



# Harbor Happenings

The newsletter of the Charlotte Harbor National Estuary Program

Summer 2000: Volume 4, Number 2

## Charlotte Harbor NEP's Signing Ceremony: Management Plan Endorsed

With more than 200 citizens, elected officials, resource managers, and commercial and recreational resource users present, the Charlotte Harbor National Estuary Program's *Comprehensive Conservation and Management Plan* was endorsed by members of its Management Conference. The Plan began in 1995 when Charlotte Harbor was recognized as an "estuary of national significance" and was accepted into the National Estuary Program. The sign-

ing ceremony, held on April 13 at the Bayfront Center in Punta Gorda, celebrated the completion of the management plan and the beginning of action to restore and protect the estuary and its 4,400 square mile watershed. The Plan uses a cooperative decision-making process to address diverse resource management concerns.

Comments from the people who spoke at the ceremony are provided in the right column.

*"Charlotte Harbor NEP helps fulfill the preservation of the harbor that began when the state purchased the mangrove shoreline from General Development Corporation and others in the 1970s."*

— Rick Cantrell, Director, Florida Department of Environmental Protection's Fort Myers Service Office

*"It has been a real privilege to be a part of this coming together of all the communities throughout the Peace River Basin with the purpose of assuring a healthy ecology to turn over to our children so they can enjoy the same wonders that are the reason we call Florida home."*

— Honorable Adam Cummings, Charlotte County Commissioner

*"Terrific signing ceremony — a tribute to the program staff, Management Conference committee members, and other volunteers who have worked so hard."*

— Bo Crum, Section Chief, U.S. EPA Region 4

*"The Charlotte NEP's CCMP is our best effort to manage environmental quality in the entire Peace Basin."*

— Don Ross, Member, Southwest Florida Water Management District's Peace River Basin Board

*"The signing ceremony capped a time for developing relationships and understanding between the coastal residents and those of us who live far up the Peace River."*

*We believe that the Peace is a lifeline between us. And, we are committed to its healthy future."*

— Doug Leonard, Executive Director, Central Florida Regional Planning Council



Photo by Maran Hilgendorf

*Committing To Our Future* by endorsing the program's management plan on behalf of cities, counties, agencies, and industry from throughout the seven counties in the Charlotte Harbor watershed are SEATED, LEFT TO RIGHT: Jim Sampson, Don Ross, Commissioner Pat Glass, Director Tiffany Lutterman, and Robert Tewis. STANDING, L TO R: Charles Gauthier, Robert Kollinger, Commissioner Adam Cummings, sign, Gary Oden, Connie Jarvis, Cal Adams, Bo Crum, Richard Cantrell, Commissioner John Albion, Tomma Barnes, Jim Beever, Commissioner Shannon Staub, Ed Higby, and Steve Fabian. TOP ROW, L TO R: Medard Kopczyński, Wayne Daltry, Steve Brown, and Doug Leonard.

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## Director Update

by Bo Crum, Chair, Charlotte Harbor NEP Management Committee

The process to select a new Director for the Charlotte Harbor National Estuary Program is over. The Management Committee created a Selection Committee made up of the following volunteers: Al Cheatham, Bo Crum, Wayne Daltry, Andy Mager, Misty Nabers, Robert Tewis, and Chuck Walter. This committee met on June 16 to screen the applications that were qualified from the original 28 that were received. The Committee selected six applicants to be interviewed for the position. One applicant withdrew; therefore, the Policy Committee interviewed five during their meeting in Venice, Florida, on June 9.

On behalf of the Management Conference, I would like to thank the NEP staff, especially Patti Armbruster, and the Selection Committee volunteers for their hard work.

## Caloosahatchee Riverwatch Public Forum 2000 — June 19

A public forum will be held to help citizens learn more about water management issues in Southwest Florida and to air citizen's opinions and concerns regarding the health of the Caloosahatchee River and the policies of the South Florida Water Management District (SFWMD).

The goal of the forum is to create avenues for public input on and influence over decisions being made by the SFWMD and other entities responsible for water and environmental policy in our region.

The free forum, sponsored by Riverwatch, a nonpartisan citizens association, in cooperation with the Calusa Nature Center and Planetarium, Charlotte Harbor NEP, SFW-

MD and the Southwest Florida Regional Planning Council, will be held on Monday, June 19 from 6:30 to 9:30 P.M. at the Lee County Commission Chambers at 2120 Main Street in downtown Fort Myers.

A presentation of various issues concerning the Caloosahatchee watershed will start off the forum. These issues include:

- A brief history of the Caloosahatchee River
- SFWMD policy hierarchy, priority of water users, and inclusion of public input into policy decisions.
- Comprehensive Everglades Restoration Plan (CERP) and Southwest Florida Study

## Seagrass Management: It's Not Just Nutrients — August 22-24

Local scientists and managers are encouraged to participate in the symposium *Seagrass Management: It's Not Just Nutrients!*, to investigate a variety of factors that may impair seagrass recovery in Southern estuaries. In addition to examining the importance of water quality to seagrass restoration, the sessions will take a closer look at propeller scarring, changes in water circulation and disease, and other factors that may affect seagrass recovery.



Shoal Grass  
*Halodule wrightii*

Traditionally, limiting the amount of nitrogen and other nutrients in an estuary has been a successful way to promote the recovery of seagrass-

es. Excess nutrient loadings cause algae blooms that turn the water murky and to flourish seagrasses require clear waters that sunlight can penetrate.

In Tampa Bay, a coordinated effort to manage nitrogen inputs to the bay has resulted in the return of more than 5,000 acres of seagrasses in the last 15 years. Although seagrass beds continues to expand baywide, the rate of seagrass recovery has declined in some areas. In several segments of the bay, seagrass expansion appears to have leveled off, despite water quality and clarity sufficient to support continued recovery.

The discovery in Tampa Bay of the widespread presence of *Labyrinthula*, a primitive organism associated with seagrass die-offs in other areas, has heightened inter-

## We are pleased to announce...

Robert W. Rudolph has accepted the position of Director of the Charlotte Harbor NEP.

Mr. Rudolph is currently the Natural Resources Coordinator for the Galveston Bay Estuary Program. Prior to this position he held various coastal planning, management and research positions in Saipan and in the United States, mostly in the northeast.

"My work experiences have covered the gamut of issues involving natural resources management, and has allowed me to work with a wide range of professionals and the general public in addressing issues of concern particular to the coastal environment," Mr. Rudolph wrote in his cover letter.

Mr. Rudolph will begin work in early July.

- Forces on the river — the many expectations for the watershed

After presentations, attendees will break into discussion groups led by a facilitator to talk more in-depth about these issues. In the last hour, participants will reassemble to discuss each group's conclusions and finalize discussions.

Your attendance at this forum is crucial in establishing local citizens' consensus prior to the July SFWMD board meeting that will be held in Fort Myers. We must learn all the facts in order to have a unified voice to influence the final water policy that will be enacted by the SFWMD this fall.

est in examining disease and other factors that may contribute to the seagrass slowdown. The symposium will bring together local scientists and managers with national experts to discuss potential impacts and solutions.

The symposium will be held August 22-24 at the Holiday Inn SunSpree Resort in south St. Petersburg. Symposium fees will be \$50 per person, with lunches included. A symposium program and registration form will soon be available online at [www.tbep.org](http://www.tbep.org) or call the TBEP office at 727/893-2765.

