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L.O.R.E.

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The Tennessee Valley Authority and the GeoResources Institute partnered together to host a tour of Bear Creek Lakes in Northwest Alabama for the Bienville Resources and Development Council to help the Council understand the potential regional economic benefits of their proposed water impoundment project.

For more information on the Mississippi water impoundment project, see the article on page 5 written by Wayne Wilkerson of MSU's Department of Landscape Architecture.

Shown in the photo above is the serene Upper Bear Lake, site of the Bear Creek Environmental Education Center.

(Photo by Wayne Wilkerson)

Mississippi State
UNIVERSITY

From the Director



The Proceedings of the 2004 Mississippi Water Resources Conference has been compiled and will be mailed very soon to those of you who attended the conference. I've received a number of positive comments regarding the program content this year. The Lewis and Clark presentations, coordinated by Mickey Plunkett, in honor of the USGS' 125th Anniversary were nothing short of fascinating.

We tried something new this year, and I think it went over exceptionally well. Representatives from all of the relevant state agencies participated in a panel discussion regarding their mission and their greatest research needs. This stimulated some great interactions, both among agencies and with university researchers. I expect to see many fruitful discussions and collaborative research projects come from this session.

The Planning Committee is beginning to think about next year's conference; please contact us with suggestions for topics or speakers. The Call for Abstracts for the 2005 conference will be included in the next newsletter, and we'd like to have outstanding technical papers and posters for the conference.

The Institute has recently completed a Memorandum of Understanding with the US Geological Survey's Biological Resources Discipline to conduct cooperative research and outreach activities on invasive species, particularly focused on aquatic invasive plants. Nationally and here at home in MS, this is becoming one of the greatest water resource management issues facing us. Our efforts will be focusing on early detection of invaders, rapid response upon detection, and educational efforts to increase awareness. We'll have more on this topic in future issues of LORE.

I also recently attended the National Institutes for Water Resources conference in Washington, DC. This gave me the opportunity to visit with other WRRI directors and federal partners on emerging issues in water resource protection and management. Water quantity and quality issues continue, and nuances of these issues continue to evolve. Probably of as much interest was the discussion from federal agency representatives regarding funding levels and priorities. In the current atmosphere of tight budgets and redirected priorities, what hit home was that we have to do good science, but just as important is making our constituents aware of the good science we are doing. In today's climate, our ability to clearly and effectively articulate both the critical needs and our ability to answer those needs will determine how successful we will be in obtaining funds to conduct the research we all know is needed.

We in Mississippi are blessed with an abundance of ground and surface water; however, one does not have to look far to see what issues we will be dealing with in the future. Shortages of ground and surface water are critical in the West right now, and problems continue to plague other metropolitan areas, as well. We are even beginning to see these issues close to home, with the aquifers in the Memphis area being challenged, impacting both drinking water and agricultural/irrigation supplies in some locales. Surface water quality issues also continue, particularly in the sediment arena. There is no shortage of issues we face; the challenge to us is finding the resources to address the issues and getting the word out when we have developed answers to them.

David Shaw, Director

You may reach David Shaw, PhD, at the GeoResources Institute at (662) 325-9575, or by email at dshaw@gri.msstate.edu.

How do I get on the GRI Water E-Mail List?

To **subscribe** to the GRI water mailing list, type "**subscribe water**" in the text body of a message to majordomo@gri.msstate.edu with **no subject indicated**.

To **unsubscribe** from the GRI water mailing list, type "**unsubscribe water**" in the text body of a message to majordomo@gri.msstate.edu with **no subject indicated**.

US Army Corps of Engineers and GRI Summer Cooperative on the Tenn-Tom Waterway

Rita Jackson, Cartographic Coordinator with the GeoResources Institute, spent one day each week during the 10-week summer semester working with the US Army Corps of Engineers (USACOE) on the Tennessee-Tombigbee Waterway in Northeast Mississippi. The summer cooperative project with the USACOE originated to fulfill a Directed Individual Study course Rita took under the supervision of Jeff Ballweber.

Rita has been involved in a Roads Management project where she developed a Geographic Information System (GIS) application that will assist in the management of the USACOE roads network. The project became very extensive in scope and had to be broken down into multiple phases. Rita completed phase I during the summer term, and she plans to continue working with the USACOE on the remaining phases.

