



Harbor Happenings

The newsletter of the Charlotte Harbor National Estuary Program

Spring 2002: Volume 6, Number 1

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The Charlotte Harbor National Estuary Program extends its appreciation to the many people who planned and supported the Charlotte Harbor Watershed Summit. Your involvement made the Summit successful. **Thank you.**

Charlotte Harbor Watershed Summit: A Success

The Charlotte Harbor Watershed Summit was a successful and important step in the Charlotte Harbor National Estuary Program process of bringing public and private stakeholders together to discuss ongoing studies and current and emerging critical issues affecting the Charlotte Harbor watershed.

Approximately 180 people attended each day of the two-day technical symposium and one-day public conference held February 7 to 9, 2002 at IMPAC University in Punta Gorda.

Forty scientific presentations on hydrology, fish and wildlife research, habitat restoration and water quality were presented during the two-day technical symposium and 20 presentations on land use, fish and wildlife, and water supply were presented during the one-day public conference. Researchers prepared posters. Agencies, businesses and organizations displayed information about the watershed and their role in protecting it.

In addition to those who provide support to the program, 23 businesses, associations and agencies sponsored the Summit. (See page 11.)

Viewed for the first time was *The Network of an Estuary: Charlotte Harbor National Estuary Program*, a 27-minute video. Clyde Butcher introduces the program to the viewer and 17 members of the Program's Management Conference tell the value of our local estuaries, the importance of the NEP and issues of concern and actions undertaken by the Program's partners (See page 7). Also released was a poster by Clyde Butcher and a 24-page *Comprehensive Conservation and Management Plan Summary*.

The *Program and Abstracts* of the three-day event and a CD of the PowerPoint presentations used during many of the presentations are available at no charge.



Clyde Butcher, fine art photographer and environmentalist, generously donated the use of a new photograph – Myakka Canopy Trail #2 – from his collection to the Charlotte Harbor NEP.

“The committed people involved in the estuary program are working together to preserve and protect a better environment in southwest Florida,” explains Mr. Butcher.

The poster of a hydric hammock is 22 inches wide by 19.5 inches and is suitable for framing.

Mr. Butcher also donated the use of a photograph taken on Lake Hancock to Polk County and Charlotte Harbor NEP as a 17 by 24 inch poster.

Both posters are available free from the NEP Office and other locations throughout the study area. To request either, visit the Program web site (www.charlotteharbornep.org) or contact the Program Office (239/995-1777).

Thank you Mr. Butcher for your generosity.

To request these items, visit the Program web site (www.charlotteharbornep.org) or contact the Program Office (239/995-1777). The *Program and Abstracts* can also be downloaded from the web site.

The tentative plan is to host a technical symposium once every three years and a public conference every year except for the years a technical symposium is held. A public conference will be held in 2003 and 2004 and a technical symposium in 2005.

Request a free subscription to this newsletter.

Dr. Lisa B. Beever became the director of the Charlotte Harbor National Estuary Program on March 6, 2002. "We're very excited that we have someone of Lisa's caliber coming to direct the NEP," said Richard W. Cantrell, Director of District Management for the Florida Department of Environmental Protection and Co-Chair of the NEP Policy Committee. "We look forward to her successfully directing the implementation of the Charlotte Harbor plan."

"The skills and talents that Dr. Beever brings to the NEP will ensure that the program continues to move forward and succeed in its mission in maintaining and preserving the natural resources of the Charlotte Harbor estuarine complex," said Wayne Daltry while he was Executive Director of the Southwest Florida Regional Planning Council.

EDITOR'S NOTE: The column and quotes were written in March 2002.

I am very excited to be selected as the director of the Charlotte Harbor National Estuary Program. I am looking forward to working with everyone from the headwaters to the Gulf. I have always enjoyed time outdoors and on the water. My childhood summers were spent exploring the estuaries of the Florida panhandle and creek systems in Illinois and Texas. I have made my home on tea-colored Powell Creek.

I first came permanently to southwest Florida in 1988 to serve the public as Lee County's principal environmental planner. During that time, I canoed the waters of the Peace River, met dolphins in Matlacha Pass and snorkeled the backwaters of Estero Bay. I took a course at Rookery Bay to learn the habitat systems of Southwest Florida. This is how I became acquainted with the wonders of the Charlotte Harbor system.

With Lee County, I developed the Sea Turtle Ordinance, Protected Species Ordinance, and littoral zone guidelines. I wrote the first successful Florida Communities Trust (FCT) grant to be funded in the state for the Pine Island Eagle Preserve. I orchestrated the acquisition of Lee County's first mitigation park and built consensus on controversial environmental, water resource and land use issues.

As I am writing this, I am still at work as the Charlotte County-Punta Gorda Metropolitan Planning Organization Director, finishing a long range transportation plan, citizen survey analysis and environmental research requests for U.S. Department of Transportation. Of course I am facilitating a smooth transition at the MPO. Even so I am renewing old acquaintances and forming new friendships with people committed to the goals of the NEP.

I have been traveling the Country for invited professional presentations. Most recently I traveled to Baton Rouge, Louisiana to talk about environmental streamlining and using games in public participation. After I

returned I attended the Public Conference of the Charlotte Harbor Watershed Summit. I enjoyed many wonderful presentations. Bill Hammond eloquently described the place of the Charlotte Harbor system in the world (and universe). Sam Stone provided new insight into the sheer variety of water sources and challenges of the separate public water utilities in the area. Jeff Spence illustrated the status of Lake Hancock and spoke about progress and plans to improve its condition. Claudia Burns displayed her creative use of cartoons to provide citizens with information. These are only four examples of extraordinary work on behalf of the greater Charlotte Harbor complex.

I went to the Habitat Conservation Subcommittee at Cedar Point. Dr. Ernie Estevez presented research and facts on unvegetated bottoms throughout the Charlotte Harbor system, including the Peace River. These areas are abundant with polychaete worms, little bivalves, gastropods and crustaceans. If you step on unvegetated bottom with a size 9 shoe, there are 12,000 to 13,000 little animals beneath. Rather than being barren wastelands, unvegetated bottoms are critical habitat for Charlotte Harbor and rivers, food webs, fisheries and water quality. Filter feeders clean a lot of water.

The efforts and accomplishments of citizens, scientists and agencies are truly remarkable. Everybody associated with the Charlotte Harbor NEP can be proud of their efforts. I plan to work with all of you to achieve the goals of the *Comprehensive Conservation and Management Plan* and realize your vision of a prosperous, healthy, biodiverse greater Charlotte Harbor system.