*This workshop is sponsored by Tampa Bay Estuary Program, Sarasota Bay National Estuary Program, Charlotte Harbor National Estuary Program, the Gulf of Mexico Program and others.*

## NEP Support Shows on Sanibel

### Pick Preserve Teaching Shelter and Nature Trail



The Pick Preserve on Sanibel Island consists of approximately 22 acres of recently restored native habitat within a 400-acre conservation corridor jointly owned and managed by J.N. "Ding" Darling National Wildlife Refuge, the City of Sanibel, and Sanibel-Captiva Conservation Foundation (SCCF). In 1999, with Charlotte Harbor NEP support, SCCF was able to develop Pick Preserve as a place for learning. The project developed an educational trail,

constructed a gazebo teaching shelter, placed bird nest boxes, planted native trees and shrubs, and created and placed trail signs.

These improvements will expose children and adults to the rare and unique freshwater wetlands and hardwood hammocks on the interior of Sanibel and provide a location to educate visitors on conservation, restoration, and land management issues, including the special partnerships formed. The Charlotte Harbor NEP provided \$9,237 to SCCF, which provided \$33,437 in match.

SCCF works to preserve the unique interior ecosystem of Sanibel and surrounding undeveloped habitats and barrier islands. SCCF currently owns and manages approximately 1,500 acres of conservation land on barrier islands.



*Photographs by Melissa Upton*

Local children learn about native trees and shrubs by planting them and teaching others about them. In the left photo, Keith Bickett tells visitors attending the April 3 dedication ceremony about the species of butterfly attracted to that particular plant. In the photo above, Sanibel School Junior Girl Scout Troop 218, and Brownie Troops 690, 311, and 262 help beautify the area near the gazebo teaching shelter.

*Due to the sensitivity of these rare habitats, susceptibility to wildfires, and their important wildlife value, visits to the preserve must be scheduled ahead of time. SCCF will make every effort to accommodate visiting group schedules and provide a staff or volunteer trail guide. At this time there is no charge for visiting schools, conservation or college groups, or SCCF members, partners and affiliates. Contact SCCF at 941/472-2329 or [sccf@sccf.org](mailto:sccf@sccf.org).*

## NEP Support Shows in the Water

### Punta Gorda Waterfront Juvenile Fisheries Habitat

The Charlotte Harbor Reef Association and its cadre of volunteers is creatively forming habitat for juvenile fish. The Association is building "reef balls," igloo-shaped concrete structures, and placing them under fishing piers, fishing docks, and private docks in Charlotte Harbor. The artificial habitat is constructed from super-strong concrete perforated with holes placed to allow juvenile fish to move throughout. The artificial habitat provides juvenile fish a safe shelter from larger predatory fish and allows other estuarine life to attach and serve as food for a host of estuarine organisms. Mangroves perform this critical function but they are too often removed or degraded in the wake of development. Although not ideal, reef balls help reclaim this lost habitat.

"When we are done with this project we will have placed 72 reef balls near Laishley, Gilchrist and Nature Parks and public fishing piers in Punta Gorda, 180 under private docks at Punta Gorda Isles, and 210 off Alligator Creek in Charlotte Harbor reef," said Bob Croft with the Association and member of the NEP Citizens' Advisory Committee. "We are also working to place 250 offshore in Lee County in the deep waters off Cape Haze."

In 1999, the Charlotte Harbor NEP provided \$2,000 to the Charlotte Harbor Reef Association, which is providing \$6,100 in match in addition to the time of the volunteers who are assembling and placing the reef balls. The Reef Ball Foundation and Krehling Industries are providing additional assistance.



*Photographs by Rich Novak*

LEFT: August Look (left), Joe Solay (middle) and Jerry Jensen lower a reef ball into the water. RIGHT: Reef balls are placed on a pier by Joe Solay (standing) and August Look. Notice the distance between reef balls.

### What's a reef ball?

A reef ball is a designed artificial reef used to restore ailing coral reefs and to create new fishing and scuba diving sites. Reef balls are made of a special, marine friendly, concrete and are designed to mimic natural reef systems. They are used around the world to create habitats for fish and other marine and freshwater species.

– Reef Ball Foundation

# Peace River Flow Lowest in Record-Keeping History

by Sam Stone, Peace River Manasota Regional Water Supply\*

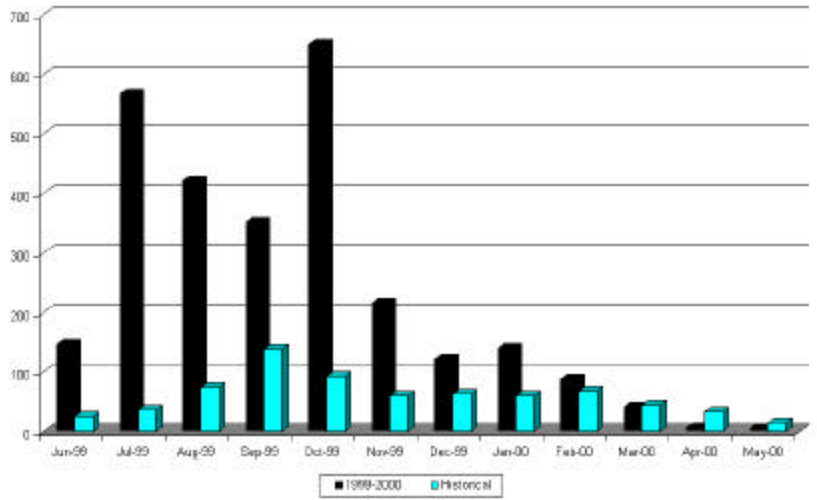
The graph of the water flow of the Peace River at Arcadia (top graph) shows the current Peace River flow at Arcadia as the lowest single day average flow for each month for the period of June 1999 through May 2000. These flows are compared to the historical lowest single day average flow for each month for the period of record from 1931 to present. Of interest is that this year the months of March, April, and May set new single day low flow records for those months and the single day low flow for May has set a new all time low flow record.

This graph of the water flow (bottom graph) shows the current Peace River flow at Arcadia as a monthly average for the period of June 1999 through May 2000. These flows are compared to the historical monthly averages for the period of record from 1931 to present. The graph shows that 11 of 12 months during this past year the flow at Arcadia was below average and that the current drought, though most severe in the last few months, has been in effect over the past year. Though not shown directly on the graph, during the past 12 months the river has not achieved flood stage during the wet season, which is a fairly typical event each year.

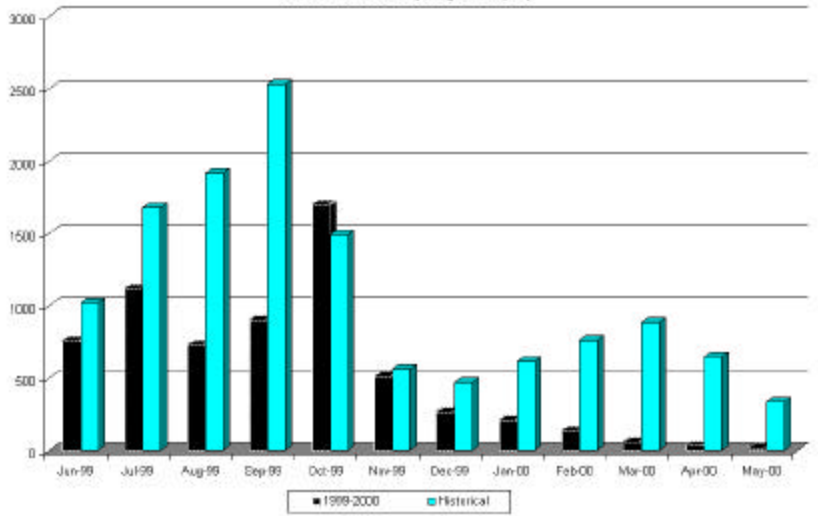
\* Sam Stone is the Environmental Affairs Coordinator for the Peace River Manasota Regional Water Supply (Authority). Mr. Stone prepared these graphs using flow information provided by the Southwest Florida Water Management District, U.S. Geological Survey and Authority records.

