A bi-annual newsletter of the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section and the Mobile Bay National Estuary Program

Alabama current connection

SPRING 2010 • Vol. V, Issue 1

Clearing the Muddy Water:
Taking Action in the D'Olive Watershed

By Tom Herder, Watershed Protection Coordinator, Mobile Bay National Estuary Program

Mud and sediment delivered to Mobile Bay through Daphne's D'Olive Creek and its associated tributaries have long concerned coastal Alabama residents and resource managers. Impacts from sedimentation include loss of important submerged aquatic vegetation habitats, decreases in fish and shellfish populations, and reductions in property values due to flooding and loss of waterfront recreation opportunities. D'Olive Bay, with average depths of six to ten feet before the construction of the Lake Forest subdivision, is currently little more than an exposed mud flat during low tide.

Continued on page 8

Roadway damage, seen here on Highway 90 in Daphne last Spring, occurs when soil underneath the asphalt erodes. The D'Olive Comprehensive Watershed Management Plan will focus on supporting local communities in finding solutions to erosion and sedimentation issues.

Currently Inside

1 Clearing the Muddy Water: Taking Action in the D'Olive Watershed

2 Coastal Corner: The Case for Reauthorizing the Forever Wild Program

4 Estuary Reflections: Eight Years Later: The Status of Conservation Actions Throughout the Mobile Estuary

6 GulfQuest Museum to Open in 2011

6 Black Rail Activity in Coastal Alabama

7 ADCNR Coastal Program Funds Marsh Birds Study

7 Gardeners Grow 45,000 Oysters for Restoration

10 Port Authority's Arlington Park Scheduled to Open This Spring

11 Submerged Aquatic Vegetation Continues to Decline in Mobile Bay

12 Alabama Coastal Foundation Hosts 10th Annual Coastal Kids Quiz

14 City of Prichard Awarded $100,000 to Reduce Pollution and Health Risks

14 Baldwin County Watershed Coalition Hires Consulting Firm for Regional Stormwater Corporation

15 New Faces: Staff Changes at MBNEP

15 Oyster Gardening Season to Open, Volunteers Welcome

16 Current Events

Coastal Corner

By Phillip Hinesley, Chief, ADCNR, State Lands Division, Coastal Section

The Case for Reauthorizing the Forever Wild Program

On Alabama's coast, we are lucky to have abundant areas for fishing, boating, and outdoor adventures like birding, camping, hiking and hunting. Expansive public lands are required for the enjoyment of these recreational opportunities, which can be accomplished by visiting a national forest, state park or wildlife management area. Unfortunately, these special places represent a very small portion of our state's land.

The State of Alabama has the smallest percentage of public land than any other southeastern state. Within a space of approximately 33.5 million acres, public land with restricted development, such as state parks, national forest, national wildlife refuges, reserves and Forever Wild Lands, amounts to roughly 1.5 million acres—only 4.5 percent of the land area in the state.

The Forever Wild Land Trust, Alabama's official program for the purchase of recreational public lands, has made great strides in protecting our state's unique natural heritage while also providing a land base that supports recreational programs. These accomplishments will continue to improve the quality of life for Alabama's current and future citizens.

Continued on page 3

The Mobile-Tensaw Delta Nature Preserve and Recreation areas secured by Forever Wild are the largest grouping of state owned lands in Alabama. These wetlands, bogs, and swamps make up almost 50,000 acres of Mobile and Baldwin Counties.
Photo by Beth Maynor Young ©

Photo by Beth Maynor Young ©

Continued from page 2

In its seventeen years of existence, the Forever Wild Program has been managed by a diverse Board of Trustees representing the broad interests of Alabama's citizens. Through the assistance of the Alabama Department of Conservation and Natural Resources (ADCNR), the program has received outstanding fiscal stewardship and has served as a model for effective government administration.

Since its initial funding in 1992, Forever Wild has acquired 205,408 acres in twenty-two counties, which are equitably distributed across Alabama. These acquisitions have been funded through the stipulations of Constitutional Amendment 543 – the interest earnings from investments within the Alabama Trust Fund, which are derived from gas royalties from Alabama's submerged lands in coastal waters. This process is often referred to as "conservation currency," whereby one form of natural resource (Alabama's natural gas) is being converted and invested into another (land).

The present tally of land acquired by Forever Wild and ADCNR has been achieved through an investment of $146 million, of which $41 million have come from federal grant programs including the Coastal Estuarine Land Conservation Program administered by the National Atmospheric and Oceanic Administration and the National Wetland Grant Program administered by the U.S. Fish and Wildlife Service.

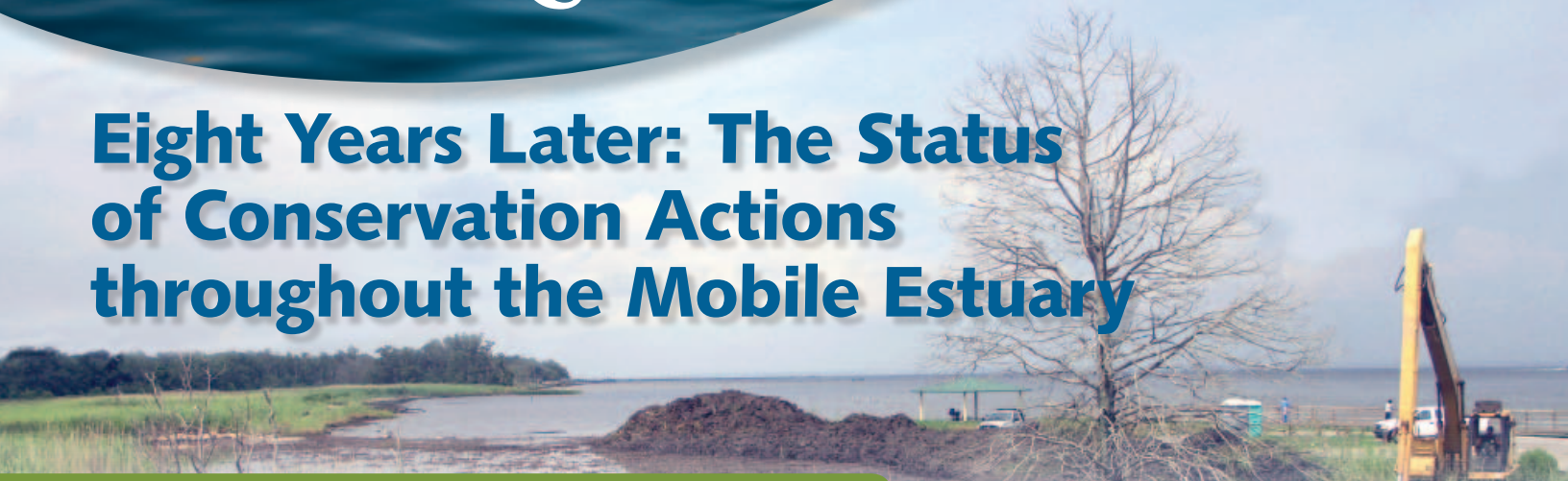
While the conservation of Forever Wild's land is forever, the funding for acquiring more land will cease in 2012, as stipulated by Constitutional Amendment 543. Despite the many successes over the last 17 years, the legislature of Alabama must decide if these accomplishments are enough, or if they warrant being continued.