This project promises to be beneficial to all parties involved. Upon completion of the project, the roads management database will be a tremendous asset to the USACOE to determine those roads within their network that are in greatest need of repair. It is also a good opportunity for the USACOE and the GeoResources Institute to build a working relationship through this means of collaboration. Rita has had the opportunity to work closely with USACOE personnel and will gain knowledge that will be valuable to her educational experience and to her responsibilities within the Institute.

You may reach Rita Jackson at the GeoResources Institute at (662) 325-3116, or by email at: rjackson@gri.msstate.edu.

GRI Conference Exhibits at a Glance

5th Annual Coastal Development Strategies Conference on Smart Growth

The GeoResources Institute was among approximately twenty-five other exhibitors promoting their projects and expertise at the 5th Annual Coastal Development Strategies Conference on Smart Growth held at the Grand Casino Biloxi, Bayview Conference Center in May. The projects that were included in the GeoResources exhibit were as follows: Upper Pearl Watershed Activities, Multi-Use Water Impoundments (Choctaw County Recreational Lake Project, Bienville Resources and Development Council) and Growth Readiness/NEMO.

2004 Environmental Training Institute for Small Communities

The GRI presented an exhibit at the 2004 Environmental Training Institute for Small Communities, which is sponsored by the National Environmental Training Center for Small Communities (NETCSC). The 2004 Environmental Training Institute was held in Morgantown, WV, which is also the home of the NETCSC. The NETCSC provides training and assistance to small communities in the areas of wastewater, drinking water, and solid waste.

SE-TAC Program Begins 2nd 5-Year Cycle

Entering its 5th EPA funding cycle, the Southeastern Regional Small Public Water Systems Technical Assistance Center (SE-TAC) issued a new Request for Proposals (RFP) on June 14, 2004. The RFP was distributed to SE-TAC advisory board members, EPA Regions IV and VI Offices, university water resources research institutes, state rural water associations, state primacy agencies, and technical assistance providers in 11 Southeastern states.

A new venue for the RFP release was the TACNet exhibit at the American Water Works Association (AWWA) Conference held in Orlando, Florida. The AWWA is an international nonprofit scientific and educational society dedicated to the improvement of drinking water quality and supply. More than 12,000 treatment plant operators and managers, scientists, environmentalists, manufacturers, academicians, and regulators participated in the week-long conference. SE-TAC coordinator, Kim Steil, co-hosted the "TACNet: EPA Technical Assistance Centers" exhibit with staff from the other seven centers located throughout the United States. The AWWA conference was the kickoff for expanding SE-TAC outreach activities. As the number and scope of SE-TAC projects grows, so too will SE-TAC's outreach efforts.

The core of SE-TAC is its competitive grants program which provides seed money for new or enhanced training, technical assistance, or pilot projects. These grants enhance the ability of small public water systems to meet the Safe Drinking Water Act's increased technical, monitoring and reporting requirements and protect public health. The latest RFP, due October 1, 2004, solicits proposals in five areas: 1) source water protection implementation; 2) small public water system security; 3) training and technology transfer; 4) financial and managerial capacity development; and 5) distribution system operation and maintenance.

Drinking water systems have an enormous impact on public health, and the public health benefits of a well-run system cannot be overstated. Virtually every American relies on a public water system either at home or on the road. SE-TAC was designed with the understanding that regulations to ensure safe, reliable water are particularly challenging for many small systems, which often confront issues of affordability as well.

For more information, visit www.gri.msstate.edu/se-tac, or contact Kim Steil at (662) 325-7355, or by email at: kims@gri.msstate.edu.



At the recent 2004 American Water Works Association conference held in Orlando, SE-TAC coordinator, Kim Steil, co-hosted the "TACNet: EPA Technical Assistance Centers" exhibit with staff from the other seven centers located throughout the United States.

\$375,000 Awarded to Assist Multi-County BRDC with Feasibility of Water Impoundment Project

The GeoResources Institute, in cooperation with Engineering Associates/Pickering, Inc., was recently awarded a \$375,000 grant from the U.S. Forest Service's Rural Community Assistance and Resource Conservation and Development Programs to assist the multi-county Bienville Resources and Development Council (BRDC) assess the feasibility of constructing a multi-use water impoundment in the Bienville National Forest.