Rainfall over the past 12 months is 9 to 14 inches below the 53.22 inches Southwest Florida normally receives. During the first four months of 2000, only 35 percent of 11.5 inches (4.08 inches) of the expected rain fell. This was the driest year since 1915.

Peace River at Arcadia Historical Lowest Single Day Avg. Flow (cfs) by Month vs. Current Lowest Single Day Avg. Flow by Month (cfs)



Peace River at Arcadia Historical Monthly Avg. Flow (cfs) vs. Current Monthly Avg. Flow (cfs)



## More Sinkholes Formed, Draining Water from Rivers

“A century ago, a drought like the one now gripping Southwest Florida wouldn’t have dried up the Peace River,” reported Victor Hull in a May 13 *Herald-Tribune* article.

“Phosphate mining, citrus groves, and development have obliterated the natural landscape, drying up a spring that once fed the river millions of gallons of fresh water daily, and opening up sinkholes that suck water underground,” he reported.

About 20 years ago, a 42-foot-deep sinkhole (shown in the photo) collapsed south of Bartow in the Peace River floodplain.

Bill Lewelling, a U.S. Geological Survey hydrologist, identified several sinkholes recently formed near the Peace River. He estimates that a number of newly formed, smaller sinkholes in the Peace River channel south of Bartow will take more than 7 million gallons of water from the river daily.

Sinkholes are created when too much water is taken out of the ground, drying the soil and causing it to collapse.

ADAPTED from article “Spring drought has new effects on river” by Victor Hull printed in the May 13, 2000 issue of *Herald-Tribune*.

Photo by Sam Stone

# Gulf Shore Life in Southwest Florida

by Karen S. Parker

Once home to the fierce Calusa Indian tribe, southwest Florida's barrier islands encompass some of the last **unspoiled vestiges** of Old Florida coastline.

Blessed with beautiful sunsets, mild surf and gentle subtropical winds, this chain of islands stretches from Lido Key to Marco Island along the southwest coast of Florida.

Drawn by the area's **beauty and abundant wildlife**, island residents are an eclectic mix. Million dollar homes mix with weekend cottages and fishermen's shacks. The hardier souls live on bridgeless barrier islands that are accessible only by boat and bemoan the progress that encroaches on their island paradise.

Residents on those islands connected to the mainland by causeways, strive to **balance growth and amenities** with a rapidly disappearing mangrove coast and ever-increasing erosion problems along their beaches. Hammock forests and wetlands on many of these islands are fast becoming a faded memory, often replaced by imported exotic landscape trees and bushes that beautify multimillion dollar estates and developments. There are a few exceptions such as the J.N. 'Ding' Darling National Wildlife Refuge on Sanibel Island and the Barrier Islands GEO Park, that includes five islands — Cayo Costa, Gasparilla, Don Pedro, Upper Captiva and the southern tip of Manasota Key. There, Department of Environmental Protection Division of Recreation and Parks staff are hard at work removing exotic plants and replanting native species as well as preserving remaining natural habitats. Ospreys, eagles, ibis, sandhill cranes, least terns, egrets and the rare white pelican have established successful rookeries on sandy keys along the coast.

Although feeling pressure from development, the area's abundant wildlife includes deer, bobcats, otters, foxes, raccoons and even occasional sightings of a panther.

**B**eautiful sunsets, mild surf, gentle subtropical winds and abundant wildlife, right here in Charlotte Harbor!

Many coastline residents acknowledge feeling that 'last man over the bridge' syndrome and wanting to limit growth, but Florida's best kept secret is no longer a secret as local governments quickly acknowledge. Condominiums vie with palm trees for space along the beach and bays in ever increasing numbers.

Many counties have already formed **land conservancies** to purchase remaining pristine coastal land before it is developed and lost forever.

These purchases are often funded through property and tourist taxes. Old timers remember the days of cisterns and drought. New residents know little but turning on the tap and enjoying water on demand. Combined with saltwater intrusion into shoreline wells, fresh water sources to feed future growth along the barrier islands have become hotly debated issues.

But it is the beauty of the area's Caribbean blue and green water and **white powder sand beaches**, along with the multitude of recreational opportunities these provide, that is the common denominator for most coastline residents. Once southwest Florida was home to a booming commercial fishing industry that can trace its roots back to the late 1600s.

Since the Net Ban of 1995, there are fewer and fewer commercial fishermen in the area. Those that have not relocated to other states, are now trying their hand at aquaculture and clam farming. In the Charlotte Harbor area alone, there are a number of clam farms that dot the shallow sounds and bays.

**Sportfishing** continues to grow in popularity and has a major economic impact on the area. Boca Grande on Gasparilla Island is known worldwide as the 'Tarpon Capital of the World.' (See page 7 for more on fishing.) From April through July anglers flock to the area to fish for this silver king of game fish, bringing much-needed tourist dollars to cash-starved businesses during the slow summer season. Back-country fishing for snook, redfish, trout, and cobia is also a rapidly growing sport attracting increasing boat traffic that threatens the already endangered West Indian manatee.



**Charlotte Harbor.** This false color Landsat Thematic Mapper Scene image was acquired by a Landsat satellite in 1996. (The white portion of the image are clouds.) This image was provided by Albert Bond in the Resource Conservation and Development Department of the Southwest Florida Water Management District.

**Eco-tourism** is growing by leaps and bounds. The shallow water along the coast is perfect for kayaking, canoeing, and guided wading trips. Lee County is in the process of planning an extensive canoe and kayaking trail throughout the Pine Island Sound area. (See page 11 for Charlotte County's plan to create more trails.)

With an average depth of five to 13 feet, Charlotte Harbor is perfect for weekend regattas of racing sailboats. Gunk holing in out of the way anchorages such as Pelican Bay, Cabbage Key, or Roosevelt Channel, are also popular pastimes for coastal sailors.

And there are still beaches along southwest Florida's coast where people can stroll for miles and rarely meet another soul. Shelling along Sanibel and Captiva islands has become such a popular hobby that locals call looking for shells there, the 'Sanibel Stoop.' Southwest Florida's barrier islands are unique in that they combine such a mix of lifestyles from the fairly isolated out islands to the cosmopolitan flair of Sarasota, Fort Myers, and Naples.

**These islands offer something to suit everyone's tastes, and it's right here in our backyard. Lucky us.**

# Helping to Protect and Manage Estuary and Watershed Habitats

## Charlotte Harbor Aquatic & State Buffer Preserves

by Betty Gilpin, FDEP Charlotte Harbor Aquatic and State Buffer Preserve

**L**inks are vital to Charlotte Harbor, its estuaries and watersheds: water to land, activities of people to the health of the natural resource, the present to the future, and agency to agency.