When we think about the protection of our state's greatest outdoor landmarks, most of them have been supported through Forever Wild's involvement. The Mobile-Tensaw Delta, Walls of Jericho, Sipsey River Swamp, Freedom Hills, Lillian Swamp, the Red Hills, Weogufka Creek, Ruffner Mountain, Turkey Creek, Hurricane Creek, Grand Bay Savannah, Little River Canyon, Old Cahawba Prairie, Hatchet Creek, Coon Gulf, Paint Rock River, Coldwater Mountain, Perdido River, Weeks Bay –this list of accomplishments mirrors the hopes of Forever Wild's early supporters.

The reauthorization of Forever Wild in its current form is imperative because of its accomplishments in preserving Alabama's public lands for future generations and the overwhelming public support to it has continued to receive since its approval by 83 percent of Alabamians in 1992.

For more information on the Forever Wild Trust or to find out what you can do to support the Forever Wild Program go to www.alabamaforeverwild.com.

Eight Years Later: The Status of Conservation Actions throughout the Mobile Estuary



Helen Wood Park: In partnership with ADCNR, State Lands Division, MBNEP recently completed the restoration of 3.5 acres of wetlands at the City of Mobile's Helen Wood Park

By Roberta Swann, Director, Mobile Bay National Estuary Program

The Mobile Bay National Estuary Program's Comprehensive Conservation Management Plan (CCMP) was approved in 2002 laying forth 29 objectives and 101 actions aimed at protecting the waters, plants, animals, and open spaces along our coast. This plan, the result of a Herculean effort among local residents, businesses, academics, and governments, represents a consensus of actions needed to ensure the health of our estuarine resources for the benefit of citizens and the environment.

Targeting Baldwin and Mobile Counties – where the State's five major rivers flow into Mobile Bay and mix with the salt water of the Gulf of Mexico, Mobile Bay National Estuary Program (MBNEP) has tracked progress made in implementing this plan. Eight years later, 87 of the 101 actions are in progress, ten are complete, and four have yet to be initiated. With 86 percent underway, and all of the "low hanging fruit" picked, MBNEP and its Management Conference must re-assess how its resources can best be applied to implementing its mission and protecting the coastal resources that contribute to our unrivaled quality of life.

The National Estuary Program (NEP) was established by amendments to the Clean Water Act in 1987 in part to assess environmental trends in the estuary; assess data to identify causes of environmental problems; recommend actions to restore and maintain the chemical, physical and biological integrity of the estuary and to assure that the designated uses of the estuary are protected. These include restoration and maintenance of water quality; balanced indigenous populations of shellfish, fish and wildlife; and recreational activities in the estuary. In addition, the nation's 28 NEPs were charged with coordinating implementation of the recommendations by the States as well as Federal and local agencies and to monitor the effectiveness of actions taken.

MBNEP provides ongoing support to three real-time monitoring stations which provide data on physical conditions like air and water temperatures and salinity in Mobile Bay. This data is made accessible at www.mymobilebay.com.

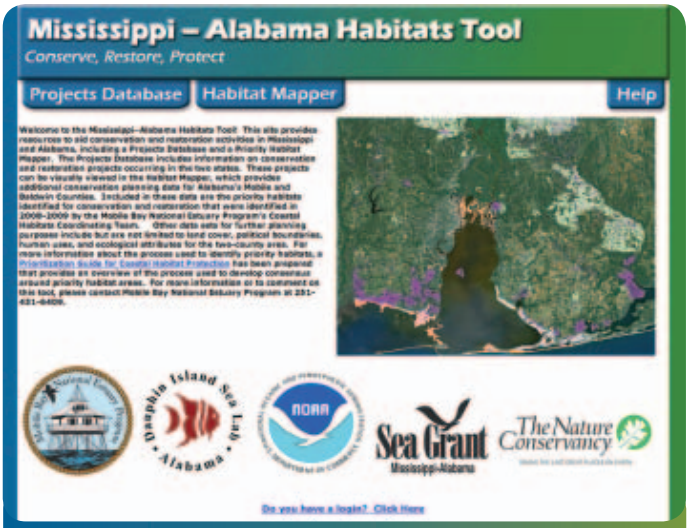
During the eight years that the CCMP has been implemented, accomplishments have included the initial investment and ongoing support of three "real time" meteorological monitoring stations (Middle Bay, Meaher Park, Dauphin Island) that provide up to the minute data on physical conditions like air and water temperatures, wind speed and direction, light characteristics, and dissolved oxygen concentrations. These data are accessible online at www.mymobilebay.com and provide useful information to fishermen, the Coast Guard, and others as evidenced by the fact that the site generates over 3,000 hits per month. Routine Alabama Department of Environmental Management (ADEM) water sampling programs have been supplemented with water quality assessments in Bon Secour, Bayou La Batre, Dog River and Eight Mile Creek.

For the past three years, MBNEP has facilitated efforts with 14 municipalities and Baldwin County to develop a regional watershed based approach to managing stormwater. Achieving benchmarks including passage of enabling legislation and 100 percent participation from all local governmental units throughout the county, the Baldwin County Watershed Coalition is now preparing for a November local referendum that, when passed, will establish a public corporation and additional revenue to support stormwater management in Baldwin County.

The MBNEP area contains four broad natural ecosystems – terrestrial, freshwater, estuarine, and salt water, which support an extremely diverse assemblage of plants and animals. The primary concerns of the MBNEP include understanding the history, habitat requirements, life cycles, strengths, and weaknesses of endemic flora and fauna; the problems associated with the introduction of exotic species; and the health of commercial and recreational fisheries. Producing status and trends reports that provide insight on key living resources in our area have been challenging due to a lack of consistent datasets and shifts in populations of certain species due in part to the impacts of two major hurricanes. In an effort to develop the data necessary for status and trends analysis, MBNEP has partnered with ADCNR to establish a program of mapping submerged aquatic vegetation. With two sets of imagery acquired, a disturbing loss of over 1300 acres between 2002 and 2009 point to problems in water clarity and the human behaviors which affect it (see pgs. 12-13). In 2002, data generated from a major point-in-time assessment of the presence and extent of nuisance species along the Alabama and Mississippi coast. This data was used by the State of Alabama to develop an Aquatic Nuisance Species Management Plan (ANS) which will be finalized in the coming months. This plan will define the problem of ANS and outline actions to be taken to prevent further introductions and manage impacts related to those already occurring where we live.