Together, we are going to do great things.



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The Charlotte Harbor National Estuary Program is a partnership of citizens, elected officials, resource managers, and commercial and recreational resource users working to improve the water quality and ecological integrity of the greater Charlotte Harbor watershed. A cooperative decision-making process is used to address diverse resource management concerns in the 4,400 square mile study area. The program Management Conference is composed of the Management, Policy, Technical Advisory and Citizens Advisory Committees and the Program Office. Each committee serves a specialized role in supporting the program goals and objectives.

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News items, photographs, and letters are welcome and may be submitted to the Charlotte Harbor NEP office by mail or email (mhilgendorf@swfrpc.org). Deadlines for future issues are June 15, August 15, November 15 and February 15.

The views expressed herein are those of the authors and do not necessarily reflect the views of the Charlotte Harbor NEP or its cooperating agencies and associations. The mention of trade names or commercial products does not in any way constitute an endorsement or recommendation for use.



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Charlotte Harbor NEP Pleased to Announce Awards

Nineteen awards were made by the Charlotte Harbor National Estuary Program for 12 mini-grant applications and 7 research and restoration (R&R) partners grants. These projects provide immediate benefits to the natural resources in the NEP watershed, enhance technical knowledge, and improve community awareness of the ecological integrity of the greater Charlotte Harbor watershed.

This year 29 mini-grant applications and 10 R&R proposals were received. Each year the Citizens Advisory Committee (CAC) reviews education and outreach proposals. The Technical Advisory Committee (TAC) reviews research, monitoring and restoration proposals. These committees then recommend proposals for funding to the Management and the Policy Committees, which make the final decision as to which projects are supported.

Many of the projects selected were funded in cooperation with other sources. The total value of each project is often much greater than the support provided by the NEP. *These sponsors are vital to the implementation of these projects.*

Requests for applications and proposals for 2003-4 are expected to be released September 1, 2002. These announcements as well as a *Directory of Grant-Supported Projects* are available from the Program Office (charlotteharbornep.org, 239/995-1777).

Mini-Grant Projects

Upper Peace River-Educational and Interpretive Kayak Programs

City of Fort Meade Leisure Services

The City of Fort Meade in Polk County is now able to offer free or low-cost educational and interpretive kayak programs on the upper Peace River. Six kayaks will be acquired as well as a kiosk and outdoor message center with the support of this grant. The kayaks will be used during biweekly paddling trips, summer camps, river cleanups, fossil-hunting trips, kayaking courses and on demand. Charlotte Harbor NEP is providing \$2,988.00 for this project.

Inaugural kayak use! Teenagers from Teen Outreach Program (TOP), a community volunteer group, used the kayaks to pick up approximately 400 pounds of trash from the Peace River on Saturday, April 20.



Sailing Through the Environment of Charlotte Harbor

LA Ainger Middle School, Rotonda West

Seventh grade students in Englewood (Charlotte County) will participate in one of six environmental field trips on Charlotte Harbor as a result of this grant. Each of the 240 students, including special needs children, will be able to enjoy being out on the water of Charlotte Harbor and Lemon Bay – some for the first time – while they collect and analyze data. Charlotte Harbor NEP is providing \$2,700 for this \$3,190 project.

Grandmother's Garden

This project restores 2.8-acres in the heart of Bartow from a defunct park and stormwater catchbasin into a demonstration garden creating an urban wildlife refuge and restoring a neighborhood park in a Community Redevelopment District while using environmentally responsible plants and management techniques. Charlotte Harbor NEP is providing \$3,000 for this project to purchase native plants.

Since 1996, the Charlotte Harbor NEP has awarded 42 mini-grant projects and 35 research and restoration partners projects throughout the greater Charlotte Harbor watershed. These projects are conducted by schools, municipalities, agencies, individuals and nonprofit centers. Mini-grant projects range from curriculum development to educational kiosks to wading trips but all help multiply the number of people who are aware of the importance of our estuaries and their watersheds. The research and restoration partners projects directly benefit the natural resources in the watershed and increase technical knowledge. Many of these projects also include an educational aspect.

Keep our Creeks Clean

J. Colin English Elementary School

Fourth and fifth grade students in North Fort Myers (Lee County) will become stewards of four creeks. The students will place stencils near storm drains and creeks that advise residents to keep their creek clean and free of debris. Once a month they will map, sample, test, collect and analyze creek data. The students will then create a filter system using native plants. Data collection will continue to learn if the filters change the water quality. Charlotte Harbor NEP is providing \$3,000 for this \$6,000 project.

Mapping Marine Resources with GIS: Lee County School District

Students in four high school science classes will connect learning with tangible real-world information when they map Bunche Beach, a 720-acre coastal tract of environmentally sensitive land recently acquired by Lee County. The students will learn how to operate the equipment and how to identify vegetation types and land features. They will then map the property through the use of global positioning system (GPS) and enter the data using geographic information system (GIS) software to a site maintained by the school district. Students will continually add their data to the web site to build a comprehensive resource atlas web site. Charlotte Harbor NEP is providing \$2,971 for this \$3,923 project.

continued on page 4

Mini-Grant Projects (continued)



Spring peeper

Southwest Florida Amphibian Monitoring Network

CREW Land and Water Trust

Amphibians are an important indicator of the health of an ecosystem – and frog populations are in decline throughout the world. The North American Amphibian Monitoring Program developed guidelines that were implemented in southwest

Florida during the summer of 2000. People voluntarily began monitoring routes – 25 volunteers on 7 routes in the first year and 40 volunteers on 14 routes the next year. This grant will provide teams with the data collecting equipment to identify the exact location using GPS and record temperature and wind speed at each location. Charlotte Harbor NEP is providing \$2,960 for this \$5,030 project.

Florida Native Plants and Habitats - An Outdoor Classroom at Manatee Park: Lee County Parks and Recreation & Florida Native Plant Society Coccoloba Chapter

Six of Florida's flora and fauna habitats, a large native butterfly garden and a south Florida oak grove have been developed at Manatee Park as a result of a five-year-old partnership between the Park and the local chapter of the Florida Native Plant Society. The state-of-the-art outdoor classroom is used by fifth grade students throughout Lee County as part of their environmental education curriculum, for workshops that teach homeowners and landscapers how to use and maintain native plants, and to 100,000 visitors who annually enjoy the guided and self-guided tours. This grant will add two educational interpretive habitat panels of the most prevalent flora and fauna inhabiting an oak/rosemary scrub and pine flatwoods. Charlotte Harbor NEP is providing \$3,000 for this \$4,000 project.

