

2005

**Education
&
Coastal Training Program Newsletter**

**National Estuarine Research Reserve
System**

Table of Contents
Education Sector and Coastal Training Program
Summary Reports - November 2005
National Estuarine Research Reserve System

ACE BASIN NATIONAL ESTUARINE RESEARCH RESERVE	4
2005 COASTAL TRAINING PROGRAM REPORT	4
APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE	5
2005 EDUCATION PROGRAM REPORT	5
2005 COASTAL TRAINING PROGRAM REPORT	8
CHESAPEAKE BAY NATIONAL ESTUARINE RESEARCH RESERVE IN VIRGINIA.....	10
2005 EDUCATION PROGRAM REPORT	10
2005 COASTAL TRAINING PROGRAM REPORT	11
DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE.....	12
2005 EDUCATION PROGRAM REPORT	12
ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE.....	14
2005 EDUCATION PROGRAM REPORT	14
2005 COASTAL TRAINING PROGRAM REPORT	17
GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE	20
2005 EDUCATION PROGRAM REPORT	20
2005 COASTAL TRAINING PROGRAM REPORT	21
GREAT BAY NATIONAL ESTUARINE RESEARCH RESERVE	22
2005 EDUCATION PROGRAM REPORT	22
2005 COASTAL TRAINING PROGRAM REPORT	23
GUANA TOLOMATO MATANZAS NATIONAL ESTUARINE RESEARCH RESERVE	25
2005 EDUCATION PROGRAM REPORT	25
2004-2005 COASTAL TRAINING PROGRAM.....	26
HUDSON RIVER NATIONAL ESTUARINE RESEARCH RESERVE	28
2005 EDUCATION PROGRAM REPORT	28
2005 COASTAL TRAINING PROGRAM REPORT	30
JACQUES COUSTEAU NATIONAL ESTUARINE RESEARCH RESERVE.....	31
2005 EDUCATION PROGRAM REPORT	31
2005 COASTAL TRAINING PROGRAM REPORT	32
NARRAGANSETT BAY NATIONAL ESTUARINE RESEARCH RESERVE.....	33
2005 EDUCATION PROGRAM REPORT	33
NORTH CAROLINA NATIONAL ESTUARINE RESEARCH RESERVE	34
2005 EDUCATION REPORT.....	34
2005 COASTAL TRAINING PROGRAM REPORT	35
NORTH INLET-WINYAH BAY NATIONAL ESTUARINE RESEARCH RESERVE	37
2005 EDUCATION PROGRAM REPORT	37

2005 COASTAL TRAINING PROGRAM REPORT	40
OLD WOMAN CREEK NATIONAL ESTUARINE RESEARCH RESERVE.....	43
2005 EDUCATION REPORT	43
2005 COASTAL TRAINING PROGRAM REPORT	44
PADILLA BAY NATIONAL ESTUARINE RESEARCH RESERVE	46
2005 EDUCATION REPORT	46
2005 COASTAL TRAINING PROGRAM REPORT	47
ROOKERY BAY NATIONAL ESTUARINE RESEARCH RESERVE.....	48
2005 EDUCATION PROGRAM REPORT	48
2005 COASTAL TRAINING PROGRAM REPORT	51
SAPELO ISLAND NATIONAL ESTUARINE RESEARCH RESERVE	53
2005 EDUCATION PROGRAM REPORT	53
2005 COASTAL TRAINING PROGRAM REPORT	54
SOUTH SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE	55
2005 EDUCATION REPORT	55
2005 COASTAL TRAINING PROGRAM REPORT	57
TIJUANA RIVER NATIONAL ESTUARINE RESEARCH RESERVE.....	61
2005 EDUCATION PROGRAM REPORT	61
2005 COASTAL TRAINING PROGRAM REPORT	63
WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE	70
2005 EDUCATION PROGRAM REPORT	70
2005 COASTAL TRAINING PROGRAM REPORT (FOR THE PERIOD NOV. 2004 – OCT. 2005)	71
WEEKS BAY NATIONAL ESTUARINE RESEARCH RESERVE	73
2005 COASTAL TRAINING PROGRAM REPORT	73
ESTUARINE RESERVES DIVISION	75
2005 NATIONAL EDUCATION SECTOR REPORT.....	75

ACE Basin National Estuarine Research Reserve

2005 Coastal Training Program Report

Rebekah Walker, CTP Coordinator – WalkerR@dnr.sc.us

- Master Naturalist program

Content included biological principals, ecological principals, reading the local landscape and identification of local plants and animals. Graduates of this 12-week (100-hours) course are trained to serve as volunteer naturalists and volunteers to conduct nature-related projects that include education, monitoring, construction of nature trails, and assisting with research. This program will be continued under the Stewardship Program at ACE Basin NERR.

- Salt Marsh Dieback in South Carolina and Georgia

This workshop was held in cooperation with Sapelo Island NERR and the event was well attended with 37 participants from a variety of state agencies, non-profit organizations, and private citizens. Speakers included staff from both reserves and The Citadel Biology Department. According to respondents the success of the event was due to the fact that it was a well focused forum with different points of view and a variety of information.

- Prescribed Fire workshop

The Reserve co-sponsored a workshop on Prescribed Fire with the SC Prescribed Fire Council and the National Wild Turkey Federation. There were 45 participants representing 19 groups in the workshop.

- Managing Visitor Use in Coastal and Marine Protected Areas

Staff worked with NOAA's Coastal Service Center and Sapelo Island NERR to hold a workshop on managing visitor use in coastal reserves. Information covered included strategies and tactics to manage visitor use, indicators and standards of quality, site management, allocation of resources, regulation, enforcement, and monitoring.

Apalachicola National Estuarine Research Reserve

2005 Education Program Report

Erik Lovstrand, Education Coordinator – erik.lovstrand@dep.state.fl.us

Ongoing Programs During the Past Year (2004-05 state fiscal year)

This section will highlight some of the standard activities that are part of the normal operation of the Reserve's education program. The numbers following each entry, indicate how many people participated during this past year. Overall, about 15,048 people visited the Reserve facilities or participated in educational programming provided by Reserve staff during the past year. Additionally, many people were reached through Reserve publications that have been distributed.

Exhibits

During this period an exhibit related to monarch butterfly migration through this region was maintained. A hands-on room is also available to the public and used during scheduled group programs. Staff has also been involved in preliminary design work on the exhibit portion of our planned new facility. The Estuarine Walk is an educational aquarium exhibit featuring simulations of three major habitats in the Apalachicola Reserve. There were 11,507 walk-in visitors this year and scheduled programs were conducted for 1,049 people in this facility. An observation beehive was also maintained to educate people about the importance of tupelo honey as a local commodity.

Presentations or Lectures/Field Trips and Tours

The following table summarizes group programs conducted by the Reserve during the past year. This includes programs at the nature center, at other facilities and in the field.

<u>Type of Group</u>	<u>Presentations and Field Trips</u>
Elementary School Groups	880
Middle and High School Groups	1058
College/Adult Groups	<u>531</u>
TOTAL	2,469

A/V Library

The education program maintains a lending library of books, filmstrips, slide programs, videos and other materials for educators. During this year, 13 individuals checked out 38 items.

Treasure Chest Program

ANERR offers eight different boxes of collected materials concerning the following general topics: reptiles and amphibians, mammals, birds, crustaceans and echinoderms, insects, fish, mollusks and plants. Each treasure chest contains numerous books, other publications, specimens, displays, games, activity cards, records or cassettes and plastomounts. The treasure chests are available to local teachers for classroom use for a one-month time period. Two individuals checked out three chests during this year.

Classroom Curricula

"Estuarine Habitats" is an elementary teaching activity series featuring the major habitats along the Apalachicola River and Bay system. It includes six habitat units and a glossary.

"Project Estuary" is a week-long unit designed for middle and high school students. It features four one-hour and one two-hour lessons focusing on various human and natural factors of the Apalachicola system. Lessons include pre- and post-tests. Both of these curricula were developed with NOAA funding and have been widely distributed in local counties around the Reserve.

Currently, for schools outside of this area or ones that can no longer locate the materials, copies are available for checkout from the education library at the Reserve.

Guest Lecture Series

The Reserve hosted two evening lecture programs this year on the topics of Florida black bears and archaeology of the Apalachicola River Valley. There were a total of 71 people in attendance at these programs.

The “Oystercatcher”

The Reserve’s quarterly newsletter has been distributed to a mailing list of approximately 500. This year the education section lost the staff position responsible for production. No issues were produced. We are in the process of working with a contractor to produce the next issue. A layout template has been developed and text will be submitted soon.

Special Events During the Past Year

Science Fairs

Education staff participates in judging at local science fairs each year. The Reserve sent staff to several different schools for this annual activity.

Florida Seafood Festival

Reserve staff were involved in coordinating educational exhibits at this festival during November. Staff also set up exhibits featuring the Reserve and its programs. There are approximately 18,000-25,000 visitors at the festival each year, with at least 300 people stopping and participating at the Reserve exhibit this year. The Reserve coordinated volunteers and staff which represented many different organizations.

Estuaries Day

The Reserve hosted an open house with several activities for the public on Estuaries Day, 2004. Activities included oyster tonging, guided boat tours, a scavenger hunt, a touch tank, button making, and a sidewalk art contest. Over 300 local people attended. Friends of the Reserve helped sponsor the event by providing volunteers, food, drinks and door prizes. Local private individuals and businesses also donated many door prizes. Children also had the opportunity to enter a class poster contest at their local school.

Teacher Workshops

The Reserve hosted one workshop for educators in the region. It focused on the development of activities for the LIFE program. There were 12 educators in attendance

Sea grass Awareness Day

Reserve staff hosted the public for an open house and provided information and exhibits related to sea grass awareness. There were 140 people who visited during the event.

Other Event Participation

Education staff is involved in many ways in the local community. Some additional events where staff set up exhibits or participated during the past year included a local antique boat show, a career day, and a bird watching festival. These events reached a total of approximately 200 individuals.

Turtles of Northwest Florida Course

The Reserve hosted a week-long class on the subject of turtle conservation and learning about the species present in Northwest Florida. There were 10 people in the class.

Program Development Accomplishments (Section features new activities/products)

Visitor Center Development

New exhibit development planned for a new facility in Eastpoint, Florida took place this year, however, things are on hold at this time due to funding issues.

National Water Quality Monitoring Day

The Reserve participated with a student group in collecting data and entering it into a national data base for “National Water Quality Monitoring Day.” There were 22 participants in the event. The core group was from a charter school in Georgia.

Master Naturalist Course Offered

Education staff participated in teaching a 40-hour course that was hosted by the Reserve’s Coastal Training Program. There were 24 people in attendance.

LIFE Program (**L**earning **I**n **F**lorida’s **E**nvironment)

The Reserve is working in concert with its state DEP Office of Environmental Education and local school district staff to develop a field-based environmental program that all 7th graders in the county will participate in. This year the Reserve served as the host site and contribute staff and equipment to the project. A workshop with teachers was conducted during the summer to draft activities and integrate the project throughout the science, language arts, and math courses in the county’s curricula. The Reserve is serving as the pilot site for this project, which is being implemented at other sites around the state. Reserve staff also participated in a LIFE development workshop that involved other sites interested in starting the program.

Apalachicola National Estuarine Research Reserve

2005 Coastal Training Program Report

Rosalyn Kilcollins

On June 24, 2005 the Apalachicola National Estuarine Research Reserve's Coastal Training Program hosted a Community Growth Readiness Workshop presented by the Southeast Watershed Forum. The Apalachee Regional Planning Council was a sponsor/partner. Local government elected and appointed officials, planners, code enforcement and building/permitting staff, volunteers from local organizations, citizen activists and other interested persons attended. The primary purpose was to review and analyze local codes and ordinances and provide training for stormwater BMPs. The hands-on activities and presentations provided knowledge, skills, tools and materials that can be used for implementation of improved codes, ordinances and practices; informed site designs; and scientifically based decision-making.

Prior to the workshop, the Cities of Apalachicola and Carrabelle, and Gulf, Franklin and Wakulla Counties were asked to review their local codes and ordinances relating to stormwater, growth and development and to complete the Code and Ordinance Review Worksheet. Volunteers, elected or appointed local officials and board members, the Reserve's staff and consultants completed the reviews for Apalachicola, and Gulf, Franklin and Wakulla Counties. The City of Carrabelle did not participate.

As a follow-up, the CTP coordinator presented the workshop materials to the Apalachicola Planning and Zoning Board. The CTP coordinator was invited by Gulf County to present a one-hour public workshop regarding stormwater management and watershed protection. The Watershed Forum workshop materials were presented to the County Planning Department at the workshop. An additional set of workshop materials will be given to the Franklin County Planning Department.

Thirty one people attended the NEMO (Nonpoint Education for Municipal Officials) Scoping Workshop at the Reserve on October 12. Partners included the GTM and Apalachicola National Estuarine Research Reserves' CTPs, Bay County Planning staff, and the Bay County Sea Grant Marine Extension Agent. The meeting brought together stakeholders interested in working in their communities and local watersheds to plan and implement improvements relating to stormwater and water quality. This effort will include representatives from GTM and Apalachicola Reserves, Santa Rosa to Citrus Counties on the Gulf Coast, Florida Sea Grant Program, regional planning councils, and others. Read more about NEMO at <http://nemo.uconn.edu/index2.htm>

As a result of the NEMO meeting we have two pilot projects started for the eastern Panhandle and have a working committee. In addition, several areas in the western Panhandle are interested in being involved and having future projects. The Sea Grant Marine Extension Agent in Bay County is currently taking the lead in getting Florida into the NEMO Network. The committee will meet in early winter to develop short and long term plans and identify some potential products/projects, such as fact sheets, websites, packaged presentations, etc.

One pilot community, Panacea in Wakulla County, will use the NEMO education network to assist the Panacea Waterfronts Program with a special waterfronts overlay district for their County's comprehensive Plan. The other, the City of Carrabelle, will use NEMO opportunities in the process of updating of their comprehensive plan. Mel Kelly, Mayor of Carrabelle scheduled a "NEMO" presentation to kick off their first meeting which focused on their Land Use Element. Seth Blitch - Manager of the Reserve, and the CTP coordinator presented that one.

Bay County's Sea Grant Agent has been giving brief presentations and recruiting Sea Grant and other potential partners. The CTP coordinator will also be reaching out the Withlacoochee and North

Central RPCs, Crystal River Aquatic Preserves office and Sea Grant in Taylor County for possible presentations in the future. It is anticipated that the Sea Grant agents, pilot project leaders and other partners will also become NEMO educators who can share the basic presentations and share successes of their efforts.

We can only grow from here!!

Chesapeake Bay National Estuarine Research Reserve in Virginia

2005 Education Program Report

Bob Carroll, Education Specialist

Sarah McGuire, Middle School Marine Science Specialist:

The Virginia NERRS education program has had the busiest year in the four years while Bob Carroll has been EC. Program priorities are intensive field and classroom programs for select student groups, teacher training and extended day student programs during the summer, and hands-on public education at select events. Highlights include:

Teacher Training

Schoolyard Habitats: one, 3-day workshop.

Water Quality: two, 2-day workshops.

Extended Day Program

Preserving Dragon Run: one, 5-day residential course.

Student Field Programs

Oyster Restoration: Twenty oyster release field trips for classes that raised oysters and monitored their growth, survival and water quality at their grow-out site during the school year.

We released approximately 100,000 1-year oysters during these wading trips to the oyster reef in 2005.

Middle School Marine Science Project: We are working intensively with all 750 7th grade students in the four middle schools in Gloucester and Mathews County to provide multiple field experiences that are tied into the classroom via several project pathways. Project pathways include capturing juvenile blue crabs and summer flounder in the field and then growing them in classroom aquaria, raising oysters and monitoring their growth and survival and learning about shallow water habitats and animals that live there. Estuaries, water quality and appropriate 7th grade Virginia life science Standards of Learning are underlying themes of all project pathways.

Teacher on the Estuary

I became so busy during the field season that I had to shrink away from my TOTE responsibilities for the most part, but that's not to say that I don't have something to say. *First*, there is currently less NERRS education on a national basis than there was when I started here four years ago. This is a bad considering we have spend considerable time, money and effort meeting, discussing and planning national education projects. *Second*, existing NERRS infrastructure remains unparalleled to perform estuarine education on a nation-wide scale with 26 sites manned by 26 EC's etc. *Third*, we have the ability, experience and know-how to do take on any education project and get projects on the ground, but we can't do it as we continue to stumble, fall and move backwards during the never-ending planning whirlpool and bizarre need to have 100% buy-in on any initiative, which doesn't guarantee that a project won't be back at square-one during the next conversation.

Good luck moving forwards friends. Power to the committee. Majority rules. The minority gets input only at appropriate times. Adaptive management. Forward, ever forward. Git-R-Done.

Chesapeake Bay National Estuarine Research Reserve in Virginia

2005 Coastal Training Program Report

Alyson Craig, Coastal Training Program Coordinator, alyson@vims.edu

- Submitted Marketing Plan, Market Analysis, Needs Assessment, and Strategic Plan
- Living Shorelines: Erosion Control Alternatives (special class for marine contractors). This initial workshop was offered in partnership with the Campbell Foundation to discuss what the alternatives to hardened structures are, in what situations they work and don't work, some of the economic cost/benefits of using these methods, and the associated permitting concerns. We plan to use the feedback gained from the marine construction community to improve our future course offering(s) on living shorelines practices before offering the class to government staff and the general public.
- Perennial Stream Determination Workshop. This 3 day workshop was offered in response to recent changes in the Chesapeake Bay Preservation Act that requires 100 foot buffers along on bodies of water with perennial flow. Due to the technical detail required to determine perenniality, this workshop was offered so that the experts that developed the method could teach these skills to government staff and consultants that are responsible for making the determinations. The workshop filled in less than 24 hours and will be offered again in December.
- Dragon Run Natural Resources Symposium. This symposium brought together individuals with interests in this sensitive watershed, including state agency staff, county officials, county staff, non profits, academic researchers, and private citizens. This pristine area has been in the news recently because of the controversial Dragon Run Special Area Management Plan that currently has been adopted by 3 of the 4 counties that border the Dragon Run watershed.
- CBNERRVA New Building Dedication Ceremony and Reception. We just built a new CBNERRVA building – the Catlett-Burruss Research and Education Laboratory. During the reception, exhibits and demonstrations were on display to highlight the role of CBNERRVA in the implementation of the Ocean and Coastal Observing Systems, current physical and biological research and its application to resource management in the Chesapeake Bay, and efforts to improve scientific understanding and stewardship through coastal training and general education programs.

Delaware National Estuarine Research Reserve

2005 Education Program Report

Katy O'Connell, Education Coordinator, katy.oconnell@state.de.us

FORMAL EDUCATION PROGRAMS

- Delaware ENVIROTHON

DNERR educators serve on the Aquatics committee for the Envirothon in Delaware: North America's largest environmental education competition. We train high school students in all things water related, create the tests for the competition, and serve as judges. This year the Delaware team placed third in the North America competition!

- School Field Trips

We continued school field trips at the St. Jones Reserve component. Groups ranging from preschool to grad school visited the reserve. Over 2000 contact hours were logged. Unfortunately, more and more schools are having difficulty in Delaware with field trips due to costs for bussing, limits to the number of trips, and the need to bring groups upwards of 100 students.

- Classroom Outreach

Classroom outreach presentations logged 2500 hours for groups ranging from preschool to grad school. The DNERR partnered with the "What in the World" program in Delaware, which highlights science careers with presentations in schools.

- EstuaryLive

Information was sent to all Delaware lead science teachers and agriscience teachers about registration for EstuaryLive. The DNERR also partnered with the local Comcast Cable Network to broadcast ELive on local channels in Kent and Sussex Counties in Delaware as well as Salisbury, Ocean City, and Cambridge areas in Maryland.

PROFESSIONAL TEACHER DEVELOPMENT

- Statewide Teacher In-service Day

The first Friday in October is a state-wide teacher in-service day in Delaware. For the past three years we have hosted a canoe trip along the St. Jones River, highlighting the transition from Silver Lake to the Delaware Bay. Teachers learn how to conduct water quality tests and interpret their results. They are also instructed in the use of the DNERR curriculum and other environmental education resources.

