Charlotte Harbor
National Estuary Program

Committing To Our Future

A Public-Private Partnership
to Protect the Charlotte Harbor Estuarine
and Watershed System

Comprehensive Conservation and Management Plan (CCMP)
This summary of the Charlotte Harbor National Estuary Program’s Comprehensive Conservation and Management Plan (CCMP) was created with information from the CCMP and various sources provided by the U.S. Environmental Protection Agency and the Southwest Florida Regional Planning Council.

To receive a printed copy or CD of the two-volume CCMP visit the Program web site (www.charlotteharborenp.org) or contact the Program Office (239/995-1777). The plan can also be found on the program web site at www.charlotteharborenp.org as a PDF file. Volume 1 (272 pages) outlines the management plan, including objectives and priority actions, Volume 2 (448 pages) describes preliminary implementation projects as provided by more than 40 organizations that participated in the development of the plan.

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When an estuary's components are in balance, all life flourishes.
Estuaries are places where rivers meet the sea. They are fascinating and beautiful ecosystems distinct from all other places on Earth.

An estuary is a partially enclosed body of water where freshwater from the land and rivers mixes with saltwater. In western Florida, the Gulf of Mexico provides the saltwater. Harbors, bays, lagoons and portions of rivers are often estuaries. Healthy estuaries are among the most productive and valuable places on Earth and are necessary for humans, marine life and wildlife. The land from which freshwater drains into the estuary is the estuary’s watershed.

The National Estuary Program was established in 1987 by amendments to the Clean Water Act to identify, restore and protect estuaries along the coasts of the United States. Governors nominate areas to be designated estuaries of national significance. By engaging local communities in the process, the program focuses on improving water quality in an estuary while maintaining the integrity of the whole system — its chemical, physical and biological properties as well as its economic, recreational and aesthetic values — and the land-water connection.

Once selected for inclusion in the national program, an estuary program creates a decision-making team to identify and prioritize the problems in the estuary. A plan is developed, approved and then implemented.

Twenty-eight estuary programs are at work safeguarding the health of 42 percent of the continental United States shoreline. One of every seven Americans lives within one of the NEP designated watersheds.

Albemarle-Pamlico Sounds, North Carolina
Barataria-Terrebonne, Louisiana
Barnegat Bay, New Jersey
Buzzards Bay, Massachusetts
Casco Bay, Maine
Charlotte Harbor, Florida
Corpus Christi Bay, Texas
 Delaware Estuary, Delaware,
Pennsylvania and New Jersey
 Delaware Inland Bays
 Galveston Bay, Texas
 Indian River Lagoon, Florida
 Long Island Sound, Connecticut
 and New York
 Lower Columbia River, Oregon
 and Washington
Maryland Coastal Bays
Massachusetts Bays
Mobile Bay, Alabama
Morro Bay, California
Narragansett Bay, Rhode Island
New Hampshire Estuaries
New York-New Jersey Harbor
Peconic Bay, New York
Puget Sound, Washington
San Francisco Estuary, California
San Juan Bay, Puerto Rico
Santa Monica Bay, California
Sarasota Bay, Florida
Tampa Bay, Florida
Tillamook Bay, Oregon
Estuaries

The relationship between plants, animals and humans makes up an estuary’s ecosystem. Estuaries are the receiving end of all the water that flows over the watershed. When the components of an estuary and its watershed are in balance, all life flourishes.

Many different habitat types are found in and around estuaries. Habitats found in southwest Florida include shallow open waters, freshwater and saltwater marshes, sandy beaches, mud and sand flats, oyster reefs, mangrove forests, seagrass beds, wetlands and wooded swamps.

Many diverse habitats are found in the watershed. The greatest diversity of wildlife can be found in mangrove forests, hydric pine flatwoods, hardwood hammocks and dry pine flatwoods.

Estuaries provide many species of birds, mammals, fish and other wildlife places to live, feed and reproduce. Estuaries provide habitat for an estimated 75 percent of America’s commercial fish catch and 80 to 90 percent of the recreational fish catch. Many species of fish and shellfish rely on the sheltered waters of estuaries as protected places to spawn, giving estuaries the nickname “nurseries of the sea” or “cradle of the sea.”

Besides serving as important habitat for wildlife, the land that buffers many estuaries provides other valuable services. Water draining from the uplands carries sediments, nutrients and various pollutants. As the water flows through freshwater and saltwater marshes, sediments and pollutants are filtered out. This filtration process creates cleaner and clearer water, which benefits both people and marine life. Wetland plants and soils also act as a natural buffer between the land and the ocean, absorbing floodwaters and dissipating storm surges. This protects upland organisms as well as valuable real estate from storm and flood damage. Mangroves, grasses and other estuarine plants also help prevent erosion and stabilize the shoreline.

