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**The Coastal Society's 23rd International Conference,
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Conference website

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Wetlands Greenhouse Gas Offsets: A Promising Tool for Coastal Managers

by Steve Emmett-Mattox

Introduction

Linking carbon finance to coastal wetland conservation projects provides one attractive solution to two overlapping challenges in the coastal environment: the historic and continuing loss of coastal wetlands to human and natural causes, and the anticipated impacts of climate change including sea level rise. Development of a rigorous framework and tools that allow the generation of greenhouse gas (GHG) credits through eligible coastal conservation projects will create a new class of GHG offset activities in which the private sector can invest.

The ecosystem services, and ecological and economic benefits of healthy coasts and estuaries are well documented, most recently in a new report, "Jobs and Dollars: Big Returns from Coastal Habitat Restoration" (Restore America's Estuaries 2011). Unfortunately, our nation has lost more than half of its wetlands in the past 200 years (Dahl and Johnson 1991), and the planet has lost a quarter of salt marshes and freshwater tidal marshes and continues to lose 1-2% per year, making these ecosystems some of the most threatened in the world (Convention on Biological Diversity 2010). Moreover, between 2004 and 2009, the U.S. lost 110,000 acres of coastal wetlands (T. Dahl 2011).

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Climate-Smart Sanctuaries: A New Place-Based MPA Program to Study and Adapt to Climate Change Impacts

by Paul Ticco

Marine protected areas (MPAs) are geographically defined areas where natural and/or cultural resources are given greater protection than in surrounding waters. In the U.S., MPAs span a wide range of habitats, including the open ocean, coastal areas, inter-tidal zones, estuaries, and the Great Lakes. They also vary widely in purpose, legal authorities, managing agencies, management approaches, level of protection, and restrictions on human uses. In general, MPAs will experience the same types of climate change impacts that will be felt in the broader marine and coastal environments, including changes in water temperatures and oceanic circulation, rising sea levels, increasing ocean acidification, changes in frequency and amplitude of extreme events, changes in precipitation and storms, and their associated effects.

An illustrative example of MPAs that are focusing on climate change impacts and adaptation are NOAA's National Marine Sanctuaries. Sanctuaries have a stable, permanent, legal and management infrastructure with a high level of resource protection, while allowing some multiple human uses. With their place-based focus, long-term research agendas, and controlled activities, sanctuar-

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Dear TCS Members,

2011 is nearing its close. It has been another year of growth for TCS, and looking back we have accomplished quite a lot. From beginning a new conference planning cycle to adopting an organizational strategic plan, planning a new special theme issue of the journal *Coastal Management*, initiating a Taylor & Francis/TCS "Sponsored Activities Request for Proposals" (RFP) and the election of new Board members, it's a great time to be part of this organization! Our chapters continue to grow stronger, as the next generation of coastal professionals blossom. TCS is fortunate to have a robust group of chapters with members who are active within their universities and communities.

Many thanks to everyone who has contributed to the successful year we've had. The Board of Directors, Committees and Executive Director continue to go above and beyond in their commitment to TCS. In particular, their efforts in developing a comprehensive strategic plan and individual committee work plans are deeply appreciated. If you're interested in serving on a committee, please email Executive Director Judy Tucker at coastalsoc@aol.com. Each committee is seeking volunteers to assist in implementing work plans, strategic plans and objectives. Please visit the TCS website for more information about the strategic plan (About Us) and committee work plans (Directors & Committees).

Thank you to the TCS23 Organizing Committee for their efforts in planning what will no doubt be a fantastic conference. Under the leadership of Conference Chairs Hans Vogelsson, Dave Loomis and Jim Murley and Program Chair Julia Wyman, the organizing committee is off to a flying start! Planning a conference is a huge effort, and TCS is fortunate to have a strong planning team.

Another exciting endeavor this year was the initiation of an RFP process to sponsor activities that further the goals of TCS and Taylor & Francis, the publisher of the *Coastal Management Journal*. The RFP was a great success, as we received more than 30 proposals. Thus, it was quite a challenge to choose from among so many high-quality proposals; the Education Committee did a terrific job of leading the review process. More information about the award winners can be found on page 13 in this issue. I hope you will join me in congratulating them.

With these successes behind us, I look forward to what's ahead for TCS in 2012. Please enjoy this issue of the TCS Bulletin. We have a diverse selection of articles and updates for you to close out the year. Best wishes for a warm and happy holiday season!