**T**he **Charlotte Harbor Aquatic and State Buffer Preserves** are managed by the Florida Department of Environmental Protection (DEP) office in Punta Gorda, Florida. The 165,000 acres of submerged lands are designated as **Aquatic Preserves** to be “preserved in essentially natural conditions for future generations to enjoy.” The 38,000 acres of **Buffer Preserve** lands have been acquired adjacent to the Aquatic Preserves to provide a buffer between human uses of the watershed and natural resources in the estuaries. Together, these lands and waters are critical to maintaining corridors for wildlife, habitat for endangered and threatened species, allow for improved species diversity, water conservation, water quality, fisheries, open space, scenic vistas, and a quality of life that is quickly disappearing elsewhere.

The Charlotte Harbor estuary supports a tremendous diversity of plant and animal life from microscopic plankton and filter-feeding worms to large marine mammals such as dolphins and manatees. Vegetation is largely dominated by mangroves, seagrasses, and, less frequently, salt marsh. These plant communities form the base of a complex food web and filter pollutants, trap sediments, reduce erosion, and stabilize the shoreline.

**R**esidents and visitors are encouraged to enjoy boating, fishing, canoeing, kayaking, nature study, and photography along the many miles of rivers, creeks, and pristine shoreline on these public lands and waters. Hiking, guided walks, and educational programs are also available.

Estuarine systems, where fresh water from the land meets and mixes with salt water from the sea, consist of coastal wetlands, including salt marsh and mangrove forest, as well as seagrass beds, mud flats, oyster bars, and other submerged habitats. Shrimp, crabs, fish, starfish, clams, and other mollusks find food and shelter within these habitats. Fluctuating salinities exclude larger freshwater and marine predators. Estuar-

ies are important as nurseries, particularly for juvenile fish such as snook, mullet, tarpon, and redfish. More than 70 percent of commercially and recreationally important species of fish and shellfish spend part or all of their lives within estuaries. Mangrove overwash islands provide nesting and roosting areas (rookeries) for birds such as herons, egrets, and pelicans. More than 40 percent of Florida’s endangered or threatened species are found within our estuaries.

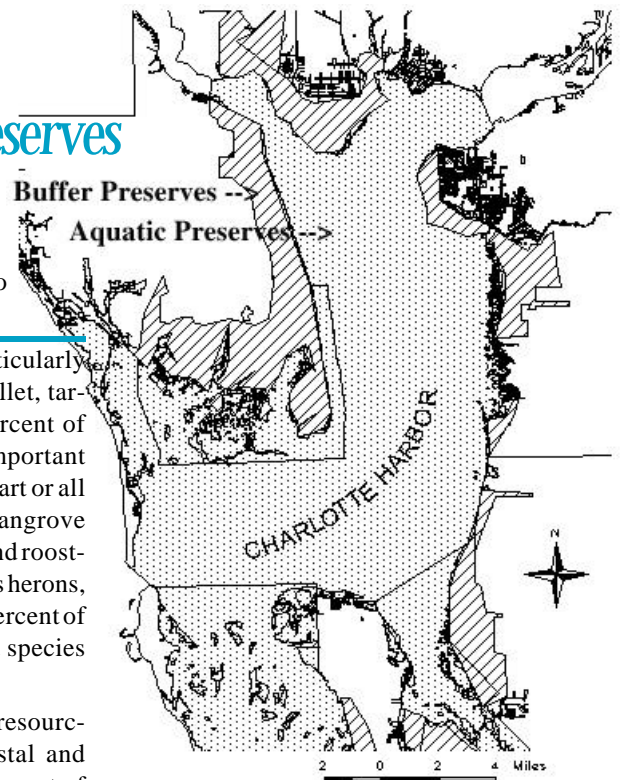
Recognizing the value of estuarine resources, Florida moved to protect coastal and inland waters through the establishment of the **Aquatic Preserves Act in 1975**. Our corner of southwest Florida is remarkable in that most of the coastal waters are **Aquatic Preserves** and include:

- Lemon Bay:** 7,667 acres
- Gasparilla Sound/Charlotte Harbor:** 79,168 acres
- Cape Haze:** 11,284 acres
- Pine Island Sound:** 54,176 acres
- Matlacha Pass:** 12,511 acres
- Estero Bay:** 9,834 acres.

Charlotte Harbor Aquatic Preserve management includes resource management, education, and research. Monitoring includes monthly water quality sampling and annual monitoring of seagrasses and anchorage. Monthly Aquatic Preserve volunteers monitor water quality at 11 stations and mangrove health in the estuary.

Sensitive to pollution, estuaries are increasingly subject to the pressures of coastal development resulting from rapid population growth and urbanization in coastal counties. The Charlotte Harbor State Buffer Preserve is critical to the protection of Aquatic Preserves. Landward of the mangrove fringe, the Buffer Preserve forms a matrix of high marsh, salt flats, coastal hammocks, pine flatwoods, and saw palmetto. Upland habitats (pine flatwoods) and wetlands (salt marsh and mangrove forest) “buffer” estuaries from stormwater runoff pollution.

The Charlotte Harbor State Buffer Preserve includes four Management Areas located in Lee and Charlotte counties. The Charlotte



Harbor shoreline from the Caloosahatchee River to Placida is 67.5 miles of which 78 percent or 52.26 miles is state owned.

**Punta Gorda Management Area** protects Charlotte Harbor proper. This area includes 5,910 acres from Burnt Store Marina north, to and including the Charlotte Harbor Environmental Center, Inc. facilities site.

**The Cape Coral Management Area** filters stormwater pollutants from freshwater Cape Coral canals before they reach the estuary. This area includes 9,185 acres from Burnt Store Marina south to, and inclusive of, the North and South Spreader Waterways.

**The Cape Haze Management Area** buffers the Gasparilla Sound/Charlotte Harbor and Cape Haze Aquatic Preserve. This 11,168-acre area includes the entire southern and eastern shoreline of the Cape Haze peninsula.

**The Port Charlotte Management Area** protects the waters of northern Charlotte Harbor. This area includes 6,677 acres from El Jobean on the Myakka River to the vicinity of Alligator Bay south of Port Charlotte.

The most common habitats in the Preserve include pine flatwoods, oak/palm hammocks, tropical hardwood hammocks, scrub oak, saltmarsh, and mangroves.

The Charlotte Harbor Aquatic and State Buffer Preserves office is located at 12301 Burnt Store Road, Punta Gorda (941/575-5861). The Friends of the Charlotte Harbor Aquatic Preserves, a citizen support organization, has been formed to assist the office.

# Charlotte Harbor Field Lab: Minding the Marine Life

by Rebecca Hensley, FWC FMRI

The Fish and Wildlife Conservation Commission's (FWC) Florida Marine Research Institute (FMRI) has several facilities all over the state to help monitor the status of the marine resources in Florida's 8,000+ miles of coastline. The information collected at all the labs are synthesized and used to better manage the marine resources. To better monitor Florida's second largest estuary, the Charlotte Harbor Field Laboratory was created in 1989.

The **Endangered and Threatened Species (ETS)** section of this field laboratory rescues manatees, recovers carcasses, and conducts research, including photo identification for the statewide database, in the ten southwestern Florida counties. As of May of this year, 63 manatee carcasses were recovered in this region alone. Four were recovered from Charlotte Harbor with three deaths attributed to watercraft. On the lighter side, two of the five tagged manatees are utilizing Charlotte Harbor. One is a rehabilitated manatee known as Tiny Tim who was rescued as an orphan on Christmas Eve 1998 at El Jobean. Currently, manatee rescue and recovery are on the increase in the southwestern area.