Aquatic Nuisance Species Surveillance and Education Network: Southwest Florida Watershed Council

Aquatic nuisance species pose threats to water resources. This project will increase public awareness of these non-native species and potential threats to the water resources of southwest Florida through a public information poster and a web-based surveillance network. This network will track the occurrence, distribution and relative abundance of the nuisance species throughout southwest Florida, including all of the NEP study area, and will be an important sentinel for the early detection of potentially harmful species and, where feasible, the coordination of eradication efforts. Charlotte Harbor NEP is providing \$3,000 for this \$5,309 project.

Experience Estero Bay: Estero Bay Buddies

If people don't know or understand an issue, how can they appreciate, respect and care about it? This project will develop outreach and interpretive materials focused on the Estero Bay Aquatic and State Buffer Preserves. The materials to be prepared include a slide show, trail guide and interpretive signs. In addition, at least three volunteer workdays will be scheduled to remove exotic species and cleanup trash. Charlotte Harbor NEP is providing \$3,000 for this \$7,091 project.

The Power of Fire and Water - Center Tract Interpretive Signage

Sanibel-Captiva Conservation Foundation

The Center Tract is 262+ acres of riparian corridor that has been hydrological restored and invasive exotic plants have been removed. It is the centerpiece of SCCF's habitat management within the island-wide wetlands management program. SCCF now mimics wild fires through the use of prescribed burns. These fires benefit the ecosystem by recycling nutrients, controlling woody vegetation and opening up forage areas for wading birds. Because of this success, there is important demonstration value to the 15,600 visitors who annually walk the trails. This grant helps SCCF provide interpretive signage on the ecological value and function of land and water. Charlotte Harbor NEP is providing \$3,000 for this \$20,379.75 project.

An Outdoor Study Along the Peace River

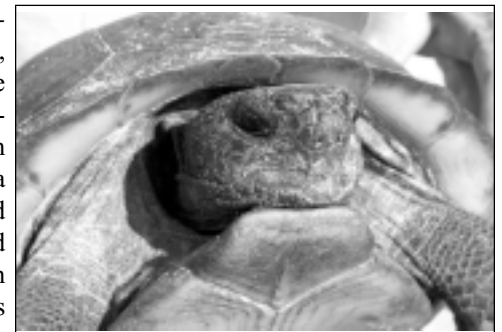
Fort Meade Middle-Senior High School

An outdoor study area along the Peace River in Fort Meade will provide environmental science students access to the river, a spring-fed pond, cypress swamp, hardwood forest and other ecosystems. Approximately 50 students in grades six through 12 will construct a wetlands survey, conduct various water tests on both the pond and river, prepare a report of their findings as well as introduce approximately 100 students in elementary grades to the life along the Peace River during field trips. Charlotte Harbor NEP is providing \$2,886 for this project to purchase supplies such as microscopes and water quality kits, provide bus transportation for the field trips and hire substitute teachers.

Gopher Tortoise Habitat Restoration:

Estero Bay Buddies

Gopher tortoises (*Gopherus polyphemus*), found throughout the NEP study area, are protected by the U.S. Fish and Wildlife Service as a threatened species and the Florida Fish and Wildlife Conservation Commission as a Species of Special Concern. The population statewide is estimated to have decreased by 30 percent in recent years. Habitat restoration efforts focused on the gopher tortoise benefit the entire sandy upland habitat ecosystem since the animals burrows provide shelter for more than 360 species of animals. Approximately 173 tortoises were counted in 1997 on the Estero Bay Scrub, 1,245 acres added to the Estero Bay Buffer Preserve in February 2000. A prescribed fire will be conducted on the property, which according to the Gopher Tortoise Conservation Initiative, will increase the average carrying capacity of an acre from two or three to four or six tortoises. Charlotte Harbor NEP is providing \$2,717 for this \$11,929 project.



Gopher tortoise
/ Charlotte County Visitors Bureau

Research and Restoration Partners Projects

Benthic Invertebrate Fauna Calibration of the Estero Bay Watershed Assessment

The Conservancy of Southwest Florida and Charlotte Harbor NEP

Benthic invertebrates, the bottom-dwelling spineless creatures such as snails, shrimp and worms, can provide valuable information on the health of an estuary and its watershed. This project will survey nine subbasins in Estero Bay to determine species abundance and diversity. Survey results will then be compared to water quality conditions in each of the subbasin to provide a clearer picture of the health of the watershed, including the structure, diversity and biotic integrity. The project will provide valuable information on resource management issues. Charlotte Harbor NEP is providing \$20,000 for this \$43,330 project.

Project Identification of a Chemical/Biological Signature for Onsite Sewage Treatment Disposal Systems (OSTDS) Effluent

Polk County and Charlotte Harbor NEP

This project will try to determine a chemical signature for septic tank influence in surficial groundwater. The project will sample surficial groundwater in areas known to be impacted by OSTDS and a control site to evaluate the effectiveness of enterococci bacteria, nitrogen isotope ratios and caffeine to detect OSTDS effluent. If a chemical signature is identified, it will be easier to determine if groundwater is contaminated by sewage. Charlotte Harbor NEP is providing \$16,050 for this \$35,654 project.

Assessing the Densities and Potential Water Quality Impacts of Septic Tank Systems in the Peace and Myakka River Basins: Charlotte Harbor Environmental Center, James R.E. Smith and Charlotte Harbor NEP

The project will attempt to estimate the densities of septic tanks and other on-site sewage treatment and disposal systems in the Peace and Myakka River watersheds. The resulting information will be used to estimate annual hydrologic discharges and loadings of nitrogen and phosphorous to the rivers and upper harbor, to identify potential "hot spots" of Onsite Sewage Treatment Disposal Systems (OSTDS) impacts to surface waters, and to design a cost-effective monitoring program to quantify and track water quality impacts of nutrient and pathogen loadings from OSTDS. Charlotte Harbor NEP is providing \$15,000 for this \$30,000 project.

Dynamics of Tree Mortality and Mangrove Recruitment within Black Mangrove Die-offs in Southwest Florida

University of Massachusetts, Department of Environmental Protection and the Charlotte Harbor NEP

Little is known about black mangrove die-offs and the possible recovery process that follows this occurrence. A large black mangrove die-off, approximately 1 km (0.62 mile) in diameter, located on the eastern wall of Cape Haze peninsula, will be researched. The project will attempt to determine the environmental factors associated with black mangrove mortality at this site and attempt to predict the possible die-off risks of black mangrove forests that appear to be healthy. Charlotte Harbor NEP is providing \$18,585 for this \$53,058 project.