The BRDC is a formal interlocal agreement between Smith, Rankin, Jasper, Simpson, and Covington counties in Central Mississippi. The project's primary goals are to work with the Council to develop a formal Statement of Purpose and Need for the impoundment, and develop and apply a site selection matrix to identify and prioritize potential lake sites for the Council to consider.

After an successful tour to the Bear Creek Reservoir in NW Alabama, a tour of the Tennessee Valley Authority's Tellico Reservoir in Tennessee is now being planned to help the Council further understand the potential regional economic benefits of an impoundment.

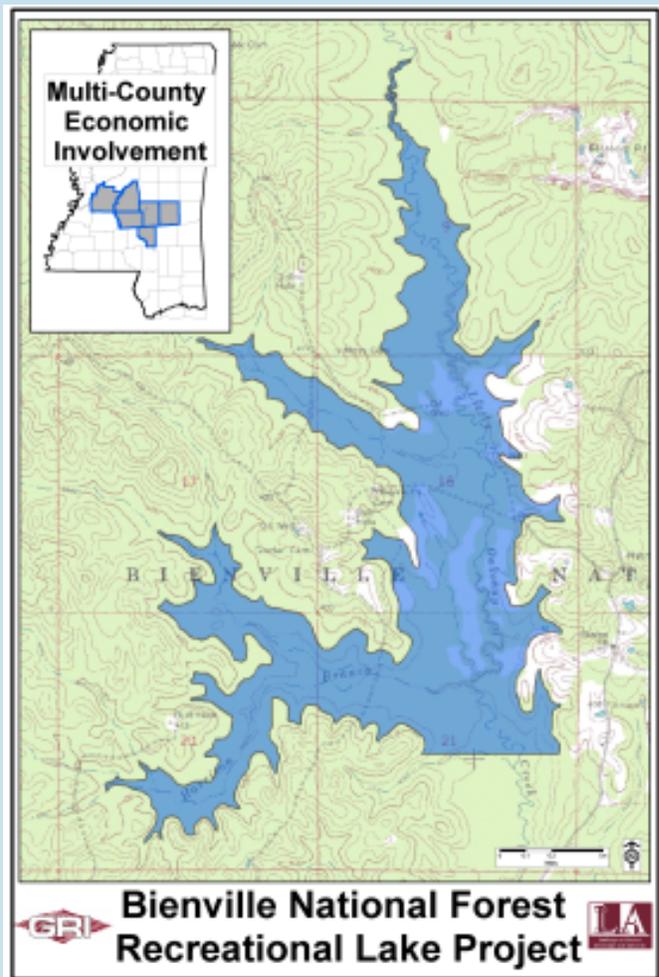
The first step in the feasibility project, under management of faculty and staff from the MSU Department of Landscape Architecture and the Mississippi Cooperative Fish and Wildlife Research Unit, will assess the impact that such an impoundment will have on the terrestrial and aquatic populations of potential development sites.

Step two will involve geohydrologic site evaluations and will be conducted by faculty from MSU's Department of GeoSciences.

Engineering Associates/Pickering, Inc., a private engineering firm located in Jackson, Mississippi, will conduct the final task that will involve identification and review of relevant existing public domain information.

Areas requiring data collection and assessment will include land use, land ownership, previous marketing studies, general geology, threatened and endangered species, cultural and natural landmarks, and general infrastructure locations such as roads, railroads, and utility lines. Pickering's involvement on the project will ensure that site evaluations take into account commercial engineering and construction considerations. The site evaluation and selection project is scheduled to be completed in the fall of 2006.

Article submitted by Wayne Wilkerson, MSU Department of Landscape Architecture. Mr. Wilkerson may be reached at (662) 325-3012, or by email at: gww@ra.msstate.edu.



Upper Pearl River Watershed Advisory Group Established

An intergovernmental/interagency Memorandum of Understanding to create an Upper Pearl River Watershed Advisory Group (UPR-WAG) went into effect in March of 2004. This was a major accomplishment under a Clean Water Act § 319 project conducted jointly by the Pearl River Valley Water Supply District (PRVWSD) and Mississippi State University's GeoResources Institute (GRI).