Many actions have been taken by MBNEP and its partners to protect the terrestrial, freshwater, estuarine, freshwater, and saltwater habitats throughout Mobile and Baldwin Counties. From 2002 through 2009, over 22,000 acres of habitat has been protected or restored, including almost 20,000 acres of land purchased by Forever Wild. To aid resource managers with project planning for conservation and restoration of habitats, the Mississippi Alabama Habitats database was developed in 2006 to catalog projects planned, ongoing, and completed, in the coastal counties of Mississippi and Alabama. In January, 2010, a Habitat Mapper was added to the database, now known as the Mississippi Alabama Habitats Tool. Alabama projects can now be visually viewed in the Mapper in relation to land cover, political boundaries, human uses, and important ecological attributes for our area at http://habitats.disl.org. In addition, this Mapper includes the priority habitats identified for conservation and restoration identified in 2008-2009 by the MBNEP through its Coastal Habitats Coordinating Team, a group of over fifty local, state and federal habitat resource managers.

Management of natural resources is ultimately the management of human actions with respect to those resources. To that end, recommendations of sustainable land use planning, reduction or mitigation of harmful impacts caused by hydrologic modification, and increasing public connections to water resources have been accomplished through a plethora of activities. These include the development of a Dauphin Island Strategic Plan and 20-year vision for a sustainable Dauphin Island (Flint, et. al.), a Mobile – Tensaw Delta Hydrological Modifications Impact Study (Valentine, et. al.) which points strongly towards a significant impact of the Causeway on ecological function in the lower Mobile-Tensaw Delta, a Survey of Coastal Alabama Marinas and inventory of best management practices employed (ADEM); and the development of public pier fishing access at Helen Wood Park including the restoration of the adjacent marsh to improve natural function as well as visibility.



Last month, MBNEP unveiled the MS-AL Habitats Tool, a database with information on conservation and restoration projects in the two-state area as well as a mapper to visually display data that will aid in future conservation planning. The tool can be viewed at http://habitats.disl.org.

At the center of all of these accomplishments is the overall goal of the MBNEP: "to promote the wise stewardship of the water quality characteristics and living resource base of the Mobile Bay estuarine system," and this can only be done with an informed and engaged community. Research and monitoring trends have been communicated to the public through news articles, brochures, workshops, symposia, and the list goes on. Citizens have volunteered to grow oysters to restore reefs; plant trees, sea oats, and marshes to restore habitats; provide operational support to environmental organizations with small budgets; scrape apple snail eggs at Langan Park and Three Mile Creek; and each year thousands come out to pick up trash along our beaches in the annual Coastal Cleanup.

About a year ago, MBNEP published a status report on Alabama's Coastline from the Delta to Our Coastal Waters. This report, a true milestone for the program, indicated that based on data available for analysis and actions taken to date, the overall environmental health of coastal Alabama is not as bad as one might have believed. However, protection of our coastal resources is not something that has an end.

Eight years ago, 29 objectives and 101 actions were prescribed to protect our coastal way of life. With most of these actions in progress, and a solid foundation of data, tools, and relationships established, it is time for the MBNEP to focus on the "high hanging fruit" and a CCMP that is updated to address current and future environmental stressors including climate change and sea level rise. Once again, MBNEP will reach out to its partners among local, state, federal and private interests to develop a focused strategy that uses science to guide the actions, policies, and behavior changes needed. As it was before and still holds true, our goal as a community: To ensure that our waters are protected; indigenous populations of shellfish, fish, and wildlife are balanced; and recreational activities in the estuary are quality and available to all.

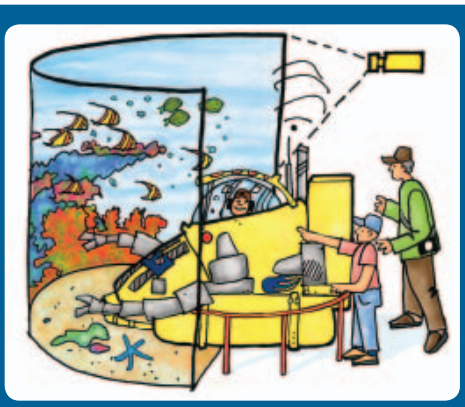
GulfQuest Museum to Open in 2011

The museum's interactive exhibits will be housed inside the stern of a full-sized container ship displayed as if dockside.

Projected to open in late 2011, GulfQuest, the National Maritime Museum of the Gulf of Mexico, will be the first museum dedicated to Gulf Coast's rich maritime traditions and only the third interactive maritime museum in the world. The GulfQuest facility will be constructed and owned by the City of Mobile, though the museum will be planned, funded and operated by a non-profit organization through a public/private partnership. Construction is slated to begin in mid-January 2010.

Once completed, GulfQuest will become a "hub of public activity" for Mobile Landing, the City of Mobile's downtown waterfront development. Mobile Landing is already home to the Arthur R. Outlaw Convention Center, the Alabama Cruise Ship Terminal and Cooper Riverside Park.

GulfQuest's 90,000 sq. ft. building will be shaped like a large ship headed out to sea, complete with three decks and a protruding bridge. The museum's interactive exhibits will be housed inside the stern of a full-sized container ship displayed as if dockside.



GulfQuest's Deep Explorer exhibit will allow visitors to travel underwater "dive trails" in the Gulf through computer animation and underwater video on a 180 degree screen. Renderings are courtesy of GulfQuest.

Inside the container ship, visitors will discover an array of exhibits including early settlements and trade routes, marine archeology and shipwrecks, Gulf animal and plant life, weather and hurricanes, marine and coastal environments, maritime commerce and shipbuilding, ship navigation and communication, offshore oil/gas platforms, and much more The museum will also host traveling exhibitions that feature a combination of maritime artifacts and interactive elements.

For more information, please contact GulfQuest, with temporary offices at the International Trade Center (250 N. Water Street, Suite 131) in Mobile, at (251) 436-8901 or visit www.gulfquest.org.

Black Rail Activity in Coastal Alabama

As part of a study funded by a grant from the National Oceanic and Atmospheric Administration through the Alabama Coastal Area Management Program (ACAMP), the Alabama Department of Conservation and Natural Resources, State Lands Division, Natural Heritage Section (NHS) tried to determine if Black Rail, a species of marsh bird, was a breeder in coastal Alabama. But, by the end of the study, which yielded a significant amount of data for marsh bird breeders along the coast (see article, page 7), no Black Rails had been encountered.

NHS biologist Eric Soehren, who co-led the study, reported that the most recent documented Black Rail calling during the breeding season (May or later) in Alabama was from Polecat Bay marsh in May 1986. Prior to 1986, single birds have been heard calling from the marshes at Dauphin Island airport, Alabama Port, Fort Morgan State Historical Park, and Lake Shelby in Gulf State Park. Recent anecdotal records of observations in spring and fall on Dauphin Island and at Fort Morgan suggest that this species may only be a transient or a winter resident (Cardiff 1998, Jackson 1999, 2000a, 2000b, Kittle et al. 2001, 2002). Soehren said that further investigation is needed to better understand the current status of this species in Alabama.