Regards,

Lisa Schiavinato

Lisa Schiavinato
TCS President



Spirobranchus giganteus (Orange Christmas tree worm). Photo Credit: Nick Hobgood (www.wikimedia.org)

The views expressed herein are those of the authors and do not necessarily represent TCS nor its Board.



Why YOU Need to Write an Article for the Bulletin

"The time to begin writing an article is when you have finished it to your satisfaction. By that time you begin to clearly and logically perceive what it is you really want to say." ~Mark Twain

"All my best thoughts were stolen by the ancients." ~Ralph Waldo Emerson

"I do not like to write; I like to have written." ~Gloria Steinem

So, if you find it difficult to sit down and write something about the work you are doing, the project you are part of, or the coastally related subject at which you are an expert—you're in good company! All the more reason to consider sharing with fellow TCS members any interesting coastal work to which you are devoting your time and effort. Maybe you're a government employee, a student or teacher, a policy wonk at a think tank or a worker bee in the private sector. You could be laboring on the local scale, toiling regionally or collaborating internationally; please give some thought to how others in the coastal management field might benefit from your experience, and help transfer that information by letting us help you get published in the Bulletin. Got an idea? Send me an email; I'll let you know if I need more information to determine whether, when, or how we might be able to use an article on the subject. In TCS, we are one of our own best resources, so, while articles in the Bulletin are also written by non-TCS members, I encourage you to give some thought to becoming a Bulletin author!

Our members are also, on occasion, authors of coastally-relevant books. If you've got one in the works, please let us know; we're happy to tap another member to read it and write a review we'll include in the appropriate issue. And as you'll note when you check our back issues for book reviews, there are no rotten tomatoes in the Bulletin!

With warmest wishes for a Happy Hanukkah, Merry Christmas, Happy Kwanzaa, Joyous Solstice, Merry Festivus and/or a Happy New Year!

Ellen Gordon
Bulletin Editor

TCS 2012 MEMBERSHIP ANNUAL RENEWAL NOTICES COMING SOON!

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- subscription to Coastal Management Journal
- TCS23 conference registration discount
- notification of the latest Bulletin issues



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Recent science has also demonstrated that natural coastal marshes, mangroves and sea grasses sequester and store large quantities of carbon in plants and the soils below them--termed "blue carbon" (Crooks, Herr, et al. 2011). In the first meter of coastal wetland sediments alone, soil organic carbon averages 500 t CO₂e/ha (i.e., 500 tons of carbon dioxide equivalent emissions per hectare) for sea grasses, 917 t CO₂e/ha for salt marshes, 1060 t CO₂e/ha for estuarine mangroves, and nearly 1800 t CO₂e/ha for oceanic mangroves (Murray, et al. 2011). If destroyed, degraded or lost, these coastal

ecosystems become sources of carbon dioxide, which is emitted into the atmosphere and the ocean. These emissions are likely of global significance. For example, in California's Sacramento-San Joaquin Delta, drainage of 1,800 km² of wetlands has released 0.9 GtCO₂ (Giga tons, or billion tons of carbon dioxide) over the last century. An additional 5 to 7.5 million tons of CO₂ continue to be released from this Delta each year (Crooks, Herr, et al. 2011).

In addition to the loss of carbon stores, when wetlands are degraded or destroyed, the ongoing sequestration capacity of wetlands is lost as well. Coastal wetlands sequester carbon at rates three to five times greater than global rates observed in mature tropical forests: 6 to 8 t CO₂e/ha compared to 1.8-2.7 t CO₂e/ha (Murray, et al. 2011).

The loss of coastal wetlands is compounded by climate change impacts, including sea level rise. Sea level rise estimates vary locally, but are significant for virtually all coastal areas and will threaten existing natural coastal wetlands. It is well documented that climate change is due to human activities, and international agreements call for significant reductions in greenhouse gases. Protecting the remaining coastal wetlands in the U.S. and globally, and restoring those that have been degraded or destroyed can provide a meaningful contribution to climate change mitigation strategies.

A key impediment to coastal conservation, e.g., wetlands protection and restoration, is adequate funding, public and private, to undertake projects. In the U.S., the restoration community is well-established but has a backlog of high-priority, shovel-ready projects that amounts to billions of dollars. For example, under the American Recovery and Reinvestment Act of 2009, the National Oceanic and Atmospheric Administration was provided \$167 million for coastal habitat restoration, yet received project applications totaling more than \$3 billion (Commerce Secretary Gary Locke Announces \$167 Million in Recovery Act Funding for 50 Coastal Restoration Projects 2009).