Estuaries provide aesthetic enjoyment for the people who live, work or play in and around them. Boating, fishing, swimming and bird watching are just a few of the numerous recreational activities people enjoy in estuaries.

From the largest landscape features to the smallest microscopic organisms, an estuary is a fascinating place. Wherever there are estuaries, there is unique beauty. As rivers meet our sea — the Gulf of Mexico — both ocean and land contribute to an ecosystem of specialized plants and animals.
The Creation of the Charlotte Harbor National Estuary Program

The Charlotte Harbor National Estuary Program is a partnership of citizens, elected officials, resource managers, and commercial and recreational resource users who are working to protect the greater Charlotte Harbor estuarine system from Venice to Bonita Springs to Winter Haven by improving the water quality and ecological integrity of the 4,400-square-mile watershed. The partnership works as an advocate for the estuarine system by building consensus that is based on sound science.

The Charlotte Harbor study area encompasses both the estuarine system and watersheds. The estuaries are coastal Venice, Lemon Bay, Gasparilla Sound, Charlotte Harbor, Pine Island Sound, Matlacha Pass, San Carlos Bay and Estero Bay as well as the Myakka, Peace and the tidal portion of the Caloosahatchee rivers. The 4,400-square-mile watershed includes all or part of Charlotte, DeSoto, Hardee, Lee, Manatee, Polk and Sarasota counties. A small portion of Highlands, Glades, Collier and Hillsborough counties are also part of the watershed.

In 1995 Florida Governor Lawton Chiles, on behalf of the State of Florida and in cooperation with the Southwest Florida Regional Planning Council, Mote Marine Laboratory and Southwest Florida Water Management District SWIM Program, submitted an application to the U.S. Environmental Protection Agency to designate the estuarine system around Charlotte Harbor as an “estuary of national significance.” The application was accepted, and a National Estuary Program was created.

From October 1996 to April 2000, more than 200 individuals who represent organizations interested in preserving the Charlotte Harbor estuarine system used a cooperative decision-making process to identify resource management concerns. These individuals serve on one of four committees that, with the Program Office, are collectively known as the Management Conference.

The Management Conference developed a 20-year Comprehensive Conservation and Management Plan (CCMP) that identifies the region’s common priority environmental issues and the actions needed to solve them. This document is a summary of the 720-page plan.

When the CCMP was completed and accepted by the Management Conference, the State of Florida and the U.S. Environmental Protection Agency in 2001, it marked the beginning of action to protect and restore the estuary and its watershed.

The Management Conference now reviews progress and identifies concerns not consistent with the plan’s goals — continuing to use a cooperative decision-making process based on sound science. The Management Conference addresses these concerns and, when consensus is reached, that position is presented by the Charlotte Harbor National Estuary Program — backed by its partners, including the counties, cities, businesses, environmental organizations, government agencies and citizens of the watershed.
Management Conference

The Management Conference is the decision-making team for the Charlotte Harbor NEP.

The Conference is composed of four committees and the Program Office. Each committee serves a specialized role to fulfill the goals and objectives in the Comprehensive Conservation and Management Plan. The Policy Committee has ultimate authority to establish policy. Members include elected city and county representatives as well as representatives from local, state and federal government agencies. The Management Committee oversees the operation of the program. The Technical Advisory Committee (TAC) guides technical decisions and a Citizens Advisory Committee (CAC) represents the interests of the public and commercial and recreational resource users.

Partners in the Charlotte Harbor NEP include:

- Cities of Arcadia, Bartow, Bonita Springs, Bowling Green, Cape Coral, Fort Myers, Fort Myers Beach, Fort Meade, Lakeland, North Port, Punta Gorda, Sanibel, Venice, Wauchula, Winter Haven and Zolfo Springs
- Counties of Charlotte, DeSoto, Hardee, Lee, Manatee, Polk and Sarasota
- Mote Marine Laboratory and other research facilities
- Citizen associations
- Environmental education organizations and facilities
- Businesses, industries and associations
- State and regional agencies of Southwest Florida Regional Planning Council, Central Florida Regional Planning Council, Southwest Florida Water Management District, South Florida Water Management District, Peace River/Manasota Region Water Supply Authority, Florida Department of Environmental Protection, Florida Department of Community Affairs and Florida Fish and Wildlife Conservation Commission
The Process

The Management Conference identified three priority regional problems to guide the development of the Comprehensive Conservation and Management Plan (CCMP) to a specific long-term vision for the region’s estuarine and watershed resources. While these problems vary geographically in extent and severity, they are common throughout the study area. Fifteen quantifiable objectives (see next page) and 48 priority actions/strategies were then developed to help address these problems. More than 40 of the participating partners of the Management Conference then suggested 274 projects to help implement the plan.