Taxonomic Identification, Relative Abundance and Toxin(s) Present in Cyanobacteria Blooms in Lakes Hancock and Banana

Polk County and Charlotte Harbor NEP

Cyanobacteria (blue-green algae) have become dominant in several surface waters feeding the upper Peace River. Along with their disruption to the food chain, many species can produce toxins that are harmful to animals, including humans. This project will sample cyanobacteria blooms in Lakes Hancock and Banana during peak phytoplankton bloom events. The samples will be analyzed for the presence of toxic species, relative species abundance and cyanotoxins. Charlotte Harbor NEP is providing \$6,745 for this \$14,889 project.

A Survey of the Effects of Invasive Exotic Vegetation on Wetland Functions: Aquatic Fauna, Wildlife and Native Plant Community Structures

The Conservancy of Southwest Florida, The Sanibel-Captiva Conservation Foundation, Lee County 2020 Conservation Program and Charlotte Harbor NEP

It is routinely argued that the presence of invasive exotic species in wetlands severely reduces their ability to function but there is relatively little scientific evidence to support this argument. This project will attempt to quantitatively evaluate the effects of Brazilian pepper and melaleuca on wetland faunal groups, plant community structure and wildlife use. Specifically, the study will compare macro invertebrate, fish, amphibian and native plant communities as well as wildlife use between wetlands that are free of exotic plants, adjacent areas that are moderately infested and areas completely dominated by invasive exotic plants. Charlotte Harbor NEP is providing \$24,641 for this \$73,523 project.

Community-Based Restoration of Oyster Reefs and Enhancement of Essential Fish Habitat in Charlotte Harbor Watershed

Florida Gulf Coast University, Lee County School District, Florida Sea Grant Extension Program and Charlotte Harbor NEP

This project will educate and involve the general public and students in a community-based project to restore oyster reefs in the lower Charlotte Harbor estuary. The project will use community volunteers to create, maintain, restore and enhance oyster-shell reefs in order to establish healthy living-oyster reefs. The project will also assess the suitability of other locations within the lower Charlotte Harbor estuary for the enhancement of existing oyster bars or for the restoration of historic bars. Charlotte Harbor NEP is providing \$19,976 for this \$40,169 project.

In 2002, 7 research and restoration (R&R) partners proposals of the 10 received were selected for funding. Thirty-five projects have been awarded since 1996.

The requests for mini-grant applications and R&R proposals for funding consideration in 2003 are expected to be released September 1, 2002. These announcements as well as a *Directory of Grant-Supported Projects* are available from the Program Office (charlotteharbornep.org, 239/995-1777).

Charlotte County Conducting a County-Wide Study of Septic Systems

Study Seeks Practical Means to Mitigate Impacts from Septic Tanks

Jeffrey S. Tompkins, Charlotte County Health Department

The Charlotte County Health Department, in conjunction with the Department of Environmental Engineering Sciences at The University of Florida, is conducting a County-wide study of On-Site Sewage Treatment and Disposal Systems (OSTDS) otherwise known as septic systems.

Septic systems are widely believed to be a potentially significant contributor to increased levels of nutrients and microbial pathogens in coastal waters as a nonpoint source of pollution.

There are an estimated 40,000 OSTDS located within Charlotte County. Given the rate of growth witnessed and anticipated within the County as well as continued and increased dependence upon on-site sewage disposal, the County is exploring options to provide systematic management and maintenance of these systems.

Federal monies from the EPA Section 319 Nonpoint Source Management Program are being combined with matching funds and

Have a septic system and live in Charlotte County?

You can receive a free pumpout while helping the County proactively protect public health.

supplemental in-kind services from the County to carry out the project. The goals of the Study are to establish a geographic information software (GIS)-based inventory of septic systems and to conduct a series of “on-site” system monitoring surveys to characterize system performance. A number of individual septic systems will be monitored throughout the year. Homeowners will also be asked to complete a standardized questionnaire.

All empirical data collected will be used by the Environmental Engineering group at The University of Florida to create a mathematical model that may prove useful as a predic-

tive tool in establishing a comprehensive maintenance/management schedule for the septic systems found throughout the County. Ultimately, such a maintenance/management program will need to be implemented through the mandate of a County Ordinance. Such a strategy represents a pro-active, practical approach to minimizing and mitigating the suspected public health and environmental impacts attributed to these systems.

The program is actively recruiting the participation of volunteer residences and businesses who will provide monitoring access to their OSTDS. In return, participants will receive the benefit of having their septic tank pumped, at NO CHARGE. Interested parties are invited to call 941/743-1266 for more details.

This project will be mutually beneficial to the Research and Restoration Partners project “Assessing the Densities and Potential Water Quality Impacts of Septic Tank Systems in the Peace and Myakka River Basins” described on page 5.

Florida's First Biodiesel Marina

Karen Children, WCI Communities

I got an email from England the other day. It said, “Look for your story under INTERNATIONAL.” I can say with surety that anyone who writes stories and articles would be pleased to get that message. The story was from an online news source abroad, and it was about another bold step that WCI Communities has taken for the environment. An environmental news weekly in England was telling its readers that Florida now has its first biodiesel marina, and it is Gulf Harbour Marina owned by WCI Communities.

The reason that the news of WCI's conversion at Gulf Harbour spread around the globe is that there are very few marinas in the world that carry biodiesel fuel. For 20 years biodiesel has been evolving in the United States, and it has gradually been making its way into fleet vehicles like the postal service, garbage truck fleets, school districts and military vehicles. On the waterfront, however, there have been few pioneers.

Biodiesel is a diesel fuel alternative made with vegetable oil. In 2000, it became the first alternative fuel in the country to meet the EPA-required health effects testing un-

der the Clean Air Act. Pure biodiesel known as B-100 is 100 percent vegetable oil, and it contains no sulfur or hydrocarbons. The vegetable oil used in biodiesel usually comes from soybeans but it may also be canola oil, which comes from rapeseed. Manufacturers also use recycled vegetable grease from fast food chains like McDonalds.

The most commonly used biodiesel product is B-20, a blend of 20 percent vegetable oil and 80 percent standard diesel made from fossil fuel. It greatly reduces pollution in both air and water. An EPA analysis shows that recreational marine diesel engines emit about 25,000 tons of hydrocarbons plus nitrous oxides each year across the U.S. These are bad and lead to ozone depletion. Even with a blend, the reduction in these emission is a huge benefit. B-20 is what is sold at Gulf Harbour.