ADCNR Coastal Program Funds Marsh Bird Study

By Janis Helton, Coastal Planner, ADCNR, State Lands Division, Coastal Section

Understanding the secretive habits and the status and distribution of marsh birds in coastal Alabama has become easier thanks to a grant from the National Oceanic and Atmospheric Administration through the Alabama Coastal Area Management Program (ACAMP) to the Alabama Department of Conservation and Natural Resources, State Lands Division, Natural Heritage Section (NHS).

According to Natural Heritage Section biologist Eric Soehren, North American marsh birds are dependent upon emergent wetlands and are generally reclusive, semi-aquatic birds that inhabit dense marshes, vocalize infrequently, and seldom fly. Thus, their habits combined with their dependence on emergent wetlands often make them a difficult group to observe or study. Consequently, they are among the least well-monitored avian groups in North America.

But monitoring these birds is important since studies show that they are considered an indicator species of wetland health (Eddleman et al. 1988). Not only are marsh birds affected by changes in habitat quality (Benoit and Askins 1999), but they may also be affected by the uptake of heavy metals or other contaminants from their wetland environs. Therefore, coordinated and effective monitoring efforts are needed at local, regional, and continental scales to better understand the status of marsh bird populations. By using NOAA grant funds, researchers from the NHS, co-led by Soehren, were able contribute to this effort by establishing a methodology to survey and then actually survey marsh birds during the breeding season along the coastal marshes and barrier islands and within the Mobile-Tensaw River Delta.

In the survey, the researchers targeted five of the 11 marsh bird species that occur in coastal Alabama. The five, Least Bittern, Clapper Rail, King Rail, Purple Gallinule, and Common Moorhen, are confirmed breeders along the coast. In addition, Black Rail was included as a primary target species because it is a suspected breeder along coastal Alabama and researchers wanted to try to validate this suspicion. However, no Black Rails were encountered (see sidebar, page 6).

The other five species, American Bittern, Yellow Rail, Virginia Rail, Sora, and American Coot are primarily winter residents and, thus, were not included in the project.

Researchers made multiple visits to individual sites along a number of routes in order to document changes in species usage across the breeding season. To better coordinate survey efforts, the entire Alabama coastline was divided into three sampling areas: lower Mobile County, lower Baldwin County, and lower Mobile-Tensaw River Delta located north of the U.S. Hwy. 98 causeway.

Seaside sparrows (foreground) and Nelson's Sparrows (background) were secondarily sampled because of their close ties to coastal emergent marsh systems. Seaside Sparrows are currently recognized as a Greatest Conservation Need (GCN) species in Alabama's Comprehensive Wildlife Conservation Strategy because of their restricted range and the potential threats from development. Photo credit: John Trent

Routes placed along lower Mobile and Baldwin Counties were characterized by tidally influenced saline marshes. Routes placed within the lower Mobile-Tensaw River Delta were characterized by tidally influenced brackish marshes.

The data obtained from the survey resulted in 1,265 geo-referenced database records of the targeted species and an additional 2,379 ancillary records were developed, accounting for a combined total of 3,644 records currently housed in the NHS database.

A clapper rail, captured and banded on Mobile County's Isle aux Herbes. Photo Credit: Eric Soehren

However, the scientific collection of raw data is only a starting point. The goal of the ACAMP in funding such studies is to contribute to better management of coastal resources. And, the NHS met this goal by using its findings to contribute to a number of projects and presentations that would promote a better understanding of the current distribution, status and ecology of coastal marsh bird populations in Alabama and beyond. These projects and presentations are listed below:

- "Alabama Breeding Bird Atlas," on line at www.una.edu/faculty/thaggerty/BBA%20website/Index.htm.
- US Fish & Wildlife Service "King Rail Conservation Plan (2008)," where the NHS project not only identified the current distribution of King Rails along coastal Alabama, but also established a baseline that can now be comparable with future King Rail surveys.
- "National Marsh Bird Monitoring Program," which has a database that serves as a repository for all marsh bird data to be used for ongoing national and regional monitoring efforts.
- Professional meeting presentations at the 29th Waterbird Society Meeting; the 4th International Partners in Flight Conference; and the 29th Society of Wetland Scientists.
- Peer-reviewed publications entitled "Effectiveness of Call-broadcast Surveys for Breeding Marsh Birds along Coastal Alabama" (Southeaster Naturalist 8(2):277-292); "Influence of Tidal Height on Detection of Breeding Marsh Birds along the Northern Gulf of Mexico" (Wilson Journal of Ornithology 121(2):399-405), and "Occupancy of Select Marsh Birds within Northern Gulf of Mexico Tidal Marsh: Current Estimates and Projected Change" (Wetlands 29(3:798-808).

Clearing the Muddy Water:
Taking Action in the D'Olive Watershed

The dirt "chimneys" on which individual rocks sit show the erosive power of the effects of raindrop splashes, which have removed all of the surrounding dirt. The rocks provided protection from the fall rain which protected the D'Olive watershed's highly erodible soil underneath.
Photo cre it: Tetra Tech/Thompson Engineering