The **Fisheries Dependent Monitoring (FDM)** program assesses the recreational and commercial catches for the Gulf and southwestern region of Florida.

The **Fisheries Independent Monitoring (FIM)** program assesses an array of forage, nontarget, recreational and commercial fish species. The current long-term sampling program documents ecosystem changes, evaluates natural and manmade disturbances, and makes management decisions. The initial monitoring efforts were directed at small and recruiting (or young-of-the-year) species. In 1993, sampling began for larger individuals.

More than 250 different fish species have been documented in Charlotte Harbor. Each year FIM records more than 4 million individuals in samples representing 130 to 150 species. Small forage species generally dominate 80 percent of the total catch. These include anchovies, pinfish, mojarras, Atlantic threadfin herring, scaled sardines, rainwater killifish, silver perch, and pink shrimp. Anchovies are usually the dominant species caught in Charlotte Harbor and can comprise more than 40 percent of the total catch. Recreationally and commercially important

species make up about 10 percent of the total catch with the most numerous species being pink shrimp, spot, sand seatrout, spot and blue crab. Other species, like snook, red drum, and spotted seatrout, are caught but are not as numerous.

Barring any major changes, the outlook for the fisheries resources of Charlotte Harbor appears bright. In samples so far this year, most species appear to be doing at least as well as in previous years. With less than half of this year's sampling done, record numbers of anchovies, snook, and parrotfish have already been recorded in Charlotte Harbor.

For more information on FMRI, visit their website at [www.fmri.usf.edu](http://www.fmri.usf.edu).



FMRI samples the Charlotte Harbor with a small 21 m seine for juvenile fish species and a 600 foot seine for larger, adult species, like this cobia (above) that will be released.

The **Fisheries Assessment** program will continue monitoring in an attempt to track and evaluate any ecosystem changes.

## Fishing Prospects in Charlotte Harbor

by Captain Ralph Allen\*

I was excited about the fishing prospects in Charlotte Harbor when I moved here from Kansas City some 25 years ago, and that excitement continues to this day. I never seem to stop learning more about this beautiful body of water and about the many creatures who live here.

Snook, redfish, trout, and tarpon are the four most popular species of game fish found in Charlotte Harbor and it's a proud angler who is skilled (or lucky) enough to catch a "Grand Slam" by landing all four species in a single day. Your shot at a Grand Slam is most likely during the months of April to September when all four species are in the harbor in abundance and are feeding heavily.

Boca Grande Pass is the most famous tarpon fishing hot spot in the entire world. For many decades anglers have traveled here from all over the world during May, June and July to tangle with tarpon, resulting in an entire industry based on this one season fishery. Since virtually all tarpon caught are released alive, this fish stock shows no sign of depletion from angling pressure. From early summer to early fall, the tarpon leave Boca Grande Pass and become more common in the deeper central part of the harbor. These fish average around 80 pounds and fight so hard that you might not want to catch two in a row!

Snook are a warm water fish and generally the hotter the weather the better the snook action.

Snook spawn in the summer months so snook season is closed during June, July and August but savvy anglers know that the closed season can be the best time to catch and release snook. Most snook are under ten pounds but the state record fish is over 44 pounds and was caught in Fort Myers in 1984.

Redfish can be caught under the mangroves when the tide is high or out on the shallowest of flats when the tide is down. In fact, many reds are caught by anglers wading ankle deep. Just don't step on a stingray or your trip will be cut short.

To catch a trout, think grass flats. Drifting over just about any sea grass bed is the ticket to trout success and is a great way to entertain the kids. Trout aren't large (though a few fish over six pounds are caught) and aren't the hardest fighting but they can be caught in good numbers and are tasty table fare.

Wait, there's much more fishing in Charlotte Harbor. Sharks, cobia, mackerel, sheepshead, black drum, jack crevalle, mangrove snapper, flounder, pompano, and others are all commonly caught in the harbor. Sometimes there are so many choices that anglers can't decide what to fish for!

\* Captain Allen, a member of the Charlotte Harbor NEP Citizens' Advisory Committee, can be reached at 941/639-0969 or [www.kingfisherfleet.com](http://www.kingfisherfleet.com). King Fisher Fleet is based at Fishermen's Village Marina in Punta Gorda.

# Reaching the Citizens Near Charlotte Harbor

by Joy Duperault, Charlotte Harbor Environmental Center

In the face of budget cutbacks, leadership changes in established programs, and a flurry of environmental issues in the watershed, the future of environmental education in the Charlotte Harbor area has never looked brighter. Just as the murky waters of northern lakes turn over each spring in order to provide a cleansing and rebirth, so the apparent upheaval of “things as we know them” will bring about a refreshing change in the nature of environmental education (EE) programs offered at this end of the river.

The Charlotte Harbor Environmental Center (CHEC, a not-for-profit corporation) stands at the center of environmental activity with its 13-year history of excellent education and recreational programs. Over the past seven years preservation land management has also been key to giving the public even more opportunity for positive interaction with the natural world. EE takes on a new, personal meaning when citizens participate in ecosystem management tasks such as water quality monitoring, removal of exotic pest plants, or plans for a new demonstration site for aquatic vegetation.

A recent request for a list of programs offered by CHEC gave us cause for applause! We spend our days delivering EE programs, managing environmentally sensitive lands, writing and administering grants, teaching visitors, making appeals, and networking with others in our field. We rarely have a

chance to sit back and take an objective look at where we are and what we have accomplished. Having done so, here's the abbreviated list.

- Volunteer Water Quality Monitoring Program
- Urban and Community Forestry Education
- Annual Teacher's Water Resources Institute and other teacher training workshops
- The Florida Yards & Neighborhoods Program
- Guided nature hikes, lectures, workshops, volunteer programs, field trips, “Learning in Retirement” classes, weekly newspaper columns, video presentations, and much much more. A week-long nature institute and annual birding festival are planned for 2001.
- New Coastal Growth Workshops and Stormwater Monitoring Program
- Fourth Grade Environmental Education Program
- The Academy Monitoring Events
- High School Intern Program
- Nature hikes at CHEC sites or classroom visits by CHEC staff for students in other and who are home-schooled



## Charlotte County Expands Environmental Parks

by George Kenny, Charlotte County Parks and Recreation

Charlotte County is working with Florida Communities Trust to acquire environmental parkland along the boundary of an Aquatic Preserve adjacent to a Buffer Preserve on the Sunrise Waterway in Port Charlotte. The site is in a very densely populated urban area. The county will manage Sunrise Park's 40.55 acres of upland and wetlands for outdoor recreation, environmental education, habitat management and access to the Charlotte Harbor Aquatic Preserve. It is contiguous to 114 acres of state-owned saltmarsh wetland that extend south into Alligator Bay. Proposed amenities include a trail system, picnic facilities playground, tennis courts, restrooms, fishing dock, and a canoe/kayak landing area.

Oyster Creek Environmental Park was acquired with aid from Florida Communities Trust in November of 1999. This 135.22 acre park is located on Oyster Creek within the greenway waterway corridor known as the Oyster Creek-Lemon Bay Aquatic Preserve-Ainger Creek Waterway. This site will be used for wildlife management, outdoor recreation and environmental education. Located across from Cedar Pointe Environmental Center, these two county parks form a greenway connection along Lemon Bay and Oyster Creek. Planned amenities include picnic facilities, restrooms, bike/foot trails, canoe/kayak landing and scenic overlooks of Oyster Creek.

