

# The GCPO Monitor

## Newsletter of the Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative



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### The Wide-Angle View

A Message from the GCPO LCC Coordinator, Greg Wathen

#### The Tremendous Science Capacity of Partners in the Gulf

Last month, John Tirpak (GCPO LCC Science Coordinator) and I attended a meeting of the USGS Southeast Climate Science Center [<http://www.theglobalchangeforum.org/se-csc/>] in St. Petersburg, FL, to help them develop their science priorities for FY2012. Nationally, the SECS is one of eight regional CSCs, and was established as part of an

overall federal strategy on climate adaptation; that national strategy also included the establishment of the network of 22 Landscape Conservation Cooperatives.

### **The USGS Climate Science Centers**

There is an explicit intent that the work of CSCs and LCCs be closely linked; indeed, the DOI document "CSC/LCC Implementation Guidance"

[\[http://tinyurl.com/7tbq7h9\]](http://tinyurl.com/7tbq7h9), produced in January 2011, provides many of the details on how that linkage should be established and how it should work. The meeting in St. Pete was the first opportunity for LCCs to really weigh in on how the SECSC should select its priorities. Overall, the meeting was a great success. All of the LCCs with major geographic coverage in the SE (Appalachian LCC, Caribbean LCC, Gulf Coastal Plains & Ozarks LCC, Peninsular Florida LCC, and South Atlantic LCC) were represented. The Director of the SECSC, Jerry McMahon, really listened to the LCCs' needs, and the priority climate research needs we identified reflect the priorities of the LCCs. It was a great way to start a relationship between the GCPO LCC and SECSC.

Another rather unexpected revelation (at least for me) from the St. Pete meeting was the incredible array of technology and science capacity that is available through the various USGS science centers. I really had no idea of the breadth and diversity of expertise available! Perhaps it's because I haven't been exposed to a whole lot of USGS during my career as a state wildlife agency employee, or perhaps it's because it's just a well-kept secret. I was impressed with the outstanding science capacity the USGS can bring to the table of an LCC with multiple science needs.

In addition to the SECSC, which has been operational for about one year now, the GCPO LCC has opportunities to work with two other regional CSCs, which are just now getting up and running: the South Central CSC [\[http://www.doi.gov/csc/southcentral/\]](http://www.doi.gov/csc/southcentral/), which is hosted by a consortium of universities led by Oklahoma University, and the Northeast CSC [\[http://www.doi.gov/csc/northeast/\]](http://www.doi.gov/csc/northeast/), hosted by a consortium of universities led by the University of Massachusetts. It's my hope and expectation that we'll establish strong and innovative relationships with both of these Climate Science Centers, much the same way that we are building a strong foundation with the SECSC.

### **Gulf of Mexico**

This month's newsletter focuses on the Gulf of Mexico, and the partnerships that comprise the large and vibrant conservation community in that part of the world. During the second week of April, the GCPO LCC Steering Committee will be meeting in Spanish Fort, AL, at the 5 Rivers Delta Resources Center. A large focus of the meeting will be on the Gulf, specifically looking for the niche that the GCPO LCC should be filling there. Though our coastal footprint along the Gulf is not large (it runs from the LA/MS boundary to FL panhandle), our geographic impact is huge - all of the GCPO's watersheds, including that of the mighty Mississippi River, empty into the Gulf of Mexico. It's also my sense that there exists a tremendous amount of science capacity among the federal, state, NGO, and university agencies and organizations that operate

in the Gulf. The job for the GCPO LCC will be to figure out what value-added we can bring to the table that will have a positive influence on the Gulf's conservation. It's an exciting time to be involved in the Gulf region, and I look forward to exploring and defining our ultimate role in that very important ecosystem.

#### **Note**

I was saddened to learn recently of the unexpected passing of Chuck Sharp. Chuck was a long-time biologist with the Alabama Dept. of Conservation and Natural Resources, perhaps best known in the conservation community for his work in waterfowl and the Mississippi Flyway Council. I got to know Chuck through our association with the Flyway Council, and found him to be a delightful and outgoing individual and a highly competent and dedicated waterfowl conservationist. The conservation community will greatly miss Chuck, and we extend our condolences, prayers, and best wishes to his family, friends and colleagues during this time of loss.