The success of the CCMP depends upon the broad support of the citizens of the watershed. The Management Conference obtains this support through outreach and education efforts designed to enhance understanding of the value of the natural resources, the problems confronting the resources and actions that can be taken to resolve these problems. The citizens role is critical; therefore, the plan incorporates a public education strategy.

The program also has specific responsibilities to further the implementation of the management plan. Important activities include assuring coordination among the many organizations in the region, coordinating data management, assisting in the implementation of the long-term monitoring strategy, locating potential funding sources, evaluating federal activities for consistency with the CCMP, measuring progress made to implement the plan, and tracking key indicators of the health of the estuarine system.

The completion of the Management Plan and its subsequent acceptance by the Management Conference, the State of Florida and the U.S. Congress in June of 2001 marked the beginning of action to restore and protect the estuarine system.

Priority Problems

Hydrologic (Water Flow) Alterations
Adverse changes to:
- amounts of freshwater flows
- locations of freshwater flows
- timing of freshwater flows
- hydrologic functions of floodplain systems
- hydrologic functions of natural river flows

Water Quality Degradation
Including, but not limited to:
- pollution from agricultural runoff
- pollution from urban runoff
- point source discharges
- septic tank system loadings
- atmospheric deposition
- groundwater

Fish and Wildlife Habitat Loss
Degradation and elimination of headwater streams and other habitats caused by:
- development
- conversion of natural shorelines
- cumulative impacts of docks and boats
- establishment of exotic species
- cumulative and future impacts

Healthy estuaries are among the most valuable places on Earth.
Fifteen quantifiable objectives were developed to help address the three priority regional problems identified by the Management Conference.

Hydrologic Alterations

- Establish values for minimum seasonal flows for select rivers in the study area and achieve those minimum seasonal flows by the year 2020.
- Identify, establish and maintain a more natural seasonal variation in freshwater flows by the year 2010 for the Caloosahatchee River, the upper Peace River and its tributaries from Tenoroc to Zolfo Springs and the upper Myakka River, with special attention to Flatford Swamp.
- Restore, enhance and improve where practical historic boundaries and natural hydrology within the study area with special attention to Outstanding Florida Waters, Class I waterbodies and tributaries to Estero Bay by the year 2020.
- Enhance and improve by the year 2020 to more natural hydrologic conditions waterbodies affected by artificially created structures throughout the study area. These structures include the Sanibel Causeway, the weir below Upper Myakka Lake, the crossing below Lower Myakka Lake, Down’s Dam on the Myakka River, the causeway between Lover’s Key State Recreation Area and Bonita Beach, the water control structure on the south end of Lake Hancock, the structure on Coral Creek and the Gator Slough canal collector system in Lee and Charlotte counties.

Water Quality Degradation

- Identify those water bodies that do not meet their designated water quality standards and develop a plan to meet those standards.
- Develop Total Maximum Daily Loads (TMDLs), except for mercury, for high priority 303(d) listed water segments by 2004 and for all remaining 303(d) waters in the study area by 2009.
- Meet or exceed designated water quality standards throughout the study area by the year 2015, with possible exceptions for natural and/or site-specific conditions.
- Achieve water quality that will meet shellfish harvesting standards throughout the Class II waters of the study area by the year 2015.
- Restore and maintain Lake Hancock to Class III water quality standards (or better) and improve the Trophic State Index (TSI) value for the water exiting the lake from “poor” to “good” by the year 2010.
**Conservation...**

- Meet or exceed designated water quality standards throughout the study area by the year 2015 with possible exceptions for natural and/or site-specific conditions.

- Identify waterbodies in the study area that should be designated as Outstanding Florida Waters and support the establishment of that designation during the year 2000.

**Fish and Wildlife Habitat Loss**

- Achieve a 25 percent increase from 1998 levels in conservation, preservation, and stewardship lands in the study area by the year 2018.

- Increase the extent and improve the quality of habitats in the study area, including native submerged aquatic vegetation, intertidal unvegetated habitats, mangroves, saltwater marsh habitats, freshwater wetland systems, oyster bars and upland communities.