Emerging voluntary carbon markets offer a potential source of private investment in coastal wetlands conservation projects, if the requi-



Replanting marsh grasses. Photo credit: Jim Olive, Stockyard Photos, Houston, TX

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site frameworks and methodologies can be established (Crooks, Emmett-Mattox and Findsen 2010). In 2010, the voluntary carbon market transaction volume grew by 34% to a value of \$424 million in U.S. dollars (Peters-Stanley, et al. 2011). Wetlands activities could provide a new class of offsets for emerging markets. Moreover, the ecological and economic co-benefits of offsets generated through coastal wetland restoration and protection will make them particularly attractive to private investors and corporations with an interest in coastal sustainability and stewardship.

Current U.S. Activities

In 2009, Restore America's Estuaries (RAE) initiated a programmatic approach to linking carbon finance to coastal conservation efforts in the U.S. Their goal is to achieve increased coastal wetlands restoration and protection while mitigating climate change by sequestering carbon and protecting existing carbon stores. RAE's approach follows the Action Plan laid out by a national Blue Ribbon Panel convened by RAE in 2010 (Crooks, Emmett-Mattox and Findsen 2010), which identifies the science and policy gaps that must be addressed. The Action Plan identifies and describes four foundational areas for further work: eligibility, additionality, quantification and permanence.

Eligibility

The panel defined a tidal wetland GHG offset project as a planned set of activities to remove, reduce, or prevent GHGs in the atmosphere by conserving and/or increasing wetlands carbon stock and/or lowering GHG emissions. Project activities that could be included encompass four management approaches:

- *Avoided Wetlands Loss*—Conserving and avoiding loss of existing wetlands carbon stocks that would otherwise be at risk of CO₂ release by erosion and/or human impacts.
- *Wetlands Restoration*—Actions taken in a converted former wetland or degraded natural wetland that result in the reestablishment of ecological processes, functions, and biotic and abiotic linkages, and lead to a persistent, resilient, and integrated system.
- *Wetlands Management*—Manipulating one or more functions performed by an existing degraded wetland beyond baseline conditions of existing practice.
- *Wetlands Creation*—Conversion of a non-wetland (terrestrial upland or unvegetated water) to a vegetated wetland where no wetland previously existed.

Each of these project activities has parallels with principles of wetlands science and with principles established for existing national and international forestry GHG off-

set protocols and methodologies. The panel recognized as important an initial step to develop clear and overarching definitions that categorize near-term and potential future project activities.

To fit these project activities into existing greenhouse gas standards, RAE is managing a technical working group to expand the Verified Carbon Standard (VCS) AFOLU (agriculture, forestry and other land uses) requirements to include wetland activities. The VCS is a global standard founded to provide a robust quality assurance standard that projects could use to quantify greenhouse gas emissions and issue credits in voluntary markets. Once approved, the expanded standard will allow for the development of wetland methodologies for GHG credits. The team, comprised of private sector and federal government representatives includes Iginio Emmer of Silvestrum, lead-author of the VCS Afforestation, Reforestation and Revegetation requirements and the Peatland Rewetting and Conservation requirements; ESA PWA's Steve Crooks, a wetland scientist with international expertise in wetlands and carbon sequestration; Boone Kauffman, a mangroves and carbon expert with the U.S. Department of Agriculture Forest Service; Pat Megonigal, a wetland biogeochemist with the Smithsonian Environmental Research Center, and Steve Emmett-Mattox with RAE.

Additionality

A chief concern of any offset project is that it produces GHG benefits beyond those that would have occurred otherwise, under business-as-usual practices. Only projects that are truly additional should receive credit and be used to meet emission targets or offset other emissions.

In the fall of 2011, RAE convened a working group to develop a decision-framework for additionality of tidal wetland projects. RAE will release the framework in early 2012.

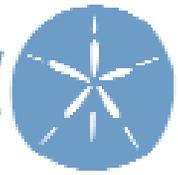
Permanence

For tidal wetlands, GHG offset projects may be at risk due to such factors as: change of environmental policies; project manager financial failure; engineering failure, e.g., collapse of structures, such as levees; vegetation eradication to manage invasive species; disruptive impacts of large natural events; progressive impacts of sea-level rise and climate change; and human-induced disruption to upstream water and sediment supply. A working group should examine the potential for such reversals to occur, as well as methods for managing risk and preventing reversals from occurring.

Quantifying Net GHG Sequestration

The key calculation in issuing GHG offset credits is the net GHG sequestration and emissions prevented that result

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from a project, beyond what would have happened if the project had not occurred. A model is being developed for GHG flux in tidal wetlands, by a working group under the National Center for Ecological Analysis and Synthesis.