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*(NOTE - links to full articles in this newsletter are accessible only to GCPO LCC members. Access to the complete archived version of the newsletter is available on the [Gulf Coastal Plains & Ozarks LCC homepage](#). Or, [Apply for GCPO LCC membership](#). Membership includes newsletter subscription.)*

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## **The Meander**

Profiling us - the many people and organizations that make up the far-flung Gulf Coastal Plains and Ozarks LCC

### **The Gulf Coast Ecosystem Restoration Task Force**

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## The GCERTF Recommends a Strategy to Restore the Gulf of Mexico Ecosystem

“Everyone living and working in the Gulf Coastal Plains and Ozarks region is in the Gulf of Mexico watershed, which means right away we are connected,” explains John Hankinson, Executive Director of the Gulf Coast Ecosystem Restoration Task Force. “This is not just a natural fact, but it also very directly affects the livelihood of people all up and down the Mississippi River. We may not feel connected, but I’m always struck at the massiveness of the Gulf watershed: 56% of the country, which includes but surpasses the 40% that feeds into the Mississippi.”

The work of the Gulf Coast Ecosystem Restoration Task Force is poised to impact significantly the future of the entire Gulf Coast. “The Task Force developed a blueprint in terms of priorities for restoration, and we accomplished this through unprecedented engagement with the public. We went to the science community, and those who live and work in the Gulf, and everyone’s been working together to address needs that stretch out over 600,000 square miles!”

### Task Force Origins

After the Deepwater Horizon oil spill occurred almost two years ago on April 20, 2010, President Obama sent Navy Secretary Ray Mabus - a former Mississippi Governor - down to the Gulf to assess the situation. “The President promised to stay with the issue through restoration of the Gulf,” Hankinson said.

In keeping with that promise, the President took Secretary Mabus’ recommendation and issued an executive order in October 2010 to create the Gulf Coast Ecosystem Restoration Task Force. In his order, he directed the group to begin building a strategy quickly for prioritizing restoration needs. The Task Force includes representatives from state and federal agencies with some of the state membership crossing over with those involved in the Gulf of Mexico Alliance (see GOMA article below), all of whom recognized that many restoration plans had been created already. Hankinson clarifies, “What was needed was an initiative to coordinate a lot of the existing efforts, draw the best parts from these plans, and develop a strategy to prioritize actions and to find a way to work together, including listening to the people of the Gulf.”

The Gulf of Mexico Regional Ecosystem Restoration Strategy, released in December 2011, focused its recommendations on four overarching goals:

- Restore and conserve habitat (land)
- Restore water quality
- Replenish and protect living coastal and marine resources

- Enhance community resilience

The strategy also stressed that all efforts must have a strong foundation in science.

Within these goal areas are recommendations addressing long standing challenges in the Gulf, such as wetlands loss, nutrient pollutions, maintaining healthy fisheries, and helping communities be more resilient in dealing with storms.

Another part of the Mabus plan that the President supported was a call for redirecting a significant portion of any Clean Water Act civil penalty money recovered from BP as a result of the Deepwater Horizon oil spill to help restore the Gulf, a move the Gulf of Mexico Regional Ecosystem Restoration Strategy supported. (Under current law, civil penalty money is deposited into the U.S. Treasury's Oil Spill Liability Trust Fund). In response to this call, the Restore Act, an amendment to the Senate Transportation Bill, has received bipartisan support (see "Gulf Policies and Programs to Watch" below). The Transportation Bill passed in the Senate on March 14, 2012, and as of publication, awaits action in the House. The Restore Act would redirect 80% of Clean Water Act civil penalties recovered from BP to the Gulf and would create a Gulf Council.