- Green Eggs & Sand: The Horseshoe Crab/Shorebird Education Project

This was the fifth year for the project. Workshops were held in Delaware, Georgia, Massachusetts, and Virginia. Teachers from various states traveled to these locations to be instructed in the use of the GES curriculum. The project received two awards this year: Conservation Communicator of the Year for the Northeast Association of Fish and Wildlife Agencies, and a top three placing for the National Association of Interpretation's Media Awards in the curriculum category.

PUBLIC AND COMMUNITY EDUCATION

- Earth Day

The DNERR partnered with the Delaware Solid Waste Authority and others to host an Earth Day celebration at Killens Pond State Park. The DNERR hosted the Aquatics learning station along the "Eco-trail." The event was attended by approximately 4000 people.

- Blackbird Field Day

In celebration of new land acquisition at the Blackbird Creek Component of the Reserve an “open house” was held in April. Local landowners and community members came to see exhibits, tour the new properties, and have a cook-out.

- Delaware State Fair

Attended by over 300,000 people, the Delaware State Fair maintains its roots in agriculture, but exhibits about natural resources are a highlight as well. The DNERR hosted several presentations in the Department of Natural Resources and Environmental Control’s pavilion.

- Becoming an Outdoors Woman

The DNERR partnered with the Department of Natural Resources and Environmental Control’s Division of Fish and Wildlife to host the sixth annual BOW program. The event held for three days in August at a local camp, gave 100 women the opportunity to learn skills to allow them to participate in numerous outdoor activities. DNERR staff taught the sessions on nature crafting with kids and ecology in Delaware’s Inland Bays.

- Coast Day

In cooperation with the Delaware Coastal Management Program, the DNERR once again provided interactive coastal exhibits for the University of Delaware’s College of Marine Studies annual Coast Day in October. Estimates for attendance were near 10,000 people.

- Public Programs

Public programs ranging from canoe and boat trips to hikes and interpretive programs were offered on a seasonal basis. The Preschool Naturalist Program took off this year with great attendance at these once a month programs.

COMMUNICATIONS

- The Skimmer

The DNERR’s newsletter was published quarterly and sent to the over 1000 person mailing list.

- Blackbird-Delaware’s Undiscovered Treasure

The DNERR in cooperation with Anew, Inc. produced a 16 minute video about the Blackbird Creek watershed. It is available on DVD.

Elkhorn Slough National Estuarine Research Reserve

2005 Education Program Report

Kenton R. Parker, Education Coordinator – krparker@elkhornslough.org

Through partnerships and collaborations, and a wonderful team of dedicated and creative staff and volunteers, we continue to improve the accessibility of the resources of the Elkhorn Slough National Estuarine Research Reserve to educators, students, decision makers, and the general public. Our 1400 acre outdoor classroom offers 5 miles of hiking trails through a variety of habitats: oak woodlands, grasslands, riparian corridors, fresh water ponds, right down to the salt marsh and mudflats of this seasonal estuary that empties into the waters of the Monterey Bay National Marine Sanctuary. With over 90% of California's wetlands lost, the Elkhorn Slough Reserve offers a rare and important opportunity to witness the creatures that live in these coastal habitats, and to teach the value of preserving wetlands and protecting watersheds.

K-16 Teacher Professional Development and Field Programs

- Teachers are required to complete a 2 day training course before they can bring their students to the Elkhorn Slough Reserve. These environmental education workshops are officially certified by California State University Monterey Bay (CSUMB), and teachers receive Continuing Education Units for their training. They are designed to provide educators with the information and tools needed to integrate environmental science and conservation into their classroom curriculums and to prepare their students for informative and enjoyable field experiences at the Reserve.
- We served 340 teachers through our environmental education workshops and K-12 school programs, providing 5300 students and parent chaperones with invaluable outdoor learning experiences. Our teacher workshops are officially certified by CSUMB, and teachers can receive Continuing Education Units for their training.
- We worked with 32 different instructors from local colleges and universities giving special tours and presentations to 690 college students as part of courses on coastal ecology, wetland habitats, environmental education, interpretive exhibit design, and resource management.
- Our 96 active volunteers put in over 7,900 hours as ambassadors for the stewardship of Elkhorn Slough and its watershed. They worked on restoration projects, helped with research and monitoring, greeted over 30,000 visitors and provided 234 tours of the Reserve to 2328 people who participated in the regularly scheduled weekend hikes or who arranged for special naturalist guided tours.
- We are partners in the Environmental Education Certificate Program at CSUMB, a 2 year program that coordinates the teacher professional development efforts of several local agencies and institutions. This offers professional recognition to teachers who make the effort to acquire the skills needed to bring environmental education into the classroom and who get their students involved in the many field programs offered in the area.
- We are working closely with the Earth Systems Science and Policy and WeTEC (Wireless Education and Technology Center) programs at CSUMB to develop the capacity to do virtual field trips over the web and to broadcast live images of our nesting colonies of Caspian Terns, Herons and Great Egrets. Through this technology we are able to help teachers integrate the Elkhorn Slough environmental curriculum in their classrooms throughout the school year, so that the students can follow the seasonal changes and ongoing research/monitoring efforts at the Reserve before and after their actual field trip to the site.

Afterschool Programs

- Through the MERITO program, we have helped the Monterey Bay National Marine Sanctuary develop a standards based bilingual regional watershed curriculum that is now available for afterschool teachers/programs in Watsonville and Salinas: “Del Cielo al Mar; From the Sky to the Sea”. In this program students witness research and monitoring projects at the Elkhorn

Slough Reserve such as the tag and release of leopard and smoothhound sharks where they learn the importance of basic research for fisheries management; monitor for marine invasive species; help our restoration team with seed collection, propagation and planting of native plants; and practice their own skills of observation as they make water quality measurements, shorebird surveys and study plankton samples under the microscope. They also visit other neighboring wetland systems, local beach and dune restoration sites, municipal waste water treatment plants, local water supply facilities, and a municipal recycling center. They learn about the responsibilities of taking care of the watershed to protect both terrestrial and marine wildlife, and the role of science in maintaining the health of our estuaries and oceans.

Career Development Programs and Collaborations

We are part of a growing network of opportunities where young people can gain experience in the environmental sciences and meet people with careers in this discipline, starting in elementary school and continuing into college. We look forward to the day when we will be able to hire graduates of these programs.

- We work with a team of local environmental professionals making a concerted effort to outreach into the Latino communities of our area through the MERITO program, (Multicultural Education on Resource Issues Threatening Oceans), a collaboration with California State Parks and the Monterey Bay National Marine Sanctuary. Activities include bilingual hiking and kayaking tours of the estuary for students and their families.
- We support Camp SEA Lab Monterey Bay summer youth programs, (Science Education and Adventure), a program offering field experiences for youth to inspire conservation of marine resources. This has recently expanded to offer year round activities.
- We work with the Ventana Wilderness Society's summer day camp program.
- The RISE program (Recruitment In Science Education) sponsored by CSUMB to encourage minority youth to seek careers in science and pursue college educations.
- COSMOS, a high school science program sponsored by the University of California at Santa Cruz.
- Upward Bound, a science education program for inner city youth sponsored by Monterey Peninsula College.
- The Monterey Bay Aquarium's Young Women In Science program.

Visitor Center & Special Events

- In addition to supporting the many programs mentioned above, the visitor center is open to the public Wednesday – Sunday, 9:00am to 5:00pm. It offers a highly visible presence in the community for the NERRS and our partners, the California Department of Fish and Game, NOAA and the Elkhorn Slough Foundation. In addition to welcoming the general public drop-in visitors we offer docent led tours at 10:00am and 1:00pm on Saturdays and Sundays. Staff and volunteers also lead special tours upon request for seniors, youth groups, service clubs, employee organizations, etc.
- We reached a large and diverse audience through our annual Mother's Day event, (over 300 attendees) providing opportunities to participate in watershed habitat restoration; learn about the habitats and species of Elkhorn Slough and the importance of the Slough as nursery ground for many species of fish; and explore the microscopic world of plankton, the basis of life in our estuaries and oceans.
- Once again Earth Day activities were combined with "Día de los Niños", an important holiday celebrated in the Latino community. Over 3,000 people enjoyed the festive activities and informational booths set up at Ramsay Park in the city of Watsonville by a mix of local youth organizations and conservation groups including the Elkhorn Slough Reserve, the MBNMS, Save Our Shores, and Watsonville Wetlands Watch.

- We also participated in the annual national Coastweeks celebration through the Coastal Clean-up Day, (60 participants helping to clean the marsh and roadside at our site), sponsored by the California Coastal Commission.

Elkhorn Slough National Estuarine Research Reserve
2005 Coastal Training Program Report
Grey Hayes, CTP Coordinator, grey@elkhornslough.org

Maritime Chaparral Education Program (Pt. 2 of a series)

Day 1: Fort Ord HCP Discussion Group

California's leading scientific experts on maritime chaparral met with the stewards of the Ft. Ord ex-military base to advise them on the Habitat Conservation Plan that will guide the future of one of the largest remaining areas of the endangered maritime chaparral. The scientists were prepared in the month leading up to this day long workshop by working with the CTP Coordinator on a series of questions posed by the Ft. Ord stewards. The day consisted of a moderated discussion focused on answering the most important questions. Following the event, an evening dinner focused on networking the scientists to focus future research on the leading applied questions.

Day 2: Mitigation-Related Restoration and Management of California's Maritime Chaparral

During this day-long workshop, a number of presenters spoke to an audience of 65 stewards, regulators, and consultants on the current science of restoring maritime chaparral. An organic, in season lunch was followed by a lengthy discussion period and then an afternoon field trip (via two large buses to nearby public conservation lands) which featured the oldest, best monitored maritime chaparral restoration projects in the state.

Day 3: Fort Ord Field Trip

Stewards were invited to a half day field trip for a more in depth discussion of methods for soil stabilization, plant restoration, and monitoring of restoration of maritime chaparral. The Bureau of Land Management co-sponsored this field trip and provided the results of a many-month long internship investigation into the success of their restoration practices, before after photos, and site histories. The tour also featured stops at various aged stands of chaparral following historic fires.

Day 4: Vandenberg Maritime Chaparral Field Trip

The CTP coordinator and science experts summarized the education program during a day long field trip 200 miles to the south of the Monterey Bay, at the next largest site of maritime chaparral, just north of Santa Barbara. Stewards were invited to tour the Vandenberg Airforce base to view years of ongoing efforts to manage and restore maritime chaparral.

Yadon's Piperia Recovery Workshop

A day long workshop focused on an endangered orchid species that is endemic to the Monterey Bay region including the Elkhorn Slough watershed. We flew in one of the world's leading experts in this group of endangered orchids to present her information about orchid conservation, management, and monitoring. Another scientist presented new information on the orchid's biology. Stewards, regulators, and land owners learned about the species' biology and the difficulty of monitoring it through time. Data was compiled that was requested from attendees on the population numbers and extent of the species.

Restoration and Management of Blue Gum Eucalyptus Workshop (Part 2 of a series)

A day long workshop focused on the methodology, costs, and issues in controlling blue gum eucalyptus and restoring areas where the species has been removed. The leading expert on controlling the species gave an in depth presentation on control strategies. A number of case studies followed, as presented by practitioners at a number of sites in California. One speaker specifically outlined strategies for informing the public about this controversial subject. A field trip featured the oldest restored site (at the Reserve!) of blue gum removal as well as a hands-on demonstration of control strategies.

Coyote Ridge Serpentine Grassland Fieldtrip (one of an ongoing series)

As part of our ongoing educational programs on California grasslands, we sponsored a day long field trip to one of the most studied grasslands in our region. Leading botanists and scientists spoke on the conservation concerns and management methods for an endangered grassland type, serpentine grassland, which has been heavily affected by nitrogen deposition from car exhaust.

Ecology and Conservation of Coastal California's Riparian Areas Workshop (the first of a series)

As is typical for our ecosystem foci, we opened this educational series with a focus on the basic ecology, conservation, and regulation of riparian areas. This day long workshop attracted 90 attendees, mostly stewards but also consultants and regulators. We had 4 presenters, the most popular spoke on fish habitat in riparian areas. An organic, in season lunch was followed by a lengthy discussion period and then an afternoon field trip to look at one of the few remaining riparian areas in the Elkhorn Slough watershed.

Introduction to Ecology and Regulation of Tidal Wetlands in Central California and the San Francisco Bay (part one of a series)

As with the previous, this workshop began our focus on tidal wetlands with an overview of the tidal wetland system ecology, regulation, and conservation concerns. 4 speakers focused on: 1) an overview of the different types of tidal wetland plant communities and hydrology; 2) tidal wetlands fish; 3) tidal wetlands birds; and 4) the regulation of tidal wetlands. Around 70 people attended, mostly consultants and regulators/planners, but also stewards and others. This was the first of the San Francisco Bay NERR's CTP workshops and a partnership with them allowed a transfer of CTP knowledge to help boost the success of the program. An organic, catered lunch was followed by an hour long question and answer and then we piled on two large chartered buses to a field trip at the Rush Ranch, part of the SF NERR, where our presenters reiterated topics raised in the workshop and answered questions.

Grassland Monitoring Educational Program (part 2 of a series)

Day 1: Defining the Science of Monitoring Grasslands for Management Goals Scientific Advisory Panel

The CTP moderated a half day meeting amongst the leading experts in California grasslands, with a discussion focused on the results of a survey of grasslands stewards. Scientists focused on how to best advise stewards on monitoring methods and reasonable goals. A dinner meeting helped the scientists network and further discuss grasslands research, management, and monitoring.

Day 2: Defining the Science of Monitoring Grasslands for Management Goals

Results from the previous day were presented to a group of 50 invited stewards. Following this, there was a moderated discussion on the science of California grasslands, monitoring methods, and goal setting. This day long workshop also featured catered, organic, in season lunch, snacks and coffee as well as plenty of time for networking and discussion. Small discussion groups each with 4 stewards and 2 scientists helped to focus on many of the questions raised by managers in the survey that preceded this workshop.

Grand Bay National Estuarine Research Reserve

2005 Education Program Report

Jennifer Buchanan, Education Coordinator, buckcannon1@aol.com (temporary email address)

- **K12 Education Specialist**

Grand Bay NERR and the J.L. Scott Aquarium and Marine Education Center share an educator that is dedicated to develop estuarine curriculum, teach Sea Camp, lead onsite field trips and participate in offsite outreach events. Mr. Rick Ranew, a former K12 educator from south Alabama, spends half the year with us and half the year at the MEC in Biloxi promoting estuarine education.

- **New Facility and Exhibit Design**

We have been working diligently with the exhibit designers for the interpretive center component of our new facility. The process has been tedious, but the final product will hopefully be worth all the frustration that we have had to suffer through during the process. The theme of our exhibit hall is “Grand Bay is a diverse, dynamic and ever-changing place--and we are all a key part of it. “

- **Regional Ecotourism Festival**

In April, the reserve served on the planning committee to develop a new weeklong regional festival. The festival is aimed at introducing birding and ecotourism to local communities. Centered around Earth Day, this festival involved staging several different outdoor/environmental activities throughout many of the communities in Jackson County, Mississippi. The reserve exhibited at the big Earth Day Celebration at the Gulf Islands National Seashore and hosted an early morning bird banding event on one of the reserve’s secluded “tree islands” or middens.

- **Regional Science Fair/Ocean Sciences Bowl**

The reserve/Department of Marine Resources co-sponsors and serves on the task force for the regional science fair. In addition to the planning duties, the staff also coordinates the awarding of the annual Excellence in Marine Sciences award to students whose projects best address coastal management issues. We also hosted a field trip for three visiting teams from the National Ocean Sciences Bowl as well as participated in the judging process for the event.

- **EstuaryLive**

In spite of Hurricanes Katrina and Rita, the southern component of EstuaryLive still went on. Many thanks go out to co-sponsor Lee Yokel, Mobile Bay NEP, and Margaret Sedlecky, Weeks Bay NERR, who stepped up to the plate when the Grand Bay Staff were recovering from a direct hit of Hurricane Katrina. Although we had to change the location twice (our second location was being flooded by Hurricane Rita) and our theme, I believe the students who participated in the activity benefited from the presentation.

After Katrina our NERR family has really been there for us!!!! Thank you for all your offers of help during this trying time at our reserve and in our home communities. You all are so great!

Grand Bay National Estuarine Research Reserve
2005 Coastal Training Program Report
Marian Dicas, CTP Coordinator, mariandicas@hotmail.com

Submission of CTP planning documents:

The greatest accomplishment of the Grand Bay NERR's CTP was the completion and submission (to the CTP Oversight Committee) of all 5 CTP planning documents as of July 1, 2005.

Workshops:

Managing Visitor Use in Coastal and Marine Protected Areas (March 1-2, 2005)

This 2-day workshop was offered at the Department of Marine Resources' main office in Biloxi, MS. Staff from the NOAA CSC facilitated the event, which provided coastal managers with a methodology for identifying and defining unacceptable impacts to biological and cultural resources. Workshop instructors also presented a variety of strategies and tactics address the impacts.

Mississippi Coastal Plant Identification Class (May 3-6, 2005)

Dr. Robert Mohlenbrock of Biotic Consultants, Inc. facilitated this 4-day field-intensive plant identification class at the Grand Bay NERR. Twenty-five participants representing state, federal, and non profit organizations learned how to identify plants characteristic of a variety of coastal wetland habitats (including bottomland hardwood forests, tidal marsh, pine savanna, pine flatwoods, salt panes, and shell middens).

Conferences:

Strategy Session Luncheon (May 16, 2005)

Local elected and appointed officials from across the Mississippi Gulf Coast were invited to attend a special luncheon, in conjunction with the CRMP Coastal Development Strategies Conference in Biloxi, to review the results of the needs assessment survey and identify specific coastal resource management priorities in their communities. The results of the needs assessment surveys provided themes for future trainings, and luncheon participants were able to evaluate the themes and expand upon the specific needs of their communities relative to these results.

CTP

Local elected and

Mississippi Association of Professional Surveyors (July 23, 2005)

The Grand Bay NERR CTP was asked to coordinate a 2-hour training session at the annual MAPS conference in Biloxi. We used this opportunity to collaborate with the Mississippi Department of Marine Resources and the Mississippi Secretary of State's Office to re-visit the issue of littoral rights issues and coastal surveying methodologies. This is a topic that was initially covered through a coastal decision-maker workshop in March 2003. The conference provided the state agencies with a second opportunity to present the legal implications associated with littoral boundary determinations and to review George Cole's draft methodology for determining littoral rights boundaries in coastal Mississippi with a professional audience. The draft methodology is being considered for inclusion in the Mississippi Coastal Program. Eighty surveyors from across the state were in attendance at this event.

Great Bay National Estuarine Research Reserve

2005 Education Program Report

Kelle MacKenzie, Education Coordinator, Kelle@greatbay.org

- Completion of New facility; The Hugh Gregg Coastal Conservation Center, featuring geothermal heating and cooling, composting toilets, other green features, provide additional meeting space of up to 250 and additional exhibit space to be completed during the winter of 2006. Grand opening and dedication, spring of 2006.
- Fall Cultural History School programs, approx, 1700 children attend 3-hour program in a six-week period during the fall. Program focus on the cultural history of the Estuary as it relates to the natural resources. Programs run by staff and volunteers.
- Spring Natural History School programs, approx 1700 children, focus on natural history of the Estuary, run in identical fashion as fall program
- Bay Ventures: summer programs for children ages, 7-11.
- Once upon an Estuary: summer programs for pre-school children.
- Natural History Mysteries: summer programs for teens.
- Bay Views: evening adult discussion series in summer months
- Interpretive Kayak programs in the Estuary. Skills and interpretive program lead by staff. Kayaks belong to Reserve.
- Brown Bag lunches for volunteers throughout the winter to keep volunteers current and connected during slower periods. Currently have approx. 80 volunteers.
- Integrated programs: Stewardship/Research/Education/CTP
 - Invasive species monitoring and removal, using volunteers
 - Invasive species education Bay Views Program
 - Phragmites workshop for Land Managers combining research, education/CTP and stewardship goals
 - Community Land Stewards, volunteer program on Reserve properties
 - EC and SC work together to create signage and interpret Reserve properties, develop and implement logic models to address stewardship and education goals
 - RC and EC work together on interpreting SWAMP data and research results through exhibits and publications such as Great Bay Matters and Interpretive Kayak Programs.