Conclusion

There is a strong potential for blue carbon to provide a new incentive for coastal wetlands conservation in the U.S. and globally.

In 2012, working in concert with many partners, RAE will begin to develop the first tidal wetlands greenhouse gas offset methodology for acceptance by the Verified Carbon Standard. The methodology team will include experts from wetland science, GHG offset registries, methodology developers, project developers, and the coastal conservation community. RAE's focus is to develop and share a set of tools and resources that enable coastal managers, with little or no expertise in carbon offsets, to take advantage of this new potential revenue stream and to utilize coastal blue carbon as a management tool. RAE will be actively seeking partners and sites for demonstration projects as well.

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ABOVE: Coastal Texas Marsh. Photo credit: Jim Olive, Stockyard Photos, Houston, TX

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Steve Emmett-Mattox is senior director for strategic planning and programs with Restore America's Estuaries. He has lead new program development for RAE for 11 years, and has more than 20 years of experience with conservation organizations.



ABOVE: Re-flooding a marsh. Photo credit: NOAA

LEFT: Volunteers planting marsh grasses on Back Creek Shoreline in Annapolis, MD. Credit: Chesapeake Bay Foundation



Gulf of Mexico Saltwater Threatens Rice, Crawfish Farmers

A rice and crawfish farming region on the low-lying southwest Louisiana coast has declared a state of emergency because a large freshwater basin that farmers rely on for irrigation is being spoiled by salt water from the Gulf of Mexico. On Monday, Vermilion Parish declared an emergency and pleaded for help from state and federal officials to prevent the salt water from fouling the Mermentau River basin, a 700-square-mile area of mostly freshwater marsh. Salt water intrusion is a growing problem in Louisiana because the state is losing its shoreline buffer against the Gulf. Since the 1930s, coastal Louisiana has lost about 2,000 square miles of land. Excerpted from http://www.nola.com/environment/index.ssf/2011/11/gulf_of_mexico_saltwater_threa.html

Kivalina Claims Climate Change Cover-Up by Energy Companies

The battle between some of the world's most powerful energy companies and an Alaska village that's losing ground to climate change recently headed to federal appeals court. Sea ice, which used to protect this coastline from fall and spring storms, is coming in later and later and leaving earlier a key Kivalina argument charges that the energy companies are engaged in a conspiracy to cover up the link between their emissions and the earth's warming temperatures. A similar argument proved pivotal decades ago in helping smokers prevail in court against tobacco giants. That's the critical second part to the lawsuit that makes it similar to the tobacco cases that smokers eventually won in the 1980s. The village alleges industry is engaged in a conspiracy -- in part by funding junk science -- to cover up the link between their emissions and the rise in global temperatures. Lawsuits against the tobacco companies weren't successful until it was shown they intentionally hid the link between smoking and the health problems, including lung cancer that it caused. Excerpted from <http://www.alaskadispatch.com/article/kivalina-claims-climate-change-cover-energy-companies>

Australia Setting up World's Largest Marine Preserve

Australia moved to set up the world's biggest marine park on Friday to protect vast areas of the Coral Sea off the country's northeast coast and the site of fierce naval battles during World War II. The park would cover almost 1 million square

km -- an area the size of France and Germany combined -- and would help protect fish, pristine coral reefs and nesting sites for sea birds and the green turtle. The new park would also cover ships sunk in the Battle of the Coral Sea, a series of naval engagements between Japanese, American and Australian forces in 1942, considered the world's first aircraft carrier battle. Excerpted from http://www.enn.com/top_stories/article/43616

The Third Circuit is Latest Federal Appeals Court to Attempt to Decipher Rapanos V. United States

Rapanos is the 4:1:4 decision from 2006--famous in Clean Water Act (CWA) circles--in which the Supreme Court announced differing standards for delineating the reach of federal jurisdiction over wetlands and other "isolated waters." In *United States v. Donovan*, the Third Circuit, joining two other circuits, holds that a wetland falls within CWA jurisdiction if it satisfies either test announced in the fractured Rapanos decision. Specifically, the court held that a wetland falls within CWA jurisdiction if: (1) Justice Scalia's plurality test is met, i.e., there is a "continuous surface connection" between a wetland and a water of the United States in its own right, "so that there is no clear demarcation between 'waters' and 'wetlands'"; or (2) Justice Kennedy's "significant nexus" test is met, i.e., there is "a significant nexus to waters that are or were navigable in fact or that could reasonably be so made" so that, "either alone or in combination with similarly situated lands in the region," the wetlands "significantly affect the chemical, physical, and biological integrity of the covered waters more readily understood as 'navigable'."