#### **Landscape Conservation Cooperatives - A Value-added Role**

John Hankinson understands better than most the mission of the LCCs. "Our mission on the Task Force was a lot like that of the LCCs: to create synergy because you get better results if everyone is working together toward the same goals in a targeted way. We did not come down to the Gulf for a whole new round of science and planning. Instead, we built on the work that had already been done and we listened to the people of the Gulf." That is precisely the role that the GCPO LCC has been playing throughout the region since its inception in 2010.

"I'm excited about the LCC program and many of the initiatives that support our efforts in the Gulf," continues Hankinson. "I've met with many of the partner agencies and organizations that make up the GCPO LCC including the Fish and Wildlife Service and others at the Department of the Interior, and the GCPO LCC Steering Committee.

Hankinson, a self-described "ecosystems guy" with experience building community watershed programs says, "A priority action that the Gulf of Mexico Regional Ecosystem Restoration Strategy calls for is the development of a Gulf-wide conservation plan to identify the most critical pieces of the ecosystem to be protected. That's a very immediate role for the LCCs and will allow for connections that move farther up out of the Gulf into the watershed - for example, more partnerships with USDA programs that are so important to water quality. That LCC watershed role is important to have and not readily available."

For more information on the Gulf Coast Ecosystem Restoration Task Force, please visit <http://www.epa.gov/gulfcoasttaskforce/>.

## The Gulf of Mexico Alliance

photo by kthypryn via Flickr Creative Commons



### **GOMA: Gulf State Leadership in Collaboration with the Federal Government**

“To have an appreciation of the challenges facing the Gulf, you need to recognize that the US land mass between the Rockies and the Appalachians drains to the Gulf of Mexico: for over 60% of the continental US - every drop of rain and every commode that flushes - that water ends up in the Gulf,” explains Phil Bass, Acting Director of the 8-year-old Gulf of Mexico Alliance [<http://www.gulfofmexicoalliance.org/index.php>], or GOMA. Bass believes that to better manage threats to the Gulf region, the requirements of commerce and natural systems need to be recognized as co-equal and interdependent.

#### **Gulf of Mexico Alliance Origins**

GOMA formed prior to Katrina in 2004, after the release of two major reports on oceans: The US Commission on Oceans and the Pew Ocean Commission. “Both basically said that, collectively as a nation, we’re not doing a good job of ocean management,” Bass explains. “We held our first annual Gulf Summit with the Harte Research Institute in the fall of 2005. Our first Action Plan was finalized in August that year, ready for release one

week later, then Hurricane Katrina hit. With that devastation, release of the plan was delayed until 2006, with the storm adding to the importance of having a regional effort.”

The Alliance is a partnership created by the governors of the five Gulf states - Alabama, Florida, Louisiana, Mississippi and Texas - with strong federal support led by the White House’s Council on Environmental Quality. The Alliance is supported by 13 federal agencies to help protect and restore the Gulf. Bass says a key to their success has been the states’ agreement, early on, to work only on the issues where they had consensus. “We agree on far more than we disagree, so that took the disagreements off the table. It has really opened up the doors to take some major steps forward,” says Bass.

With five initial areas of focus - water quality, environmental education, nutrient reduction, habitat conservation/restoration, and ecosystem integration - each state was asked to lead one of the efforts. GOMA has successfully completed nearly all the actions called for in their first 2006 Action Plan. Efforts during that first three years led to the establishment of a sixth priority, coastal community resilience. The Governors’ Action Plan II (2009-2014) is a 5-year plan that seeks to expand partnerships and improve the health of coastal ecosystems and economies in ways that a single entity could not achieve alone.

“Our goal is to make sure that we, in the Gulf, are working to do everything we can before we start asking our neighbors upstream to do more,” Bass says in a friendly tone. “We want to reach upstream, not necessarily to fuss, but to ask people to work with us. We’re working to help folks understand the Gulf’s vital importance to the nation as a productive, vital economic engine. Gulf ecosystems provide oil, seafood, tourism, and transportation. In fact, over half the tonnage into or out of the U.S. goes through the Gulf of Mexico, and with expansion of the Panama Canal that will only increase. We want to make sure people recognize that: it’s not only locally and regionally but nationally significant resources we have here! If this thing crashes, it’s going to be felt worldwide.”