There is a very strong relationship/partnership between the education program at the Reserve and our friends group, The Great Bay Stewards. Each year the friends group provides financial support as well as manpower to accomplish Reserve educational goals and objectives. The quality and consistency of our education programs are greatly enhanced by the contribution the friends group makes.

Great Bay National Estuarine Research Reserve

2005 Coastal Training Program Report

Steve J. Miller, Coastal Training Program Coordinator, Steve@greatbay.org

1. *Gulf of Maine Bioregion* 4/12/2005.

1-hour presentation for the Wells NERR Brown Bag Lecture Series for volunteers, local community, and staff of WNERR on the Gulf of Maine oceanography and coastal ecology. 32 people attended.

2. *Regional Dock and Pier Management Workshop* 6/1-2/05

A regional 2-day CTP project with WNERR, GBNERR, WBNERR, and NOAA NCCOS on the management of small docks and piers in New England. To provide coastal decision makers with information, skills, and tools to evaluate and manage the environmental, visual, navigational, and public access impacts associated with the construction and maintenance of small docks and piers. Day 2 was a train the trainer workshop.

3. *Dealing with Growth in Wakefield NH NROC* 6/8/05

The Dealing with Growth is a 1-hour presentation on growth and how growth affects the community's natural resources. The presentation is the beginning of a community wide planning process to address growth by providing technical and educational resources and tools to address the town's concerns regarding growth. 89 people attended.

4. Wakefield NROC Dealing with Growth Follow-up #1 on 6/21/05

The first follow up meeting (2 hours) is where NROC begins the process of helping the town prioritize the growth issues that they wish to address. 39 people participated.

5. Wakefield NROC Follow-up #2 7/28/05

The second follow up meeting (2 hours) continues the prioritization process and results in the formation of action groups focused on each town priority. Wakefield is focusing on Zoning, Water Resources, and Land Conservation. 36 people participated.

6. Wakefield NROC Follow-up #3 8/16/05

The third follow up is where the three action groups begin the process of identifying the actions that may be used to address their growth issue. 35 people participated.

7. Wakefield NROC Follow-up #4 9/8/05

The fourth follow up (2 hours) is where action group continue the process of identifying actions by either receiving further education and technical assistance from NROC providers or through the continued meeting facilitation from NROC. 37 people participated.

8. *Forested Wetland Buffers* 6/26/05

The CTP participated in an all day "Working on your Woodlot" program sponsored by the NH Division of Forestry and Lands. CTP participated by giving a presentation of buffers and talking with woodlot owners. 6 people participated in the 1.5 hour buffer program.

9. Center for Stormwater Technology Evaluation and Verification Tour 7/6/05

A tour of the UNH CSTEV with 14 CDMs sponsored by GBNERR. This 4 tour updates CDMs on the ongoing research on the effectiveness of stormwater technology in New England. 14 participants.

10. *Watershed Management* 7/14/05

1-hour program for the GBNERR Volunteer Osprey Monitors on Watershed Management and the connection to wildlife populations. 9 people attended.

11. *Watershed Ecology Institute* 8/2/05

This is a ten day ecology institute in which the CTP provides instruction during the Estuarine and Marine Ecology Day. 7 hours field instruction on estuarine and marine ecology for CDMs, teachers and graduate students. 9 people in the 2005 class.

12. *Field Identification of Native and Exotic Phragmites* 9/15/05

This all day workshop gave coastal land managers from 4 hour New England states (RI, MA, NH, ME) the most up to date science on genetically verified morphological characteristics to identify native and exotic Phragmites. 34 people participated.

Guana Tolomato Matanzas National Estuarine Research Reserve

2005 Education Program Report

Janet Zimmerman, Education Coordinator, Janet.Zimmerman@dep.state.fl.us

- September 24, 2005 was the grand opening of the GTM Reserve's Environmental Education Center. Much of the activities for this year have been in preparation for the opening of the Center including exhibit design, program development and creation of outreach materials. U.S. Rep. John Mica, FL DEP Deputy Secretary Bob Ballard and NOAA's Laurie McGilvary spoke at the opening ceremony. Other activities the day of the grand opening included mini lectures by GTM staff, nature crafts for the kids, presentation by GTM volunteers about their volunteer activities, hands on science experiments for the kids and parents, and our researchers were in the lab to talk about their many research projects.
- Now that the GTM Environmental Education Center is open, education staff are dealing with an influx of special program requests. Monthly GTM programs include Coastal Science Seminars (evening lectures), Brown Bag lunch series, and nature walks (Birds, Botany and Breakfast; Upland hike and Salt Marsh walk) for the general public. School programs are available for 4th grade, 7th grade, high school and college. The Environmental Education is now open 7 days a week.
- This is GTM's first year participating in the Learning in Florida's Ecosystem (LIFE) program. LIFE is a state initiative to establish a series of field-based, environmental science education programs at FL NERRs and other conservation properties in FL. Apalachicola NERR was the pilot site for the LIFE program. In January, GTM Reserve hosted the statewide planning meeting to introduce the LIFE program to other state agencies/properties interested in starting a LIFE program. The core guiding principal of LIFE is to create multi-day field experience using current technologies in environmental science with emphasis on observation and inference as critical components of the scientific method. The LIFE program helps to create long term partnerships between GTM and the local school district that include teacher professional development, program content driven by teacher identified needs and an integration of all subject areas by connecting field experiences with pre and post classroom lessons. Field activities will include: beach profiling, sand investigation, marsh vegetation plot surveys, water quality testing and plankton study.
- GTM Reserve has recently added 2 new Environmental Educators to its education team. Angie Lamanno (Angie.Lamanno@dep.state.fl.us) and Catherine "Cat" Eastman (Catherine.Eastman@dep.state.fl.us) will be leading the school and general public programs for the GTM Reserve.
- GTM NERR-NEWS celebrated the publication of its 50th issue. Now in its fourth year, GTM NERR News is a free email newsletter sent out the first of every month to over 900+ subscribers informing them about the Reserve's activities and environmental education opportunities in Northeast Florida. We are currently researching better ways of managing our email list (currently using Outlook).

Guana Tolomato Matanzas National Estuarine Research Reserve

2004-2005 Coastal Training Program

Terri Mashour, Coastal Training Coordinator, Terri.Mashour@dep.state.fl.us

- **Marineland Comprehensive Plan Amendment Process 2004-2005**
GTMNERR staff participated in the comprehensive plan amendment for the Town of Marineland, Florida. In monthly meetings, staff contributed scientific and environmental background for coastal management components of the comprehensive plan, measures to protect water quality and increase water quality standards, and instituting a Maritime Hammock Overlay District. Staff also provided information about sustainable community issues such as implementing mixed use zoning with commercial and residential uses and a pedestrian friendly layout for the town.
- **River to Sea Preserve Coastal Scrub Restoration Meeting March 14, 2005**
GTMNERR gathered environmental experts to advise Flagler County Parks and Recreation on a means to restore endangered scrub habitat within the River to Sea Preserve at Marineland. Only 10,000 acres of this habitat remains in Florida and 595 acres are found within the reserve along with the associated scrub endemic species of skinks, Florida Scrub Jay, gopher tortoise, and white tailed deer. A restoration plan was prepared and presented to the public. Through the networking that occurred at these meetings, Florida Division of Forestry agreed to fund and perform the restoration for the county, and the Flagler County Commission voted to approve the restoration plan. The restoration process has begun and will be completed with a prescribed burn to allow palmetto and scrub oak species to regenerate.
- **Sea Turtle Nesting Seminar and Volunteer Orientation April 7, 2005**
As a kick off to Sea Turtle nesting season, GTMNERR and St. Johns County joined forces to teach about sea turtles. Stewardship biologist Matt Love presented information about the local species and nesting behavior. Attendees viewed a Florida Fish and Wildlife Conservation Commission Sea Turtle nesting video. The St. Johns County Aquatics Superintendent presented the lighting requirements for beach front residents during the season. Sixty volunteers were recruited from this event for the 2005 monitoring season.
- **Energy and Resource Efficient Landscape Design Workshop May 28, 2005**
GTMNERR and University of Florida Institute of Food and Agricultural Sciences (UF IFAS) partnered to offer this Florida Yards and Neighborhoods (FYN) and landscape design principles workshop. The workshop had many positive outcomes. First, integrating watershed curriculum into landscape design created heartfelt motivation to create beautiful yards that are also environmentally sustainable. Secondly, informative materials donated by UF Extension were helpful to the residents. Participants learned of new networking capabilities from the IFAS Extension Master Gardeners. Residents can also visit the St. Johns County Extension office arboretum for FYN examples. Lastly, educating residents on native landscaping will create a demand for landscaping and nursery companies to supply native plants and provide native landscaping services. This workshop is an example of how to utilize the CTP program to directly improve management of our watershed by improving landscaping and yard management on private land.
- **Florida Fire Ecology and Firewise Seminar July 21, 2005**
Fire is a large component of public land management within GTMNERR and a large part of Florida's history and ecosystem, but can be highly disliked by the public. As a follow up to the River to Sea Restoration Meeting GTMNERR organized this seminar with the Florida Division of Forestry (FL DOF) to teach landowners near the River to Sea Preserve property about the prescribed burning that would soon be occurring. Twenty five participants learned about the history of fire in Florida, why land managers utilize fire for management, and how to prevent wild fires from occurring on their property according to the Florida Firewise Program. All residents in attendance had been

through the Palm Coast fires of 1998 (and some through the 1985 fires as well) and when learning about how the lack of prescribed burning can cause fuel buildup that could increase the chance of wildfire occurrence, they were all inviting FL DOF to burn on their properties. This education will help in increasing the acceptance of burning as a component of land management within GTMNERR boundaries.

- Water Quality and Citizen Involvement Workshop August 3, 2005
GTMNERR partnered with St. Johns River Water Management District and Flagler County Sportfishing Association to offer this workshop. Local organizations were invited to present their water quality improvement programs, such as volunteer water quality monitoring and trash pick up. Water quality monitoring research from the GTMNERR and the Water Management District was presented. A focus group session was included to elicit input on the water quality issues in the area and the idea of creating a watch group was mentioned. The themes extracted from the focus groups were buying more land for conservation, Florida friendly landscaping, and environmental education for children, the public, and especially developers and elected officials. A follow up meeting may be scheduled to discuss further movement of a water watch dog group.
- GTMNERR EEC Grand Opening September 24, 2005
Every sector at GTMNERR participated in the GTMNERR Environmental Education Center grand opening festivities. From creating K-12 water quality education stations in the classrooms, explaining research in the working lab, creating educational posters for the kiosks, writing exhibit text, and organizing volunteers and the Friends group everyone lent a hand. As a CTP component, mini lectures were organized to present in the auditorium. Sector overviews were created and the CTP overview included information regarding the history of the purchase of the Guana property, how the purchase was funded, the layers of protection on the property, and how the GTMNERR was designated. The day was highly successful, well received, and many are calling to book programs. The center will be the gateway to environmental education and coastal training programs for the future.

Hudson River National Estuarine Research Reserve

2005 Education Program Report

Jean Valla McAvoy, Education Coordinator, jvmcavoy@gw.dec.state.ny.us

Laurie Fila, Education Specialist, lafila@gw.dec.state.ny.us

Public Canoe Series

Guided canoe trips for the general public at 3 of 4 reserve sites. Introduction to tidal wetlands, the work of the Hudson River NERR and some of the challenges and strengths of the Hudson River Estuary, such as encroachment of invasive species, continued viability of submerged aquatic vegetation, improvements in understanding the benthos, etc.

Community Canoe Programs

Guided canoe trips for a variety of community groups, particularly at-risk youth, covering much the same material as the public canoe trips.

Tivoli Bays Talks

A monthly lecture series devoted to the connections between the Tivoli Bays, the Hudson River Estuary and the Village of Tivoli.

Family Programs at the Visitor Center

Monthly programs devoted to children and families celebrating water, estuaries and the Tivoli Bays.

Senior Citizen Program Series

Monthly programs offered to local seniors exploring the riches of the Tivoli Bays and Hudson River Estuary through walks, presentations, poetry and song.

Miscellaneous Community Presentations

Presentations to garden clubs, scout troops, church service groups, etc. Participation in The Hudson River Project, a year-long, monthly series of guided conversations attempting to find common language between different Hudson River constituencies.

Have provided music and am arranging a contemplative Hudson River canoe trip for key religious and philosophical leaders in the valley.

Regional Festivals

Participation in various regional events, such as the Hudson River Regional Festival, the Hudson River Valley Ramble, Hudson River Sweep, Hudson River Shad Fests and smaller community or business events.

National Estuaries Day

This year's celebration was a Hudson River Story Theater performance by Jonathan Kruk, a storyteller of the valley who specializes in dramatic presentations of Hudson River Valley history and fable.

SWaMPing the Classroom

Pilot under development for interactive, web-based, education program aimed at middle-school students, using SWMP data for the 5 reserve tributaries of the Hudson River Estuary in a watershed perspective. Work will resume shortly now that field season is winding up. A key component of the program will be developing a network of school/teacher contacts and coordinating with other efforts to develop Hudson River curricula, such as those of the NYS Department of Environmental Conservation Hudson River Estuary Program and the National Park Service Teaching the Hudson River Valley. Target date for introduction into selected classrooms: Spring 2006.

Miscellaneous Formal Education Programs

In keeping with our effort to develop closer ties to the formal education community, we are collaborating with the Brendon Montessori School on a Teaching the Hudson River Valley grant to develop a Hudson River focus for the 2005-06 school year. We continue to offer field trips and presentations to undergraduate and graduate classes upon request.

Professional Teacher Development

Collaboration with various organizations (such as Hudson River Sloop Clearwater, NYS Project Wet, Cornell University Center for the Environment, NYS SeaGrant, Woodstock Day School) to offer field and classroom components of teacher workshops.

Relocation to Norrie Point Environmental Center

A great deal of time and effort has gone into planning for relocating the Hudson River NERR headquarters to the Norrie Point Environmental Center.

Hudson River National Estuarine Research Reserve

2005 Coastal Training Program Report

Emilie Hauser, Coastal Training Program Coordinator, eehauser@gw.dec.state.ny.us

Rising Salt Concentrations in Tributaries of the Hudson River Estuary

The impetus for this December 2004 conference was HRNERR's water quality data that showed increasing chloride concentrations in tributaries within the Reserve over the last 12 years. Experts from the USA and Canada gave presentations on salt sources, transport, and fate in the environment; snow and ice control operations; the status and trends of chloride in the watershed of the Hudson River; and road salt effects on aquatic ecosystems. The Hudson River Environmental Society helped coordinate the event and has the abstracts and an extensive list of references on their website. Recommendations that came out of the conference covered data collection, research on sources, management, enforcement and education and outreach.

- *Managing Visitor Use*

Thirty-three participants representing national, state and municipal parks, local land conservancies and preserves attended this two-day workshop which is taught by staff of the NOAA's Coastal Services Center. Local local speakers and a field activity on the Tivoli Bay trails supplemented the workshop, which was a repetition of one held in autumn 2004, which was over-subscribed. A winter 2006 follow-up workshop will bring all participants together to share their experiences in applying the techniques learned and to hear from an expert on a framework for selecting effective indicators of resource condition and recreation use.

- *Invasive Plant Species: An Introductory Workshop for State Parks Staff.*

Fifty state parks managers from the east side of the Hudson learned identification and biology of the top twelve invasive plants in their parks, as well as to inventory, record and map invasive plant locations and to plan a pilot control project. This workshop was in cooperation with NYS Office of Parks, Recreation and Historic Preservation. Regional speakers gave presentations and led a field activity. A similar workshop is planned for park managers on the west side of the Hudson.

- *Watershed Assessment and Planning*

Forty-two participants from 26 watershed groups and agencies attended this two-day workshop held in cooperation with NYS Department of Environmental Conservation's Hudson River Estuary Program and presented by the Center for Watershed Protection.

Participants learned how to assess their watershed needs and capabilities; learned about stream corridor and upland source control assessments; better site design; and sub-watershed delineation and comparative analysis. As a result, area watershed groups have begun watershed plans.

- *Mile-a-Minute Vine (Polygonum perfoliatum L.): Push Back the Invasion in the Lower Hudson Estuary Watershed*

Fifty participants representing stakeholder groups learned about Mile-a-Minute vine from experts from surrounding states and visited an infestation on the Reserve's site at Iona Island. A facilitated brainstorming session set the foundation for a plan to treat infestations in a multi-year collaborative effort. The workshop brought together individuals and agencies with the ability to be leaders in outreach and education and eradication and control of mile-a-minute vine. A follow-up meeting this winter will finalize a rapid response plan.

Jacques Cousteau National Estuarine Research Reserve

2005 Education Program Report

Janice McDonnell, Education Coordinator, mcdonnel@marine.rutgers.edu

- Bringing Ocean Sciences to Your Elementary Classroom (A.K.A. MARE 2005) – August 16th to the 18th the JCNERR hosted thirty-six kindergarten to sixth grade teachers for a three-day professional development course. This course focused on the educating the teachers about the concepts of ocean literacy through the teachers exploring our local habitats and learning from our Rutgers Marine and Coastal scientists. The teachers were introduced to the concepts of interdisciplinary learning, common ocean misconceptions, using literature to teach science concepts, learning through movement, inquiry-based learning and observation skills. We focused on marine science content such as the ocean and our weather, barrier islands, coastal storms and sea level rise, aquatic habitats, adaptations from bays to beaches, and submerged aquatic vegetation in Barnegat Bay. This three day program was one of our most successful in our ten year history of summer professional development programs.
- Since early 2005 JCNERR has been working with our partner, The Tuckerton Seaport, to deliver public education programs about the culture, the environment and science research in the Tuckerton and Little Egg Harbor area. Our suite of programs included the following topics:
 - Lunch N’ Learn Series: January 19th: Striped Bass Tagging and Tracking; February 23rd: Crabs, Birds, and the Tuckerton Seaport; March 16th: Dolphin Research Project
 - Capturing Tuckerton’s Treasures Through Art: June 11th: Painting with Kathy Johnston; July 17th: Outdoor Photography with Frank Tenner; August 12th: Nature Illustrations and Observations with Kathy Johnston
 - Mullica River -Great Bay Watershed Bus Tour: April 16th: Spring Tour; October 1st: Fall Tour
 - Great Bay Boulevard Hiking and Birding: September 17th

Jacques Cousteau National Estuarine Research Reserve

2005 Coastal Training Program Report

Lisa Auermuller, Coastal Training Program Coordinator, auer Mull@marine.rutgers.edu

- Land Use Permitting Seminar Series for Municipal Officials – This state-wide seminar focused on the confusing world of land use regulations and permitting in New Jersey. These seminars focused on coastal and wetland regulations including the Coastal Area Facilities Review Act (CAFRA), fresh and coastal wetlands regulations, stream encroachment and waterfront development. These workshops were geared at municipal and use and zoning officials and construction code and building sub-code officials. Five regional seminars were held around the coastal areas of New Jersey.
- Stormwater Management Outreach in the Barnegat Bay Watershed - I have been working with a group of partners throughout the Barnegat Bay Watershed to provide assistance for the municipalities in stormwater management for things such as ordinance writing, stormwater management plan writing, public education and stormdrain labeling, to name a few. This stormwater outreach was part of a grant given to the Reserve and included six stormwater roundtables, funding for needs assessments, and evaluation. Topics have included: Regulation overview, Writing a Municipal Stormwater Management Plan, Writing a Pollution Prevention Program Plan, Q&A for Public Works Officials, Low Impact Design Guideline and Success Stories from Other Municipalities.
- Continuing Education Seminar Series for Municipal Officials - For three years the JCNERR has been co-sponsoring CTP workshops with Rutgers Office of Continuing and Professional Education. Subjects for these workshops included: Wastewater Disposal, Goose Management, Introduction to Wetlands, Freshwater Wetlands, Coastal Project Review, Introduction to GIS, Grant Writing and Funding, and Geographic Information Systems. This partnership works well for the JCNERR CTP because it was identified in our needs assessment that an incentive for participation in workshops was continuing education credits.

