



FROM THE
PRESIDENT
CHRIS MCLINDON

Surprisingly, Louisiana is in the minority of states that do not have a state atlas of geological faults. The Louisiana Coastal Geohazards Atlas Project is a joint development of the Louisiana Geological Survey (LGS) and the New Orleans Geological Society (NOGS). The Atlas Project will seek to combine the strengths of each organization to produce a comprehensive assessment of the surface and near-surface geology of south Louisiana including faults, and to publish that assessment in atlas form.

Over the next four months I will use the President's Letter as a forum to describe the Atlas and its applications. I will begin here with an overview of the Atlas Project and in successive months describe the mechanics of the construction and implementation of the Atlas, and its wide-ranging applications including each of these areas:

1. Transportation and Infrastructure Planning and Development
2. Groundwater Resource Management
3. Coastal Subsidence and Wetlands Loss
4. Coastal Sustainability Project Design and Planning

Prior to this joint development project, LGS has focused primarily on the assessment of surface geology in areas where there is adequate elevation to see geological features expressed topographically and to investigate and map soil and sediment outcroppings. NOGS has focused primarily on the subsurface geology of the coastal parishes of southeastern Louisiana and the continental shelf. Historically the contribution of NOGS to the study of subsurface geology has been through the construction of atlases of subsurface geological interpretations of oil and gas fields and salt domes.

In 2015 NOGS began a program to coordinate access to oil and gas industry data for university research projects examining the relationships between subsurface geology and surface coastal processes such as subsidence and wetlands loss. Access to geological and geophysical data under this program has come primarily through direct donations of seismic surveys to the University of New Orleans (UNO) and Tulane University and through internships at oil and gas companies for graduate student researchers at UNO and the University of Louisiana at

Lafayette (ULL). Since 2012 a total of nine university research projects have used oil and gas industry data to study the relationship between geology and coastal processes. The principal investigation has been to map geological faults that appear to extend to the land surface. These faults, mapped in every project, appear to play a significant role as a cause of subsidence and to affect both rates and patterns of subsidence across the local study areas. To date, three of these research projects have resulted in completed master's in science theses, one of which has been published in a peer-reviewed technical journal. It is anticipated that these eight projects, and all future projects undertaken through the Atlas Project will result in the publications in peer-reviewed technical journals.

The total combined area of investigation of the nine projects is about 2,500 square miles. While these projects have begun the process of working toward a more complete comprehension and prediction of subsidence on a local scale, the scope of the research needs to be significantly expanded to begin to address the regional scale, and to contribute to comprehensive, coast-wide modeling efforts of the integrated natural systems. The primary impetus for the Atlas Project is to expand the scope and pace of university research utilizing oil and gas industry seismic data to allow for the development of the Atlas in comprehensive form.

This proposal is intended to directly address two essential findings of the Consensus Study Report of the National Academies of Science, Engineering and Medicine: Understanding the Long-Term Evolution of the Coupled Natural-Human Coastal System: The Future of the U.S. Gulf Coast.

"Research Gap 2: The causes, rates, and patterns of subsidence along the Gulf Coast are not sufficiently well understood to allow for accurate prediction at the local to regional scale."

"Barrier to Communication 3: The size and complexity of the energy industry, as well as apparent limitations to information sharing, present a barrier to effective communication between the energy industry and other stakeholders. Opportunity 3: Create an incentive structure that fosters information sharing between the energy industry and other stakeholders, as well as protocols for how to engage more effectively to facilitate information sharing. This process could be facilitated by a third party such as a boundary organization."