### **Deepwater Horizon**

In the wake of the BP oil spill, GOMA state governments and federal agencies were consumed with the response. As the effort progressed, the legal process of dealing with the Oil Pollution Act of 1990 (passed as a result of the Exxon Valdez oil spill), required natural resource trustee agencies to begin working together.

“Our role evolved to include helping with the science to understand the effects of the spill and improve technology development. BP, to their credit, voluntarily gave \$500 million outside of the Natural Resources Damage Assessment to the Alliance’s Gulf of Mexico Research Initiative,” explains Bass. BP asked GOMA to appoint 10 research scientists to the Research Board and to handle the business side of the science grants, so the Alliance created a separate administrative arm for that purpose. “We also wanted to protect the interests of the Gulf and give our great researchers a fair shot so that hopefully by 2020, research capacity in the Gulf will be greatly increased.” (See “Policies and Programs to

Watch”)

Every change creates new priorities, and that applies to both the Gulf oil spill and changes in administrations. Bass noted, “There’s been concern at times that the direction of the National Ocean Council was to ‘throw everything out’ from previous administrations, but we are working closely with both the National Ocean Council as well as our partners in the region to, hopefully, change that perception. The Gulf as a whole is a very conservative region, and states’ rights are a big issue, so communication and collaboration are key. Since that’s what GOMA is all about, it’s another reason we have been so successful.”

### **The LCCs’ Value-added Role**

Bass points out that LCCs bring a different set of players to the Gulf and can add value. “We in the Gulf Alliance recognize that to protect the Gulf of Mexico, it’s not enough that five states are involved, we have to reach upstream. That’s a huge effort. The Alliance is dealing primarily with marine resource and environmental agencies. The LCCs can bring people dealing with upstream issues that affect coastal and marine ecosystems - it’s a matter of expanded geographies.”

“Luckily, the Alliance already has a very good relationship with some agricultural entities, especially in Mississippi and Iowa, which started with efforts of the Hypoxia task force,” [\[http://water.epa.gov/type/watersheds/named/msbasin/\]](http://water.epa.gov/type/watersheds/named/msbasin/) says Bass. “We got to know the folks in Iowa and linked them with our partners in Mississippi agriculture and created a farmer-to-farmer exchange. We brought a group of Iowa farmers and agricultural leaders to the Mississippi Delta and showed them farm practices and conservation measures (and likewise we sent Mississippi farmers back to Iowa.) Then we brought the Iowans to the Gulf and took them deep sea fishing to allow them to see and feel and hold Gulf resources.”

That program has created some ownership for the Gulf among Iowa farmers, who now better understand the impacts that nutrients are having and have gone back to their state with renewed energy. For the first time, cattle, hog, soy bean and corn farmers in Iowa are working collectively to address the issue of nutrients in farm runoff.

“In the near term we hope to expand our partnership with business and industry. We hope that not only BP, but industry as a whole, will come to see the need for supporting a regional approach to the Gulf’s problems,” concludes Bass. The Gulf is a region ripe for business involvement in valuing not only the area’s transportation and commercial infrastructure, but also its ecosystem values. Clearly, it is a region where all three are intimately interconnected.

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## Coastal Zone Management and National Estuarine Research Reserves: A Solid Foundation for Coastal Conservation Planning

Weeks Bay NERR in AL, photo courtesy of NOAA-OCRM



### Forty Years of Partnerships under the Coastal Zone Management Act of 1972

The Gulf of Mexico region has a robust research, policy and outreach capacity, facilitated in part by the National Oceanic and Atmospheric Administration (NOAA) and guided by the Coastal Zone Management Act of 1972, as amended (CZMA) [[http://coastalmanagement.noaa.gov/czm/czm\\_act.html](http://coastalmanagement.noaa.gov/czm/czm_act.html)]. NOAA's Coastal Zone Management (CZM) Program and its National Estuarine Research Reserve System (NERRS) were both established by the CZMA, which did something unusual.

