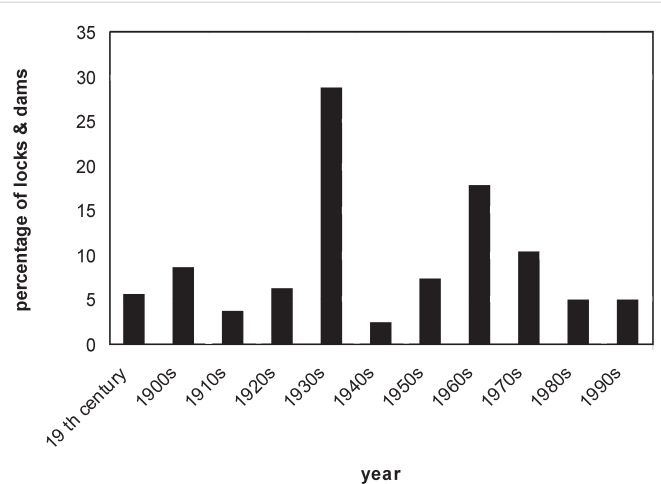


Figure 2. When navigation 164 locks and dams were constructed in Mississippi River watershed (source of data is US ACE (2008a and b)).

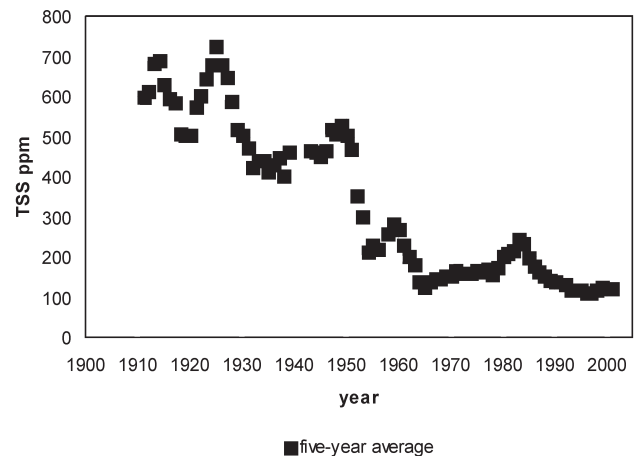


Figure 3. Total suspended solids (TSS) of the Mississippi River at New Orleans [source of data: is New Orleans Sewerage and Water Board data (1913 to 2002)].

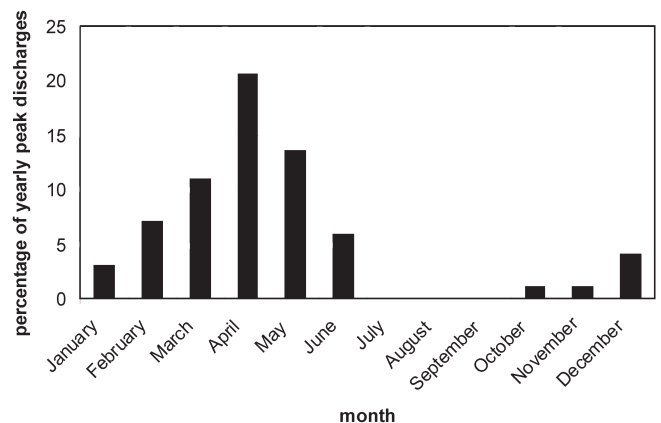


Figure 4. Month of yearly peak discharge for the Mississippi River at Vicksburg, Mississippi, from 1932 to 1998.

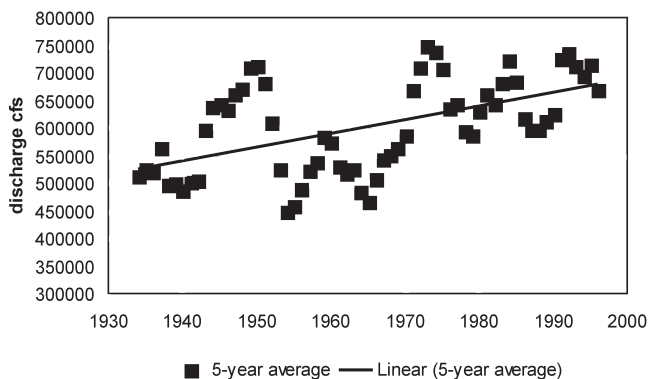


Figure 5. Rolling 5-year average of yearly mean discharge of Mississippi River at Vicksburg, MS (source of data: USGS website 2008).