The foundational premise of the Atlas Project is that there is a direct relationship between the research gap in the understanding of subsidence in coastal Louisiana and the barrier to communication with the energy industry. The exploration for oil and gas has made subsurface south Louisiana one of the most well-understood geological provinces on earth. Billions of dollars have been expended

over the past few decades on the acquisition of seismic data to image the subsurface and the drilling wells that have recorded detailed stratigraphic information, and yet almost none of this massive knowledge base has been utilized in the study of surface geological processes and their impact on subsidence. Through the preliminary stages of the development of the Atlas, LGS and NOGS have demonstrated that they can act very effectively in the role of boundary organizations to facilitate information sharing between the energy industry and academic research institutions. The university research projects that have resulted from this information sharing have demonstrated unequivocally that energy industry knowledge base is an essential component in understanding the causes, rates and patterns of subsidence along the Louisiana coast. The Atlas Project seeks to expand the scope and pace of the research.

The Louisiana Coastal Geohazards Atlas project team was assembled in January 2018:

Dr. Charles Groat - Acting Director of LGS, former CEO of TWIG, former director USGS

Dr. Jeff Hanor - Professor Emeritus, LSU Dept of Geology & Geophysics

Dr. Woody Gagliano - CEO, Coastal Environments, Inc.

Dr. Gary Kinsland - Professor, ULL School of Geosciences

Dr. Nancye Dawers – Chair, Tulane School of Earth and Environmental Sciences

Dr. Mark Kulp - Director of the Coastal Research Laboratory, UNO

Dr. Raphael Gottardi – Assistant Professor, ULL School of Geosciences

Dr. Karen Wicker – Senior VP, Coastal Environments, Inc.

Dr. Elizabeth McDade - Geological Consultant, 30 years oil and gas industry experience

Mr. Chris McLindon – Vice President, New Orleans Geological Society

Mr. John Johnston - Geological Review, Louisiana Geological Survey

Mr. Rick McCulloh - Research Associate, Louisiana Geological Survey

Mr. Paul Heinrich - Research Associate, Louisiana Geological Survey

Mr. Michael Merritt – Retired SLFPA-W

2018 NOGS Highlights – A Look Back at Last Year’s Activities

Ed Picou
Chair, Historical Committee

Due to the serious decline in advertising revenue, printing copies of the *NOGS LOG* for members could not be continued. Members will receive digital copies via the website. Those members wanting hard copy issues must pay \$90 per year. With the decrease in revenue for the *NOGS LOG*, coupled with the fact that the NOGS business office’s lease was expiring in May, the Board decided to close the office to save money. Annette Hudson, our Administrative Assistant for the past quarter-century, retired at the end of June. On August 1st NOGS employed Christy Himel to replace Annette. In September, NOGS launched a new and improved website, which provides more functionality for members.

Other notable events included our March Luncheon, where to commemorate the 300 Anniversary of the founding of New Orleans, Roy Campanella presented an interesting talk detailing events associated with the city’s founding. On April 7, NOGS sponsored the ever-popular Super Science Saturday event at the Louisiana Children’s Museum. On May 18, the joint NOGS-PLANO-SWPLA Golf Tournament was held at the new Bayou Oaks course in City

Park. The jointly sponsored Louisiana Geological Survey-NOGS Louisiana Coastal Geology Symposium was held July 10-11 at LSU. On August 22-24, the 22nd Annual Deepwater Technical Symposium was presented, sponsored by SPE-Delta, NOGS and AADE. On September 19, the NOGS Kick Off Party was held at NOLA Brewing. Earth Energy Day was held on September 22, at the Louisiana Children’s Museum. NOGS participated in the “Believe in Girls” event at UNO on September 29. On December 1st, NOGS sponsored a Field Trip to Baton Rouge to the Lower Mississippi River Physical Model. The final event of the year was our Annual NOGS Christmas Holiday Party, which was held at the Filmore in City Park on December 8th.

In closing, we note the passing of these long-time NOGS members: Jim Hartman* (1/11), Hank Ecroyd (9/27), Phil Johnson (10/1), Tom Klekamp* (10/4) and Bob Branson* (11/1) *Denotes past president of NOGS.

For previous years’ highlights, visit the NOGS website. On the Homepage, go to the About NOGS tab and then click NOGS History on the dropdown menu.