#### 40th Anniversary of a Forward-Thinking Piece of Legislation

The Coastal Zone Management Act did something unusual when it established a federal/state partnership program to promote improved U.S. coastal communities: it recognized the profound differences among Atlantic, Gulf, Pacific, and Great Lakes coastal states and territories. As Josh Lott, team lead for NOAA's Great Lakes and Gulf of Mexico Coastal Management Programs, said recently, "The Coastal Zone Management Program is successful because, while it recognizes a national interest in managing coastal resources, states may tailor their specific state programs to the issues most critical to their own areas." In this 40th-anniversary year of the CZMA, it's safe to say that NOAA and Gulf state partnerships form a solid foundation upon which to plan for landscape conservation over the long-term.

#### The Gulf Coastal Zone Management Programs

Under the national CZM program

[<http://coastalmanagement.noaa.gov/programs/czm.html>], each coastal state has the authority to develop and administer its own coastal management program. Lott says, "The Gulf of Mexico state coastal zone management programs have a strong voice in

setting regional conservation priorities through the Gulf of Mexico Alliance and other mechanisms.” The states partner with NOAA to support comprehensive management for over 20,400 miles of the Gulf coast, focusing on protecting coastal habitats, managing development to protect lives and property from coastal hazards, enhancing public access to the coast, ocean planning, energy facility planning and siting, and planning for climate change. NOAA ensures that state programs are consistent with the requirements of the CZMA while also providing resources to assist in development of work plans, priorities, and locally driven projects.

The overarching program goal is to increase the capacity of coastal states to comprehensively manage their coastal resources. This translates into a range of programs that seek to balance protection and conservation of natural resources with state and local planning for sustainable development, commerce and public access. Gulf State Coastal Zone Management programs will be valuable sources of tools and capacity to plug into the Southeast Conservation Adaptation Strategy, an effort led by SEAFWA and the Southeast LCCs.

**The following are highlights of the 2011 Gulf State Coastal Zone Management programs within GCPO boundaries:**

- The Alabama Coastal Management Program is working with Perdido Beach in Baldwin County to develop a local plan to conserve, protect, and develop community resources by providing low-impact recreational opportunities and highlighting the natural environment of the Mobile-Tensaw Delta.
- The Florida Coastal Management Program is working with the City of Pensacola to design a Baywalk for the historic downtown waterfront and restore seagrasses in nearby counties.
- The Mississippi Coastal Management Program is developing an inventory of hardened shorelines within its bays and estuaries - an issue critical to long-term shoreline management.

**The Gulf State CZM Programs (listed from west to east):**

Texas Coastal Management Program:

<http://www.glo.texas.gov/what-we-do/caring-for-the-coast/index.html>

Louisiana Coastal Management Program:

<http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5>

Alabama Coastal Area Management Program:

<http://coastalmanagement.noaa.gov/mystate/al.html>

Mississippi Coastal Management Program:

<http://www.dmr.ms.gov/coastal-ecology>

Florida Coastal Management Program:

<http://www.dep.state.fl.us/mainpage/programs/cmp.htm>

**National Estuarine Research Reserve System (NERRS)**

The NERRS is a network of 28 reserves protecting over one million acres of estuarine lands and waters nationwide. As a partnership between NOAA and the coastal states, reserves are protected for long-term research, monitoring, education and stewardship. Many reserves serve as sentinel sites for climate change, combining observational capabilities with outreach and training to address coastal management issues.

Recognizing that coastal communities, estuaries, and watersheds are on the front line of climate change impacts, reserves provide opportunities for place-based studies of anthropogenic and climate change impacts on coastal habitats. These studies inform mitigation and adaptation practices in the construction of facilities and through stewardship activities. Reserve training and education programs help natural resource managers and communities understand, improve and adapt to anticipated local and regional impacts.

Each reserve is unique, representing a specific biogeographic region, operating under its own management plan, and working with a diverse set of management partners. As part of the national system, each reserve participates in the NERRS System-Wide Monitoring Program (SWMP). SWMP was established in 1995 and provides standardized quantitative measurements of short-term variability and long-term changes in the physical and biological characteristics of reserves. NERRS offer a wealth of data for Landscape Conservation Cooperative projects. SWMP data are managed at the Centralized Data Management Office at the University of South Carolina. Past syntheses and analyses of SWMP data are available.