Continued from page 1

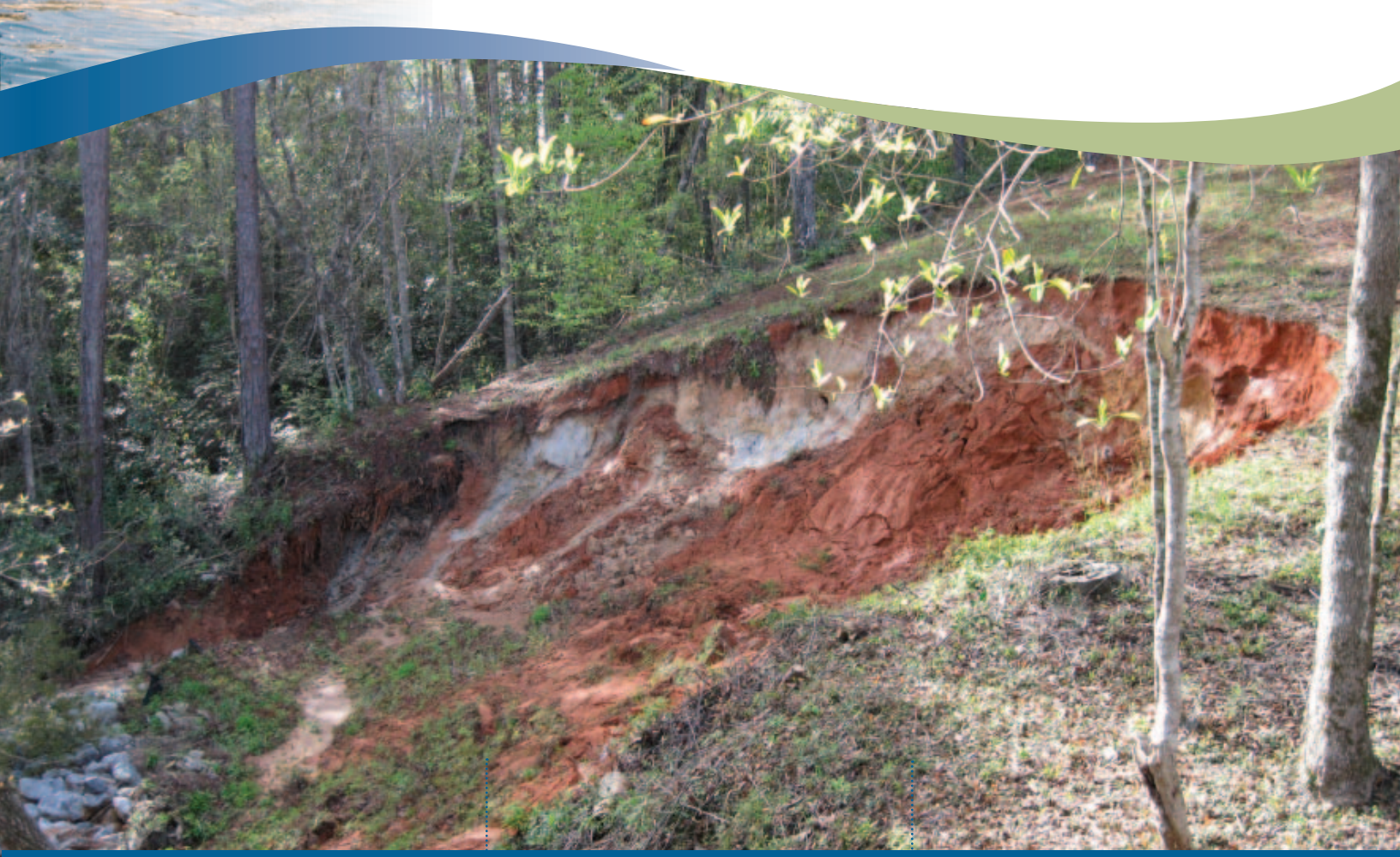
In 2006, concerns of the Lake Forest Property Owners Association, whose lake and marine have been filled by sediments, triggered a renewed effort on the part of the Alabama Department of Environmental Management and a collaborative effort to address this issue. The Mobile Bay National Estuary Program (MBNEP) began the coordination of a task force, the D'Olive Watershed Working Group (DWWG), composed of federal, state, and local agencies and resource managers, elected officials, and stakeholders whose goal involved establishing a systematic and scientific approach to addressing water quality and nonpoint source pollution management issues.

After two years of sampling, Geological Survey of Alabama's Marlon Cook published an "Analysis of Sediment Loading Rates and Impacts of Land-Use Change on the D'Olive and Tiawasee Creek Watersheds, Baldwin County, Alabama 2007." He reported that "Land-use change can have tremendous deleterious impacts on water quality and biological habitat of streams, particularly in parts of Baldwin County where topographic relief and highly erodible soils are subjected to residential and commercial development." Mr. Cook reported that "normalized" sediment loads in the watershed (allowing comparisons with respect to unit draining area) for five of the eight streams draining into Lake Forest were 1,977 tons per square mile each year of drainage area, the equivalent of over 130 dump truck loads. This compares to the geological erosion rate (which would occur with no human impact) of 64 tons per sq. mi. per year. With continued development in a watershed with extreme topography and erodible soils that receives on average over 66 inches of rain per year, Mr. Cook says that "the horse is out of the barn." Indeed D'Olive Creek, Joe's Branch, Tiawasee Creek, and several tributaries within the watershed were listed by the Alabama Department of Environmental Management (ADEM) on the 2008 Clean Water Act Section 303(d) List of Impaired Waters due to sedimentation.

On November 20, 2008, a Request for Qualifications (RFQ) was issued by the MBNEP for the development of a Comprehensive Watershed Management Plan for the area that includes D'Olive and Tiawassee Creeks and Joe's Branch. It was sent to experienced planners and developers of large scale environmental planning and construction firms with experience in CWMP development and posted on the MBNEP web site. The goal of this CWMP was to identify erosion, sedimentation, and other nonpoint source pollutant loading problems in the watershed and recommend environmentally protective and economically feasible actions or management measures needed to mitigate historic impacts, including lake restoration and managing future growth and land use changes. From the eleven firms submitting proposals, Thompson Engineering was selected to develop the plan. Funders of this project included ADEM, MBNEP, Mississippi Alabama Sea Grant Consortium, Alabama Power, the LFPOA, and the Cities of Daphne and Spanish Fort.

The team assembled by Thompson Engineering is headed by Project Manager Glen Coffee and includes personnel from Thompson, Hand Arendall, Barry Vittor and Associates, Tetra Tech, and the Alabama Coastal Foundation. At the August 27, 2009 Kick-off Meeting, Thompson presented a schedule of meetings and major milestones, with the completion of the final CWMP schedule for July 2010.

At the most recent DWWG meeting, Mr. Coffee first presented a convention for naming sites within the Watershed and then described the methodology used to assess stream channels in the Watershed, the wetland condition survey, and the types of geomorphic data collected. He explained the factors that affect surface runoff and sediment erosion: rainfall, topography, surface soils and underlying geologic materials, and changes in land



Streambank erosion causes mass wasting along an unnamed tributary of D'Olive Creek , threatening a Lake Forest property owner's home. *Photo Credit: Ashley Campbell*

use/land cover. Rainfall contributes greatly to sedimentation problems in greater Mobile, rated as "the wettest city in the U. S." Only 59 days (on average) are considered "rainy," but rainfall events are often intense producing large amounts in short periods of time with large, powerful drops. Baldwin County topography increases from sea level to over 160 feet over only a four-mile distance and its streams are characterized by steep gradients (and fast flows) with many bordered by slopes of greater than 25°.

Land use changes are largely responsible for the difference between geological erosion rates and those presently reported in the Watershed. Elimination of forested or vegetated areas and increases in impervious surfaces result in increased runoff volumes and velocities, increased flood peaks, accelerated rates of "head-cutting," increased streambank erosion, and increased sediment loads.

Mr. Coffee discussed particular problems that occur frequently within the Watershed that include:

- channel incision,
- channel head-cutting,
- undesirable sedimentation,
- accelerated erosion,
- accelerated/increased surface runoff, and
- mass wasting or "slumping." These events entail large portions of steep streambank collapsing during periods of high stream flow or precipitation, frequently resulting in trees falling into streams. Resulting woody debris jams cause scouring of streambeds and erode flanking stream banks, which threatens property, structures, and infrastructure.