The proposed Coral Sea Commonwealth Marine Reserve will be more than half the size of Queensland. Photo Credit: Coastline Colour Photography □



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ies are able to serve as control areas or “sentinel sites” for monitoring both environmental and biological parameters that might reflect climate changes, and interactions between climate change and other non-climate impacts. Thus, they can act as testing grounds to evaluate the effectiveness of adaptive management strategies designed to respond to climate change.

One constant for all managed areas is the need for the best data relating to climate change. Sanctuaries are beginning to use climate information to develop management strategies that focus on preparing for climate change impacts, and on educating the public. In all cases the primary data needs target not only increased protection and management of sanctuary resources, but also require knowledge of past climatologies and future predictive modeling:

- monitoring and assessment of baseline physical and biological conditions - critical for resource protection and other management purposes at each site
- projections and predictions of patterns in physical, biological and biogeochemical variables - critical for long-term planning and management purposes
- vulnerability and impact assessments of both living marine resources and the socio-economic impact of climate change on those resources and the individuals and communities that depend upon them - critical for management purposes at each site and for the public directly influenced by the sanctuary
- changes in amplitude and frequency of extreme events - critical for long-term planning purposes
- decision support tools for developing and evaluating management options - critical for long-term planning purposes
- information to develop better education and outreach programs, including web-based tools, climate literacy efforts, and training of sanctuary resource users - critical for increasing the knowledge base of constituents, stakeholders and the public who have a stake in their neighboring sanctuary

To help sanctuary sites adapt to and mitigate for climate change, and to aid the program as a whole, NOAA’s Office of National Marine Sanctuaries (ONMS) recently launched a Climate-Smart Sanctuary (CSS) initiative to develop climate change scenarios and implement a responding climate change action plan for each sanctuary. A sanctuary can then be certified as “climate-smart” when it achieves a set of identified standards including:

- Climate Change Site Scenario completed
- Manager, staff, and/or partners as appropriate have completed climate change adaptation training
- Advisory groups and/or stakeholders have been

briefed on climate change impacts and adaptation plans

- Climate Change Action Plan completed
- Minimal green operating standard reached

This initiative is being piloted in several ONMS sites, and is most advanced in the Gulf of the Farallones National Marine Sanctuary (GFNMS). The Fagatele Bay National Marine Sanctuary (FBNMS) has also completed its climate change site scenario. It is expected that the first sites will seek full CSS certification in 2013. A number of important lessons have already been learned for implementing site-specific climate change action plans:

Planning and managing for climate change impacts must be integrated into routine and ongoing management processes; they cannot be seen as being something “extra” to do.

- Proven and familiar processes and tools with which site managers and staff are already experienced need to be used. For example, the CSS process makes use of sanctuary condition reports and sanctuary advisory councils. While the process can stand alone, it can also easily be integrated within a management plan review process.
- Flexibility is key; different sites may want to use slightly different approaches or terminology because of their local communities and cultures. For example, GFNMS chose the term impact report instead of site scenario because of the preference of their research community, even though the document fulfilled the same purposes as outlined under the CSS guidelines.
- A diverse and localized group of both scientific experts and decision-makers should be engaged throughout the planning process to help ensure that the best available knowledge, data, and information is utilized, and regional buy-in and support is obtained.

It is hoped that the ONMS Climate Smart Program will not only protect vital coastal and ocean resources at sanctuary sites, but also serve as a model for similar MPA systems.

Paul Ticco is the Regional Coordinator for the Northeast & Great Lakes Region of NOAA’s Office of National Marine Sanctuaries and a past-President of The Coastal Society



DUKE UNIVERSITY

In September, Duke TCS chapter hosted Andy Coburn, Associate Director of the Program for the Study of Developed Shorelines, Western Carolina University, for his presentation, "Beaches vs. Buildings: Can We Have Both?" Andy discussed various forms of shoreline hardening and reinforcement, the positives and negatives of each option and his thoughts on the best solution to changing shorelines.

In October, we hosted a movie screening of *The Last Run*, a documentary about salmon by filmmaker Owen Bissel. Owen was present for our screening and answered questions about the filming and production processes as well as his career as a wildlife filmmaker. Utilizing teleconferencing, we were able to host participants in both Durham and Beaufort, NC, resulting in attendance at each of these events of approximately 25 people.