The UPR-WAG's mission is to work to sustain, restore, and enhance the Upper Pearl River Watershed's current and potential environmental and natural resources. The UPR-WAG is closely coordinated with the Mississippi Department of Environmental Quality's (MDEQ) Basin Approach to Water Quality Management. The UPR-WAG addresses both water quality and drinking water protection by encouraging stakeholder involvement to promote watershed health and harmony by balancing among recreation, environmental and economic development concerns and issues.

While still awaiting the return of signature pages from some organizations to finalize its initial membership, the UPR-WAG elected Dr. Ken Griffin, Executive Director, PRVWSD and Brent Bailey, Director, Natural and Environmental Resources, Mississippi Farm Bureau Federation, as President and Vice-President respectively.

The UPR-WAG has two standing committees: Education and Outreach, and County Assistance. Ms. Jeannine May, Public Affairs Specialist, Natural Resources Conservation Service, and Ms. Janet Chapman, Water Quality Education Specialist at MDEQ, were elected as co-chairs of the Education and Outreach Committee. Selection of the co-chairs for the County Assistance Committee was tabled pending more county members in the UPR-WAG.

Ms. May and Ms. Chapman hit the ground running and have been promoting the UPR-WAG through numerous events. Perhaps the most notable event was an Earth Day celebration that brought together Earth Team volunteers, and local, federal and state agencies and organizations. The water quality awareness event involved students from Northwest Rankin High School and Jackson Academy who placed warning markers on storm drains in neighborhoods around the Ross Barnett Reservoir. The markers read, "No Dumping! Drains to River". The storm drain marking program was an outreach effort developed by the Mississippi Department of Environmental Quality. This effort was the first step in promoting the UPR-WAG's new awareness campaign.

The Education and Outreach Committee has most recently started working with artists from MSU to create a logo and printed materials for distribution to increase public awareness.

In addition, the UPR-WAG's Executive Council has identified fecal coliform as a high priority issue in the watershed based on the Pearl River Basin Team's prioritization of water quality concerns and the most recent Clean Water Act § 303(d) Impaired Waters List. The Council is pursuing funding for several projects that would directly and indirectly address fecal coliform and other issues.

Please contact the GRI if you or your organization have activities or interests in the Upper Pearl Watershed and would like information on the UPR-WAG or the next Council meeting. We are also happy to share information on the structure and function of the UPR-WAG with others interested in organizing a similar type of watershed organization.

Article written by Jeff Ballweber, JD. Dr. Ballweber may be reached at (662) 325-9573, or by email at: ballweber@gri.msstate.edu.

Port Sedimentation Study Completed by MSU's Civil Engineering Department



*The tugboat Joe Cain pushes barges of wood chips on the Tenn-Tom near Amory, MS.
(Photo courtesy of Carol McAnally).*

Mississippi State University's Civil Engineering Department recently completed a study to identify feasible, affordable engineering solutions that will reduce or eliminate dredging requirements at docks and mooring areas in the Mississippi public ports on the Tennessee-Tombigbee Waterway.

Mississippi's six public ports on the Tenn-Tom experience sedimentation that reduces efficiency and limits barge access. Sedimentation of waterways is a natural and ubiquitous phenomenon, and artificially deepened navigation facilities such as ports often accumulate sediment faster than waterways of natural depth. Engineering solutions that reduce or eliminate the excess sedimentation are available, and, if they can be designed to be economical, effective, and environmentally sustainable, may offer viable alternatives to dredging. The many possible engineering solutions fall into three categories – keep sediment out, keep sediment moving, or remove deposited sediment.

The MSU team analyzed local hydrodynamics and transport in each of the ports and recommended a custom solution for each. For example, Port Itawamba at Fulton can reduce sedimentation by regularly agitating the bottom sediments with propwash from a tugboat. For Columbus-Lowndes Port, the recommended solution was a set of dikes to train flow through the port and prevent deposition. The dikes are also an environmentally friendly solution, providing desirable habitat for fish. The general design, cost, and expected sedimentation reduction for the recommended solution was estimated and compared to the cost of local purchase and operation of a dredge. The MSU team found that implementing all the recommended solutions will save the six ports about half the cost of dredging and prolong the life of confined disposal areas along the waterway.

Article submitted by Bill McAnally, PhD, of MSU's Civil Engineering Department. Dr. McAnally may be reached at (662) 325-9848, or by email at: mcanally@engr.msstate.edu.