CHEC MANAGES FOUR PUBLIC PROPERTIES  
IN CHARLOTTE COUNTY.

**The Alligator Creek site** in Punta Gorda is a 20-acre section of the more than 4,000-acre Charlotte Harbor Aquatic Buffer Preserve. CHEC partners with Florida DEP to manage this property for preservation and public access. There are almost eight miles of trails, a large screened pavilion, and four buildings with displays and educational programs. This site is open seven days each week throughout the year.

**The Tippecanoe Scrub site** in Port Charlotte is a 354-acre county-owned preservation tract purchased in 1995 as a buffer to development on the bay and inland waters of the harbor. There are approximately four miles of trails and picnic areas for public use, along with an observation tower overlooking Tippecanoe Bay. A non-motorized boat launch is planned for this property.

**The Cedar Point Environmental Park** is an 88-acre site in Englewood purchased by Charlotte County in 1992 in order to preserve some of the last remaining undisturbed land on

Lemon Bay. Bounded by Oyster and Ainger Creeks and the Bay, this site offers visitors a new program building (1998), over four miles of trails, a non-motorized boat launch, and picnic areas.

**Amberjack Slough** is an 182-acre site in Cape Haze purchased as Charlotte County preservation property in 1998 and is managed for both passive and limited active recreation for area citizens. Preliminary plans include a perimeter jogging trail, along with boardwalks, picnic areas, kiosks, and a variety of other educational and recreational opportunities.

### FOR MORE INFORMATION

CHEC's administrative offices are located at 10941 Burnt Store Road in Punta Gorda, FL 33955. 941/575-5495, Fax 941/575-5497, chec@sunline.net, www.charlotte-florida.com/chech

Alligator Creek: 10941 Burnt Store Road, Punta Gorda, FL 33955, 941/575-5435, Fax 941/575-5437

Cedar Point Environmental Park: P.O. Box 5197, (2300 Placida Rd.) Englewood, FL 34224, 941/475-0769, Fax 941/475-1899, bobbi@sunletter.com

Visit one of these sites and you may see:  
Florida scrub jays  
gopher tortoise  
bald eagles  
white pelicans  
roseate spoonbills  
Eastern indigo snakes



# Florida Blueways

## A Statewide Marine Ecosystem Management Effort Being Tested In Charlotte Harbor

by Rob Hudson and Christopher Friel\*

**F**lorida Blueways is a better way of managing our marine natural resources. The mapping technology used helps reduce conflicts between people who use these resources and the resources themselves to ensure the resources are sustainable.

The 1998 Florida Coastal Management Conference, *The Edge of an Ocean Frontier*, brought coastal managers and scientists together to discuss the future of coastal and ocean management in Florida. In response to these discussions, the Coastal Management Program is supporting the Florida Fish and Wildlife Conservation Commission's Florida Marine Research Institute (FMRI) to cooperatively develop a Florida Blueways concept. This concept fully integrates scientific knowledge and environmental protection priorities into a marine ecosystem management strategy. To implement this concept, FMRI is developing innovative methods, tools, partnerships, and processes to address management concerns throughout the marine environment.

FMRI is using mapping technologies, scientific information, and local knowledge from Charlotte Harbor's citizenry to describe the bay. Florida Blueways characterizations use Geographic Information Systems (GIS) mapping information and integrate ecological, human use, and management descriptions to identify marine areas in need of increased

marine ecosystem management effort such as research, education, volunteerism, enforcement, etc.

FMRI is testing the Florida Blueways concept in Charlotte Harbor because of the interest by resource management agencies, the establishment of the Charlotte Harbor National Estuary Program, available information, and other ongoing programs at FMRI.

FMRI has spent the past two years characterizing the ecology of Charlotte Harbor. The preliminary results from these efforts are providing the foundation to further refine the ecological characterization while building the human-use and management characterizations.

To characterize human uses in the bay, the University of Florida's Conservation Clinic and local managers worked together to prioritize ways people use Charlotte Harbor. The prioritization exercise first gathered local input into the most pressing human uses in the marine system and informed the community about the Florida Blueways process. In addition, FMRI and Florida Sea Grant recently

*Thank you! The FCMP and FMRI would like to thank the Southwest Florida Regional Planning Council, Charlotte Harbor National Estuary Program, Charlotte Harbor Environmental Center, and all of the citizens who have contributed to this effort. Your comments and information are invaluable in the development of Florida Blueways.*

completed a series of expert meetings in Charlotte Harbor to gather local knowledge from boaters. This information is being compiled along with a telephone survey, mail survey, and aerial videography to characterize boating use in Charlotte Harbor. FMRI will couple the boating use characterization with additional human-use characterizations to build an overall human-use characterization. Investigations are also underway to identify baseline information and information gaps from which FMRI will build a management characterization next year. All three characterizations — ecology, human-use, and management — will be tested by the summer of 2001.

\* Rob Hudson is an Assistant Research Scientist with the Florida Fish and Wildlife Conservation Commission's Florida Marine Research Institute. He can be reached at 727/896-8626 or rob.hudson@fwc.state.fl.us. Christopher Friel is a Program Administrator with the Florida Fish and Wildlife Conservation Commission's Florida Marine Research Institute.

## Ancient Mariners: Sea Turtles

by Maran Hilgendorf

Sea turtles' fossilized skeletons have been dated back 150 million years, before the age of dinosaurs. While the reign of dinosaurs ended 100 million years ago, sea turtles survived — even thrived — until recently. Only seven species of sea turtles still exist and they are all either considered to be threatened (at risk of becoming endangered) or endangered (at risk of becoming extinct). Both federal and state laws protect all sea turtles from disturbances from people.

Nearly all of the turtles' activities on land occurs at night. The hatchlings emerge at night and adult females nest at night with the exception of the Olive and Kemp's Ridelys, which nest in large aggregations called "arribadas" during the day. Sea turtles rely on natural light to complete their reproductive cycle. Females prefer the dark beaches for nesting while hatchlings are attracted to the brightest point on the horizon after they emerge from their nests. The reflection of the moon and stars over

the water points them in the right direction.

The State of Florida, through the Florida Fish and Wildlife Conservation Commission's Florida Marine Research Institute, coordinates the Statewide Nesting Beach Survey program ([www.fmri.usf.edu/turtles.htm](http://www.fmri.usf.edu/turtles.htm)). Initiated in 1979 under a cooperative agreement between FWC and the U.S. Fish and Wildlife Service, the Survey documents the total distribution, seasonality, and abundance of nesting by sea turtles in Florida.

Three species of sea turtles, the loggerhead (*Caretta caretta*), the green turtle (*Chelonia mydas*), and the leatherback (*Dermochelys coriacea*), nest regularly on Florida's beaches. Two other species, the hawksbill (*Eretmochelys imbricata*) and Kemp's ridley (*Lepidochelys kempii*), nest infrequently.

Data for this survey are gathered through a network of permit holders consisting of private conservation groups, volunteers, consultants, academics, local governments, federal agencies, and the Florida Park Service.