UNIVERSITY OF WASHINGTON

This quarter, our chapter has hosted several networking opportunities, geared to get students exposure to different careers in marine affairs in the Puget Sound region. We hosted a reception for Will Stelle, NOAA's Northwest Regional Administrator, who came to discuss the imminent decision he is facing: whether allowing Snohomish County Public Utilities District to install tidal power turbines in Puget Sound will have any adverse effects on the endangered resident Puget Sound orca population. In a simula-

tion, attendees were divided into 3 groups: advocates of tidal power, animal right activists and the decision makers. It was a great hands-on experience to debate current marine affairs policy with the person who will be making the actual decision.

In our second event, we teamed with the UW student chapter of the American Fisheries Society (AFS) to host "Blue Drinks." Blue Drinks is a semi-annual event for the students to learn and discuss marine affairs. Thanks to our cohost, AFS, Mark Celedona, a biologist with the US Fish and Wildlife Service, spoke about using fine-scale acoustic tracking and GIS to evaluate behavior, spatial distribution and habitat use of fish. TCS organized the second part of the evening, a career panel of recent School of Marine and Environmental Affairs graduates who represent various tiers of government and environmental consulting firms. During the panel, attendees learned how to better prepare for the work force and were advised to take advantage of all graduate school has to offer. In the future, our chapter will be hosting more networking and environmental restoration events in addition to a possible workshop on using social media to communicate science.

UNIVERSITY OF RHODE ISLAND

Greetings from surprisingly warm Kingston! This semester for the URI Coastal Society was successful and full of wonderful experiences. Our membership covers both undergraduate and graduate students in the disciplines of Marine Affairs, Environmental Economics, and Marine Biology. In September, members attended a public meeting pertaining to the future of offshore wind development in Rhode Island, where we learned the forward progression of a potential 5-wind turbine project in the waters off of Block Island, RI.



SMEA students L-R Cherie Wagner, Laura Wigand, Libby Whiting and Audrey Kuklok attend a reception for NOAA Regional Administrator for the Northwest Region, Will Stelle. Photo credit: Dr. David Fluharty



School of Marine and Environmental Affairs (SMEA) students, Jennifer Sawchuck and Libby Whiting, attend "Blue Drinks" to learn about careers from recent SMEA graduates. Photo credit: Breena Apgar-Kurtz



We were able to get one beach cleanup completed this semester, in October, collecting three large bags of trash. Members also attended a seminar on issues concerning marine conservation and sustainable fisheries in West Africa. Dr. Papa Samba Diouf, Director of the World Wildlife Fund's West Africa Marine Eco-Regional Program discussed current initiatives underway. We also had a few students submit abstracts for TCS23. In the upcoming semester we hope to take a tour of the Providence Sewage Treatment System and to bring in alumni to speak to the group about where life after school has taken them, to give us ideas of different avenues we can pursue. Happy Holidays to all!

EAST CAROLINA UNIVERSITY

ECU Chapter members were privileged to hear talks by eminent speakers at both the October and November meetings. On Friday October 14th, following a brief business meeting, Dr. Steve Culver, reviewed, explained and illustrated many years of research into the potential effects of sea level rise in North Carolina. Dr. Culver, Head of Geological Sciences at ECU, is co-author with other ECU researchers, Stanley J. Riggs, Dorothea Ames and David Mallinson, of the recently published book entitled The Battle for North Carolina's Coast: Evolutionary History, Present Crisis and Vision for the Future. At the November meeting, on Friday November 11, we were pleased to welcome Dr. Lisa Schiavinato, TCS President, who provided many helpful insights in her talk entitled "Making Connections: Transitioning from Student to Young Professional." She also reviewed current status in relation to three "hot-button" issues for coastal resources in North Carolina: wind energy, terminal groins, and estuarine shoreline



University of Rhode Island. Photo credit: Rebecca Eith

mapping.

Saturday, October 15 was the "Big Sweep." Intrepid members of the ECU TCS Chapter joined with the ECU Student Subunit of the American Fisheries Society to clean up Green Mill Run, a tributary of the Tar River that runs through campus; lots of trash was collected! Looking forward to 2012 we are planning a film night and also to volunteer for other community events, including Greenville's Community Tree Day on Saturday February 11, 2012. More in the next Bulletin!