Biodiesel's impact on the environment in the event of a small spill is far less damaging

“Because Charlotte Harbor is one of only 28 estuaries in the U.S. National Estuary Program, WCI takes seriously its responsibility as a corporate neighbor to help protect this natural resource.”

than petroleum. That definitely makes it a better fuel for vessels operated in estuaries like Charlotte Harbor where Gulf Harbour is situated.

While some land transportation fleets have switched to using biodiesel, marinas have stuck to supplying conventional fuel. Until 1999 there were no federal emission regulations for marine vessels forcing a change. When standards were finally established, they were aimed at commercial vessels. This year the EPA is in the process of setting emission standards for marine recreational vehicles. In the near future biodiesel will step out of the shadows to help boat operators meet these regulations. WCI has stepped out ahead.

WCI Communities is the developer of five communities around Charlotte Harbor. WCI has made a commitment to being a good corporate neighbor to Charlotte Harbor and is committed to sustainable development. The company has entered into partnerships with Audubon International, Florida Gulf Coast University and the Florida Green Building Coalition to advance sustainable building.

Implementing the Watershed Management Approach for Charlotte Harbor

Linda Lord, Florida Department of Environmental Protection

The Florida Department of Environmental Protection (the Department) has initiated a statewide watershed management approach for restoring and protecting water quality and implementing total maximum daily loads (TMDLs) as required by Section 303(d) of the federal Clean Water Act and the Florida Watershed Restoration Act (Chapter 99-223, Laws of Florida). TMDLs must be developed for all waters that do not meet water quality standards for their designated beneficial uses and are thus defined as impaired. A TMDL represents the maximum amount of a given pollutant that a waterbody can absorb and still meet its designated uses.

Under the watershed management approach, Florida's water resources are managed on the basis of natural boundaries such as river basins, rather than political or regulatory boundaries, and public involvement in decision making is emphasized. Instead of focusing only on individual sources of pollution, water resources are assessed from a basin-wide perspective that considers the cumulative effects of human activities. The approach is not new, nor does it compete with or replace existing programs. It is intended to improve the health of surface water and ground water resources by strengthening coordination among such activities as monitor-

ing, stormwater management, wastewater treatment, wetland restoration, and land acquisition.

State, federal, regional, and local agencies and organizations in the Charlotte Harbor Basin are making significant progress towards identifying problems and improving water quality. These include the Charlotte Harbor National Estuary Program, the Southwest Florida Water Management District's Surface Water Improvement and Management (SWIM) Program, the South Florida Water Management District, the Florida Marine Research Institute, Charlotte, Sarasota and Lee counties and the cities of Cape Coral and Punta Gorda. The implementation of the watershed management approach and the development of TMDLs will depend heavily on the active participation of the water management districts, local governments, businesses and other watershed stakeholders. The Department will work with these groups and individuals to undertake or continue reductions in the discharge of pollutants and achieve TMDLs for impaired waterbodies.

The watershed approach is implemented using a cyclical process, made up of five phases, in which stakeholders in each of the state's basins are involved in identifying

Florida DEP TMDL Phase Schedule

GROUP 1 BEGAN PHASE 1 SEPTEMBER 2000

- Estero Bay

GROUP 2 BEGAN PHASE 1 SEPTEMBER 2001

- Charlotte Harbor, including Lemon Bay, Pine Island Sound and Matlacha Pass

GROUP 3 BEGINS PHASE 1 SEPTEMBER 2002

- Caloosahatchee River
- Peace River
- Myakka River

Myakka River was listed as a priority for TMDL development in the EPA's Consent Decree with EarthJustice. Under the decree, a TMDL for Myakka had to be developed by December 31, 2001. The EPA's proposed TMDL, published on December 27, 2001.

and addressing water resource problems and TMDL requirements. In the Charlotte Harbor region, this approach is first being initiated for Charlotte Harbor and the adjacent area, and subsequently for the area's major rivers – the Peace, Myakka, and Caloosahatchee – and their watersheds.

The management cycle is being implemented in the Charlotte Harbor Basin as follows.

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The Network of an Estuary: Charlotte Harbor National Estuary Program

, a 27-minute broadcast quality video was produced and premiered at the Charlotte Harbor Watershed Summit on February 9. Clyde Butcher, fine art photographer and environmentalist, introduces the program to the viewer and 17 members of the Program's Management Conference tell their stories of the value of our local estuaries, the importance of the NEP and issues of concern and actions undertaken by the Program's partners. The video was produced by Live Oak Productions for the Program.

The video will be broadcast on select stations and is available on tapes for private viewing. If you have a class, organization or event where you'd like this video aired, please contact the Program Office (239/995-1777, www.charlotteharbornep.org).



Clyde Butcher while canoeing the Peace River from Bartow to the IMC-Agrico Park.

Watershed Management Approach (continued)

PHASE 1: WATERSHED EVALUATION

The Charlotte Harbor Status Report, available April 1, 2002, is a key part of Phase 1, the watershed evaluation. The report provides a planning list, or preliminary identification, of potentially impaired waterbodies in the Charlotte Harbor Basin. It also identifies general water quality monitoring needs and summarizes existing water quality restoration plans and projects. The report is intended for distribution to a broad range of stakeholders, including decision makers from federal, state, regional, tribal, and local governments; public and private interests; and individual citizens. A copy is available at <http://tlhdwf2.dep.state.fl.us/basrot/charlotte.htm>.

Waterbodies in the basin were assessed for potential impairment according to the protocol described in the impaired surface waters rule (Identification of Impaired Surface Waters Rule, Section 62-303, Florida Administrative Code). This rule, developed with the help of a Technical Advisory Committee, defines thresholds for impairment based on water chemistry, nutrients, biology, fish consumption advisories and ecology. The following summarizes the results of the assessment.

- Of the 553 square miles of estuary in the basin, 1 percent met the data sufficiency requirements for assessment under the impaired surface waters rule for metals, 99 percent for conventional parameters, and 35 percent for nutrients. Insufficient data were available to assess any estuarine areas based on biology or fish consumption advisories. Of the square miles of estuary with sufficient data for assessment, 0.1 percent were potentially impaired for the conventional parameter of dissolved oxygen, 1 percent for the conventional parameter of fecal coliforms, 28 percent for the conventional parameter of total coliforms, and 45 percent for nutrients. No potential impairments were found for metals, another parameter with sufficient data for assessment.