USF&WS

### Sea Turtle Nests Recorded in Lee, Charlotte and Sarasota Counties from 1988-1999

Hawksbill Turtle	4
Kemp's Ridley Turtle	4
Green Turtle	37
Leatherback	0

### Loggerhead Sea Turtle Nests Recorded in Lee, Charlotte and Sarasota Counties from 1988-1999

1988	1,225	1994	3,856
1989	1,747	1995	5,274
1990	2,285	1996	4,750
1991	3,018	1997	5,083
1992	3,284	1998	6,400
1993	2,941	1999	5,176

# State Adds 1,245 Acres to the Estero Bay State Buffer Preserve

A settlement between the Florida Department of Environmental Protection and Estero River Bay Properties, Inc. (formerly Sahdev, Inc.) for the purchase of 1,245 acres near Estero Bay was finalized in February 2000. Judge Isaac Anderson, Jr. of the 20<sup>th</sup> Judicial Circuit Court in Lee County approved the settlement agreement papers.

The State of Florida first attempted to buy the property in 1998 as part of the State of Florida's Conservation and Recreational Lands (CARL) acquisition program. Home to the bald eagle, gopher tortoise, little blue heron, Florida black bear, Florida coontie, and three vegetative communities that are classified as Rare and Unique Uplands, the property is important to the overall plan to preserve this piece of Florida's natural environment. The purchase increases the Preserve (shaded areas on map) to 8,452 acres.

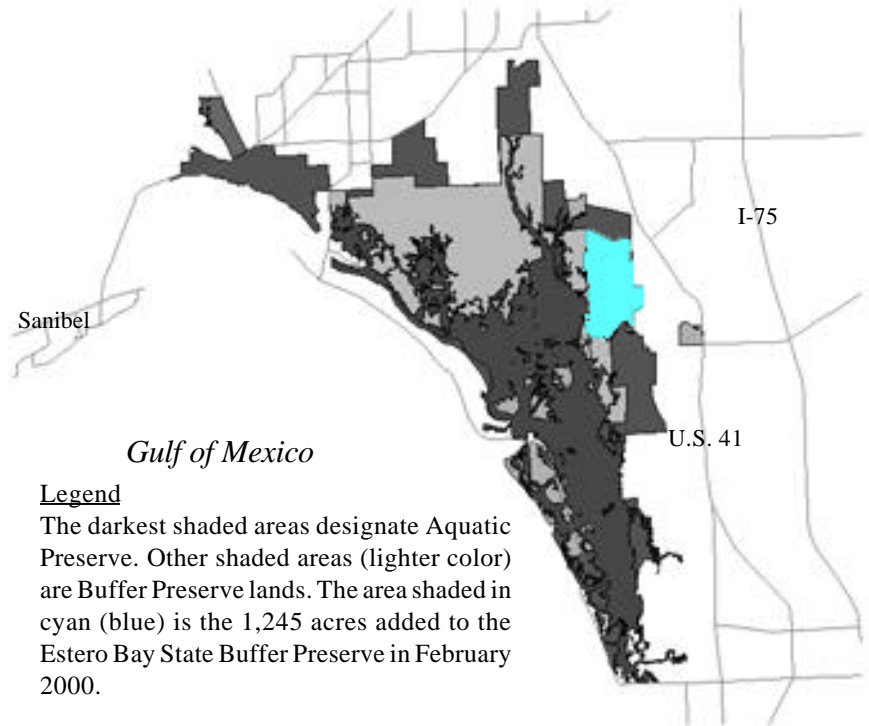
Original negotiations on a purchase price reached an impasse. On June 22, 1999, the Governor and the Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida, authorized the Florida Department of Environmental Protection to exercise the Power of Eminent Domain to acquire the property.

Prior to filing the lawsuit, the Department secured new appraisals of the property. The new appraisals reflected values closer to the owners' asking price. Rather than file the lawsuit, the Division of State Lands, through the Attorney General's Office, initiated settlement negotiations with the attorneys representing the owners. The negotiated price of \$31,850,000 includes all lawyers' fees and court costs. It represents savings of at least \$5 million to the state, had the parcel been acquired through condemnation proceedings.

"The citizens of Florida are well served by the acquisition of this land at a fair price," said Florida Department of Environmental Protection Secretary David B. Struhs. "This land was the missing link between two previous acquisitions. It adds two miles of coastal mangroves on the bay and approximately one mile of shoreline on the Estero River. This greatly enhances our ability to protect these rare lands and to make them available to all Floridians."

"We consider this acquisition a once in a lifetime opportunity and we are ecstatic. Not only will the purchase help protect the water quality of the bay and some rare and unique uplands in Lee County, but it also provides additional habitat for a variety of listed species and provides more recreational opportunities for the public," said Anna Marie Hartman, Director of the Office Coastal and Aquatic Managed Areas.

SOURCE: Florida Department of Environmental Protection.



Gulf of Mexico

## Legend

The darkest shaded areas designate Aquatic Preserve. Other shaded areas (lighter color) are Buffer Preserve lands. The area shaded in cyan (blue) is the 1,245 acres added to the Estero Bay State Buffer Preserve in February 2000.

*I want to express my sincere thanks to all of the many citizens, environmental organizations, government agencies and Sahdev, Inc. for making this acquisition a reality. The preservation of this land by incorporation into the Estero Bay State Buffer Preserve is critical to the health of the Estero Bay Aquatic Preserve and will benefit our present and all of our future generations.*

The Estero Bay Aquatic & State Buffer Preserves staff is looking forward to managing these sensitive and critical public lands through necessary activities such as exotic plant and animal control, habitat and hydrological restoration, and prescribed fire. We are also excited about being able to provide hiking and nature appreciation opportunities on the site. It is anticipated that active management will begin after July 1, 2000 with the creation of a walk-through at the designated public access point by the FPL substation on Broadway Street. The public will be welcome to walk the property from sunrise to sunset. An entrance sign will be erected and boundaries will be posted. We will be recruiting volunteers with help from the Estero Bay Buddies, Inc. to assist in the initial clean up of the public access point area and future activities. A large-scale exotic plant control project is planned for the property this year. Australian pines leaning over the two canals that bisect the property that are creating a navigational hazard will be removed shortly after July 1. An unnecessary fence running along the mangroves for almost the entire length of the property will be removed. These are a few of the initial management activities planned for the site. Public workshops will be held to gather input prior to adoption of an updated Estero Bay State Buffer Preserves Land Management Plan.

Heather Stafford, Estero Bay Aquatic & State Buffer Preserves

# Notice to Fishermen and Divers: Have you seen this fish?

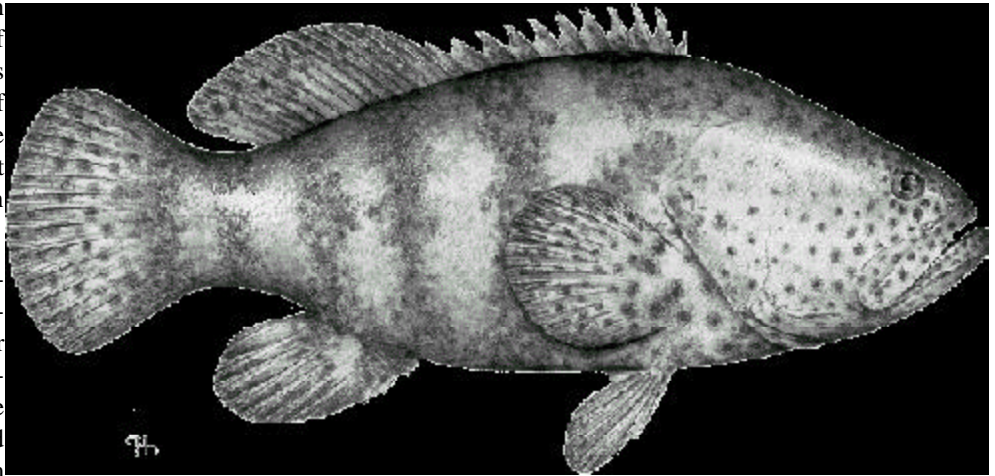
Your help is needed locating jewfish throughout Florida's Atlantic and Gulf coasts. The information you provide helps Florida State University's Department of Biological Science and the National Marine Fisheries Service determine the movement patterns and distribution of these fish throughout their range.