Channel incision and headcutting have led to intense erosion of Joe's Branch in Spanish Fort. Left unchecked, the channel side slopes will cave in, causing bank failures.
Photo credit: Tetra Tech/Thompson Engineering

Certain landowner practices are frequently the cause of identified problems, including replacement of natural riparian vegetation with grass or ornamental plants; stabilization of banks with riprap, gabions, concrete mattresses, etc.; unpaved roads, and clearing to create utility rights of way. Mr. Coffee's presentation concluded with identification of specific locations – "hot spots" – of sediment-related problems and priority problem areas.

When completed, the CWMP will impact about 13 linear miles of streams, 80 to 100 acres of open water habitat, and 320 acres of estuarine open water. It will direct measures needed to mitigate existing impacts while guiding management and planning decisions on future growth and land use and cover changes within the watershed. Hopefully, it represents the first step in a long, productive journey towards a sustainable, environmentally and economically healthy Eastern Shore and Baldwin County.

Gardeners Grow 45,000 Oysters for Restoration

By Melissa Schneider, Mississippi-Alabama Sea Grant Consortium

When people ask Martha Crosby of Point Clear, Ala., what she's been up to, her answer isn't going to the gym or volunteering at the hospital. She tells them she's raising oysters on the end of her pier.

Crosby is a volunteer with the Mobile Bay Oyster Gardening Program. This year, she and other volunteers helped grow more than 45,000 oysters that were planted on reefs in Mobile Bay in November, according to Mississippi-Alabama Sea Grant and Auburn University Maine Extension and Research Center Extension Specialist Phillip "P.J." Waters, who helps lead the Mobile Bay Oyster Gardening Program.

Volunteers grew the oysters at 44 gardening sites. They maintain juvenile oysters (spat) in submerged cages by cleaning the cages about once a week any during the summer months and removing predators, such as blue crabs and oyster drills, from the cage.

Adopt a Garden

What: Adopt-a-Garden Program.

Who: Mobile Bay Oyster Gardening Program.

Where: Mobile and Baldwin counties.

When: Start anytime.

Why: Support science activities in schools and receive monthly updates on the oyster gardening program.

Price: $25 per year.

How: Contact P.J. Waters, 251-438-5690 or waterph@auburn.edu.

Alma Bryant High School students Chris Phelps, left, and Austin Hall take a basket of oysters from Bill Ross's Baldwin County oyster garden to transport the oysters to a reef. Student Jarrod Price, behind them, works on a cage as does Ross. AmeriCorps VISTA Volunteer Marie Dyson also is pictured in back. The students then helped plant the oysters in Mobile Bay. Photo credit: AUMERC

"We saw excellent growth," Waters said. "Even though Tropical Storm Ida took 17 cages as she went by, we had a successful season."

This year's average was 1,027 oysters per gardener, which is in line with the 1,000-oysters-per-gardener average, he said.

David and Lois George of Mobile County and Steve Crockett, also of Mobile County, tied for most oysters produced this year with 2,000 oysters. Sue and John Caudil of Baldwin County boasted the biggest oyster at 3.26 inches, and Ann Browdy's oysters had the highest average size at 2.4 inches.

It only takes about an hour a week to clean the cages, Crosby said, and it gives her a chance to see firsthand that reefs are breeding grounds for many species. In the program, she also had the opportunity to tour the Auburn University Shellfish Lab and learn about the science of oysters. And, friends and family keep up with her oyster garden by asking her for reports, she said.

Crosby has spent a lot of her time on the waterfront, and her property is located on conditionally open waters, which allows her to participate in the program.

A new Adopt-A-Garden Program allows people who do not own waterfront property to participate in oyster gardening. For $25 a year, participants will receive a monthly newsletter and be able to follow their oysters as they grow.

"This is an excellent way for folks who do not live on the water, but recognize the ecological and economical importance of the oyster to our area to get involved with the program," Waters said.

All proceeds will support science research programs in area schools.

The oyster gardening program is sponsored by Mobile Bay National Estuary Program in cooperation with Auburn University and the Mississippi-Alabama Sea Grant Consortium. It teaches students and adults about the ecological and economical roles oysters play in Mobile Bay.

Arlington Park's new pier crosses newly created wetlands that will provide high quality nesting, feeding and nursery habitat for wildlife, fish and macro invertebrates.

The pavilion located at the end of Arlington Park's new pier provides spectacular views of Mobile Bay.

Port Authority's Arlington Park Scheduled to Open This Spring

By Judith Adams, Alabama State Port Authority

Recreational enthusiasts will have a new public greenspace on the western shore of Mobile Bay when the Alabama State Port Authority officially opens Arlington Park this spring. Last year, the Port Authority began revitalizing a derelict industrial site just north of Brookley that transforms the nearly 50-acre site into a recreation and wetlands attraction. "We're really excited about this project," said Jimmy Lyons, director and CEO for the Authority. "We envisioned Arlington Park to be a unique, leisure experience, especially for kayakers, cyclists and joggers that really do not have meaningful, in town access to the bay from the western shoreline." Currently, the city's and county's only Western shore parks are Cooper Riverside Park, a pedestrian park located in downtown Mobile, McNally Park near Dog River and Bayfront Park at the Dauphin Island Bridge.

The Port Authority invested approximately $7 million to acquire land and construct the park, which features a kayak and canoe launch, a gazebo, picnic tables, grills, benches, lighting, and bike racks. The park will have bicycle and walking paths and will be a city transit stop to encourage access utilizing public transportation. "While parking will be available, we really would like to see park users incorporate the park's amenities into their daily wellness program and reduce the park's overall carbon footprint," said Lyons. The drives, paths and paved surfaced areas are all permeable construction to better manage storm water runoff. Surface water will percolate through the pavement to the soil below minimizing stream erosion and storm water impacts to the bay.

Landscaping work continues at one of the park's many gazebos.

In addition to the upland amenities, the newly created high quality wetlands will provide marsh primary production, wildlife feeding and nesting habitats, fish and macro invertebrate nursery and feeding habitats, as well as water treatment and sediment retention. The Port Authority also constructed a pedestrian pier that crosses the wetlands giving visitors closer view of many coastal birds and plant species along the shoreline.

In addition to being a park for the people, it's also a reflection of the people. "The public has been involved in the park concept since day one," said Lyons. "We held public hearings, sought community feedback on park amenities and asked the public to name the future park." Arlington Park was the most popular name to surface in that the park's location is next to Arlington Point, a well known geographic feature of Mobile Bay.

Submerged Aquatic Vegetation Continues to Decline in Mobile Bay

By Amy Hunter, Ph.D., Program Scientist, Mobile Bay National Estuary Program

From the northern extent of the Mobile Tensaw Delta to the southern portions of Mobile Bay and Mississippi Sound, the Mobile Bay Estuary is home to over twenty species of submerged aquatic plants. Submerged aquatic vegetation (SAV), including coastal seagrasses, provides vital services for a healthy estuary: shelter for fish and invertebrates, nursery habitat for commercially and recreationally important finfish and shellfish species, food for waterfowl, sediment stabilization, and erosion prevention.