- Of the 95.3 miles of streams assessed, 35 percent had sufficient data for assessment for conventional parameters under the impaired surface waters rule, and 2 percent for biology. Not enough metals, nutrient,

or fish consumption advisory data were available to meet the data sufficiency requirements of the impaired surface waters rule for assessing potential impairment. Of the stream miles with sufficient data for assessment, 7 percent were potentially impaired for the conventional parameter of dissolved oxygen and 100 percent for the conventional parameter of unionized ammonia. No potential impairments were found for streams for the conventional parameters of fecal coliforms or biology.

PHASE 2: STRATEGIC MONITORING

Phase 2 of the cycle consists of a period of strategic monitoring to verify impairment of the waters on the planning list. Locally generated data are highly desired. To be used in developing the verified list of impaired waters, however, data must be uploaded to STORET, the U.S. Environmental Protection Agency's national water quality database. A draft verified list of impaired waters and supporting documentation are projected for distribution in late spring to early summer, 2003, and a stakeholder meeting will be held to discuss the draft list.

In the early fall of 2003, the Department will publish an Assessment Report documenting the results of a detailed assessment of water quality in the Charlotte Harbor Basin. The Assessment Report will include additional data, a more complete evaluation of water quality and biological resources, and the verified list of waterbodies required by Section 303(d) of the Clean Water Act. This list will be adopted by Secretarial Order and submitted to the U.S. Environmental Protection Agency for approval. The final schedule for adoption of the verified list has not been determined.

PHASES 3 THROUGH 5: TMDL DEVELOPMENT AND IMPLEMENTATION

In the Charlotte Harbor Basin, the Department will develop and adopt TMDLs for waters on the verified list during Phase 3 of the cycle (fiscal year 2003-2004). In Phase 4 of the cycle (FY 2004-2005), a

FLORIDA'S SURFACE WATER QUALITY CLASSIFICATIONS

Florida's water quality standards program, the foundation of the state's program of water quality management, designates the "present and future most beneficial uses" of the waters of the state (Section 403.061[10], Florida Statutes). Water quality criteria, expressed as numeric or narrative limits of pollutants, describe the water quality necessary to maintain these uses for surface water and ground water. Florida's surface water is protected for five designated use classifications, as follows:

Class I: Potable (drinkable) water supplies

Class II: Shellfish propagation or harvesting

Class III: Recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife

Class IV: Agricultural water supplies

Class V: Navigation, utility, and industrial use. There are no state waters currently in this category.

TMDL management action plan to reduce the amount of pollutants that cause impairments will also be produced. In Phase 5 (FY 2005-2006), implementation of the action plan will begin.

TRACKING PROGRESS IN FUTURE WATERSHED MANAGEMENT CYCLES

The cycle will be repeated beginning in July 2006. One of the key components of the watershed management approach is that the effectiveness of management activities (TMDL implementation) will continue to be examined in the monitoring phase of successive cycles. The monitoring will focus on evaluating whether water quality objectives in the Charlotte Harbor Basin are being met and whether individual waters are no longer impaired. The Department also will track the implementation of scheduled restoration activities to ensure continued progress towards meeting the TMDLs.

For additional information on the watershed management approach in the Charlotte Harbor Basin, contact Pat Fricano, Basin Coordinator (Pat.Fricano@dep.state.fl.us, 850/921-2369) with Florida Department of Environmental Protection (2600 Blair Stone Rd, Mail Station 3565, Tallahassee FL, 399-2400).

Wonderful Places in the Greater Charlotte Harbor Watershed

Four-Mile Cove Ecological Preserve in Cape Coral

The Four Mile Cove Ecological Preserve is a 365-acre saltwater wetland overlooking the Caloosahatchee River. The preserve features a 4,500-foot nature trail and boardwalk that meanders through the mangroves to an observation pier that stretches out into the Caloosahatchee River.

“Thanks to an agreement between Lee County and the City of Cape Coral, Four Mile Cove will be enjoyed by area residents forever,” says Susan Scott of Cape Coral. “The park is a terrific birding site, offers boardwalks and kayaking, a visitor center and even native plants for sale! It gives us all a chance to see what the river’s edge of Cape Coral once looked like before development.”

Red, black and white mangroves grow in the saltwater wetland along with large open areas of marshlands. There are 5,000 feet of shoreline on the Caloosahatchee River and small tidal streams meander into the interior. Wildlife that may be seen includes herons and egrets, otters, raccoons, woodpeckers and migratory birds. Infrequent visitors include alligators, osprey, anhingas, cormorants, white ibis and ducks.

YOU CAN NOMINATE A LOCATION.

Send (1) the name of the natural site in the greater Charlotte Harbor watershed you deem worthy of others visiting, (2) your name and (3) an explanation of why you want to share that particular site with others to Maran Hilgendorf at the NEP office (see page 2 for contact information). Nominated sites will appear in a future issue of *Harbor Happenings* and on the program web site. Sites featured to date include:

- Paynes Creek State Historic Site
- J.N. “Ding” Darling National Wildlife Refuge
- Myakka River State Park
- IMC-Agrico Peace River Park
- Barrier Islands GEOPark: Gasparilla and Cayo Costa
- Fort Meade Outdoor Recreation Area
- Four Mile Cove Ecological Preserve in Cape Coral

The City of Cape Coral Parks & Recreation Department wrote that it is very important to preserve areas like Eco Park. Without these areas, many important fisheries will decline and ultimately disappear along with the wildlife we all enjoy in southwest Florida. Please help conserve and protect our natural areas. The tidal creeks are home to many small fish and the young of game fish species, which take shelter in the mangroves and marshes to escape predators and find food. In this way saltwater wetlands are vitally important in acting as nurseries for our fish and shellfish.

The marsh plants and mangroves of Eco Park also filter our pollutants as water drains from the mainland to the river. As the water flows slowly through the marsh-

es it is cleaned before it reaches the river. Mangroves also trap nutrients and protect the shoreline from erosion.

Located just north of the Veterans Memorial Highway in Cape Coral at the end of SE 23rd Terrace. The park is open 8:00 A.M. to sunset year round. Canoe and kayak can be rented Saturday and Sunday from October to May during park hours. Native plants are for sale at the same times rentals are available. For more information, call 239/549-4606. There are 30 city-owned parks and recreation facilities scattered throughout Cape Coral, most of them handicap-accessible.

SOURCES: www.capecoral.net, www.myswfl.com/capecoral.html and www.capecorallive.com/four_mile_ecological_park.htm

Not sure about what's what and who's who?

Charlotte Harbor NEP Grant Makes Free Environmental Materials Available to the Public

Charlotte Harbor Environmental Center (CHEC) is pleased to announce free environmental information available to new residents living in the Charlotte Harbor watershed. This area includes new residents of Polk, Hardee, Highlands, DeSoto, Charlotte, Sarasota, Manatee and Lee counties.