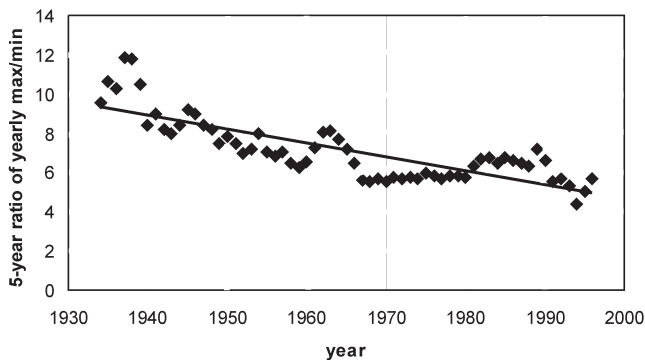


Figure 6. Rolling 5-year average of the ratio of yearly maximum divided by yearly minimum discharge of Mississippi River at Vicksburg, MS (source of data: USGS website 2008).

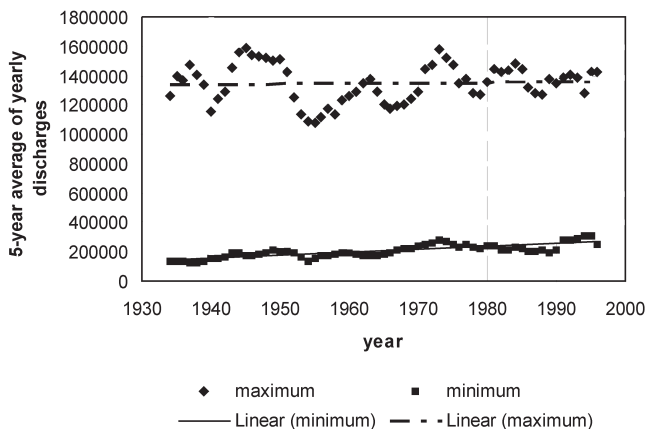


Figure 7. Rolling 5-year average of yearly maximum discharge and 5-year average of yearly minimum discharge of Mississippi River at Vicksburg, MS (Source of data: USGS website 2008).

However, of greater interest than the seasonal changes of Mississippi River discharge are changes in discharge throughout decades as a result of upstream development throughout its watershed. This development has impacted discharge at Vicksburg, Mississippi, in a variety of ways. First, there has been a general increase in average discharge, as shown by increasing value of the 5-year rolling average of the mean discharge (Figure 5). Second, there has been a general decrease in the variability of discharge as expressed by the 5-year rolling average of the maximum divided by minimum discharge within the year (Figure 6). Third, the 5-year rolling average of yearly minimum discharge has been increasing (Figure 7). Fourth, within the State of Louisiana the share of the average discharge that flows down the Atchafalaya channel has increased while the share flowing down the main channel has decreased (Figure 8).

**CONCLUSIONS**

The Mississippi River watershed has experienced large changes due to human activity. Currently agricultural activities dominate the Mississippi River watershed, approximately 39% is covered by crops, and 25% is covered by pastures and range for livestock. At a first glance it appears that land use has remained fairly constant as indicated by area of land covered by crops within the Mississippi River watershed which has remained nearly constant since 1900 (Agricultural Statistics Board, 2004; and U.S. Bureau of Census, 1889, 1909, 1912, 1922, 1933, 1942, 1951, 1958, 1964, 1970, 1973, 1978, 1984, 1990, 1995). So, what is causing this increase of average discharge?