A sampling of comments from NERR managers across the Gulf indicates near uniform consensus that the most pressing landscape scale issue along the coast is the projected extent of development. Many Reserve managers also expressed concern that the response to anticipated sea level rise and storm damage may pit the interests of private landowners and public infrastructure against those of natural ecosystems, eventually leading to decreased overall community resilience.

### **Gulf Coast National Estuarine Research Reserves**

(listed from west to east; the middle three are within GCPO LCC boundaries):

Mission-Aransas Reserve, TX [<http://www.nerrs.noaa.gov/Reserve.aspx?ResID=MAR>]

Grand Bay Reserve, MS [<http://www.nerrs.noaa.gov/Reserve.aspx?ResID=GRD>]

Weeks Bay Reserve, AL [<http://www.nerrs.noaa.gov/Reserve.aspx?ResID=WKB>]

Apalachicola Bay Reserve, FL [<http://www.nerrs.noaa.gov/Reserve.aspx?ResID=APA>]

Rookery Bay Reserve, FL [<http://www.nerrs.noaa.gov/Reserve.aspx?ResID=RKB>]

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## The Tidal Exchange

News from partners and partnerships within  
the Gulf Coastal Plains & Ozarks region

### **The Gulf Coast Landscape Conservation Liaison - Connecting 4 LCCs**

#### **An exceptional example of cross-cutting consensus building and decision making**

The number and diversity of partnerships, agencies and management areas in any LCC can be confusing, and in the Southeast, the added layer of Gulf Coast initiatives quickly becomes overwhelming. That was the way Greg Wathen was feeling as he began his job as GCPO LCC Coordinator in 2010 - until he found out about Laurie Rounds.

Laurie had been the Gulf of Mexico Regional Liaison for NOAA's Coastal Zone Management Program and supporting the Gulf of Mexico Alliance for over eight years. Yet, it turns out, her office was located a mere 15 minutes from Greg's in Nashville, TN. Greg felt as if he'd discovered a secret key to the Gulf of Mexico in his own backyard!

The two quickly began planning a partnership position between NOAA and the USFWS to bring Laurie on board to serve not only the GCPO LCC, but all four of the LCCs that border the Gulf, including the Gulf Coast Prairie LCC, South Atlantic LCC, and Peninsular Florida LCC. It took about a year for the position to be defined and approved, and in October 2011 Laurie officially assumed her role as Gulf Coast Landscape Conservation Liaison.

Liaison responsibilities include enhancing communication with Gulf Coast partnerships, identifying and coordinating resources for regional priorities, and supporting integration of climate products and services for applications by Gulf coast partners. In addition to the 4 Gulf LCCs, the following partnerships are key to this effort:

- the 5 Gulf of Mexico Coastal Management Programs;
- the 5 Gulf of Mexico National Estuarine Research Reserves;
- NOAA's Gulf of Mexico Regional Collaboration Team;
- the Gulf of Mexico Alliance;

- the Gulf Coast Ecosystem Restoration Task Force; and
- many other organizations working to conserve and protect the Gulf of Mexico.

In addition to bringing Laurie on board, the GCPO LCC Steering Committee includes David Brown. David is NOAA's Southern Region Climate Services Director and is based in Texas. The mission of NOAA's Regional Climate Services is simple: promote healthy ecosystems, communities and economies that are resilient in the face of variable and changing climate conditions. The Regional Climate Services partnerships marshal NOAA's extensive scientific expertise, field assets and relationships with stakeholders to meet this challenge. The key, however, is that to be meaningful, climate products such as seasonal outlooks and vulnerability assessments must be scaled to a region or locality.