University of Rhode Island. Photo credit: Leigh Habegger



Michelle Covi helping out with East Carolina University's Big Sweep event. Photo credit: Chad Smith



National Conference on Science, Policy, and the Environment

January 18-20, 2012, Washington, DC
<http://www.environmentandsecurity.org/>

11th Annual New Partners for Smart Growth Conference

February 2-4, 2012, San Diego, California
<http://www.newpartners.org/index.html>

Social Science for Coastal Decision Making

February 15-16, 2012, Charleston, SC
www.csc.noaa.gov/socialcoastforum/

2012 AAAS Annual Meeting

February 17-20, 2012, Vancouver, Canada
www.aas.org/meetings

Global Marine Protected Area Enforcement Conference

February 19-23, 2012, San Francisco, California
<http://www.wildaid.org/mpaconference>

2012 Ocean Sciences Meeting

February 20-24, 2012, Salt Lake City, Utah
<http://www.sgmeet.com/osm2012/>

World Oceans Summit

February 22-24, 2012, Sentosa Island, Singapore
<http://www.economistconferences.asia/event/world-oceans-summit>

Aquaculture America 2012

February 28-March 2, 2012, Las Vegas, NV
http://www.aquaculturepro.com/event.php?event_id=88

Coastal Cities Summit II, 2012

April 30-May 3, 2012, St. Petersburg, FL
www.coastalcities-ioi.org/

Australasian Aquaculture 2012

May 1-4, 2012, Melbourne, Australia
<http://www.australian-aquacultureportal.com/austaqua/aa10.html>

World Conference on Water, Climate and Energy

May 13-18, 2012, Dublin, Ireland
<http://www.iwa-wcedublin.org/>

Global Conference on Oceans, Climate and Security

May 21-23, 2012, Boston, Massachusetts
<http://www.gcocs.org/>

The Coastal Society's 23rd International Conference

June 3-6, 2012, Miami, FL
<http://www.thecoastalsociety.org/conference/tcs23/index.html>

ECSA 50: Estuarine Coastal and Shelf Science: Today's Science for Tomorrow's Management

June 3-7, 2012, Venice, Italy
<http://www.estuarinecoastalconference.com/>

Coastal Zone Canada 2012

June 10-15, 2012, Rimouski, Quebec, Canada
<http://www.cxca-azcc.org/html/conferences/mail.html>

Sustainable Tourism 2012; 5th International Conference

June 13-15, 2012, A Coruna, Spain
www.wessex.ac.uk/12-conferences/sustourism-2012.html

Coast to Coast 2012, Living on the Edge

September 17-21, 2012, Brisbane, Queensland
<http://www.coast2coast.org.au/>

6th National Conference on Coastal and Estuarine Habitat Restoration: Restoring Ecosystems, Strengthening Communities

October 20-24, 2012, Tampa, FL
www.estuaries.org/conference



A Christmas shearwater (*Puffinus nativitatis*) on Cook Islet, Kiritimati, Line Islands, Kiribati. Photo Credit: Angela K. Kepler (www.wikimedia.org)



TCS Receives Funding for Educational Events from Taylor & Francis Group

by Judy Tucker

Three educational events, selected by The Coastal Society Board through a competitive process have received funding from The Coastal Society's long-time partner, Taylor & Francis Group (T&F), publishers of the *Coastal Management* journal (CMJ), the official TCS journal. T&F provides a subscription to CMJ to every Regular TCS member, and attends TCS conferences as an exhibiting sponsor.

The partnership between TCS and T&F shares the following reciprocal goals:

- To increase the visibility and positive image of CMJ and, to a lesser extent, T&F, in the coastal management community
- To potentially increase readership of and submissions to CMJ
- To assist TCS in support of continuing education of TCS membership and others in the coastal management community
- To advance the field and study of coastal management

To help TCS accomplish these goals, T&F has provided \$5,000 in funding for an educational event(s) in 2011 and early 2012.

In September 2011, the TCS Board approved a strategic plan for the remainder of 2011 and 2012. To achieve one of the goals--sustainable membership--TCS would need to reach out to new audiences to introduce TCS and CMJ. What better way to do that than to share this opportunity for funding with TCS members and ask them to pass it on?

The TCS Education Committee (Rick Devoe, Sandra Erdle, and Brian Smith), along with TCS President-Elect Kate Killerlain Morrison, developed a request for proposals (RFP), a selection process, and a set of criteria for ranking the proposals. The committee reviewed the thirty-four proposals received and recommended three for partial funding to the TCS Board, which voted to approve the recommended programs.