Narragansett Bay National Estuarine Research Reserve

2005 Education Program Report

Kim Botelho, Education Coordinator, kim@nbnerr.org

- **NBNERR NEWS**

We finally have a newsletter! NBNERR News was first printed in March of 2005 and included an introduction to the Reserve and our staff. We have had approximately 300 people sign up to receive our newsletter and have received many praises for this effort. We plan on printing 4 newsletters per year (3 this year) and will have it available on our website www.nbnerr.org. The first two newsletters are already available on-line. If you would like to sign up for it, please email me at: kim@nbnerr.org

- **2005 Tide Calendar**

It is a challenge to reach and educate our local community on Prudence Island and it is our hope that the newsletter will help us accomplish this goal. As an incentive to sign up for our newsletter, we offered a copy of the NBNERR 2005 Tide Calendar to islanders and frequent visitors to Prudence. The calendar included a description of NERRS, NBNERR, photos of NBNERR property, and tide charts from Tidelines Calendar company. It was overwhelmingly popular so we've decided to create a 2006 tide calendar which will be mailed out by the beginning of November. Again, if you are interested in a copy, please email me.

- **New Exhibits for 2005**

Because of our small community, each year we change many of our exhibits to keep them interested in returning. This years new art exhibits included oil paintings by Catherine Mamola of the Prudence Island School, lighthouse and coastal New England Scenes, photography by Lori Cubellis, Glen Miller, and Kim Botelho, and island sculptures by Allison Newsome. Other new exhibits included the PI Historical Society's journey through time on Prudence, Invasive Plants of Prudence Island, Ferns of Rhode and an eelgrass aquarium with current research and transplanting efforts in Rhode Island. We also added a cooper's hawk to our permanent exhibit area.

- **25th Anniversary Open House**

This year's open house which marks the beginning of our summer season was held on June 25th. This was the public's first opportunity to view our new exhibits. We offered hands-on activities, lunch, and a presentation by Joe Bains, our local historian. His presentation was based on our 2005 Historical Society exhibit and was enjoyed by all who attended.

- **3rd Annual Fishing Contest**

Among many programs offered throughout the summer, the fishing contest is by far the most popular event of the year on Prudence Island. Over 50 islanders of all ages participated and awards and trophies were given out.

- **4th Annual Celebration of National Estuaries Day at Mystic Aquarium**

For attendance, this was by far our most successful National Estuaries Day celebration with over 5000 people. We had local organizations such as Save The Bay, The Audubon Society of RI, and Sea Partners exhibiting, hands on activities throughout the aquarium, live hawk presentations, and EstuaryLive playing in one of the classrooms. Unfortunately, their marketing department scheduled Thomas the Tank Engine for the same day (which is a large part of the numbers) and I feel the message was lost and visitors were more interested in taking pictures with a train.

- **Tick presentations by local Experts: Part one: An introduction to ticks and their management**

This event was schedule due to a request from the public and we have decided to over a series of programs based on this topic. On September 30th, Dr. Sam Telford from Tufts University, Lori Gibson from the RI Division of Fish & Wildlife, Dr. Rob Deblinger from the MA Division of Fisheries & Wildlife, and Rick Lafeirre from the RI tick foundation presented at the Prudence Improvement Association on Prudence Island. We had 45 people attend which is a huge number of people for that time of year and on a weekday. We had a lot of positive feedback and have planned part 2 to focus on human health aspects of ticks and tick-borne diseases.

North Carolina National Estuarine Research Reserve

2005 Education Report

Doug Coker, Education Coordinator, doug.coker@ncmail.net

- **Beaufort Middle School Habitat Mapping**

An outreach project with Beaufort Middle School was piloted this fall that utilizes global positioning systems (GPS) units and ArcView's GIS software for mapping. The goal was to introduce students to the different technologies associated with habitat mapping. The students had a great experience on the Reserve and the resulting map that was generated outlined basic estuarine habitats and water lines.

- **North Carolina NERR's EstuaryLive Spring Broadcast**

An EstuaryLive series was held in partnership with the Albemarle-Pamlico National Estuary Program (APNEP) on May 3-5, 2005. In addition to general estuarine exploration, sessions were offered to address topics such as oysters (in conjunction with NC's Coastal Habitat Protection Plan), water quality, meteorology, coastal geology (including dredging and beach renourishment), blue crabs, decoy carving, and sand sculpting. During the final day of broadcasting, a sand sculpture of a sea horse was completed while the final sessions were going on. Partners presenting during this broadcast included Core Sound Decoy Museum, NC Coastal Federation, Duke University Marine Lab, NOAA's National Weather Service, and the NC Division of Coastal Management.

- **Students Measuring Water Quality**

A joint education effort with 5th graders from Beaufort Elementary and the Reserve on measuring water quality was held. Four classes of 5th graders spent several hours learning about water quality and how to measure it while in the classroom and then were taken out in the field to test waters adjacent to the Rachel Carson site. After completing the study, they went on a field trip to see the Rachel Carson site and learn the connections between the water and different estuarine habitats found on the Reserve.

- **Workshops**

The Rachel Carson site hosted workshops on Phytoplankton Monitoring (SE Phytoplankton Monitoring Network), Barrier Island Mammals (with the NC Wildlife Resources Commission), and a Project Design and Evaluation workshop (with NOAA's Coastal Services Center). Two professional teacher development workshops based on our curriculum guide *Coastal Explorations for the Class and Field* were also completed.

- **Student and Public Field Trips**

Field trips to the Rachel Carson site are a large part of our education program. This year the Reserve education staff led field trips for nearly 900 students over the course of 5 months. The Rachel Carson Interpretive Volunteers took approximately 200 visitors to the site for our summer public field trips. The public field trips consist of either a two-hour walking or boat trip with our volunteers leading the group.

North Carolina National Estuarine Research Reserve

2005 Coastal Training Program Report

Whitney Jenkins, Coastal Training Program Coordinator, whitney.jenkins@ncmail.net

- Funding Environmental Improvements in Your Community: Funding Agencies and Grantwriting Basics – December 2004

This two-day workshop introduced participants to various funding agencies that provide assistance to local communities to make environmental improvements that control stormwater runoff, improve local water quality and restore watersheds. Participants also learned what these agencies look for in a grant application and how to find other sources of funding. Day two was devoted to refining grant writing skills.

- Clean Marina Workshops – January 2005

The Clean Marina program is designed to show that marina operators can help safeguard the environment by using management and operations techniques that go above and beyond regulatory requirements. These workshops, conducted in partnership with the NC Divisions of Water Quality and Coastal Management, introduced marina operators to the Clean Marina program; the requirements of the Clean Marina designation; and why being a Clean Marina benefits marina owners, their clients and the environment.

- Stormwater Technology Fair – March 2005

As part of a greater project to control stormwater runoff and seawater system effluent on Pivers Island in Beaufort, NC, the NC National Estuarine Research Reserve, NC Division of Coastal Management, NOAA Center for Coastal Fisheries and Habitat Research, and Duke University Marine Lab hosted a stormwater technology fair. This fair highlighted innovative technologies and practices for controlling stormwater runoff. Various companies and engineering firms demonstrated their products or past projects. The fair was also broadcast over the Internet at www.CoastLive.org for those who were unable to attend in person.

- On-Site Wastewater Treatment and Disposal System Basics – March/April 2005

These workshops, for realtors, offers information on the significance of on-site wastewater systems, the treating and disposing of wastewater, and explain the several different types of systems. Participants will also learn how to communicate helpful tips relating to on-site system maintenance and awareness. Realtors earn four continuing education credits and they are offered in partnership with the North Carolina State Cooperative Extension.

- Small Dock and Pier Management Workshop – August 2005

This workshop introduced the small docks and piers training curriculum developed by NOAA's Office of Ocean and Coastal Resource Management to trainers and state regulatory staff. Topics covered included environmental issues of docks and piers; navigation and public access issues; and visual impacts of docks and piers. This training was held in conjunction with the NERR Southeast Regional Educator Meeting, and thus CTP coordinators from North Inlet-Winyah Bay, ACE Basin, GTM and Grand Bay were in attendance.

- Managing Visitor Use in Coastal and Marine Protected Areas – October 2005

This workshop, taught by NOAA's Coastal Services Center, provides an overview of the human dimensions of protected area management, offers examples of visitor use and associated impacts to natural resources and visitor experiences, and demonstrates applications to help managers address the people side of resource management.

- Promoting Sustainable Communities Using Smart Growth Principles – November/December 2005

The purpose of these workshops is to help coastal communities integrate smart growth principles into their land use practices. Incorporating smart growth principles will help coastal communities mitigate cumulative and secondary impacts on coastal resources and improve the built and environmental systems in our coastal region. This workshop discusses how smart growth principles are designed to slow sprawl and employ mixed land uses (i.e. retail and residential); create walkable neighborhoods; and preserve open space, farmland, natural resources and critical environmental areas. An overview of CAMA land use plans and a demonstration of the land suitability tool will be provided.

- Stormwater Management Education for Realtors – January/February 2006

These workshops will introduce realtors to the importance of stormwater management, the design of structural best management practices, and the principles of low impact development and better site design. Realtors earn four continuing education credits and they are offered in partnership with the North Carolina State Cooperative Extension.

- Green Building Workshop and Technology Fair – February 2006

This event was developed in coordination with the other Southeast Region Coastal Training Programs, and is a stab at regional collaboration. There will be two more similar events in South Carolina and Georgia, and we will advertise the three events together. The purpose of this two-day event is to introduce green building concepts and technologies to coastal communities. Regional case studies of green buildings will be highlighted, as well as the economics of green building, how to fund green building projects and incorporating green building into local codes.

North Inlet-Winyah Bay National Estuarine Research Reserve

2005 Education Program Report

Beth Thomas, Education Coordinator, beth@belle.baruch.sc.edu

Community Outreach Programs

'Meet the Reserve' Open House

- An opportunity to visit and explore the North Inlet-Winyah Bay National Estuarine Research Reserve (NERR) headquartered at the University of South Carolina's Baruch Marine Field Laboratory on Hobcaw Barony. The Open House event included a walking tour of the Reserve headquarters, salt marsh boardwalk and meteorological station, and water chemistry laboratories with overviews on current monitoring, resource management and education initiatives, as well as an opportunity to meet new Reserve core staff members (RC,SC). Free.

Bike to the Boardwalk

- Participants travel by bike on dirt roads through the forests of Hobcaw to the Reserve's salt marsh boardwalk on beautiful North Inlet. Meet Reserve staff in the Hobcaw Visitor Center parking lot and bike 2.5 miles each way to the boardwalk to experience a leisurely salt marsh exploration. Upland forest habitats, wildlife, salt marsh ecology and a variety of other topics are discussed during the trip. Bring your own bike (all terrain tires recommended), snack, water, and cameras and/or binoculars. Offered in spring and fall. Free.

Spring Marsh Sweep

- As part of the Keep America Beautiful 'Great American Cleanup', participants join Reserve staff for a salt marsh cleanup to help remove trash and debris from the high tide line along the marsh edge. Learn about resource management issues facing the Reserve and salt marsh ecology as we provide areas of North Inlet with a "spring cleaning". Old shoes or boots (suitable for walking in marsh mud) and old clothes recommended; bring snack and water if desired. Clean up materials will be provided. Free. Note: Reserve staff also participate in local cleanups throughout the year such as "Spring Tide" and SeaGrant's annual Beach/River Sweeps.

Special Research Focus Lecture: "Beach Vitex-Kudzu of the Coast"

- This special focus lecture was a joint Community/CTP event and featured updates on the invasive plant, Beach vitex (*Vitex rotundiflora*), including plant identification tips from the SC Native Plant Society, current findings from Clemson University researchers, and updates from the SC Beach Vitex Taskforce. This informal lunchtime lecture provided current information from local experts and Taskforce members to both concerned community citizens and local government officials. Free, with lunch provided courtesy of CTP.

The Fishes of North Inlet Estuary

- Participants assist with a long-term biological study of the nekton of North Inlet Estuary. This program includes a trip to a nearby creek to observe scientists as they take water measurements and collect a sample of fish, shrimp, and crabs. The catch is carried back to a seawater laboratory where everyone helps sort, identify and measure the sample. Old clothes and sneakers or boots are recommended. Be prepared for walking through marsh mud and along a narrow boardwalk, biting insects, and outdoor conditions. Bring a bag lunch or snack, if desired, and meet at the entrance to Hobcaw Barony promptly at the start time to travel by van to the sample site. Free. Note: This program is offered year-round and was

also offered during the annual SeaGrant-sponsored CoastWeeks event. It is also a popular program for high school field trips as a “hands-on” research opportunity.

Fall Marsh Stroll at High Tide

- Stroll along our salt marsh boardwalk to observe first-hand some unique high tide wonders. The estuary takes on a new and refreshing look during high tides as animals move over the marsh with the incoming waters. Learn what Baruch and Reserve scientists have discovered about the animals that use these productive coastal resources and call them home. Meet at the entrance to Hobcaw Barony to travel by van to the boardwalk; bring binoculars and cameras if desired. Free.

National Estuaries Day Open House

- As part of festivities for National Estuaries Day, the North Inlet-Winyah Bay National Estuarine Research Reserve hosted an open house at the Reserve headquarters located in the University of South Carolina’s Baruch Marine Field Laboratory on Hobcaw Barony. The Open House event included a walking tour of the Reserve and USC facilities, a salt marsh boardwalk exploration and visits to water chemistry and research laboratories. Free.

Tidal Creek Catches

- Participants visit a salt marsh creek to seine and sieve for a variety of fish, crustaceans, and mud-dwelling creatures. Learn about the importance of these nursery grounds and the various animals that make the creeks their home. This program takes place at the Baruch Marine Laboratory and a nearby tidal creek; be prepared for walking through marsh mud and biting insects. Old clothes and shoes are recommended; closed-toed shoes are a must for protection from oysters (no sandals or water shoes!). Free.

Beach Creatures

- Have a look at “life at the beach” and discover the unique creatures that inhabit the ocean and creek. We meet at the south parking lot at Pawley’s Island at the designated start time to explore the beach and creek environments on the south end with seines and other collection devices. Open to all ages (children under 10 must be accompanied by an adult). Free.

Carolina Crabbing

- Learn about the habits and biology of the blue crab while preparing them for the dinner table. This class features equipment and techniques for catching crabs, rules and regulations for harvesting from local waters, and tips for cleaning and preparing these tasty creatures, including a variety of recipes. Come prepared for a trip to the creek and to crack and eat some crabs at the end of the program. Cost: \$25 per person.

School Outreach Programs

SC Chamber of Commerce ‘High Performance Partnership’

- This grant-funded partnership initiated by State and Local Chambers of Commerce pairs targeted local schools with high poverty populations with community business partners (as “mentors”) to help raise student academic achievement. The NI-WB NERR, Clemson University’s Baruch Institute of Coastal Ecology & Forest Science, and the Baruch Foundation are sharing roles in the business partnership and are working with Pleasant Hill Elementary School in Georgetown County. A planning retreat with Chamber staff, the three business partners, and the school principal and teacher teams was held during the summer to prepare for the upcoming school year. A kick-off event hosted at the school and an on-site open house for teachers showcasing the business partners’ resources and introducing teachers to our personnel were both held at the beginning of the school year.

Field trips and school outreach programs have been planned for at least two grade levels for the 2005-2006 school calendar.

High School Water Quality Monitoring & the NERRS System Wide Monitoring Program

- This is an offshoot of the former NERRS “Estuary-Net” water quality monitoring program. The water quality background information (including curriculum), test kits, and classroom presentations were so successful in our local high schools that the NI-WB NERR has continued to offer these programs to local high schools in Georgetown, Horry, and Charleston Counties. Teachers have a chance to utilize a customized program based on their needs and requests. These can be conducted in the classroom and/or at the NERR, or at the location of their choice. The classroom presentations include information about the NERRS and the SWMP.

Middle & High School Field Trips

- The Reserve offers customized field trips for local middle and high school classes-especially classes in chemistry, biology, marine science, and environmental studies. These are offered throughout the school year and are limited to the classes mentioned; class size is also limited to no more than 30 per visit. These trips are free of charge.

North Inlet-Winyah Bay National Estuarine Research Reserve
2005 Coastal Training Program Report
Jeff Pollack, Coastal Training Program Coordinator, jpollack@sc.edu

*Hosted *Designing Constructed Wetlands Part II* – 11.10.04

This workshop-style training event was the second in a 2-part series that provided technical guidance for engineers, developers, and stormwater managers about the design of constructed wetlands for managing stormwater. Around 40 participants received detailed information about wetland ecology and hydrology, plant selection, acquisition, and maintenance. The event concluded with an afternoon case study and group design charrette.

*Co-hosted *Improving Stormwater Quality: Innovative Technology and Site Design* - 2.2.05

This workshop-style training event featured the Jordan Cove Urban Watershed Project, a paired development study in Connecticut that is a great platform for comparing economic, hydrologic, water quality, and social quality of life criteria between conventional and alternative modes of development in a coastal community. To complement the macro perspective of this case study, afternoon sessions included a structural BMP technology fair to showcase technical solutions to site-based stormwater quality challenges, including post-development retrofits. This high-profile event was attended by around 90 people and was well covered in the local media.

*Conducted, targeted watershed and stormwater training for the City of Conway Stormwater and Drainage Commission - 3.1.05

The City of Conway is a designated MS4 community in Horry County, SC and is the only urban center on the Waccamaw River. Conway's newly-formed Stormwater and Drainage Commission is comprised of citizens from different sectors, demographics, and educational backgrounds. The North Inlet-Winyah Bay CTP was asked to provide an introduction to watershed concepts, innovative stormwater management strategies, and the relationship between poorly planned development and water quality by citing local examples and incorporating local images.

*Co-hosted *Managing Visitor Use in Coastal and Marine Protected Areas*—4.18/19.05

This workshop, designed and facilitated by the NOAA Coastal Services Center, provided an overview of the human dimensions of protected area management by offering examples of visitor use and associated impacts to natural resources and visitor experiences. It was co-hosted by the ACE Basin, North Inlet-Winyah Bay, and Sapelo Island CTPs.

*Co- host *Beach Vitex Special Focus Lecture*—5.12.05

The North Inlet-Winyah Bay CTP and Community Education Program teamed up to host a special focus lecture on beach vitex, an invasive dune plant that is threatening dune habitats in the Southeastern US. This training session reviewed tips for distinguishing Beach Vitex from other common dune plants, include updates about the activities and progress of the Beach Vitex Task Force as well as project descriptions and updates from researchers who are working with Beach Vitex, and fostered discussion about possible impacts and management strategies for this invasive on SC beaches. Around 30 participants attended, including municipal and county officials, researchers, environmental interests, and members of the general public.

*Hosted *Mean High Water Surveying for Coastal Managers*—5.16.05

This workshop-style training provided a history and explanation of the Public Trust Doctrine and other legislation pertaining to mean high water determination. Attendees learned technical methods for accurately measuring tidal datums during afternoon field and case study sessions.

*Hosted *Pervious Concrete: Installation, Efficacy, and Economics*—8.17.05

Pervious Concrete—when properly installed and maintained—is an efficient, cost-effective, and underutilized tool for managing stormwater runoff. This training event provided around 80 decision makers—including engineers, architects, developers, stormwater managers, planners, and elected and appointed officials—with an introduction to pervious concrete, a summary of current research efforts, and installation details and case study illustrations from a successful contractor. An afternoon computer work session allowed attendees to experiment with two modeling tools, which are intended to help contractors anticipate the cost and stormwater storage capacity of pervious concrete for a given project.

*Facilitated pervious concrete coastal demonstration/ research sites; contributed to outreach/ education component of Sea Grant and NSF proposals

As a result of the workshop-style training detailed above, the CTP was able to help one researcher identify coastal sites for pervious concrete installation and research. If funded, these sites would also serve as local demonstration sites for further stormwater management training. The CTP is also facilitating the use of pervious concrete for an additional parking lot project and will be conducting the outreach portion of the demonstration project.

*Helped facilitate water quality monitoring proposal (Sea Grant) in association w/ Noisette Project in N. Charleston—Spring, 2005

The NI-WB CTP was pleased to contribute to the outreach and education components of a SC Sea Grant proposal to support water quality monitoring at an innovative re-development project in North Charleston, SC. After learning about the Noisette Project last February, I spent the spring trying to bolster interest among Charleston-area scientists to initiate a water quality monitoring program to gather data about the effectiveness of the innovative site design and stormwater management practices that distinguish the project. This re-development project has tremendous potential as a very compelling local demonstration project for incorporation into regional training events. In fact, the NI-WB CTP will be hosting a training event entitled *Coastal Development Alternatives: Case Studies of Innovative Site Design from the Lowcountry*, which will feature a case study of the Noisette Project. The adoption of this project by a University of South Carolina PhD student and the subsequent submission of a Sea Grant a full proposal is a case in which a CTP Coordinator's understanding of local decision makers' needs helped inform the research community of an opportunity to produce management-oriented data.