One of SAV's most important roles is its function as an indicator of the state of the physical environment—thriving SAV beds indicate clean water with appropriate nutrient and sediment input. Loss of SAV can indicate changes in water clarity, wave energy, salinity, and other environmental factors.

Locally, determining trends in SAV coverage for Mobile Bay has been an ongoing challenge.

In 2002, Mobile Bay NEP and ADCNR State Lands Division partnered with Barry A. Vittor and Associates to map SAV along the Alabama coast with the long-term goal of conducting aerial SAV surveys every five years. Comparisons between the 2002 survey and historical aerial photographs showed a dramatic decline in Mobile Bay's SAV coverage in the intervening sixty years. Between 1940 and 2002, a 55.5 percent decrease in SAV coverage in Mobile County was documented. The most dramatic changes in SAV coverage were noted along the Baldwin County shoreline, with results indicating a decrease in SAV habitat of over 88 percent in Baldwin County.

Perdido Bay Quadrangle

Mississippi Sound and Perdido Bay, shown above, are two areas studied that showed slight increases in seagrass coverage.
Photo credit: MBNEP

While many SAV species, such as widgeongrass (*Ruppia maritima*) are ephemeral, appearing and then disappearing with some regularity, the persistent decrease of SAV over the past sixty years in coastal Alabama waters indicates a clear negative trend. This decrease was documented again in a 2008 and 2009 report funded by MBNEP and ADCNR State Lands Division and conducted by Vittor and Associates. In 2009, a total of 5,248.7 acres of SAV were mapped, indicating a decrease of over 1300 acres between the 2002 and 2009 surveys.

While aerial surveys give little to no indication of the causes of SAV decrease, they do provide a great deal of information about the location of the decrease. In the case of Mobile Bay between 2002 and 2009, most of this decrease in SAV coverage occurred in the northern extent of the survey area, in the Mobile Delta.

The dynamics of SAV occurrence in the Delta are poorly understood, and reasons for the decline of SAV in these areas are not clear, according to the Vittor & Associates report. Understanding SAV decline in the Mobile Tensaw Delta involves understanding a complex system. In addition to natural storm events such as Hurricanes Ivan and Katrina, physical factors such as light, temperature, salinity, and wave energy control SAV distribution. Given the measured and consistent loss of SAV in Mobile Bay, we have to consider the things that can impact those physical factors. For example, the amount of light reaching SAV is controlled by water clarity, which can be altered by nutrient input, suspended sediment and storm water runoff. It is then important and necessary to think about the ways human activity impacts those variables.

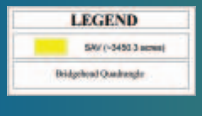
Continued mapping of SAV in the Mobile Bay Estuary every five years will provide insight into general trends in SAV distribution. However, aerial surveys just scratch the surface of what we have to learn about our bay. The information obtained from mapping provides direction a launching pad for future research that can direct scientists on where to study the primary factors contributing to variability in SAV abundance and diversity.

For SAV in Mobile Bay, the list of "knowns" is shorter than the list of unknowns. Aerial surveys can only indicate the extent and location of SAV coverage decrease. Follow up work on the water can yield information about changes in species distribution. By using what we know to form questions about what we don't know, we can address the causes of SAV loss. From a list of possible causes, a list of possible solutions can grow.

To read the full report, visit http://www.mobilebaynep.com/site/news_pubs/Publications/SAVfinal_Jan2010.pdf.

Bridgehead Quadrangle

The lower Mobile Tensaw Delta is one of the areas surveyed that experienced the most substantial SAV loss. SAV coverage is shown in yellow. *Photo credit: MBNEP*



Alabama Coastal Foundation Hosts 10th Annual Coastal Kids Quiz

The 10th Annual Coastal Kids Quiz will be held on Tuesday, April 27th at Daphne United Methodist Church. Teams of fifth graders from fifteen schools in Baldwin and Mobile Counties will participate in this environmental science competition. The top three teams receive scholarship awards and their teachers receive funds for science activities at school. Volunteers are needed and sponsorships are available. Contact the Alabama Coastal Foundation for more information at 251.990.6002 or by email at info@joinacf.org. To learn more about ACF, visit our website at www.joinacf.org.

City of Prichard Awarded $100,000 to Reduce Pollution and Health Risks

The U.S. Environmental Protection Agency (EPA) recently awarded $100,000 to the city of Prichard, Ala., for a project designed to help residents understand and reduce local pollution and associated health disparities.

During 2009, the Prichard CARE project was the only project funded in the southeast region and one of just nine projects funded nationwide. The project will focus on creating a community-based partnership that will work in collaboration with various agencies in identifying environmental and health risks in the Prichard community. Grant funds will be focused on building the capacity of Prichard's grassroots environmental organization, Prichard Environmental Consortium (PEC), which will in turn raise public awareness of environmental risks.

Since last fall, PEC has been engaged in a watershed planning effort for the Eight Mile Creek watershed, facilitated by AUMERC's Nonpoint Source Pollution Specialist, Christian Miller.

"Watershed planning will not only serve to protect the environment for future generations, it also allows communities within the watershed to be more proactive in their search to fund conservation and restoration projects," Miller said. "The recent award to Prichard, through the EPA's CARE program, will be incorporated into the 8 Mile Creek plan with the hope of attaining additional funding to help address other issues throughout the watershed."

Baldwin County Watershed Coalition Hires Consulting Firm for Regional Stormwater Corporation

The Mobile Bay National Estuary Program, on behalf of the Baldwin County Watershed Coalition (BCWC), has hired Gresham, Smith and Partners to consult on the design and implementation of a regional public stormwater corporation in Baldwin County. The hire of the consulting firm follows the Alabama Legislature's 2008 passage of a constitutional amendment allowing Baldwin County residents to vote in November 2010 to decide whether a fee-based regional stormwater management corporation should be created for the County. The mission of the BCWC is to act as a voluntary, non-regulatory association of local interests that will operate on a regional/watershed scale "to support local communities in managing flooding, drainage, and issues related to stormwater runoff in Baldwin County while preserving and improving water quality and the use of our water resources."

The public corporation currently under development by the BCWC would be funded by a small, equitable user fee, based generally on area of impervious surface (hard surface which does not allow water penetration), with credits for innovative stormwater management features.

Its function will include watershed stewardship provision, standards and criteria development, regulatory compliance coordination, stream system management, and partnership in local stormwater programs.

In the initial weeks working with the BCWC, Gresham, Smith and Partners has facilitated a decision-making process to determine how the stormwater corporation will be governed and implemented. Currently, the Gresham Smith & Partners team is overseeing the development of a financing strategy, including how user fees and incentives will be established as well as an organizational structure for administering the public corporation. BCWC priorities will be coordinated with assistance from Volkert & Associates, who is partnering with Gresham Smith on this project.