This free information, funded by a grant from the Charlotte Harbor National Estuary Program (NEP), includes topics such as the natural resources of southwest Florida, places to visit where new residents can learn about native plants and wildlife, sugges-

tions for environmentally sound living practices, the Florida Yards & Neighborhoods program, tips and facts from other environmental organizations and related websites for those who desire an environmentally friendly lifestyle.

For a package to be sent free of charge, new residents can contact CHEC at 941/575-5435 or by email at chec@sunline.net. They are also available for pickup at the CHEC Alligator Creek site (10941 Burnt Store Rd, Punta Gorda) and the Cedar Point Park site (2300 Placida Road, Englewood).

Florida Master Naturalist Program Training

The Florida Master Naturalist Program is a new adult education program that offers courses on freshwater wetlands, coastal systems and upland habitats. The freshwater wetlands class is being offered in Lee and Polk counties and elsewhere.

The 40-hour courses will be of interest and benefit to individuals who are interested in learning more about Florida’s environment, especially those who wish to increase their knowledge for use in education programs as teachers, naturalist volunteers and employees, and ecotourism guides.

The program was developed by the University of Florida and offered through the Extension Service and host organizations. Each program includes 40 hours of classroom instruction and field trips.

Several classes will be held this fall and winter.

Registration is accepted on a first come, first served basis with a maximum of 20 adult students to a class. Tuition is \$200. Program and course details are available at the website www.MasterNaturalist.org.

Workshop Helps Volunteers Meet Monitoring Challenges

Ron Ohrel, The Ocean Conservancy

As government agencies face more and more budget cuts in water quality monitoring programs, volunteers have become essential in efforts to measure and protect the health of Florida's waterbodies. By donating their time and talents to a monitoring program, volunteers offer a priceless, enduring legacy for future generations of people, animals and plants that call the area "home."

In recognition of the significant role of volunteer monitoring programs, The Ocean Conservancy has been conducting volunteer water quality monitoring workshops throughout the United States, Mexico and Canada since 1997. The workshops are funded by the U.S. Environmental Protection Agency's Oceans and Coastal Protection Division and supported by various National Estuary Programs throughout the U.S. The 18th workshop was held January 24-25 in Punta Gorda.

As with all prior workshops, the Punta Gorda meeting was designed specifically to meet the needs of local monitoring groups. Consequently, the agenda was developed with significant input from the U.S. EPA, Charlotte Harbor National Estuary Program and Florida Department of Environmental Protection.

The workshop had 38 people in attendance representing 18 organizations, including educational institutions, non-governmental monitoring organizations and federal, state and local government agencies. Most participants came from within a short drive of Punta Gorda, although a few came from states outside of Florida.

The workshop had several objectives:

Promote networking among all participants

The workshop was an excellent opportunity for volunteer groups to share experiences and information about their programs. It also facilitated interactions between monitoring groups and government agencies that are interested in helping volunteer groups collect useful, high-quality data.

Review and describe monitoring issues and programs

Workshop presenters summarized some of the common environmental issues in Florida watersheds, reviewed the significance of different water quality measurements (e.g., dissolved oxygen, nutrients, bacteria, etc.) and described volunteer monitoring efforts in Florida and throughout the U.S. They discussed specific Florida efforts targeted at lakes, canals, stormwater treatment systems and estuaries.

Review quality assurance issues and practices

A significant challenge for any monitoring effort — volunteer or otherwise — is ensuring that the data collected is of sufficient quality for its intended use. Whether volunteer organizations use their data for informing the public, influencing policy decisions or incorporating into statewide water quality assessments, they must have plans in place for demonstrating that the data was collected appropriately.

A major portion of the Punta Gorda workshop focused on quality assurance. First, quality assurance was discussed from three perspectives: the U.S. EPA, Florida DEP and a volunteer who collects water quality data. After that, all workshop attendees participated in a quality assurance



Ron Ohrel

practice session to review monitoring techniques and compare the performance of different monitoring equipment.

Describe different uses of volunteer data

Workshop presenters described how volunteer data is or could be used by different audiences, including government agencies, other monitoring organizations and the volunteer monitors themselves. Presenters addressed the sometimes touchy subject of government agencies' reluctance to use volunteer data, specifying several causes for their concerns and ways to minimize them.

Brainstorm ideas for improving volunteer programs

All attendees contributed to a lively discussion about improving volunteer monitoring programs. Participants discussed ways to improve communications within a program and among different programs throughout the state. They shared ideas for improving volunteer training and maintaining volunteers' interest in the program. They also explored potential new roles for exceptional volunteers seeking new challenges.

For more information about future workshops or to obtain a copy of the Punta Gorda workshop minutes, call 757/496-0920 or email Laura Titulaer (ltitulaer@oceanconservancyva.org) or Ron Ohrel (rohrel@oceanconservancyva.org).



Ron Ohrel

Charlotte Harbor Nature Festival: Fun Way to Learn About Natural Environment

All those who participated in the second Charlotte Harbor Nature Festival had a great day to explore and enjoy the incredible wild-life and natural environment of the Charlotte Harbor area – even with challenges from nature! A pair of bald eagles decided to build their nest at the original festival site, prompting a last minute venue change for the festival. The daylong event was held Saturday, March 2 at the FDEP Charlotte Harbor Aquatic & State Buffer Preserve Office on Burnt Store Road in Punta Gorda.

Guided nature and bird walks were offered, presentations on manatees, birds of prey, snakes, bats and butterflies were made, organizations and artists were on hand, musicians played throughout the day, and children enjoyed their own fantastic area where they

made eagle and manatee puppets, bat masks and leaf prints, listened to stories as told by local authors, had their faces painted, and enjoyed discovery walks designed just for them. Wagon rides to salt flats and coastal ponds, with the tractor driven by Preserve Manager Bob Repenning, were a surprise addition made as a result of the relocation.

Charlotte Harbor National Estuary Program was the primary sponsor and FDEP Charlotte Harbor Aquatic and State Buffer Preserves was the host. Additional sponsors were Peace River Audubon Society, Charlotte County, Herston Engineering Services, Inc., VanasseDaylor, Johnson Engineering, Inc., WilsonMiller, Florida Environmental, AAA-1 Portable Sanitation, Charlotte Har-

bor Environmental Center, Coccoloba Chapter of Florida Native Plant Society, Friends of the Charlotte Aquatic Preserves, Babcock Wilderness Adventures, Inc., Winn's Landscaping and Technical Design, Inc., and W. Dexter Bender & Associates.