*Served as a core education provider in the Coastal Waccamaw Stormwater Education Consortium (CWSEC)

The North Inlet-Winyah Bay CTP is one of 4 co-founding, core education providers in the CWSEC—a pioneering regional collaboration between watershed education providers and stormwater managers. The CWSEC is designed to simultaneously help MS4 communities meet the education and outreach requirements of the EPA Phase II NPDES requirements while increasing the efficiency and impact of regional watershed-related education efforts. Over the last year, the CWSEC conducted an on-line needs assessment of participating stormwater managers, completed a regional education strategy and year 1 activity plan, and hosted a press event at which delegates from the participating MS4s publicly signed a resolution in support of regional stormwater education efforts. The NI-WB CTP hosts the web home for the Consortium:
http://northinlet.sc.edu/training/stormwater_education

*On-going work with the Georgetown County, SC Planning and Public Services staff to develop the County Stormwater Management Program

The CTP has been called upon with increasing frequency to serve as an informal consultant and information provider to Georgetown County staff as they develop and implement a Stormwater Management Program. The CTP has served a number of functions for the County:

- Worked with staff to plan demonstration stormwater management projects at county facilities
- Facilitated 3rd party review of key ordinances and regulations
- Chaired the County's Stormwater Advisory Committee and engaged in regular dialogue with contracted engineers as they reworked county ordinances

*Provided guidance in a program evaluation of the NI-WB CTP that was conducted by the Office of Program Evaluation at the University of South Carolina

June, 2005 marked the end of a contracted program evaluation of the North Inlet-Winyah Bay CTP that was conducted by the Office of Program Evaluation in the College of Education at the University of South Carolina. The CTP Coordinator and Reserve Manager were actively involved in all aspects of the evaluation process, from focus group selection and design to final report formulation, and we hope that our experience will prove useful to other members of the CTP community who are considering similar contracted program evaluations.

Old Woman Creek National Estuarine Research Reserve

2005 Education Report

Phoebe Van Zoest, Education Specialist, Phoebe.vanzoest@dnr.state.oh.us

1. Healthy Water Healthy People Teacher Workshops- The goal of Healthy Water, Healthy People is to make the complex concepts of water quality relevant and meaningful for teachers and students. These workshops will provide teachers the opportunity to participate in hands-on activities from the HWHP guide including activities on non-point source pollution, water chemistry, and aquatic biology. The lessons presented at this workshop will cover several Benchmarks and Indicators for the Ohio Academic Content Standards in Science; specific details will be sent to interested teachers.
2. Old Woman Creek Lecture Series – We’ve begun a lecture series focused on Old Woman Creek watershed. The general public is invited to attend and the programs move throughout the watershed. Our topics have included: Soils, People and Places (a historical look at the watershed.), Conservation of the Watershed.
3. Estuary Live Participation-
 - a. Getting to Know Estuary Live Teacher “Workshop” – These “workshops” are geared for teachers who may not be exceptionally comfortable with technology or may feel more comfortable becoming familiar with the website and the technology in a guided environment. Attendees are shown the estuaries.gov website and how to find information on the website, as well as looking at archived EstuaryLives. I have had very good response to these workshops the three years I’ve held them, with a total of 25 teachers in those three years.
 - b. Estuary Live Broadcast – I encouraged all the teachers I work with to view Estuary Live. I saw many names on the registrations and know that they asked questions as well. I feel that Estuary Live is an excellent resource for teachers in all parts of the country and will continue to advertise it as much as I can.
 - c. Estuary Live Public Event – Due to unfortunate circumstances, we were unable to hold the Public Event as we had wanted, but were able to set up in our Visitor Center. The attendance was not what I would have hoped, but I think the move had something to do with that.
4. General Program- The Old Woman Creek Staff has been very busy over the past 10 months with programming. Most of the programs are k-12, but we had a considerable rise in the number of College level programs, especially during the summer. Since January 1, 2005, the staff has presented 131 programs for 4700 people.
5. “Meet the Researcher” Day - We have planned a "Meet the Researcher Day" on Saturday, September 24th from 1pm-5pm. Many of the researchers currently doing work at Old Woman Creek will be available to answer questions about their work. This event drew 40-50 people and was very successful.

Old Woman Creek National Estuarine Research Reserve

2005 Coastal Training Program Report

Heather Elmer, Coastal Training Program Coordinator, heather.elmer@dnr.state.oh.us

- *GIS Training*
One week of NOAA Coastal Services Center GIS training attended by local soil and water conservation districts, extension staff, and other natural resource managers. Participants learned to create, edit, and work with georeferenced spatial data, manipulate tabular data, query a GIS database, produce maps, reports, and graphs. Advanced participants were able to build and synthesize their technical skills with Arc GIS software and familiarize themselves with topics such as metadata, map scale issues, and data formats. Small group discussions and hands-on problem-solving exercises afforded participants the opportunity to apply GIS technology to real-world coastal issues such as population growth, sensitive habitats, and marine protected areas.
- *Sustainable Design Roundtable*
The Ohio CTP facilitated a roundtable discussion on sustainable design for public use facilities. Former staff of Old Woman Creek NERR and the architect of the Reserve's recent visitor center and administrative facilities project shared their experiences, lessons learned, and interpretive value of employing sustainable design with planners and resource managers of a large Metropark system that is considering sustainable design for a future project.
- *Oil Spill Impacts in Freshwater Marshes and Streams*
Local natural resource managers, park rangers, state agencies, emergency management agency directors, and fire chiefs participated in two offerings of this workshop. Presented in partnership with a local park system and led by NOAA Office of Response and Restoration, U.S. EPA, and U.S. Coast Guard this training informed resource managers about the impacts of oil on freshwater marsh and stream ecosystems and demonstrated response options appropriate for these ecosystems. Workshops culminated in virtual response drill in which teams considered response options to a hypothetical spill in their watershed.
- *Social Assessment in Coastal Regions: Tools and Applications*
This two day pilot NOAA Coastal Services Center workshop provided an introduction to the process of social assessment and familiarized participants with the human ecosystem framework as an organizing concept in selecting social indicators for ecosystem management. The workshop features social assessment case studies of three NERRS watersheds and was attended by coastal and natural resource managers from state, federal and local natural resource agencies. Several attendees participated in a half day post workshop dialogue session which will inform on-going development of this human dimensions offering of the Coastal Services Center.
- *Effects and Control of the Invasive Reed, *Phragmites australis* in Lake Erie Coastal Wetlands*
Conservation organizations, local officials, natural resource managers, and state agencies attended this seminar focused on the natural history and ecosystem impacts of the invasive strain of *Phragmites australis* and control strategies to remove and/or minimize its spread. *Phragmites* has spread throughout significant portions of the Old Woman Creek estuary since 2000 due to low water levels.

In-Service Training Series for Ohio Coastal Management Program

The Ohio CTP provided seminars and field experiences for the Ohio Coastal Management Program to enhance knowledge of Lake Erie coastal ecosystems among staff.

- *Lake Erie Ecology*

An overview of Lake Erie ecology focused on history of and current stresses to the ecosystem including nutrient loading, climate change, sediment and toxic loading, and aquatic invasives. Participants measured indicators of Lake Erie water quality aboard a research vessel and collected plankton, benthos, and fish which they identified in a laboratory session.

- *Wetland Ecology*

An overview of wetland ecology, economic valuation of ecosystem services, federal and state legal protections, extent and consequences of wetland loss and large scale wetland restoration projects. In a tour of two intensively managed Lake Erie coastal wetlands participants were introduced to invasive wetland species and associated ecosystem impacts along with management measures employed to minimize these impacts.

Padilla Bay National Estuarine Research Reserve

2005 Education Report

Over 10,000 people attended classes at Padilla Bay Reserve this year. Most of these are school groups (K-12) but also includes families, teachers, college classes, Asian ESL students, home schools, and adult citizen volunteer monitors. Most of these programs are on site, include field experience (collecting and observing plants and animals on the beach and/or in the mud flats/eelgrass) and last 1 to 5 hours.

We did one teacher workshop this year bringing teachers together with regional science education providers (attended by 80 people). This was a need identified at our popular annual regional conference for environmental educators called “Storming The Sound. Storming The Sound attracted about 150 people because it’s affordable (\$5 donation) and only one day long. We offered substitute teacher reimbursement and provided continuing certification credits to attract teachers.

We again organized a family celebration on National Estuaries Day. We call it Puget Sound Kids Day and partner with a citizen environmental advocacy group called People For Puget Sound. It’s a great partnership and we attracted about 80 people for songs, crafts, science projects, face painting, and a jumpy house in the shape of a dolphin. I had to write a justification memo for the jumpy house because it was not considered a usual and customary purchase for normal state agency business.

That reminds me of our Poetry Workshop, also a mystery to state agency folks. We hire a poet to teach writing craft, provide field and lecture “inspiration” on estuary subjects, then collect and publish estuary poetry. Our Foundation now sells three volumes.

I’m still looking for money to fund a complete re-design of one of our exhibit rooms – the aquarium.

We received a grant for curriculum development that will fund teachers attending a two-week workshop about estuary science. They will create new curriculum for grades 4 to 6 that address our state educational standards.

Our education staff includes Susan Wood, Education Specialist (0.8 FTE), two full-time AmeriCorps Members, one part-time (0.4 FTE) high school specialist, Dave Henry, and me, Glen Alexander, Education Coordinator.

We’ll be doing the International Brant Monitoring Project again this year. This project keeps on going but doesn’t grow because we don’t have any money or do any marketing. We take students from a local middle school in small groups (4 at a time) to look for brant geese. They report their findings via the Internet to other interested citizens and wildlife managers in the flyway (Alaska to Mexico).

We had our Grand Opening on October 1 for new facilities including a laboratory, meeting room (holds 120 people), conference room (holds 20), offices, library, kitchens, bathrooms, and more to the tune of about \$4.5 Million.

Padilla Bay NERR

2005 Coastal Training Program Report

Cathy Angell, cangell@padillabay.gov

❖ Using the Revised WA State Wetland Rating System (8x)

This two-day intensive workshop provided wetland regulators and consultants with practical information and experience in using the newly revised rating system for wetlands in Washington State. It was specifically designed for those who would be using the rating system in the field and taught by wetland specialists from the Department of Ecology.

❖ Shoreline Management and Stabilization Using Vegetation (2x)

This one-day workshop provided shoreline planners with practical information regarding vegetation management and marine slope restoration techniques. Topics included the role of vegetation in stabilizing slopes and reducing erosion; evaluating slope stability using vegetational field indicators; how upland clearing or view pruning may adversely effect the shore, how low-impact development practices can reduce site impacts, how to mitigate unavoidable impacts using an integrated biostructural approach. A field trip was held in the afternoon. It was taught by a private consultant.

❖ How to Administer Development Permits in Washington's Shorelines (3x)

This practical, hands-on workshop was for local government personnel engaged in shoreline permitting activities. The class took an in-depth look at the permit process and considered both procedural and substantive shoreline management issues. Students were taken step-by-step through the review process for each type of shoreline permit. It was taught by a permit reviewer from Ecology, a city planner, and two county planners.

❖ Puget Sound Coastal Processes and Shoreline Stabilization Measures (1x)

This two-day class helped give shoreline planners a working knowledge of the physical processes that shape marine shorelines and how these shorelines can be impacted by development. The first day of the training covered basic coastal information, natural shoreline processes, bluff processes, and issues of human modifications. The second day focused on applications, including approaches to site evaluation, avoiding natural hazards, shoreline stabilization, and alternative methods of erosion control. It was taught by a private consultant and a geologist from Ecology.

❖ Protecting Aquatic Resources by Incorporating Landscape Principles into Land Use Plans (1x)

This class offered planners a step-by-step review of the methods described in the State's guidance document for protecting aquatic resources. Students learned to identify areas important to landscape processes, determine whether these environmental processes had been altered, determine compatible future land use patterns and development standards, and identify viable restoration opportunities. It was taught by two wetland specialists from the Department of Ecology.

Rookery Bay National Estuarine Research Reserve

2005 Education Program Report

Randy McCormick, Education Coordinator, randy.mccormick@dep.state.fl.us

This has been an extremely busy year for Rookery Bay. At this point, after completion of our first year of operation at our new Environmental Learning Center, I can safely say that it has been a very steep learning curve. The Education Team forged ahead with a variety of new programming and found learning opportunities at every curve. With an intense effort to clarify responsibilities, increase communication, build teamwork, and recruit new talent, we have ended up with some significant achievements. The formally articulated mission of the Rookery Bay Education Team is to deliver positive, rewarding experiences that increase awareness and understanding of the value of coastal ecosystems.

Formal Education Programs

Fourth grade Estuary Explorers Program – We conducted 37 of these field trip programs and 3 teacher trainings. A collaborative effort with our county school system, Estuary Explorers requires teachers to participate in a training session before their class will be allowed to participate. Pre- and post-trip activities in the classroom are an integral part of this program.

High School Marine and Environmental Science Field Trips – We did 27 of these boat-based field trip programs that include activities such as water quality analysis, trawling, oyster reef explorations, mangrove studies and barrier island ecology.

University and College Field Trip Programs – A total of 11 of these boat-based field study programs were delivered on a variety of topics including marine biology, environmental studies, ichthyology and oceanography. A significant increase in demand for these programs has already appeared in this new school year.

Total attendance for formal education programs in the past year was 2,780.

Non-formal Education Programs

Boat based field trips – 21 trips were provided to a wide variety of community groups, lifelong learning programs, scouts, volunteers, etc. The educational content of these trips includes an introduction to the flora and fauna of Rookery Bay Reserve and the ecological processes that influence the health of an estuary.

Florida Master Naturalist Program – We conducted a 6 day course on Coastal Systems as a part of this public education program administered through the University of Florida.

Community Education – A total of 21 programs (typically PowerPoint followed by discussion) were provided to various community groups. Attendance at presentations has ranged from 10 to over 100. The topic is usually an overview of Rookery Bay Reserve, who we are, what we do, and why community members should care.

Summer Camp Programs – Summer activities were provided for several local day camps. Campers spend a day at the Environmental Learning Center doing hands-on discovery activities, crafts and microscope explorations. This year we provided programs on a total of 13 days.

Natural Connections Guest Speaker Series – This presentation series is held in the evenings, once a month from November through April, and is open to the public. Topics have ranged from nature photography to cultural history to the world of bats.

Planet Earth Film Series – This is a series of films on the natural world that are offered for free on Saturday afternoons. When the weather is hot, this offers families an inexpensive air conditioned place to go and learn about a variety of natural history topics.

Activities and Events

Art Gallery Exhibitions – Rookery Bay, in partnership with our local United Arts Council, presents four art exhibitions per year. We provide the gallery space and opening receptions, while the UAC solicits entries, juries the show, and installs the artwork. Rookery Bay staff participates in theme selection. Opening receptions usually involve 50 to 100 visitors. In addition, we do at least one art exhibit per year in association with the art teachers at Collier County schools.

Southwest Florida Birding Festival – Created and hosted by Rookery Bay, this year's inaugural event now counts 13 different agencies and organizations as partners. Guided field trips, speaker presentations, films, and a host of family fun activities support the festival's mission: to stimulate people to appreciate, and motivate them to preserve, the rich bird life and bird habitats of southwest Florida. Approximately 300 people attended.

Southwest Florida History and Archeology Festival – This event highlights the cultural heritage of our region and acknowledges the human influence on this landscape over the last 2000 years. As stewards of this reserve, we are also stewards of its history, and this festival offered opportunities for the public to participate in a variety of hands-on living history experiences as well as listen to some of the best local experts in the fields of archeology and cultural anthropology. Approximately 700 people attended.

Dive Into Ocean Careers – Over a three day period of time this event offered an opportunity for middle and high school students, as well as the general public, to learn about the many career opportunities that are dependent on ocean and coastal resources. A 20,000 gallon pool was set up by the Dive Equipment Manufacturers Association and students were given the opportunity to try scuba equipment in a safe and structured environment. Other agency participants included Florida Fish and Wildlife Commission, environmental engineering firms, ecotour operators, fishing guides, etc. Over 800 people attended, including 16 busloads of students.

International Coastal Cleanup – Rookery Bay sponsored a total to 70 participants who came together to clean up trash and marine debris in various parts of the Reserve. This international program is administered by the Ocean Conservancy.

National Estuaries Day – A variety of hands-on activities, guided walks, kids activities, and interpretive programs were offered to the public. Approximately 200 people attended.

Visitor Services and Volunteer Program

In addition to the specific programs offered to various user groups discussed above, we have made substantial efforts to provide visitors to the Environmental Learning Center with a positive educational experience. This involves the development, installation and maintenance of interpretive exhibits, development of interpretive programs within the exhibit hall, operation of a nature store, stocking aquaria and feeding specimens, maintaining life support systems, creation of traveling exhibit materials, etc. We hosted a variety of workshops and meetings for Reserve staff as well as for

partner agencies. Meeting attendance for the year came to almost 5000 people. All these meetings require managing room reservations and facility rentals. Visitors in the front door came to an additional 10,500 people in the same period. In order to accomplish our mission we must rely on the help of volunteers, so successful recruitment, training and supervision of volunteers is crucial. The effective and efficient day to day management of a public visitor center has been a surprisingly challenging experience for our entire education staff.

Publicity, Marketing, Communications and Research Translation

The face that Rookery Bay presents to the public is primarily guided by the efforts of the Education Team. This involves the production of an endless stream of brochures, program guides, activity flyers, graphics, promotional materials, PowerPoint programs, banners, posters, newspaper articles, media releases, etc. We are also responsible when print or broadcast media representatives contact us for a story and require interviews or photo ops. The public relations component of our work is critical to our success. If the public does not understand what we are doing, or why it is important, then they are unlikely to support our efforts. We also realize that we cannot afford to be passive. Publicity and marketing can be effective educational tools that can dramatically impact our program, so we spend a considerable amount of time and money placing ourselves in the public eye.

Rookery Bay National Estuarine Research Reserve

2005 Coastal Training Program Report

Tabitha Whalen Stadler, Coordinator, tabitha.stadler@dep.state.fl.us

Joy Hazell, Training Specialist, joy.hazell@dep.state.fl.us



Gulf of Mexico Alliance

The Gulf of Mexico Alliance (www.gulfofmexicoalliance.org) is the Gulf States response to the U.S. Ocean Commission report and subsequently the US Ocean Action Plan released by the White House in December 2004. These reports noted certain ocean-related problems nationwide and among other solutions, called for an integrated management approach for the Gulf of Mexico, led by surrounding states.

On June 9, 2005 the state of Florida hosted the first Gulf Alliance meeting at Rookery Bay with planning and support from the Coastal Training Program and Education Departments. This meeting included representatives from eight federal agencies, five Gulf States, and also the Mayor of Naples and a Lee County Commissioner. The goals of the meeting included reviewing priority topics and identifying action items to be implemented at a Gulf Alliance Summit, now scheduled for March 2006.

Another key strategy of the Alliance is to engage and empower local communities so that final action items will be driven by, and useful to, the people on the ground. To meet this objective, a series of nine local stakeholder meetings are taking place in regions around the Gulf. The first community workshop was hosted by Rookery Bay on June 10th with 99 attendees from diverse government, academic, non-profit and business sectors. This series of workshops, facilitated by NOAA's Coastal Service Center, include identification and ranking of critical issues affecting the environmental and economic health of the Gulf of Mexico.

Rookery Bay's CTP Coordinator assisted in planning and facilitating several of the other nine planned workshops around the Gulf. Currently, plans are underway for a 2006 Gulf Alliance workshop series at Rookery Bay to meet the identified needs of local stakeholders.

Ecotour Operator Series

July, August and September marked the third annual Ecotour Operator Series. Workshops were held on the third Thursday of each month and a total of 97 participants attended the series. The target audiences include individuals or staff who lead the public in activities that combine walking, hiking, boating, fishing or driving with viewing or interaction with the environment. Attendees included naturalists and interpreters from government parks and refuges and also private sector business owners and staff who conduct tours for profit.