### **What a difference a few months can make**

In the few months since her hire, Laurie has met with every Gulf LCC to gain an understanding of their goals and priorities. She has also met with numerous Gulf Coast partnerships to provide information about the Gulf LCCs and identify shared conservation goals and priorities. One priority that has emerged is to better understand and develop effective ways to address the vulnerability of coastal ecosystems to climate change and sea level rise. Laurie is developing an approach to meet this need by identifying research, information and opportunities to leverage existing efforts within the Gulf Coast region.

Laurie is also working with David Brown and the Gulf LCCs, other programs in NOAA, and the USGS to hold a Gulf of Mexico Climate Data & Scenarios workshop in May. It will address the turbulent issue of how best to apply regional climate and sea level rise data available for the Gulf of Mexico region in efforts such as vulnerability assessments and adaptation planning.

GCPO LCC members interested in Laurie's activities and contributing to a cross-LCC regional dialog can join [gcpolcc.org](http://gcpolcc.org) and the Gulf of Mexico Coastal and Marine Conservation working group at <http://gcpolcc.org/group/gulf-of-mexico-coastal-and-marine-conservation> or you can follow Laurie's page at <http://gcpolcc.org/profile/LaurieRounds>.

Additionally, the Gulf of Mexico Alliance has joined the GCPO LCC's Partnership Advisory Council as a member. The GCPO LCC spring Steering Committee meeting is being held at the Five Rivers Delta Resource Center in Spanish Fort, Alabama, with an agenda largely focused on Gulf Coast initiatives and how the GCPO LCC can bring something new to the table.

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## **Salt Marsh versus Mangrove Forest in the Southeastern US**

### **How winter climate changes could impact the future distribution and abundance of these foundation species**

Coastal wetlands in the southeastern U.S. provide many important ecosystem goods and services. In addition to supporting important fish and wildlife habitat, they maintain coastal fisheries, store carbon, improve water quality, protect coastlines, and provide recreational opportunities. In many ways, coastal wetlands are dynamic and resilient ecosystems; however, they are being subjected to tremendous environmental change at the regional (e.g., hydrologic alterations, nutrient enrichment) and global scale (e.g., climate change).

One aspect of global change that is expected to have a substantial impact on coastal wetlands is winter climate change. Salt marshes and mangrove forests are common coastal wetland ecosystem types that occupy similar estuarine environments but have different climatic tolerances. In warmer climates, mangrove trees often outcompete salt marsh grasses. However, mangrove forests are sensitive to freezing temperatures, and within the region, mangrove forests are currently found only in Florida, Louisiana, and Texas (though isolated individuals have been reported in Mississippi). Salt marshes are more dominant along colder coastlines where mangroves are not able to survive freeze events. Future climate change is expected to result in increased winter temperatures and, potentially, reductions in the intensity of freeze events which could lead to mangrove forest replacement of salt marsh in parts of the Gulf of Mexico and southeastern Atlantic coast.

From a functional perspective, salt marsh grasses and mangrove trees are foundation species that control ecosystem dynamics and, in stressful and highly dynamic environments, provide the structural properties needed by other species; hence, the ecological and conservation implications of grass-to-tree conversions in coastal wetlands could be large (in both positive and negative ways). Dr. Mike Osland, USGS Research Ecologist and GCPO LCC staffer, along with 4 collaborating scientists, has initiated a study that addresses the following question: how might winter climate change impact the distribution and abundance of salt marshes and mangrove forests in the southeastern U.S.?

Their results begin to illustrate the vulnerability of salt marshes in the southeastern U.S. to mangrove forest expansion and quantify the amount of salt marsh habitat within each

state that could be impacted by mangrove forest expansion under various winter climate change scenarios. Preliminary results are striking in terms of the potential for mangrove forest range expansion and coastal marsh displacement in the region. The hope is that these analyses stimulate additional discussion, research, and planning regarding the potential ecological and conservation implications of winter climate change for coastal wetlands in the southeastern U.S.

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## The Census

### A little box of descriptions about the GCPO LCC

#### Gulf Restoration Policies and Programs to Watch

In the wake of Deepwater Horizon, a scattering of restoration programs in the Gulf ...