There have been three changes that have probably contributed to the increase of average discharge: First, there has been a consistent increase in the area covered by urban development in the Mississippi River watershed over the past 40 years; there has been an increase of approximately 150% between 1960 and 1997 in land covered by urban development in the Mississippi River watershed (Vesterby and Krupa, 2001). Urban landscapes generally have large volumes of runoff per unit acre as a result of nearly impermeable surfaces that cause larger fractions of rainfall to be converted into runoff and ultimately stream discharge than for land used as pastures, croplands or forests (Chow et al., 1988 and Roberson et al., 1988). Second, by contrast to urban development the portion of land covered by

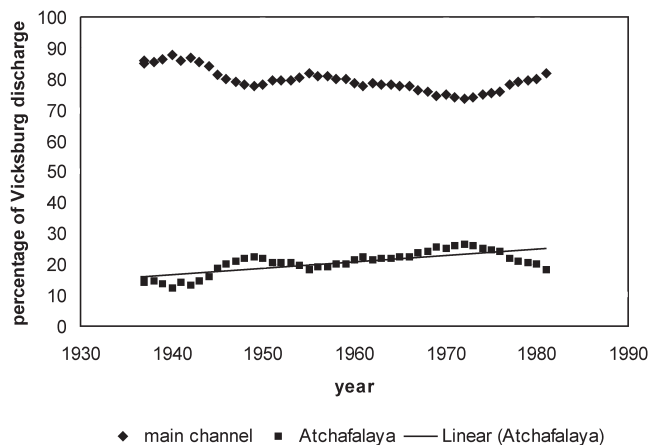


Figure 8. Share of Mississippi River discharge split between Atchafalaya and the main channel flowing past Baton Rouge, Louisiana (source of data: USGS website 2008).

forests in the Mississippi River watershed has been slowly decreasing. Between 1953 and 1997 there has been an approximately 10% decrease in land covered by forests in the Mississippi River watershed (US Bureau of Census, 1956, 1965, 1976, 1983, and 1990 and Vesterby and Krupa, 2001). This is a significant decrease of land which typically has the lowest ratios of runoff to precipitation among the common types of land use of pasture, crop land and urban landscapes (Chow et al., 1988; and Roberson et al., 1988). Third, although the total amount of cropland within the Mississippi River watershed has remained roughly constant over the past century the amount of cropland that is drained has increased by almost 100% between 1920 and 1998 (US Bureau of Census, 1952; and Ohio State University, not available).

In summary, the change of landscapes has probably increased the mean discharge of the Mississippi River. However, why has the variability not increased due to these changes? This could be a result of two changes within the watershed both of which increase low discharges without impacting high discharges significantly. One is the increase in navigation structures which has probably increased low flows by holding back water during high flow times to later release it in order to maintain discharge which in turn maintains the depth of water within navigation locks and the channels between the series of locks and dams along the Mississippi River and major tributaries. Another change has been the significant increase in irrigation water used within the watershed, which has been approximately a 300% increase between 1960 and 1990 (MacKichan and Kammerer, 1961; Murray and Reeves, 1972; and Solley et al., 1983 and 1993). Part of this irrigation water is lost as runoff that ends up ultimately in the Mississippi River.

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## Research and Development of a GIS of Petrochemical Transmission Pipelines Between Baton Rouge and New Orleans, Louisiana

Robert Paulsell

Development of digital petrochemical pipeline data is crucial for energy planning, environmental monitoring, disaster prevention, and especially emergency preparedness/response. This project is intended to enhance emergency response and planning for possible pipeline incidents emanating from hazardous petrochemical transmission pipelines that crisscross an area between Baton Rouge and New Orleans, Louisiana (Figure 1). Roughly 6,200 total miles of pipeline features are within the revised study area. In this mapping effort, 4,027 miles of new polyline pipeline features were developed. Updated pipeline features include East Baton Rouge Parish and the Greater New Orleans area, with a combined 2,175 miles of revised pipelines.

The objectives of this project were to collect all pertinent pipeline documentation, to collect and compile GPS point data on transmission pipelines crossing the public roads, and develop petrochemical pipeline GIS features (shapefile format, ESRI Inc., Redlands, CA). The GIS vector pipeline features are modeled on the National Pipeline Mapping System (NPMS). Additional supplemental data identifies industrial sites with plant manager, contact information, and plant activity.