This year's theme focused on boosting business and stewardship. By all accounts the program was successful. Evaluations included comments such as, "Excellent job in new and innovative ways to present information" and "Fun, informative, learning experience...I found the sharing of ideas very worthwhile and loved the activities, I would very much like to use them in my position."

Evaluations were summarized with 98% of attendees affirming that the workshops enhanced their interpretive skills and encouraged stewardship. Attendees also reported that 94% were very satisfied with the content and 98% were very satisfied with the training delivery. Workshop titles included:

- Hands on Environment: Low-impact/low-cost strategies for increasing stewardship
- Coastal People Through History: A look at stewardship past and present
- Citizen Science: Turn your guests into visiting investigators

A key partner, contributing to the success of the program, was the Marine Industries Association of Collier County Foundation (MIACCF) that donated \$250. Participants that attended all three programs received a Rookery Bay and MIACCF-endorsed certificate. A total of 20 certificates were awarded.

American Red Cross Certification and Training

Meeting the training needs of a growing Reserve includes safety and hazard preparedness training. In 2005, Rookery Bay's CTP certified 17 staff members in American Red Cross CPR with AED for adults, infant and children. An additional 14 staff were certified in American Red Cross First Aid.

NERRS Annual Conference

Yes! We helped plan the conference. Give us a call if you ever have questions.

Sapelo Island National Estuarine Research Reserve

2005 Education Program Report

Brooke Vallaster, Education Coordinator, brooke@darientel.net

Children's & School Programs

"Ocean Floor and Coastal Mapping," is geared toward 5th and 6th grade students. This program introduces students to ocean exploration technologies, ocean floor topography and mapping. Students learn to use local and regional nautical charts as well as relief, contour and bathymetric maps to locate coastal and ocean floor features. The program is being promoted as an optional preliminary activity for classes scheduled to visit Sapelo Island.

Seastar Science Camp was organized by SECOSEE in partnership with Savannah State University and SINERR to work with children who live on Sapelo and/or whose families are from Sapelo Island. The two day camp featured the ecology and sea life of the Georgia coast.

Teacher Workshops

-Programs include: Coastal Ecology, Coastal Botany, Sea Turtle Conservation, Shorebirds

-Hired a local educator/naturalist to coordinate and lead several workshops

-SINERR also led programs for "Rivers to Reefs" (Gray's Reef NMS and Georgia Aquarium) and "Coastal Legacy" (SECOSEE).

-SINERR curriculum materials were provided to participants in two SECOSEE workshops and the UGA COASTLINES workshop.

-SINERR article on effective teacher training efforts was featured in Georgia Science Teachers Association (GSTA) newsletter.

Volunteers

In August, SINERR hosted the second "Ecology Camp" for members of the Friends of Sapelo organization. The two day program introduced participants to Sapelo's rich natural history and wildlife. Activities included a plankton and invertebrate lab, seining at Nannygoat Beach, a sea turtle walk to look for nesting activity, and an introduction to one of SINERR's ongoing research efforts.

Looking ahead...

-New website!

-2006 marks SINERR's 30th anniversary. Several projects are being planned including:

-commemorative posters, calendar

-writing contest for local schools

-lecture series highlighting ongoing research and the history of ecological research on Sapelo Island.

Sapelo Island National Estuarine Research Reserve

2005 Coastal Training Program Report

Suzanne VanParreren, CTP Coordinator, Suzanne_vanparreren@dnr.state.ga.us

January. Computer Training in partnership with the Georgia Department of Natural Resources and the Sapelo Island Cultural and Revitalization Society.

February. Ecotourism on the Georgia Coast Workshop in partnership with the GADNR, USFWS and the Gray's Reef National Marine Sanctuary
Oyster Roast for a Reason in partnership with the University of Georgia's Marine Extension Service – Shellfish lab and the Georgia Coastal Program.

March. Computer Training in partnership with the Georgia Department of Natural Resources and the Sapelo Island Cultural and Revitalization Society.

April. Coastal GIS meeting in partnership with University of Georgia's Marine Extension Service.

Managing Visitor Use Impact Workshop in partnership with the ACE Basin and North-Inlet Winyah Bay Reserves. Held in Charleston at the ACE Basin Reserve.

May. Hiring of a per diem assistant to assist with website maintenance, workshop logistics, office management and program support.

Partnered with the Adopt-A-Wetland program to help promote their program and assist with distribution and availability of the information. The program is also continuing to support the ESRI regional meetings and seminars.

June. The summer months were spent working on the management plan.

July. Attended the Coastal Zone 05 conference from which the Darien Master plan and Growth Readiness workshop was instigated. The workshop to help Darien develop and implement a master plan as part of an effort to prepare the community for growth will take place on January 18th.

August. Regional Meeting with NC Reserve, North-Inlet Winyah Bay, GTM and Weeks Bay Reserve. During the meeting guidance was provided on how to use the database and information was shared on how to provide continuous support and guidance for the regional support on a long term basis.

September. Coastal GIS meeting in partnership with University of Georgia's Marine Extension Service.

October. Presenting at the Estuarine Research Federation Conference to be part of the Science to Management sessions. The programs present included social scientists, NOAA's ERD section and three CTP coordinators.

Upcoming Workshops:

Marine Mammal Seminar

Visitor Use Impact

Growth Readiness Workshop

Diamondback Terrapins of Georgia

Sustainable Building

South Slough National Estuarine Research Reserve

2005 Education Report

Tom Gaskill, Education Program Coordinator, tom.gaskill@state.or.us

The past year has been a period of growth and development for the education program at the Reserve. New partnerships and the addition of new staff resources and volunteers have afforded excellent opportunities to advance the South Slough NERR mission by offering a robust and diverse program of educational activities. In particular, an increased number of well planned and executed interpretive activities on Saturdays have attracted new visitors to the Reserve and expanded community awareness of South Slough.

Refinements in the systems used to develop, design, track, publicize and evaluate activities were further informed through training conducted by the NOAA - Coastal Services Center and co-sponsored by South Slough NERR and the Jackson Bottom Wetlands Preserve in Hillsboro, Oregon. The Project Design and Evaluation Workshop, held in mid-February, was attended by the Education Program Specialist, Public Involvement Coordinator, and the Education Program Coordinator. Audience needs assessment was a major focus of the curriculum and will be incorporated more comprehensively into future program development.

FORMAL EDUCATION ON-SITE AND OUTREACH ACTIVITIES

During the period from November 2004 to the end of August, 2005, South Slough offered 66 formal education programs providing over 223 contact hours for approximately 2262 students. Preparation time for these programs varies dramatically and has been more difficult to track, however 180 hours of prep time were reported for the period covered by this report.

Programs during this period focused mostly on elementary school and high school students. Programs were also offered for adults and college age students. Schools using the MARE (Marine Activity and Resource Education) program curriculum have begun using the classroom at the Reserve to deliver classes with instruction from educators being trained at the Oregon Institute of Marine Biology. Additionally, Reserve staff offered programs for schools participating in MARE.

The two weeks of South Slough Summer Science camp were well attended and parents participated during the week and on the final evening barbeque and sleepover event at the Interpretive Center. Evaluations have been positive and have offered some excellent suggestions for incorporation into next year's camps.

Curriculum revision and the Education Advisory Group

In June, an education advisory group made up primarily of informal science educators from the Oregon coast and Eugene met to learn about South Slough's programs and discuss opportunities and direction. The full day meeting was extremely productive in helping to define some of the challenges faced by staff in addressing a large and open ended audience.

This is the first meeting of a group specifically focused on advising the aspects of the education program working with schools and the revision of the curriculum being offered to those schools. While this topic was not the sole focus of the meeting, some excellent perspectives were offered that will inform the development of new curriculum and the refinement of existing resources.

Work continues on the curriculum revision project and draft materials will be field tested in October. Several educators on the advisory group have offered to review the materials as they are developed. This work will be aided by the addition of a new Americorps volunteer and a temporary education assistant sometime in the fall.

Tsunami Awareness Workshop

South Slough continues to coordinate a planning group for a workshop titled “The Earthquake/Tsunami Connection: A Matter of Life and Death” to be held October 8th, 2005 on the campus of Southwestern Oregon Community College at the Performing Arts Center. Currently, over 400 participants are signed up for this workshop. (see CTP report for additional information.)

INTERPRETIVE ACTIVITIES

During this period, 117 interpretive programs were offered as a part of the Spring and Summer Activity Calendars serving a total of 3172 participants with 221.5 hours of total contact time. Programs included lectures, hands-on workshops, public fairs, paddling trips, guided hikes, toddler programs, arts and crafts activities, and two non-residential summer science camps. Also included in these programs was a “Focus on Research” lecture series designed to highlight the new information being discovered through the work of investigators using the South Slough NERR as a field site.

The public fairs were by far the largest events and may be the most effective outreach mechanism available to the Reserve for reaching a broad community audience with information about estuaries and what South Slough is. Education staff has been discussing the potential ways to foster more volunteer involvement and provide training to assist in the delivery of information and education at these events.

INTERNSHIPS

Northwest Service Academy AmeriCorps Position

A new Americorps volunteer through the individual placement program of the Northwest Service Academy will begin service on October 3rd, 2005 and will continue through August, 2006. This individual will join a team of professional, experienced educators working with a variety of audiences ranging from toddlers to elders. The project will focus on three primary goals:

- 1) implementation of outreach activities centered around migratory and local bird use of the estuary including implementation of the International Brant Goose Monitoring Project;
- 2) development and delivery of interpretive activities and visitor services for public audiences primarily on Saturdays and weekends at the South Slough Interpretive Center and;
- 3) assisting with on-site delivery of local and visiting k-12 school programs through classroom and field-based activities related to estuary themes using established and new curriculum.

The Education Outreach Specialist will build on the outreach work started during the 2004-2005 period. In particular, an increased level of community involvement has been observed through well planned and executed weekend interpretive programs and school interactions. Further work on this effort and strategy will serve the educational objectives of South Slough NERR and foster greater support for the mission of the Reserve.

The conclusion of the project will be the delivery of a set of final outreach strategy defining activities and products, as well as, a strategy for continuation of the Brant project for inclusion in the educational program offerings of the Reserve.

South coast science educator's forum

A recent informal poll of local high school and middle school science teachers by the Reserve has identified a strong interest in resurrecting a forum to facilitate communication and provide enrichment on topics of interest. South Slough has offered to host an initial meeting of the group at the Interpretive Center to discuss future plans for the forum and seek potential sources of funding. Additionally, the staff has offered assistance with recruitment of speakers and use of equipment and facilities.

South Slough National Estuarine Research Reserve

2005 Coastal Training Program Report

John Bragg, Coastal Training Program, Coordinator: john.bragg@state.or.us

The South Slough NERR Coastal Training Program provides training, outreach and information to coastal decision makers related to six priority topics, including marine protected areas, invasive species, water quality, habitat restoration, coastal hazards, and visitor impacts.

2005 activities include, in no particular order:

- Master Watershed Stewards Program [Priority topics: habitat restoration, invasive species, water quality] Target audience: Landowners, watershed association members

In cooperation with Oregon State University (OSU) Extension Service and local watershed associations, South Slough hosted a four month watershed training program developed by OSU. Topics: salmonid biology; watershed and stream processes; soils, erosion and conservation; creating successful groups; riparian management; water quality monitoring; wetland evaluation and enhancement; stream assessment and restoration. South Slough provided tuition benefits for training materials and hosted a field trip on the reserve. Stewardship Coordinator Craig Cornu and CTP Coordinator John Bragg served on the MWS advisory committee. Cornu taught one class and co-led a field trip.

Decision makers trained: 20¹

- Winchester Tidelands Restoration Project (WTRP) Case Histories [Priority topic: habitat restoration] Target audience: Watershed associations, Oregon Legislature Coastal Caucus; Oregon Fish and Wildlife Management Commission; Oregon Coastal Program commission and staff; Oregon Parks and Recreation Commission; CTP Advisory Group, WTRP Advisory Group; ERD staff and CTP coordinators; Pacific Estuarine Research Society; landowners and consultants associated with regional restoration and mitigation projects; Master Watershed Stewards program participants; post-secondary students.

South Slough published comprehensive case studies of restoration projects in South Slough (*Restoring Kunz Marsh, a case history addressing marsh surface subsidence*; *Restoring Cox, Dalton & Fredrickson Creek Marshes, a case history addressing different methods for restoring, constructing and enhancing tidal channels*; and *Restoring Anderson Creek, a case history addressing methods for constructing a complex, non-tidal stream channel*). Posted on South Slough Reserve's website.

Decision makers trained: ~281²

- Spartina identification project [Priority topic: invasive species] Target audience: Restoration professionals, watershed associations, Oregon Department of Agriculture staff

CTP participated in planning for a survey of invasive *Spartina* cordgrass in the Coos estuary. Exotic vegetation found growing in the South Slough, originally thought to be *Phragmites*, was positively

¹ The program, developed by Oregon State University Extension, provides watershed restoration education for landowners, professionals, and others. Graduates may become master watershed stewards by completing an approved, 40-hour habitat restoration project applying lessons learned during the course.

² The figure is a count of the members of each organization listed who have received copies as a result of a mailing or participation in a workshop, seminar or other event. 27 coastal watershed councils each received 3 sets of the papers for use and distribution among their members; several requested additional copies. Assuming that some copies will be read by, and provide training for, more than one individual, the actual number of individuals benefiting from the training provided by the series could be higher than this estimate.

identified as *Spartina* through DNA analysis this summer. Staff cooperated with Vanessa Howard, research assistant at the Center for Lakes & Reservoirs, Portland State University, to develop a plan for conducting ground and aerial surveys for additional *Spartina* clones in the Coos estuary, with the expectation of hosting a *Spartina* identification workshop for watershed associations. However, the initial aerial survey indicated the infestation was limited to the previously-identified clones. South Slough NERR will continue to monitor and control the infested site. CTP will stand ready to develop the identification workshop if additional clones are discovered in the bioregion.

Decision makers trained: 7

- Coos Hydrodynamic Model Development [Priority topics: invasive species, water quality, habitat restoration, coastal hazards, visitor impacts] Target audience: Port officials, marina operators, watershed association, state natural resource agency staff, marine vessel operators, oyster growers, emergency services

CTP facilitated a workshop to develop the Coos Bay hydrodynamic model in cooperation with NOAA; developing and administering a stakeholder needs assessment and organizing a three-day workshop for modeling specialists to interact with stakeholders to refine modeling needs. CTP will continue to be involved with this project as it moves from an information-gathering mode to model development and implementation.

Decision makers trained: TBD³

- The Earthquake-Tsunami Connection (Priority topic: coastal hazards) (Target audience: home and business owners, emergency services and first-responders, tourism operators, ports, marinas, elected officials (local, county, state))

In response to the December, 2004 Indian Ocean tsunami, CTP participated in planning and development of a tsunami readiness workshop held Oct. 8 and facilitated the workshop. The workshop provided individuals, businesses and decision makers with critical information and training to survive the immediate impacts of a major tsunami expected to strike the Oregon coast. The workshop constitutes the first step in developing tsunami-ready community status for communities around Coos Bay.

Decision makers trained: ~500

- Coos Watershed Association's Lowlands Assessment Project [Priority topic: restoration] Target audience: Agricultural landowners

For the past year, CTP has participated on the advisory committee for the Coos Watershed Association's Lowlands Assessment, the intent of which is to understand stakeholders' concerns and needs concerning the development of a watershed restoration plan for the lower Coos Bay watershed (primarily agricultural lands below tide gates). This year the association conducted a series of coffee klatches to learn landowners' concerns.

Decision makers trained: 78

- Bitung and Sangihe, Indonesia, Exchange [Priority topics: marine protected areas, restoration] Target audience: Representatives of the cities of Bitung and Sangihe, and the

³ TBD: To be determined. South Slough CTP provides planning, development or support functions for numerous activities related to training that are not easily captured in statistics of decision makers trained. For instance, the development of the tsunami workshop required numerous hours (involving up to three South Slough staff members) over an eight-month period. Staff worked with a planning group of about 20 local decision makers to plan and prepare the workshop; however, the target audience is very broad. In part this reflects the rural nature of the bioregion. Given the priority topic (coastal hazards), any resident who lives, works or recreates in the tsunami inundation zone is a *de facto* decision maker whose choices will affect lives and resources.

Port of Bitung, Sulawesi, Indonesia (sponsored by the US Aid to International Development Building Institutes of Good Government program); local government and port officials

Over the past four years leaders of the City of Coos Bay and the Oregon International Port of Coos Bay have hosted an exchange program with Indonesian city and regional government and port officials to explore a number of topics related to coastal development including a marine protected area in the Lembeh Strait near the city of Bitung; managing visitor impacts; non-point source pollution management; water quality and habitat restoration. During a visit to Coos Bay early this year, South Slough's CTP and research coordinators made presentations to the exchange group. The CTP presentation provided a blueprint of how CTP is organized and carried out at National Estuarine Research Reserves, with emphasis on the role of market analyses and needs assessments in developing decision maker training. This visit was followed by a trip this summer to Bitung by South Slough manager Mike Graybill, to evaluate the potential, and develop recommendations for creating marine protected areas in and around the commercial port of Bitung. In August, the Indonesian group made a final visit to Coos Bay to continue the discussion of developing an MPA, managing non-point source pollution, and tour port operations in Coos Bay and Portland (a city and port roughly the size of Bitung's) and tour restoration projects in the South Slough. Decision makers trained: ~35 (over the course of the 4-year exchange, including local and international participants)

- Coos Regional Trails Partnership (CRTP) – Healthy Hikes Initiative [Priority topic: visitor impacts] Target audience: Federal, state and county public land management agencies and officials, recreation and tourism businesses, health-care industry, city and county elected officials

To address this priority topic, CTP works closely with the CRTP to develop initiatives to assist public land agencies manage visitor impacts. One initiative is the Healthy Hiking partnership with the Bay Area Hospital and Women's Health Coalition. Hikes provide three primary benefits: Participants enjoy healthy outdoor exercise on public lands in a safe group setting; public agency partners (staff and volunteers) lead the monthly hikes, which provide them with opportunities for natural interpretation and to explain land management policies, practices and rationale, and the hospital provides publicity, financial support and health care education through staff involvement. For example, on a recent hike in South Slough NERR, 17 participants spent a Saturday morning hiking through restored marsh and stream habitat, guided by the CTP, public involvement and stewardship coordinators. In response to their questions, participants received training in basic watershed restoration principles, salmon biology, stream ecology, invasive species management, visitor impacts, and other topics besides.

Decision makers trained: 226 (community members); 29 (CRTP)

- IOOS-NANOOS-Coos Hydrodynamic Model Needs Assessment Workshop (Priority topics: invasive species, water quality, habitat restoration, coastal hazards, visitor impacts] Target audience: Port officials, marina operators, watershed association, state natural resource agency staff, marine vessel operators, oyster growers, emergency services

In May South Slough NERR held a one-day needs assessment workshop, facilitated by Research Coordinator Steve Rumrill, to identify issues of concern among local stakeholders for consideration in development of the Integrated Ocean Observing System (IOOS) and the Northwest Association of Networked Ocean Observing Systems (NANOOS). Because of the similarity of issues involved, the workshop provided an opportunity to identify issues of concern for consideration in developing the Coos Bay Hydrodynamic Model (see above).

Decision-makers trained: TBD

- Restoration Advisory Group Meeting for Big Trees Project; Restoration Science Information Sharing and Discussion [Priority topic: habitat restoration] Target audience: Restoration professionals

In 2005 South Slough NERR convened the restoration advisory group to present the reserve's plan for placement of large wood (big trees) in tidal channels to improve habitat complexity. The meeting provided an opportunity for staff to describe the project, explain its anticipated benefits, and receive professional evaluation of the proposal.