"Jewfish populations were heavily exploited in the recent past," wrote Felicia Coleman, Program Director of the Institute for Fishery Resource Ecology. "This exploitation led to dwindling numbers of fish and the enactment of strict regulations by state and federal management agencies. Jewfish seem to be making a resurgence, at least locally, thanks to restrictions on harvest."

If you see a jewfish, call the Florida Marine Research Institute Tagging Hotline at 800/367-4461 or write The Institute for Fishery Resource Ecology, Department of Biological Science, Florida State University Tallahassee, FL 32306-1100. Please provide the following information:

- your name, address, phone number, and email address
- the fish's location, depth, and date seen
- the fish's estimated total length
- the tag number, bead pattern (if beaded tag), and photo if possible

Remember, jewfish are protected by law. Do not attempt to harvest the fish or remove the tags. Your help is greatly appreciated.



Jewfish (*Epinephelus itajara*)

Jewfish are the largest members of the sea bass family. They can be as large as 700 pounds and 8 feet long. While they are generally found inshore, they are occasionally found in deeper waters.

## Volunteers Partner with Students

by Dr. Jon Hubertz, Science Officer, CMRT

The Charlotte Marine Research Team (CMRT) is a nonprofit corporation of volunteers who "partner with local educational organizations to provide opportunities for students to learn about and contribute to the health of the Charlotte Harbor estuary." Toward this end, CMRT is qualifying eight students, under the direction of Mike Jones of the Port Charlotte Academy, to become scientific divers.

The Academy is an alternative high school program that focuses on at-risk students. The students have learned SCUBA diving with Jim Joseph of Fantasea Scuba and the principles of scientific diving through classroom lectures and open water dive instruction provided by Alex Brylske of Instructional Technologies Inc. Mr. Brylske is a respected authority on marine and undersea technology education and developed the scientific diver course that certifies all CMRT divers. The students are excited about their first dives to help monitor three artificial reefs and seagrass beds in the Charlotte Harbor region.

For more information about CMRT, visit their web site at [www.cmrtinc.org](http://www.cmrtinc.org).

## Citizens and Agencies Plan Public Participation Workshops in September Charlotte Harbor Eco-Heritage Trails Master Plan

By Nancy Wagner, Charlotte County-Punta Gorda Metropolitan Planning Organization

Thirty-five agencies, both public and private, are working as partners to develop and record ideas for paths, routes, and destination points that link neighborhoods to cultural and historic resources, recreation, parks, and nature preserves as part of the Charlotte Harbor Eco-Heritage Trails Master Plan. The plan will identify potential multi-use path linkages of regional parks, linear parks, and key purchases of environmental sensitive lands. Charlotte County is working with the National Park Service (NPS) Rivers, Trails, and Conservation Assistance (RTCA) program office to develop "close to home" recreation projects.

Charlotte County chose to develop a project consistent with the Tourist Development Bureau's theme "Pure Florida" to develop a system of non-motorized vehicle trails and pathways, and expand the marketing aspect to include land acquisition and "eco-heritage" destinations.

With input from several organizations, a draft mission statement is being considered. It reads: "To create a county-wide system of trails, blueways, and greenways that encourage responsible public recreational use, in balance with resource protection and education. The system will enhance quality of life and instill an ethic of shared responsibility for the environment and history of Charlotte County."

FOR MORE INFORMATION,  
call the MPO office at 941/639-4676 or  
attend a public workshop.

Wednesday, September 6, 2000  
2:00 P.M.

Port Charlotte Beach Complex

Wednesday, September 13, 2000  
6:00 P.M.

Tringali Recreation Center

Throughout the two-year project, the NPS RTCA program office, MPO staff, partnering citizens, and representatives of other agencies will work to reach as many people as possible to achieve county-wide consensus concerning greenways and blueways planning in Charlotte County.

# Calendar of Events and Meetings

## June

- 14** Charlotte Harbor NEP Technical Advisory TMDL Subcommittee, 1:30, Sun Trust Bank, Arcadia, 941/995-1777 — *This group will meet approximately monthly.*
- 14-15** SFWMD Governing Board, West Palm Beach, 561/682-2529
- 15** Southwest Florida Regional Planning Council, 9:30 North Fort Myers, 941/656-7720
- 19** Caloosahatchee Riverwatch Public Form, 6:30, Lee County Commission Chambers, Fort Myers, 941/995-1777
- 21** Charlotte Harbor NEP Technical Advisory Committee, 1:30, K.D. Revell Bldg., Wauchula, 941/995-1777
- 21** Manasota Basin Board, Palmetto, 352/796-7211
- 23** Peace River Basin Board, 9:30, Polk County Hall
- 27-27** SFWMD Governing Board, Brooksville, 352/796-7211

## July

- 5** Central Florida Regional Planning Council, 800/297-8041
- 7** Peace River/Manasota Regional Water Supply Authority, 10:00, Sarasota Commission Chambers
- 10** Estero Bay Agency on Bay Management, 9:00, SWFRPC, North Fort Myers, 941/995-1777
- 12-13** SFWMD Governing Board, West Palm Beach, 561/682-2529
- 18** Charlotte Harbor NEP Citizens' Advisory Committee, tentative, 941/995-1777

**20**

Southwest Florida Regional Planning Council, 9:30 North Fort Myers, 941/656-7720

**25-26**

SFWMD Governing Board, Brooksville, 352/796-7211

## August

**4**

Peace River/Manasota Regional Water Supply Authority, 10:00, Charlotte County Admin Ctr, Port Charlotte

**9-10**

SFWMD Governing Board, West Palm Beach, 561/682-2529

**14**

Estero Bay Agency on Bay Management, 9:00, SWFRPC, North Fort Myers, 941/995-1777

**15**

Charlotte Harbor NEP Citizens' Advisory Committee, tentative, 941/995-1777

**15**

*Deadline for Fall 2000 issue of Harbor Happenings newsletter! FOCUS: Water in the watershed: where it comes from, where it goes, how it is used, who controls it.*

**17**

Southwest Florida Regional Planning Council, 9:30, North Fort Myers, 941/656-7720

**18**

Peace River Basin Board, SFWMD Bartow Service Office, 9:30

**22-24**

Seagrass Management: It's Not Just Nutrients, Holiday Inn Sunspree Resort in St. Petersburg, 727/893-2765

**25**

Myakka River Management Coordination Committee, TBD

**25-26**

SFWMD Governing Board, Brooksville, 352/796-7211

## Harbor Happenings

is produced quarterly by the

### Charlotte Harbor National Estuary Program

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EDITING AND DESIGN: Maran Hilgendorf

News items, photographs, and letters are welcome and may be submitted to the Charlotte Harbor NEP office by mail or email to mhilgendorf@swfrpc.org. Deadlines for future issues are August 15, November 15, 2000, February 15, and May 15, 2001.

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