Creating digital pipeline features of hazardous materials pipelines is detail intensive. The compilation and spatial analysis of digital pipeline data for the state of Louisiana is a complex process that will take years to accomplish. The quantity and quality of data sources and the unique geographic parameters of each inhibit the rapid development of a full scale pipeline GIS for the state. Assessment of digital data, field investigations, and the development of undocumented data are important to the development of the *Louisiana Pipeline Inventory GIS* (LaPIGIS).

An abstract describing the data collection methodologies and GIS development has been accepted for the Trimble Dimensions 2009 User Conference in Las Vegas, Nevada. The presentation "Utilizing GPS Technology to Enhance Spatial Accuracy of Pipeline Features in a GIS" will be presented by Robert Paulsell in the "Mapping and GIS track sessions".

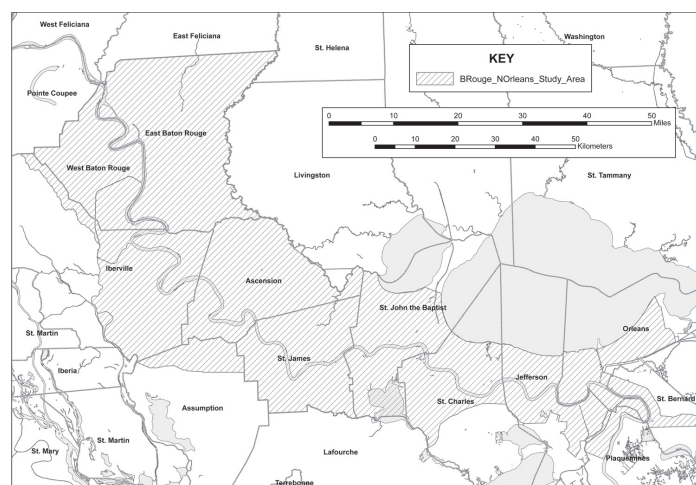


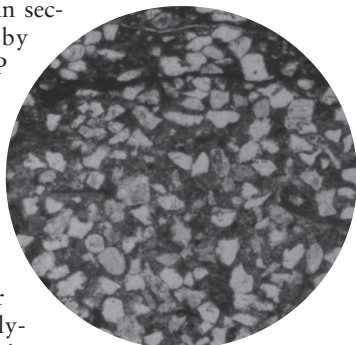
Figure 1. Baton Rouge to New Orleans Pipeline study area



## LGS Expands Petrography Laboratory

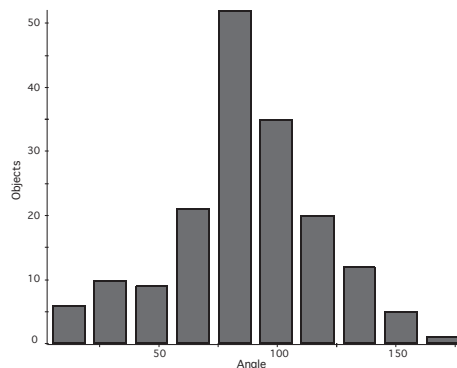
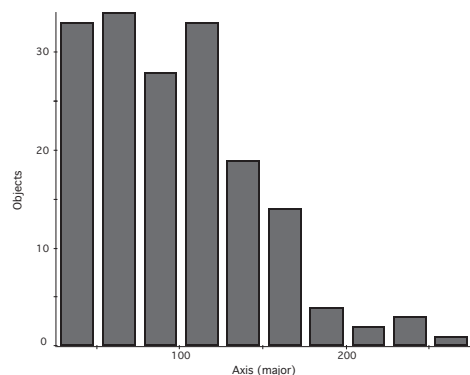
The Louisiana Geological Survey recently expanded its petrography laboratory by acquisition of two new petrographic microscopes along with Image-Pro Plus image analysis software. Both microscopes are Leica brand which has replaced the Leitz brand of the 19<sup>th</sup> to mid 20<sup>th</sup> century. Leitz/Leicas microscopes have long been famous for exceptional quality in design, mechanism, and optic elements.