New Faces:
Staff Changes at the MBNEP

Last fall, the Mobile Bay National Estuary Program (MBNEP) announced the appointment of Roberta Arena Swann as its new Director. Having served as Deputy Director under Captain David Yeager since 2004 and as Interim Director for much of the time since his June, 2008 retirement, Ms. Swann has extensive experience leading the MBNEP. With a BS degree in Economics from the University of Massachusetts at Amherst and an MBA from Boston University, Ms. Swann's background is in community development. As a consultant, she was integral to the development of the Dauphin Island SeaLab Foundation and an acquisition campaign for the Dauphin Island Bird Sanctuaries.


Roberta Arena Swann

In May, Brenda Lowther was hired as the Program Administrator of the MBNEP. Ms. Lowther came to the MBNEP from ATC and Associates, an environmental consulting firm, where she was the office administrator. Ms. Lowther has a background with volunteer community efforts, including stints as Volunteer Services Coordinator and the Re-Store Business Manager at Habitat for Humanity of Baldwin County. Ms. Lowther is a resident of Fairhope.

Dr. Amy Hunter, formerly of Toxicological and Environmental Associates, has joined the staff as Program Scientist. She received her Bachelor of Science in Mathematics from Birmingham Southern College and a Ph.D. in Biology from the University of Alabama with a focus on wetland ecology.

Sara Shields, having completed a one-year term at the MBNEP as an Americorps VISTA volunteer, has been added to the staff as Communications Manager. Ms. Shields, a graduate of Daphne High School and Salem College in Winston Salem, NC, lives in Mobile where she is currently attending the University of South Alabama in preparation for medical school.

Replacing Ms. Shields as an Americorps VISTA volunteer is Megrez Mosher of Fairhope, who graduated from Pacific University in Portland, OR. Ms. Mosher's plans include pursuit of a doctorate degree in political science.

Oyster Gardening Season to Open, Volunteers Welcome

Anyone interested in volunteering with the Mobile Bay Oyster Gardening Program should attend one of two upcoming workshops. Program volunteers grow oysters in cages off their wharves in "conditionally open" waters. The oysters grown in the gardens will be planted on reefs.

A Baldwin County workshop will take place at 10 a.m., Saturday, April 17, at the Alabama Gulf Coast Convention and Visitors Bureau (the Welcome Center in Orange Beach. A Mobile County workshop will be held at 10 a.m., Saturday, May 1, at the Auburn University Shellfish Laboratory on Dauphin Island. Workshops typically last for one to three hours.

There is no cost for the workshops, but reservations are recommended. Contact Extension Specialist P.J. Waters at 251-438-5690 or waterph@aces.edu for more information or to reserve a seat.

The program is sponsored by the Mobile Bay National Estuary Program, The Sybil H. Smith Charitable Trust, the Organized Seafood Association of Alabama and Wintzell's Oyster House in cooperation with the Alabama Cooperative Extension System and the Mississippi-Alabama Sea Grant Consortium.

Alabama current connection

About the Mobile Bay National Estuary Program: The Mobile Bay National Estuary Program's mission is to lead the wise stewardship of water quality and living resources of the Mobile Bay and Tensaw Delta. The MBNEP serves as a catalyst for activities of estuary stakeholders, helping to build community-based organizational capacity for sound resource management and leveraging commitment and investment to ensure the estuary's sustainability. For more information, please contact the MBNEP office at 251-431-6409.

About ADCNR, State Lands Division, Coastal Section: In an effort to protect and enhance coastal resources and reduce potential conflicts between environmental and economic interests, the Alabama Coastal Area Management Program (ACAMP) was approved by the National Oceanic and Atmospheric Administration (NOAA) in 1979. The ACAMP is administered through the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section. For more information, please contact the Coastal Section office at 251-621-1216.

Alabama Current Connection is produced bi-annually by the Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division, Coastal Section. Support is provided in part by the U.S. EPA, the Dauphin Island Sea Lab/Marine Environmental Science Consortium, and the National Oceanic and Atmosphere Administration.

Alabama Current Connection encourages reprinting of its articles in other publications. If you have recommendations for future articles or would like to subscribe, please contact the editor:

Sara Shields
Mobile Bay National Estuary Program
4172 Commanders Drive
Mobile, AL 36615
Office: 251-431-6409
Fax: 251-431-6450
Email: sshields@mobilebaynep.com

We reserve the right to edit submissions for content and grammar.

Funding for this newsletter provided by the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section, in part, from a grant by the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management. Award #: NA09NOS4190169.

Alabama current connection

Dauphin Island Sea Lab
Marine Environmental Science Consortium
101 Bienville Boulevard
Dauphin Island, Alabama 36528

Non-Profit Org.
U.S. Postage
PAID
Permit No. 1343
Mobile, AL 36601

Current events

April

April 14, 9:30 a.m. - 12 p.m.

What: **Workshop - Planning for Coastal Resilience Using Green Infrastructure**
Where: Mississippi State University Coastal Research and Extension Center Auditorium; Biloxi, Miss.
For more information contact Patty Rogers at 601-528-5133 or patty.rogers@ms.usda.gov

April 17, 10 a.m.

What: **Baldwin County Oyster Gardening Workshop**
Where: Alabama Gulf Coast Convention & Visitors Bureau; Orange Beach, Ala.
For more information contact P.J. Waters at 251-438-5690 or waterph@aces.edu

April 21, 7 p.m.

What: **IMAX on Tap**
Come drink wine and beer, eat movie popcorn and candy while watching the IMAX film, *Hurricane on the Bayou*.
Where: Gulf Coast Exploreum, Downtown Mobile
For more information visit www.mobilebaykeeper.org

April 24, 10 a.m. - 7 p.m.

What: **Earth Day Mobile Bay**
Where: Fairhope Municipal Pier
For more information visit http://earthdaymobilebay.org

April 27, 8 a.m. – 3 p.m.

What: **Coastal Kids Quiz**
Where: Daphne United Methodist Church
Who: Fifth graders from Baldwin and Mobile Counties compete for scholarship money
For more information visit www.joinacf.org

May

May 1, 10 a.m.

What: **Mobile County Oyster Gardening Workshop**
Where: Auburn Shellfish Laboratory; Dauphin Island, Ala.
For more information contact P.J. Waters at 251-438-5690 or waterph@aces.edu

May 7, 8 a.m. - 3 p.m.

What: **Washington County Water Festival**
Educational event for fourth grade students in Washington County to learn about watershed function and wastewater treatment.
Where: Ciba Specialty Chemicals

June

June 5, 7 a.m.

What: **Springhill Medical Center Grandman Triathlon**
For more information and registration visit www.thegrandman.com

November

November 8-12

What: **Vibrios in the Environment 2010 Conference**
Where: Beau Rivage Resort - Biloxi, Miss.
For more information contact Brian Jackson, bjackson@ucar.edu