Decision makers trained: TBD

Tijuana River National Estuarine Research Reserve

2005 Education Program Report

Anne Marie Tipton, Education Coordinator, amtipton@parks.ca.gov

- After an almost 18 month creative process, in Spring of 2005 we turned in copies of the Tijuana Estuary High School Teachers' Guide to the grantors, the National Park Service's National Natural Landmark Program. It is the only high school-level estuarine science field-based curriculum in the county! Education staff and the writers worked diligently to create this interdisciplinary curriculum. Marya Ahmad spent the good part of a month formatting the almost 200 page document in Quark. It is on the website under Education and Outreach.
- Education Coordinator Tipton was appointed the U.S. Chair of the Environmental Education Council of the Californias (EECC) steering committee which also serves as the Environmental Education Taskforce for Border 2012 for this region. She attended the National Coordinators meeting in Tucson, AZ on behalf of the taskforce.
- The Habitat Heroes Field Trips took place in January and February. Education staff led the field trips for the students. Habitat Heroes focuses on invasive plants and restoration. Over 200 3-6th graders came to participate in Tijuana Estuary Explorers activities.
- Tijuana Estuary staff coordinated the San Diego Coast District State Parks activities in the special e-community watershed area at Earth Fair in Balboa Park May 1st. This event is one of the largest of its type on the west coast. Our popular activities focused on fish and the importance of maintaining healthy slopes for good water quality.
- Coast Alive teacher training was held in the Visitor Center February and March. Coast Alive is a joint program of California State Parks and the California Institute for Biodiversity. It is a technology based curriculum. This program is for upper-elementary and middle school. Anne Marie attended one of the trainings.
- International Migratory Bird Day took place May 14th at the visitor center outside in the amphitheater and in the A/V room. Great attendance thanks to our membership in the San Diego Museum Council and the KPBS co-op advertising! Nicole Perretta amazed us with her bird calls. Nancy Conney from Sky Hunters, a raptor rehabilitation organization, educated the audience with her raptors. Kids participated in crafts and played the migration game.
- TRNERR Junior Rangers collaborated with students at Hudson River NERR. TRNERR collaborated with Hudson River NERR in an activity called House of Seasons. The Jr. Rangers used pictures to represent the different seasons at the estuary/Imperial Beach and incorporated them in a house made of construction paper. The students at Hudson River did the same. The houses were then sent to the opposite reserve so comparisons could be made and the houses will go on display at the visitor center (TRNERR) and the town hall (Hudson River) for the public to see.
- We had the second annual Fiesta del Río October 8, 2005 at noon at Imperial Beach Pier Plaza. Unfortunately, the event was not bi-national this year due to lack of funds. This year we are celebrated the Tijuana Slough Refuge's 25th Anniversary with this FREE event for the whole family. Attendees re-discovered their *California*/Californian pride as they experience the live stories, music, dance, and drama of the peoples that lived near the Tijuana River Estuary since pre-historic times. Children's activities include games and crafts. Folks experienced local students adorable *Go Fish!* play and special guest Dr. Zoolittle!

- The education staff, especially the education coordinator, has been spending a good deal of time helping to coordinate the exhibit repairs and visitor center sustainable design renovations. We hired a museum store consultant and an interior designer that specializes in sustainable materials. We now have one of the most stylish State Park facilities in Southern California! Our new gift store is gorgeous.

Tijuana River National Estuarine Research Reserve

2005 Coastal Training Program Report

Oscar Romo, Coastal Training Program Coordinator, oromo@parks.ca.gov

- Interpretive Watershed Tours

CTP Coordinator conducts interpretive tours of our Reserve and surrounding areas within the Tijuana River Watershed, a minimum of twice a month, for select decision-makers in our bioregion. Tour participants come from local, state, federal, and non-governmental agencies, academia and business, from both sides of the border. Highlights include tours for the Council on Foundations, NOAA Coastal Storms Program, SCWRP, Rosario Marin and Cal EPA staff.

- Visit by Mayor Hank of Tijuana

On March 3, 2005 we warmly welcomed the newly elected Mayor of Tijuana, Jorge Hank Rhon, on his first official visit to the TRNERR. Members of the 18th Tijuana City Council and staff from the mayor's new administration were also in attendance. This event was an opportunity to facilitate a chance for the Mayor and his staff to tour and become familiar with the Reserve, express support for existing joint environmental projects in Mexico, and to attend an official meeting of the TRNERR Management Authority.

- CalCoast Legislative Day

On April 5th and 6th, CTP Coordinator was in Sacramento for Legislative Day. The annual Capitol Symposium, organized by CalCoast, the Southern California Wetlands Recovery Project and the California Watershed Network was held this year in Sacramento. The CTP presence at the event was quite productive, as we discussed priority issues such as stormwater management, sedimentation, and the proposed border triple fence. CTP Coordinator was able to meet with various elected officials including Senator Ducheny, Senator Kehoe, Assemblymember Saldana and an aide of Assemblymember Vargas.

- Cal EPA Town Hall Meeting

CTP Coordinator was officially invited on April 14th, to attend and participate in a Cal EPA town hall meeting to discuss regional environmental issues with Dr. Allan Lloyd, newly appointed Cal EPA Agency Secretary. The CTP Coordinator was also able to meet with several other high level decision-makers, such as Rosario Marin, Chair of Integrated Waste Management for the Cal EPA, who subsequently agreed to visit our Reserve on July 21st. This event also assisted us in facilitating a future visit from Dr. Lloyd on December 14th.

- RAMSAR Workshops

On April 22nd, the TRNERR celebrated our official RAMSAR designation. To complement this event, CTP helped plan and coordinate several day workshops between officials from RAMSAR, City of Imperial Beach, City of Tijuana, *SEMARNAT*, USFWS, State of Baja California, State Parks, *Pronatura*, and ICF. During the workshops and panels, discussion was held regarding the possible benefits and future opportunities for the Reserve with this new designation, as well as the designation of new RAMSAR sites within our bioregion.

- E-Community at Earth Fair

On May 1st, CTP hosted our own booth for the Earth Fair at Balboa Park. The event was a great success, as over 60,000 people made the visit to the park to learn about the environment and to celebrate our Earth. As part of the interactive “e-community” we were able to provide attendees outreach materials, such as cd-roms, pamphlets, and also displayed two 3-D solid terrain models borrowed from our partners at the UCSD Regional Workbench Consortium.

- San Diego Coastal Ocean Observation System (SDCOOS) Workshop

On June 1st, in partnership with Wildcoast and San Diego Baykeeper, CTP coordinated a roundtable discussion with the Scripps Institute of Oceanography regarding the use of data being collected by Scripps’ San Diego Coastal Ocean Observing System. The event had a large turnout, where there was discussion about lessons learned from the SDCOOS project in Imperial Beach and at the U.S.-Mexico Border, and possible future directions for use of project-related information.

- UN Health and Environment Fair

On June 3rd, CTP hosted a booth at the Tijuana City Hall for the UN Health and Environmental Fair. The event went fabulously, as over 50,000 people made the visit to Tijuana to learn about the environment, conservation, sustainability, and to celebrate our Earth. The CTP booth received hundreds of visits, where we offered brochures, cd-roms, posters and also presented two large 3-D models borrowed from our partner the Regional Workbench Consortium at UCSD. CTP Coordinator also was given the opportunity to address the entire audience, where he spoke about the importance of our Reserve and sustainability of the border region.

- Los Laureles Canyon Health Fair

On June 4th, a Health Fair was conducted in Los Laureles Canyon. The CTP was instrumental in the planning, contacts, and logistics for this event. The day allowed medical professionals to visit Los Laureles and provide haircuts, vaccinations, medical consultation, and to neuter and spay animals. The day also allowed residents to receive a low cost food basket in return for their participation in at least three thirty to forty-five minute workshops. These workshops were related to issues such as recycling, waste management, dry latrines, watershed management, water pollution, family farms, non-toxic insecticides, and native plants, and were conducted by professionals from various sectors in Mexico.

- 20th Forum Fronterizo for San Diego Dialogue

On July 11th, CTP Coordinator was invited to participate in the 20th *Forum Fronterizo* for San Diego Dialogue. The meeting/roundtable discussion was focused on crossborder challenges and opportunities, alternative models for organizing and staffing the Dialogue, and pursuing renewed support for the activities of the Dialogue and its partners. While the meeting was largely a success, CTP drafted a follow-up letter to express some concerns in relation to the development strategies being promoted by the San Diego Dialogue.

- UCSD Institute of Americas - Scientific Journalist Visit

On July 12th, in partnership with our Research Coordinator, we received a visit from over thirty scientific journalists working with the Institute of Americas at UCSD. Building upon the success of last years similar event, the journalists came to take a tour of our area, learn more about the Reserve and its relationship with Mexico, and the different research and science based endeavors taking place

in our region. The journalists that came represented over 20 countries throughout North and South America.

- Rosario Marin Visit

On July 21, CTP facilitated a visit by Rosario Marin, Chair Integrated Waste Management for the Cal EPA, and other Cal EPA staff. Ms. Marin, former Treasurer of the United States from 2001 to 2003, visited us to view, discuss and learn more about regional waste management concerns significant to the TRNERR. This included our long standing and increasing binational concerns, such as the flow of trash and tires coming into our Reserve from Mexico. The CTP is now hopeful of future waste management projects in partnership with Cal EPA.

- 25th Annual ESRI International User Conference

From July 25th through July 29th, the CTP helped manage and host a booth at the 25th annual ESRI International User Conference. In partnership with our friends the UCSD Regional Workbench Consortium (RWBC), this conference was dedicated to looking for new and better ways to implement GIS technology, affording us the opportunity to showcase our partner's solutions and services, but also to increase awareness of our own program and projects, and to direct our key messages and announcements to the entire ESRI community.

- Urban Rivers and Pervious Surfaces Workshop

On August 18th, a workshop was held for various officials and agencies within the city of Tijuana. The workshop provided training for Mexican decision-makers on adverse effects of the concrete channelization of rivers, creeks, and streams, as well as the importance and benefits, both ecological, social, and economical, of urban river parks and river restoration. At this event, Secretary of Urban Development for Tijuana expressed a new and progressive policy approach in that "concrete channels are a thing of the past for Tijuana", and that the city is now in the process of drafting a specific city ordinance related to these issues.

- California State Assembly Hearing on Bajagua Project

On August 19th, Assemblymember Lori Saldana officially invited CTP Coordinator to participate as a panelist in a California State Assembly hearing regarding the protection of San Diego's coastal waters from bi-national sewage discharges. The invitation is a good example of the way that our CTP is now viewed in the region, as elected officials call upon us for recommendations and expertise in their binational and local negotiations. The goal of the hearing was to discuss the proposed Bajagua project for the International Wastewater Treatment Plant in San Diego.

- TRNERR MA Meeting in Tijuana, Mexico

On September 1, for the first time in twenty-five years, the TRNERR MA meeting was held in Tijuana, Mexico. The meeting follows up on an invitation received by the TRNERR from the Mayor's office in Tijuana, and builds off of the prior '03 additions of the Mayor's of Tijuana and Tecate, Mexico to the MA. This was the first ever MA meeting to be held south of the border, and a major step in securing a mutually beneficial working relationship for both sides of the border.

- 2005 WRPPN Conference

From September 28 – 30, CTP Coordinator was invited to attend and present at the Western Regional Pollution Prevention Conference in South Lake Tahoe, CA. CTP received this invite from our partner at the County of San Diego Department of Environmental Health. The CTP Coordinator was able to meet with several decision-makers from all levels to discuss pollution prevention case studies, approaches, and strategies. One of the more highly attended and a lively discussion, the CTP presentation was dedicated to binational pollution prevention within the Tijuana River Watershed.

- AM 1270 XEAS Monthly Radio Interviews

Beginning last August, CTP Coordinator will now be presenting ideas and information on the CTP, TRNERR, and other important Reserve matters, the first Monday of every month with a reporter on AM 1270 XEAS. This allows our program to reach a wider audience, and will help raise understanding and awareness of priority issues. For example, this next months program will be dedicated to pollution prevention challenges within the Tijuana River Watershed, and the Los Laureles Canyon project.

- December 18th Visit by Allan Lloyd- Agency Secretary, Cal EPA

On December 18th, we will be receiving a visit from Allan Lloyd, Agency Secretary for the Cal EPA, among other staff. This is a major accomplishment for our program, as we have facilitated a visit from another high level decision-maker that has the ability to directly impact our Reserve. Dr. Lloyd will be touring our Reserve, as well as the cities of Tijuana and Tecate, Mexico in an attempt to gain a better understanding of the issues facing the TRNERR.

- Aquatic Adventures – Wetland Avengers

On April 29, 2006, Aquatic Adventures, in partnership with the CTP, plans to conduct an unprecedented binational wetland and canyon restoration event at Yogurt/Los Sauces Canyon. The Wetland Avengers Program is an annual event, and this year hopes to engage over 600 volunteers, including children from both Tijuana and San Diego, to conduct habitat restoration on both sides of the border. This volunteer event will restore sensitive habitats at the mouth of Tijuana River while educating community members on the value of our local wetlands and canyons.

Since its inception, the Coastal Training Program has played an important and effective role in facilitating necessary interactions between U.S. and Mexican decision-makers in the watershed on various issues and projects of significance to the TRNERR conservation and research missions. CTP Coordinator regularly holds informal and formal meetings and consultations with officials from the local, state, federal, and non-governmental levels, in Mexico and the US. These trainings and consultations are educational, and communicate important information to relevant stakeholders. This has been especially effective in Mexico, where decisions made tend to be more centralized. Below are highlights or outcomes of these interactions from 2005.

- *inSite Border Project*

After assisting with contacts, meeting spaces, the identification of funding sources, and cross border relations, inSite has now officially completed their binational garden project. inSite is a binational collaborative arts partnership among nonprofit and public institutions in the San Diego-Tijuana region. Their binational garden serves as a different option to the proposed border triple-fence that

cuts through Playas de Tijuana and Border Field State Park. It involves urban landscape intervention through the creation of a public garden which seeks to evaluate the symbolic values and themes of the area (besides the fence).

- *LEAD San Diego, Inc.*

After being accepted to the program last September, the CTP Coordinator graduated from the LEAD San Diego, Inc. program in May. LEAD is a nonprofit organization focused on developing community leaders who can provide a catalyst for creating a better future for San Diego. The program sessions provided invaluable leadership training and exercises, as well work on special weekly focus topics, such as urban rivers. This was a unique opportunity for the CTP Coordinator to expand partnerships, and have meaningful networking and dialogue.

- *MOU Negotiations*

Building off an MOU signed with the previous mayoral administration, TRNERR and City of Tijuana are in the process of drafting four new Memorandum of Understandings.

- The first MOU will be a general memorandum regarding a willingness to cooperate and work together in future projects and endeavors, within the watershed, which affect both sides, and also deals with the creation of specific conservation sites to help reduce impacts facing the Reserve and to offer the people of Mexico a “greener” city.
- The other three MOU deal with current joint projects, as well as proposed joint projects that take place in canyons or sub-watersheds that lie adjacent to the Reserve, namely the Los Laureles Canyon Erosion and Sedimentation Control Project, Matadero Canyon Binational Conservation Easement, and Los Sauces Canyon Restoration Project/Conservation Easement.

- *EPA Border 2012 grant - Decision Maker Tool Kit*

Created to be an effective tool to display the conditions for those individuals calling Los Laureles home, as well as a resource for agencies and organizations looking to understand the processes undertaken to make the project in Los Laureles Canyon possible, this “decision-maker tool kit” includes a video profiling the canyon, self-construction manual for residents of the canyon, and complete documentation of the processes, public involvement, and partnership development required to initiate a collaborative binational project such as Los Laureles Canyon.

- *EPA Border 2012 grant – Pilot Projects*

With the CTP Coordinator serving as the main facilitator for the development of community-based pilot projects that addressed various aspects of erosion control and storm water management in Los Laureles Canyon, three specific projects have begun in Los Laureles.

- “Manos a la Obra” or “Working Hands”: Focuses on applying methods that will control erosion in Colonia San Bernardo. Community trainers from Promoción y Docencia are already training at least 10 local residents on issues of erosion, trash management, public health, public safety and other relevant themes. Simultaneously, a reforestation project has started with local homeowners on the slopes behind their homes incorporating low-tech and low-cost irrigation ideas. RECON, a local land use consulting company with a native plant nursery is donating the plants.

- Water Quality, Public Health, and Recycling: Led by a group called “Ja Jan”, this project intends to increase the level of awareness of the relationship between environmental and public health; integrate community members in local and regional events, such as World Water Monitoring Day, Coastal Clean Up Day, and Coastal Monitoring Day; and establish a recycling transfer station in Colonia San Bernardo’s community center.
- Composting Household Goods: Focuses on composting to recuperate the eroded soils and prepare them for later reforestation in Colonia San Bernardo. The Universidad Tecnológica de Tijuana and ECO-SOL hope to encourage local residents to consider composting as a micro-enterprise. In addition to nurturing to the soils, composting has the added benefit of decreasing health risks and environmental impact (in landfills). For non-organic waste, UTT and ECO-SOL will work with community members to see if recycling is possible.

- *Creation of MOU work group*

A new workgroup has been created by the Mayor of Tijuana. Members include CTP Coordinator, head of the Legal Department and Private Secretary of Mayor Hank, Urban Development Secretariat of Tijuana, Government/Interior Secretariat of Tijuana, and Director of Public Affairs for Tijuana. Their work will be dedicated to joint initiatives, including joint projects, MOU, legal authorizations, land owner negotiations, and the possibility of the construction of sedimentation basins in Mexico.

- *Pervious Pavers Project in Los Laureles*

In partnership with the CTP and City of Tijuana, the *La Esperanza Foundation* secured \$100,000 from the UN Habitat Programme for improving conditions in Los Laureles Canyon. This funding will be used for a future pervious concrete road project in Los Laureles Canyon, in which pervious pavers will be used on the three main streets in Colonia San Bernardo. This should significantly slow the water during storm events. Workshops dedicated to the issue of an urban development vision for Tijuana, and its relationship to rivers, creeks, and open spaces are also being developed.

- *Signs of Promise Article*

An article was recently written regarding the Los Laureles Canyon Erosion and Sedimentation Control Project in *Signs of Promise: Stories of Philanthropic Leadership in Advancing Regional and Neighborhood Equity*. This was completed by the Funder’s Network for Smart Growth and Livable Communities. The article highlighted the work being completed in Los Laureles in a section dedicated to promoting equitable public investment, and what the role of specific funding agencies have been, such as the ICF and San Diego Foundation. The article also made specific reference to the CTP, and how it has been fundamental to achieving project goals and objectives. It goes on to note that the project in Los Laureles might be one that can be mimicked in other parts of the country or world.

- *City of Tijuana’s contributions in Los Laureles Canyon*

After matching a \$50,000 EPA Border 2012 grant awarded to the CTP and ICF for initiatives in Los Laureles Canyon, the Mayor of Tijuana has also donated a section of land in San Bernardo at Los Laureles Canyon. This land will be used for the construction of a small community center, model home, plant nursery, composting and recycling station, as well as a site for making pervious concrete pavers. The Mayor is also looking at the possibility of using Los Laureles as a model for other urban developments in Tijuana.

- *Sediment Study in Los Sauces Canyon*

Upon receiving recommendations from the Mayor of Tijuana and CTP Coordinator, *Grupo Integra*, a development company working in the south side of Los Sauces Canyon, has hired researchers from *CICESE* to conduct a study analyzing the source of sediment in Los Sauces Canyon, much of which flows across the border to Yogurt Canyon in the US at Border Field State Park.

- *City of Imperial Beach Proclamation*

In a showing of support at our March 3, 2005, TRNERR MA meeting, Mayor Diane Rose of Imperial Beach extended a proclamation to Mayor Hank of Tijuana expressing the City of Imperial Beach's "support for the City of Tijuana's efforts to find bi-national social, economic and environmental solutions to current problems facing the busiest international border in the world and look forward to continued joint cooperation in the future". CTP worked with the City of Imperial Beach in the preparation of this memorandum.

Waquoit Bay National Estuarine Research Reserve

2005 Education Program Report

Joan Muller, Education Coordinator, joan.muller@state.ma.us

Pat Harcourt, Outreach Educator, pat.harcourt@state.ma.us

Graduate credit for teacher training programs

The Reserve has applied for and received the ability to offer teacher training courses for graduate credit through Framingham State College. Last year we were able to offer Fish and Fishing by the Numbers (one credit), Oceans and Coasts in the Classroom (two credits) and Charge Up Your Curriculum with Renewable Energy (two credits). We also offered a two week Climate Change Institute and collaborated on a two week institute on Environmental Change.