The festival is organized by a committee of volunteers who represent a diverse group of organizations such as the Peace River Audubon Society, Charlotte County Arts & Humanities Council, Charlotte Local Education Foundation, Lemon Bay Park and the Charlotte Harbor Environmental Center.

If you'd like to volunteer to serve on the planning committee or participate in next year's festival, call 941/743-1239.

This poem was written by a person who enjoyed the Charlotte Harbor Nature Festival.

Lost or Found

by Barbara Whelan

He was a tall man from Pennsylvania
I believe,
He led us down a trail naming vines
and birds and leaves.
Suddenly we were lost
We'd gone astray,
But no one really doubted
We'd soon find our way.
You could tell it hurt his pride,
But he joined in, as we teased
Our good natured guide.
He pointed out plants that were poi-
son,
Plants we could eat,
And rare ones trampled by our
Touristy feet.
We entered a hammock.
His reverence we could feel,
For the ecosystem he works
To restore and heal.
Being lost in discovery,
Is the best part of each day.
And finding others
To share the way.

Thank you to the many businesses, associations and agencies sponsored the Charlotte Harbor Watershed Summit.

SUMMIT SPONSORS

- Mote Scientific Foundation
- Charlotte Harbor Environmental Center/Charlotte Harbor Fund

LUNCH, BREAK & ACTIVITY SPONSORS

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- Florida Environmental, Inc.

TECHNICAL SYMPOSIUM & PUBLIC CONFERENCE SPONSORS

- Janicki Environmental, Inc.
- Caloosahatchee River Citizens Association
- The Charlotte Harbor Chapter of the Florida Native Plant Society
- Estero Bay Buddies
- Sierra Club - Calusa Chapter
- Southwest Florida Watershed Council
- National Wildlife Federation
- Friends of the Charlotte Harbor Aquatic Preserves

ADDITIONAL SUPPORT PROVIDED BY:

- City of Punta Gorda
- IMPAC University
- King Fisher Fleet
- Fishermen's Village
- Peace River Valley Citrus Growers Association

"We would be hard pressed to find any program that garners as many partners as the National Estuary Program. The whole concept of the National Estuary Program is partnership driven from issue identification to research and data gathering to policy, funding and implementation."

– Commissioner Jon Thaxton, Sarasota County and member of the Policy Committee

ORGANIZATIONAL SUPPORT FOR THE CHARLOTTE HARBOR NEP IS PROVIDED BY:

- U.S. Environmental Protection Agency
- Southwest Florida Water Management District
- South Florida Water Management District
- Florida Department of Environmental Protection
- Florida Department of Community Affairs
- Florida Fish and Wildlife Conservation Commission
- Natural Resources Conservation Service
- Peace River/Manasota Region Water Supply Authority
- Charlotte, DeSoto, Hardee, Lee, Manatee, Polk and Sarasota counties
- Cities of Sanibel, Cape Coral, Fort Myers, Punta Gorda, Bartow, Venice and Fort Myers Beach
- Southwest Florida Regional Planning Council
- Central Florida Regional Planning Council

– Calendar of NEP Meetings – Do you have an idea of how to protect our estuaries and their watersheds? Charlotte Harbor NEP Now Makes Small Grants Available

For a more complete list of events, call 941/995-1777 or visit the Charlotte Harbor NEP web site at www.charlotteharbornep.org.

June 2002

- 7 Charlotte Harbor NEP Policy Committee
- 18 Charlotte Harbor NEP Citizens Advisory Committee, 10:00 to noon

July 2002

- 4 Independence Day – office closed
- 10 Charlotte Harbor NEP Technical Advisory Committee, morning
- 10 Charlotte Harbor NEP TAC Water Quality Quantifiable Objectives Subcommittee, afternoon
- 16 Charlotte Harbor NEP Citizens Advisory Committee, 10:00 to noon (September 17, October 15, November 19)
- 26 Charlotte Harbor NEP TAC Habitat Conservation Subcommittee

August 2002

- 9 Charlotte Harbor NEP Management Committee
- 23 Charlotte Harbor NEP Policy Committee

Dates to remember:

September 1: Requests for Mini-Grant Applications and Research and Restoration Partners Proposals will be released

October 5: National Estuaries Day

Area code change: 941 to 239

The area code for the Program Office has changed from 941 to 239. Until March 10, 2003, both area codes will be active. After that date callers will be required to use the 239 area code to complete their calls.

Harbor Happenings

Charlotte Harbor National Estuary Program
4980 Bayline Drive, 4th Floor
North Fort Myers FL 33917-3909



To further the Charlotte Harbor National Estuary Program partnership and help implement the *Comprehensive Conservation and Management Plan* (CCMP), Charlotte Harbor NEP is now offering “micro-grants” of up to \$250 to Florida residents, organizations, businesses, government agencies, schools, colleges and universities.

These grants will help the Program “establish and maintain environmental education efforts” with organizations, educational centers, government agencies and others, an activity that the Citizens Advisory Committee ranked as a high priority action item to help fulfill the Program’s management plan.

These grants will help magnify the number of people involved in the Charlotte Harbor NEP and will help further the implementation of the management plan.

Micro-grants were only recently made available but have already supported the following.

- Envirothon for students in Lee and Charlotte counties hosted by the Natural Resources Conservation Service
- a Stormwater Management Workshop hosted by the Southwest Florida Watershed Council
- the Peace River Environmental Education Network, which represents 35 organizations and agencies whose combined mission is to create and sustain collaborative educational processes that will foster knowledge about the environmental integrity of the Peace River watershed. Their goal is to build people’s knowledge and

These funds will help forge partnerships and increase awareness with those who may not otherwise learn about the NEP, its partnerships throughout the watershed, and the plan to protect fish and wildlife habitat, water quality and water flow.

commitment so that each can positively contribute individually and collectively toward environmental solutions.

To apply for a micro-grant, send the details of who, what, when, where, how and why to Maran Hilgendorf (see page 2 for contact information). Be sure to explain how the funds will be used and how the project will benefit the NEP in its efforts to further the management plan. Additional guidance is available on the Program web site (www.charlotteharbornep.org). The Program Office will promptly respond to all requests.

The Charlotte Harbor National Estuary Program (NEP) is a partnership to protect the Charlotte Harbor estuary by improving the ecological integrity of the greater Charlotte Harbor watershed. This partnership gives citizens, elected officials, resource managers, and commercial and recreational resource users in the 4,400-square-mile study area a voice to address diverse resource management concerns including fish and wildlife habitat loss, water quality and water flow.

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