**Gulf of Mexico Research Initiative:** In May 2010, soon after the Deep Horizon explosion and while the spill was ongoing, British Petroleum voluntarily committed up to \$500 million to an open research program, GoMRI [<http://www.gulfresearchinitiative.org/>], designed to study the impact of the oil spill and response on the environment and public health in the Gulf of Mexico. The funding is administered by an arm of the Gulf of Mexico Alliance, and in August 2011 the first merit-based competitive awards to 8 research consortia were announced. The teams are investigating the fate of petroleum in the environment, the impacts of the spill, and the development of new tools and technology for responding to future spills and improving mitigation and restoration.

**The Restore Act:** This is legislation that grew out of recommendations in the “America’s Gulf Coast” report

[<http://www.restorethegulf.gov/sites/default/files/documents/pdf/gulf-recovery-sep-2010.pdf>], developed by Navy Secretary Ray Mabus’s team in the aftermath of the Gulf oil spill. In the introduction, Mabus stated “A key recommendation of this report will be to call on Congress to dedicate a significant amount of any civil penalties obtained from parties responsible for the oil spill under the Clean Water Act to the recovery of the region that was damaged, and to those impacted by its effects.” The Restore Act - part of the federal transportation bill - passed in the Senate on March 14, 2012, but was not included in a House 90-day extension of the transportation bill passed on March 29th. There is still hope that it may be included in the final bill, in which case 80% of all administrative, civil, and criminal penalties from the spill would be allocated to a Gulf

Coast Restoration Trust Fund. As currently written, up to 35% of the Trust would be allocated in equal shares to the five Gulf Coast States; 60% of the total would be allocated to a Gulf Coast Ecosystem Restoration Council, and 5% would be allocated to a Gulf Coast research, science and technology program.

- **Clean Water Act civil penalties:** The CWA [<http://www.epa.gov/compliance/civil/cwa/cwaenfreq.html>] gives the federal government and states the authority to “recover the cost of pollution control and of damages caused by violations” and “to seek penalties for violations” of oil spill provisions in the law. As of March 2012, this process of determining penalties is ongoing, and is calculated on a per gallon basis. All parties have yet to agree on the actual amount spilled, and the per gallon charge can vary depending upon the degree of malfeasance or negligence attributed to those responsible for the spill. Estimates of potential civil penalties in the news have ranged from \$6 billion to more than \$20 billion.
- **Clean Water Act criminal penalties:** Given that 11 deaths occurred as a result of the Deepwater Horizon explosion, under the Clean Water Act or possibly other statutes, the U.S. government may bring criminal charges against BP or others and/or seek a settlement that includes criminal penalties.

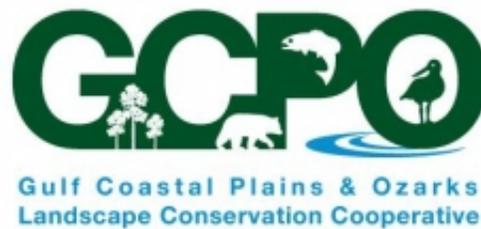
**Natural Resources Damage Assessment or NRDA:** The Oil Pollution Act (OPA) of 1990 establishes liability for responsible parties to restore any natural resources that are injured and services that are lost as a result of oil spills. Federal, state and tribal natural resource agencies are the “trustees” that administer the process of assessing damage compensation and implementing ecosystem restoration. In April, 2011, BP agreed to provide an unprecedented \$1 billion toward early restoration projects in the Gulf. Trustee agencies plan to release a preliminary Environmental Impact Statement associated with the NRDA by fall 2012. They are still accepting restoration project ideas at <http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/suggest-a-restoration-project/>. Projects that have already been submitted can be viewed at <http://www.gulfspillrestoration.noaa.gov/restoration/give-us-your-ideas/view-submitted-projects/>.

Whether civil and criminal penalties under the Clean Water Act and natural resource damages under the Oil Pollution Act will be litigated or settled, jointly or separately, remains an open question.

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## One Minute for the Community

A very brief poll from DesignCrowd, to help us choose our GCPO LCC logo!



### Which GCPO LCC logo do YOU prefer?

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