Solar Hot Water Renewable Energy Curriculum for Technical High Schools

As part of a collaborative effort for renewable energy education coordinated by the local community college, the Reserve has helped facilitate solar hot water training for the plumbing and HVAC classes at both the Cape's technical high schools. Sophomore students are challenged to design a model solar hot water heater and test it, visit "on-the-roof" installations, do a mock site visit and site a system. During their junior year, students work on a system in their own school. We hope to set up apprenticeships with solar hot water installers as capstone experiences for the senior students.

Falmouth Friendly Lawn Program

The Reserve Education Coordinator has been working with the Fertilizer Reduction Committee (a Town of Falmouth Committee) for a few years to reduce fertilizer use or if that's not possible, get people to change to organic or slow release fertilizers. A couple of aspects of this program illustrate well some of the tools of Community Based Social Marketing. The FFL Honor Roll displays pledges from golf courses, churches, banks, and other town, state and federal institutions to use no or a limited amount of fertilizer. The names of the organizations are printed on a poster, in the newspaper and they're given a framed certificate for their place of business. The recordkeeping of this program shows that since the implementation of the program, Falmouth has reduced fertilizer nitrogen use by four million tons per year. We also worked with fertilizer retailers on barriers to people buying organic or slow release fertilizers (see Joan for details).

Climate change education

This year Pat Harcourt offered six teacher training sessions and a graduate course for teachers on the topic of climate change, with a special focus on coastal impacts of climate change. Waquoit Bay Reserve now offers a coordinated sequence of teacher training sessions which open with climate science and follow up with renewable energy education. We are pleased to report that after two years of training, teaching support, and mentoring by Reserve staff, many classroom teachers in the region are bringing climate and renewable energy topics into their classrooms. We are encouraging teachers and students to adopt sustainable behaviors by including an opportunity at the end of each workshop for participants to pledge to take one action to reduce greenhouse gas emissions.

Bringing data into classrooms

Pat Harcourt has shared simplified subsets of SWMP data with middle and high school math teachers from three districts this year as a first step to bring SWMP data into classrooms. The teachers are using temperature, dissolved oxygen, and tide data to teach students graphing and basic data analysis skills.

Waquoit Bay National Estuarine Research Reserve (WBNERR)

2005 Coastal Training Program Report (for the period Nov. 2004 – Oct. 2005)

Coastal Training Program Coordinator, Tonna-Marie Surgeon-Rogers,
Tonna-Marie.Surgeon-Rogers@state.ma.us

- New CTP Coordinator

Our new CTP Coordinator joined the Waquoit Bay NERR team this September. Tonna-Marie Surgeon-Rogers has a background in oceanography, climate dynamics and hazard risk management. She has already begun working with CTP Steering Committee partners to flesh out a strategy and work-plan for 2005-2006 and in planning for a number of specific CTP events on the horizon.

- CTP Advisory Group

An Advisory Group consisting of six members representing the Cape Cod Cooperative Extension, Cape Cod Community College, MIT Sea Grant College Program, Massachusetts Bays Estuary Association, Coalition for Buzzards Bay and the 300 Committee was established this year. The group met for the first time in December and discussed vision for the Massachusetts CTP, needs and regional priorities and opportunities for collaboration. The suggestions of the Advisory Group are being used to inform development of the CTP work-plan for 2006.

- Denitrification Systems Workshop

In response to an expressed need by coastal decision-makers for additional information on the cost and effectiveness of different wastewater denitrification systems, the Reserve convened a workshop in March to discuss three new technologies (leachfield aeration, nitrex barriers and biological denitrification) and their management implications. Participants represented six Cape Cod towns and a total of eighteen institutions. The workshop provided an opportunity to hear about CICEET funded research on new technologies supporting nutrient pollution, detection, prevention, and remediation.

- Climate Change and Public Health

Physicians and other public health personnel were brought together to discuss the implications of climate change for Cape Cod as well as potential mitigative measures to slow or reverse climate change impacts.

Public health expert Dr. Patrick Kinney from Columbia University and training specialist, Dr. Cindy Parker from the Johns Hopkins Center for Public Health Preparedness were the two main presenters. The workshop drew over seventy two participants.

- Docks and Piers Workshop

The first of two planned workshops to discuss the management of docks and piers was held in June at the Wells NERR in Maine. This regional event enabled collaboration among CTP programs in Massachusetts, Maine and New Hampshire, along with NOAA. NOAA materials were presented and local case studies examined the issue. Participants were provided with information on the environmental and visual impacts of small docks and piers and available state and local management tools to help minimize impacts.

- Coastal Habitat Stream Restoration Series

During the year the Reserve initiated a coastal habitat stream restoration series and two workshops were held on the theme. The first focused on steps involved in a successful restoration project and the second on assessing and addressing barriers to fish migration. Both workshops have been very successful in bringing a wide cross section of persons involved in restoration activities from Cape Cod and other areas in the Northeast region. Additional workshops in the series are being planned for 2006.

- Town Discussion Sessions on Shoreline Change

The Reserve worked with the Coastal Resources Working Group in the town of Falmouth to organize two summer evening sessions in two town villages to discuss shoreline erosion issues. The Working Group presented information on the geology of the town and findings on shoreline change. It is hoped that the recommendations presented by Group will be discussed and considered further by residents when making decisions about how to tackle shoreline erosion.

- Fostering Sustainable Behavior

This workshop was used to present community-based social marketing as a new and more effective approach to encouraging sustainable behavior than simply relying on information dissemination. Mr. Doug McKenzie-Mohr from Canada, international expert in this area, was the featured presenter for the event. The Reserve worked with many partners in planning the workshop which drew broad participation from the NGO community, federal, state and local groups as well as businesses.

- Green Building Program

Building on past workshops conducted with the Cape's home builder's association, the Reserve and a strong group of partners have collaborated to strengthen a program to promote green building on Cape Cod. The Reserve hosted a focus group for builders, architects and suppliers to gain direction for future activities and is now planning a workshop entitled "Towards a Zero Energy Home" for architects, engineers and home builders. Our Education Coordinator has also been asked to serve on a regional advisory board to promote green building in the Boston and Cape Cod areas.

In addition, a presentation covering energy and cost saving programs available on Cape Cod and information on Energy Star homes was given to realtors. Attendees were allowed to tour an energy efficient home.

- Municipal Land-based Wind

In March, the Reserve held the third in its series of workshops on Municipal Land-based Wind. This one focused on interconnection issues. These workshops have served to bring towns across the Cape together to share information. Another workshop will be held this November which we hope will result in a Cape Wind Task Force to continue work on these issues.

- Wetlands Protection Act

Over forty realtors were trained on the Massachusetts Wetlands Protection Act and its implementation state-wide. The presenter was John Rockwell, Wetlands Specialist from the Buzzards Bay Project, National Estuary Program.

Weeks Bay National Estuarine Research Reserve

2005 Coastal Training Program Report

Cheryl McClary, Coastal Training Program Coordinator, cmcclary@dcnr.state.al.us

In all of our CTP activities, our managing agency, the Alabama Department of Conservation and Natural Resources (ADCNR) - State Lands Division (SLD) - Coastal Section, was a partner.

- **Funding Environmental Improvements in Your Community: Funding Agencies & Grant writing Basics – December 2004**

This two-part interactive Webcast was broadcast by the NC NERR CTP and NC reserve partners. Alabama participants were able to learn about various funding agencies that provide assistance for local communities to make environmental improvements that control stormwater runoff, improve local water quality and restore watersheds. Participants also learned what grantors look for in an application and how to find additional funding sources. Training materials were available to download and questions generated during the webcast were answered in real time.

- **Community Culture & the Environment: Understanding a “Sense of Place” – January 2005**

The CTP and the Mobile Bay National Estuary Program (MBNEP) partnered this two-day workshop. Theresa Trainor, EPA Office of Water applied anthropologist, facilitated and used her co-authored guide, *Community Culture and the Environment*, as the basis for the training. The highly participatory workshop introduced social science tools (e.g., social mapping, visual methods, cross-cultural communication, interviewing, surveys, and focus groups) to enable natural resource managers to identify community perceptions, attitudes, and beliefs, and for building partnerships around environmental issues.

- **Web Content Design and Evaluation: A NOAA Coastal Services Center Workshop – February 2005**

The CTP assisted the Education Coordinator in hosting this one-day NOAA CSC workshop about how to create a website. We learned how to plan, organize, and evaluate websites to ensure they meet our communication objectives. (I encourage any CTP Coordinator who is interested in developing a website to advertise trainings to host one of these informative workshops!)

- **Weeks Bay Reserve Research Symposium – April 2005**

Thirteen researchers covered a broad range of topics about their research within the reserve boundaries to a diverse audience. The presentations were followed by panel discussions about the scientists’ applied perspectives on how they would: 1a) explain the implications of their research findings to policy makers, 1b) and any limitations that the policy maker should understand; and 2) describe their research to a local resident (e.g., in the Weeks Bay Watershed) and what could the resident do with the information?

- **NPDES Stormwater Workshops: I Permit Compliance and II Effective Design – April 2005**

Residential and commercial development is occurring rapidly in coastal Alabama. The construction activity can increase the likelihood of erosion and damaging impacts to local waterways receiving the sediment-laden runoff. The reserve Watershed Coordinator arranged this two-part training to help transportation professionals prevent erosion problems and remain in compliance with their appropriate permits. Speakers from the University of Alabama Civil Engineering Department and the Alabama Department of Environmental Management (ADEM) presented information about many innovative techniques to protect the environment.

- **Stormwater Runoff, Watershed Management, and NPS Pollution Workshop – June 2005**

The reserve Watershed Coordinator organized this 12th annual event. During the 3-day training, community leaders learned about techniques for watershed mapping, growth readiness, engaging

public input, and low impact development. When applied, the tools should enable communities to reduce the effects of nonpoint source pollution and stormwater runoff; both conditions create serious environmental and economic conditions in Alabama. Additionally, success stories from various Alabama municipalities were shared to provide ‘take-home’ models for workshop participants.

■ Smart Coast Green Building: What it means for you and your customer – July 2005

Workshop partners included Smart Coast, Baldwin County Home Builders Association, Alabama Cooperative Extension System Water Quality Program, and the Auburn University (AU) Dept. of Landscape Architecture. Builders, developers, architects, engineers, and homeowners heard Stephen Guesman of GreenWorks discuss the value and techniques of green building. Charlene LaBleu from AU Community-based Restoration Initiative showed how alternative landscaping practices could better handle stormwater at construction sites. Attendees could receive AU CEUs; eligible builders could receive credits toward their Certificate of Green Building.

■ Community Leader Wastewater Training – August 2005

Alabama Coastal Foundation and MBNEP were our partners for 3 days of training in separate locations. Attendees were elected and appointed officials, and utility board members in Mobile and Baldwin counties. Presenters described the processes of wastewater treatment, enforcement and liability requirements, governance issues, and alternative treatment techniques. We then toured a treatment facility. The goal was to enable community leaders to respond positively to wastewater challenges. They could also receive CEUs from the Alabama League of Municipalities.

■ Wetlands & Realtors® Workshop: Making Informed Decisions and Providing Educated Advice about Wetlands in Real Estate – August 2005

The Watershed Coordinator developed this program to provide real estate professionals with information about wetlands (i.e., types, identification), existing state regulations and permitting, and methods and options for wetland conservation. The training was to enhance realtors’ decision-making, and their ability to distribute knowledge about wetlands. Invited speakers were Gena Todia of WETLAND RESOURCES Environmental Consulting; Cindy House-Pearson, US COE; and Neil Johnston, member of the law firm of Hand Arendall, L.L.C. The half-day intensive training was followed by a luncheon.

■ Disaster Recovery Audio/web Conference – September 2005

The event was a good representation of the collaborative efforts and outreach in our regional area that took place within a short timeframe. NOAA OCRM alerted ADCNR- SLD-Coastal Section about this American Planning Association conference. Reserve staff prepared for Internet access, emailed announcements to listservs, and our Volunteer Organization provided refreshments. We had a small but well-representative crowd. One very useful portion of the event was the Q & A in which the presenters answered our faxed local questions.

■ One final note...we had several activities planned for the short-term future which have been postponed due to the effects of hurricane Katrina, including a much-needed “Docks & Piers” workshop partnered with the Grand Bay NERR CTP. We’ll be happy to report on those results in the next newsletter go-round!

Estuarine Reserves Division

2005 National Education Sector Report

2005 was spent in the development of better coordination tools, support in the development of a K-12 system-wide education program, and for raising visibility for the education programs. All of this was meant to position the NERRS Education programs in various education venues with the vision that it would help develop the partnerships and leverage the resources the NERRS Education program will need to launch a KEEP program in the future. Highlights include:

ERD, in collaboration with NERRS Educators, Launched Redesigned Education Websites

In the past two years, NERRS educators launched two redesigned websites. In 2004, the completely redesigned www.estuaries.gov proved to be quite effective in supporting the EstuaryLive program. On September 2005, NERRS Educators launched a redesigned NERRS website for education that can be found at <http://nerrs.noaa.gov/Education/welcome.html>. The site was redesigned to provide teachers access to information about estuaries and the education programs offered by the National Estuarine Research Reserves. The site now includes curriculum, distance learning programs, professional development opportunities, downloadable power point presentations, a section on data resources, and more. In addition, the website provides a function that allows teachers to contact an Education Coordinator from a Reserve to help them respond to questions. To date we have responded to ten inquiries, ranging from basic questions about estuaries, way to access educational resources on estuaries, to interest in formalizing a partnership to translate some materials in Spanish.

The NERRS Education Sector has taken first steps in becoming an important contributor of educational products that will use NERRS/SWMP - IOOS data.

ERD is working closely with NOAA's Education Council in the development of a NOAA strategy for linking IOOS datastreams. Thanks to this work and their participation in planning meetings with Ocean.US, the NERRS has now started to raise its profile as an important contributor of data, educational products and teacher training. Participation in events such as the Annual Meeting of the Digital Library for Earth System Education (DLESE) and MBARI have also been important in formalizing partnerships and building a teacher network that will help develop and pre-test some of the educational products the NERRS will put forward in the near future. Three products have been developed as a way of communicating about the reserve's efforts in making the SWMP data more accessible for educational purposes:

- A poster that was prepared by Ibanez & White titled "Understanding Estuaries Through NERRS Data" and was presented at the 2005 Annual Meeting of the Digital Library for Earth System Education (DLESE);
- A paper written by Ibanez, Mc Dougall & White titled "Utilizing Data from NOAA's Observing Systems to Achieve Environmental Literacy" and which was submitted for the MTS/Oceans 2005 Conference; and
- A power point presentation that was presented at the MTS/Oceans 2005 Conference titled Utilizing Data from NOAA's Observing Systems to Achieve Environmental Literacy prepared by Ibanez, Mc Dougall & White.

ERD, in collaboration with the Jacques Cousteau Reserve, submitted a proposal and obtained funding (80K) from the Office of Education and Sustainable Development (OESD) to assess how K-12 teachers and students can use SWMP/IOOS data. This assessment will help inform potential development of one component of the Estuaries 101 Curricula and will help inform NOAA's Education Council in the development of a NOAA strategy for linking IOOS data streams with teachers and students in select regions. Janice Mc Donnell from the Jacques Cousteau Reserve is taking the lead in implementing this assessment. Results are expected by the end of 2006.

ERD, during early 2005, also assisted the SWMP/IOOS Interpretation Workgroup and NERRA to conceptualize, draft and submit a literacy proposal to OESD. This proposal aimed to develop the *SWMP Education Initiative*, which would focus on grades 9-12 and include: (1) the development and testing of curriculum materials; (2) the design and development of a web-based educational interface for student use of data streams; and (3) training for teachers to ensure ready access to, and meaningful use of SWMP data, all products that would complement the system-wide Estuaries 101 Curricula.

Finally, Atziri Ibanez, Susan White and Carrie McDougal have fine-tuned the paper titled "Utilizing Data from NOAA's Observing Systems to Achieve Environmental Literacy" to turn that into an article that has been submitted to the MTS Journal, a peer-reviewed journal that will have a special issue on education and IOOS.

The EstuaryLive 2005 program served as a great tool to help widen a national teacher network. Estuary Live was the featured event for National Estuaries Day again this year. ERD coordinated the multi-reserve Estuary Live webcast. The 2005 EstuaryLive broadcasts included segments from [New York-New Jersey Harbor Estuary Program](#) (EP); [Jacques Cousteau NERR](#) and [Barnegat Bay EP](#) in New Jersey; [San Francisco Bay NERR](#); [Tillamook Bay EP](#) and [South Slough NERR](#) in Oregon. In addition approximately 20,958 students and teachers participated directly in EstuaryLive via the Internet, a number of public television networks, cable systems and other institutions provided access to the programs for as many as a million viewers.

2005 was an exciting year! As a result of this years' work with EstuaryLive, ERD helped consolidate a list of 700 teachers who have now joined a listserv meant to provide information about upcoming NERRS events, EstuaryLive, National Estuaries Day, and professional development opportunities that focus on estuaries. This listserv will now be the vehicle through which the NERRS Education programs can seek to inform and engage a dedicated list of teachers interested in teaching about estuaries! In addition, a network of 80 teachers was formed who joined the evaluation team for EstuaryLive, and 6 teachers are acting as informal advisors in the development and implementation of current and future NERRS educational products and programs.

Estuaries.gov was restructured to create a more user-friendly learning environment. The educational materials and field trip archives from 2004 were retained on the site. Additional education materials were added to [www.estuaries.gov](#)- EstuaryLive host sites contributed all additional materials. Each field trip had its own page on the Web site that included: student learner objectives, a program description, correlations to national educational standards, links to accompanying educational materials, and contact information. According to statistics provided by ERD, use of [www.estuaries.gov](#) increased by 233% over 2004, a 747% increase from 2003. There were two other significant updates to [www.estuaries.gov](#). EstuaryLive participants were able to register electronically for the program directly on [www.estuaries.gov](#) and the results were stored in an accessible on-line database. In addition, Globix, the vendor used to stream and encode the program, provided a live video streaming test link for participants two weeks in advance of the program's broadcast. This allowed teachers to try out the technology/fix glitches ahead of time.

ERD also actively collaborated in developing the evaluation strategy for the 2005 program. Several new tools were used and more detailed information was captured to tell the real story about the impact of the program. For more details see NERRA's Final 2005 Report.

Finally, ERD participate in the MTS/Oceans 2005 Conference and gave a presentation about EstuaryLive. In addition, ERD worked with several NERRS Education Coordinators to submit a paper written to this same conference which is titled "EstuaryLive: Linking Classrooms to the Natural World".

ERD is working to raise the visibility of the NERRS in and outside of NOAA

Raised the visibility for NERRS by representing the education programs at the Digital Library for Earth Science and Education (DLESE), MTS/Oceans 2005 Conference, MBARI EARTH Workshop, Second IOOS Implementation Conference, and NOAA's Education Council. This has helped build contacts and networks for enhanced support and dissemination of reserve program information.

ERD established a strong presence by giving presentations or participating in Exhibitor's Session on the NERRS education programs and EstuaryLive at the National Science Teachers Association (NSTA) Annual Meeting, the MTS/Oceans 2005 Conference, and two NOAA Education Council meetings; and by presenting a poster at 2005 DLESE Annual Meeting.

ERD has also encouraged all the NERRS Educators who visit Silver Spring to give a presentation about their programs. This year Terry and Margaret gave a presentation about their programs!

ERD working on developing tools to support NERRS educators

This year ERD launched the intrAnet and we made sure that the education section would contain a preliminary list of education materials to help form an archive of all important system-wide documents. The site is still in development, but we have given the first steps in generating a more cohesive way to capture the results of our meetings, form a library of important education materials, provide contact lists, and much more...

ERD secured National Education Coordinator position for the NERRS

The National Education Coordinator position, held by Atziri Ibanez, is no longer a contractual position. Atziri is now, starting October 2005, an FTE with the Estuarine Reserves Division. The National Education Coordinator, besides supporting the development of a K12 system-wide education program, works closely with Angela Corridore, Executive Director for NERRA to promote reserve education initiatives and assist in fundraising. In addition, she works with ERD communication staff that supports National Estuaries Day and the EstuaryLive program. The Web Developer, Jin Wang –hired the summer of 2004 – has worked extensively on the estuaries.gov site to post new content. Matt McIntosh completely re-designed the website.