The first of the three programs to receive funding is being held as this issue of the Bulletin 'goes to press': the "Southeast Tidal Creeks Summit," December 5 - 6, 2011, in Charleston, SC. The purpose of the Summit is to: 1) identify the current state of knowledge regarding tidal creek research and management in the southeast, 2) identify current issues and threats to tidal creek system ecology and function (manage-

ment needs) and relevant future research efforts (e.g., classification, restoration, monitoring), and 3) evaluate the current and potential management and restoration strategies to protect and enhance the ecology and function of tidal creeks (e.g., development setbacks, buffers, impervious cover limits, stormwater BMPs and restoration efforts). A post-Summit white paper will outline the findings, and the increased communication between researchers and managers should help focus research on questions relevant to managers, encouraging scientifically-based decisions for future protection, preservation, and restoration efforts. See <http://www.bae.ncsu.edu/workshops/tidalcreeksummit/>.

In January 2011, on the sea islands in Beaufort County, SC, the Gullah/Geechee Sea Island Coalition will hold a workshop entitled "De Island da We: Gullah/Geechee Coastal Sustainability." The workshop will allow the leaders and citizens of the Gullah/Geechee Nation, representatives of the SC General Assembly, community zoning committee members, the Gullah/Geechee Fishing Association, Earthwise Productions (which focuses on the interactions of people of color and the national parks and great outdoors), scientists from the National Oceanic and Atmospheric Administration, the Environmental Defense Fund, the Gullah/Geechee Angel Network, and The Coastal Society to learn about this unique culture. Gullah-Geechee has thrived as a traditional coastal water and agriculture-based society, but faces threats from tourism, recreation, and gated communities, which have contributed to population displacement and cultural alterations. This workshop will expose the Gullah/Geechee Nation to new techniques from scientists and environmental groups that may assist their cultural survival in the face of climate change and other new issues affecting the coast, while also sharing Gullah/Geechee-developed methods that could be replicated in other coastal communities, to enhance their quality of life. The workshop will conclude with a roundtable that embraces all participants, working together to develop a framework for a "coastal sustainability plan" for the Gullah/Geechee Nation. The goal is to support the community in finding resources that can help them adapt to climate change and other threats, as well as to develop terminology and methodology that can assist with legislative changes that incorporate indigenous knowledge and coastal living into fisheries and coastal management in this region.

The third event will be an ecosystem modeling workshop and training organized by the Barnegat Bay Partnership (National Estuary Program) to be held March 12-17, 2012

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at Ocean County College in Toms River, New Jersey. The first day of this workshop will bring together resource managers and modeling practitioners to focus on the ways in which models of estuarine and near shore coastal habitats can be used to support ecosystem-based management, and to identify systems where researchers could apply modeling techniques to address specific needs of the management community. The subsequent days of the workshop will be a hands-on training for biologists in the use of a particular modeling package, (EwE), for conducting multi-trophic level analysis of their chosen system, in order to better inform managers' decision making.

After each of these programs is conducted, a report will be published in an issue of the *TCS Bulletin*. If you attend one of the programs, we hope you'll let us know so that perhaps you can contribute to the report. TCS would like to thank each TCS member for their assistance in forwarding the RFP widely. Through just a click of the "forward" button, you helped increase the visibility of TCS and CMJ!



Queen Quet with Gullah Geechee fishermen in Sea Breeze, NC. Photo credit: ED Fish Blog

Judy Tucker is the Executive Director of The Coastal Society

International Journal of Risk Assessment and Management (IJRAM)

Call for Papers, Special Issue on: "Assessing the Risks of Climate Change for Water Resources and Coastal Environments"

Climate change is now widely recognized as one of the major challenges facing the world. While we are certain that climate change is in our future, our ability to predict the magnitude of these changes is limited due to uncertainties in forecasting anthropogenic interference with the climate system. We expect climate change to have wide-ranging effects on the environment and on socioeconomic factors. For densely populated urban areas, the impact of climate change on water resources and coastal zones is of critical importance for the social, economic and environmental sustainability of the region. This reinforces the need to assess the risks of and vulnerability to climate change and formulate adaptation strategies to address the impending changes.

The objective of this special issue is to invite original research papers focused on the risks of climate change for water resources and coastal environments. We hope this will promote the advancement and propagation of knowledge in this field and provide a resource for policy makers involved in regulating the increasing demands of climate change.

Guest Editor: Vivien P. Chua, National University of Singapore, Singapore

All papers are refereed through a peer review process. A guide for authors, sample copies and other relevant information for submitting papers are available on the Author Guidelines page

Submission deadline: 1 March, 2012; Notification of acceptance: 1 May, 2012; Final paper due: 1 July, 2012. All papers must be submitted online. Online Submissions of Papers



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Signature: _____ Today's Date: _____ Thank you!

Make check payable to The Coastal Society, and mail it with your application to: PO Box 3590, Williamsburg, VA 23185. To pay by credit card, please use the online application at: www.thecoastalsociety.org/membership2.html.