The two new polarized light thin section microscopes purchased by LGS are the Leica models DM-EP and DM2500-P. The DM-EP features a binocular head and a 4-lens turret. The simple and utilitarian design of the DM-EP is ideal for classroom use and for cursory examination of thin sections. The Leica model DM2500-P is designed for detailed examination and analysis of thin sections as required by a research program. The configuration features binocular viewing, a 5-lens turret, reflected light illumination, and a digital camera. The heavier build of this microscope provides the mechanical stability required for careful optical analysis, particularly at high magnification.



The microscopes are equipped with a full complement of Leica objectives. Magnifications range from 2.5x suitable for analysis of millimeter scale lithologic texture and fabric to 63.0x required for resolution of micron size minerals and textures and for interference figure work with smaller minerals. The objectives incorporate the highest quality of the glass elements and lens configuration available for a polarized light petrographic scope. They are easily interchangeable between the two microscopes as needed.

The DM2500-P is equipped with a digital camera for capturing microscope images for analysis. The analysis is performed on a dedicated computer using the latest version of Image-Pro plus software published by Media Cybernetics. This software, which can be applied to any digital image, is especially useful for determining size and distribution of mineral components and pore space, for quantifying rock fabric by measuring particle orientations, and for manipulation of imagery for presentation purposes.



The accompanying figures illustrate use of the microscope-camera-software system. The specimen is a calcareous siltstone from the Cotton Valley group cored from the north Louisiana subsurface. The plane light images show the specimen's sedimentary texture at 1.25x and 5x magnifications. Computer analysis of the 5x image renders the quartz grains as ellipses, retaining area and orientation. The histogram charts show the range of ellipse major axes (in microns), a proxy for grain size, and the orientation of major axes as the acute angle measured counter-clockwise from 12:00.

Polarizing microscopes are now standard requisite equipment for any basic geological research effort. This acquisition of modern, high quality microscopes equipped with digital image capture and analysis represents a significant addition to research capabilities of the LGS.

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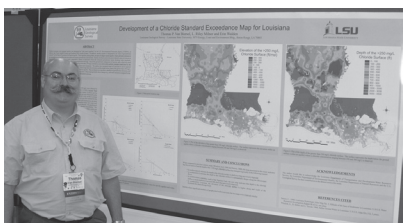
## New Publication

McCulloh, R. P., 2008, *The Scotlandville, Denham Springs, and Baton Rouge Faults—A Map Guide for Real Estate Buyers, Sellers, and Developers in the Greater Baton Rouge Area*: Louisiana Geological Survey, Public information series no. 13, 38 p.

**GSA/GCAGS/GCSSEPM/SSSA/ASA/CSSA/HGS**

For the first time a number of professional societies including the Geological Society of America (GSA), Gulf Coast Association of Geological Societies (GCAGS), Gulf Coast Section of the Society of Sedimentary Geology (GCSSEPM), Soil Science Society of America (SSSA), American Society of Agronomy (ASA), Crop Science Society of America (CSSA) held a joint meeting with the Houston Geological Society (HGS) as the meeting host in Houston from October 5-9 which had nearly 10,000 attendees. LGS personnel who attended the meeting were Douglas Carlson, Thomas Van Biersel, Paul Heinrich, Marty Horn, Riley Milner and Chacko John. Six technical presentations (listed under "Papers published") were made by LGS staff at this meeting.

LGS had an exhibit booth at this conference which was managed by Riley Milner and he was assisted by the other LGS staff at various times. The most recent LGS maps were on display along with other LGS publications. Information on the papers being presented by LGS staff at the meeting was also provided at the booth which attracted a large number of conference attendees.



Poster presentation by Thomas Van Biersel



Poster presentation by Paul Heinrich

**LOUISIANA SUBSIDENCE AND LAND LOSS SYMPOSIUM**

The second annual Louisiana Subsidence and Land Loss Symposium was hosted by the Louisiana Geological Survey (LGS) and Baton Rouge Geological Society (BRGS) on November 17, 2008. The symposium was held in the Dalton Woods Auditorium of the Energy, Coast and Environment Building at Louisiana State University and was co-ordinated by Doug Carlson who is also the BRGS President this year. There were eight oral presentations and 4 posters presented by authors from LGS, Tulane University, University of New Orleans, U.S. Geological Survey and industry. Approximately fifty attended this symposium from a variety of Louisiana universities, Louisiana state agencies, Federal agencies and industry. LGS staff presented one oral talk "Can Mississippi River Flooding Save the Delta Parishes of Louisiana" by Douglas Carlson and Thomas Van Biersel and one poster "Louisiana Shoreline Change 1937-2000" by John Snead, R. Hampton Peele, and S. Ahmet Binselam. Abstracts and expanded abstracts can be viewed on the BRGS website at <http://www.brgs-la.org/web-content/archives.htm>.

**Personnel News**

**GCAGS HONORARY MEMBERSHIP AWARD**

Chacko John, LGS Director & State Geologist, was awarded the GCAGS Honorary Membership for 2008 at the GCGAS Convention held in Houston, Texas from October 5-9, 2008. This award is designated as one GCAGS's most significant awards. GCAGS guidelines for this award state that "Candidates for Honorary Membership should not only have distinguished themselves in service to geology, but also in service to GCAGS. Contributions to the science and profession of geology may be in particular areas or combinations of discovery, thinking, application, exploration, leadership, research, etc. Distinguished service to the industry may be brought favorable reflection on the profession of geology, to GCAGS, and to one's colleagues".



Ken Nemeth, GCAGS President and Chacko John. Photo by Kevin McGowan, courtesy of GCAGS.

**DORIS MALKIN CURTIS MEDAL**

This medal established by the Gulf Coast Section SEPM recognizes geologists for their career contributions in the development of new concepts for understanding the geology of the Gulf of Mexico Basin and other basins globally. The award is named in honor of Doris Malkin Curtis, one of the pioneers in studying the paleontology and stratigraphy of Gulf Coast Geology. Dr. Curtis worked in the Gulf Basin for more than 50 years, and served the geologic profession in many ways.

The 2008 awardee is James M. Coleman, LSU Boyd Professor and Member of the LGS Advisory Board. The Medal was also presented during the 2008 GCAGS Convention.



**NEW ORLEANS GEOLOGICAL SOCIETY FIELDTRIP**

Rick McCulloh prepared a contribution to the fall field trip of the New Orleans Geological Society, organized by Woody Gagliano and Kathy Hagggar and conducted Saturday, October 18th, on the subject of southeastern Louisiana surface faults, for a trip segment focusing on the Baton Rouge fault in western East Baton Rouge Parish. This material has been posted at the LGS Web site.

**LGS RESOURCE CENTER**

The LGS Resource Center is located on the LSU Campus and consists of a core repository and well log library. The core facility has over 30,000 feet of core from wells in Louisiana, Alabama, Arkansas, Florida, Mississippi, and Texas. The well log library contains over 50,000 well logs, most of them from Louisiana. The LGS Resource Center is available for use by industry, academia, government agencies and those who may be interested. Details of current holdings are posted on the LGS website [www.lgs.lsu.edu](http://www.lgs.lsu.edu) under Publications and Data. For more information contact Patrick O'Neill at 225/578-8590 or by email at [poneil2@lsu.edu](mailto:poneil2@lsu.edu).

## Earth Science Week

Earth Science week is sponsored annually by the American Geological Institute (AGI) and its Member Societies on behalf of the geoscience community. This year's theme was "No Child Left Inside" which was designed to encourage young people and others to venture outdoors and experience the natural wonders of earth science in the field. At the request of LGS, Governor Bobby Jindal issued a proclamation for Earth Science Week from October 12-18, 2008. LGS received fifty packets containing geoscience material from AGI as part of this celebration and these were distributed to Earth Science Teachers in various schools.





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Greetings

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