- Reduce propeller damage to seagrass beds, identified from the 1992-1993 baseline data, within the study area by the year 2010. Reduce all severely scarred areas to light scarring and reduce 70 percent or more of the moderately scarred areas to light scarring.

- Achieve controllable levels of invasive exotic plants as defined by the Florida Exotic Pest Plant Council by the year 2020 on conservation, preservation, stewardship and other public lands in the study area. Encourage and support the removal and management of invasive exotic plants on private lands.

**...Preservation ...Stewardship**
The Study Area

The Charlotte Harbor study area includes eight basins that have hydrological, ecological and management distinctions. These basins are the coastal Venice, Lemon Bay, Charlotte Harbor proper, Pine Island Sound/Matlacha Pass and Estero Bay coastal environments and the Myakka, Peace and Caloosahatchee rivers. A map is provided on pages 10 and 11.

Coastal Environments: A series of bays, beaches, barrier islands and mangroves dominate the coastal environments of Venice, Lemon Bay, Pine Island Sound, Matlacha Pass and Estero Bay, which are located in Sarasota, Charlotte and Lee counties. Twelve barrier islands protect the estuaries and the mainland from storm waves and floods. Saltwater from the Gulf of Mexico enters through 11 passes located between the barrier islands and San Carlos Bay, the mouth of the Caloosahatchee River. Passes are dynamic and close, shift or open because of natural events such as hurricanes and human efforts to maintain them.

The Charlotte Harbor estuarine system is mostly influenced by its large rivers. The amount of salt in the each estuary varies dramatically, depending in part on the large fluctuations of river and stream flows from the Myakka, Caloosahatchee and Peace rivers between wet and dry seasons.

The watershed — the area that drains to a common waterway — for the Peace River is large, 26 times larger than the estuary it drains into. For every acre of water, 26 acres of land drains into the estuary. By comparison, the watershed for Tampa Bay is four times larger than its estuary and the watershed for Sarasota Bay is eight times larger.

Much of the submerged land is designated an Aquatic Preserve and much of the shoreline is designated as Buffer Preserve to be “preserved in essentially natural conditions for future generations to enjoy” by the Florida Department of Environmental Protection. In addition, the tributary streams in Estero Bay are designated by the state as “Outstanding Florida Waters” to be protected from harm.

Some important resource management challenges, especially in the coastal environments that are dominated by urban development, are:

- the effect of boat traffic and dredging of the Intracoastal Waterway
- health of mangroves and seagrasses
- disposition of undeveloped yet plated land
- effects on water quality of septic systems and stormwater runoff from developed areas
- dynamically unstable tidal inlets
- nuisance exotic vegetation
- canals, which change the amount, timing and quality of the water that runs into the estuaries
- land use changes, including urbanization.
**Myakka River:** The Myakka River is one of only two rivers to be designated a Florida Wild and Scenic River. This designation provides for preservation and management of the 34-mile portion of the river within Sarasota County, 12 miles of which flow through the Myakka River State Park. Much of the 66-mile river's watershed lies to the north in Manatee County, but the Myakka River does not become well defined until numerous tributaries coalesce near the park. Two lakes and extensive marshes are prominent features of the park, which is famous for its diverse wildlife. While agriculture use dominates the majority of the upper basin and urban development in the lower basin, many acres of this watershed are protected as park, forest and preserves.

**Peace River:** The Peace River flows 105 miles from its origin in the Green Swamp and Lake Hancock in central Polk County through Polk, Hardee, DeSoto and Charlotte counties to the estuary known as Charlotte Harbor. This river is the major freshwater contributor to the estuary. The river’s rate of flow is directly related to groundwater levels, which have been falling significantly due to increased demand for the water and less rainfall. The health of the river and the estuary depend upon this water, as do the human inhabitants. The Peace River is the source of drinking water for more than 100,000 people. Agriculture, primarily cattle ranching, citrus production and row crop farming, as well as phosphate mining and residential development are the dominant land uses in this watershed. These land uses have resulted in alterations to the hydrology and natural flora and fauna of the landscape. To help protect the integrity of the Peace River and Charlotte Harbor, state laws and regulations require that land mined after July 1, 1975 be reclaimed, that the hydrology approximate that prior to mining and that habitat loss be appropriately mitigated. Since 1977 a state trust, supported with phosphate severance tax dollars, has provided funds for the voluntary reclamation of land mined prior to 1975.

**Caloosahatchee River:** The flow of this river is no longer controlled by Nature. Dredging has straightened and deepened the river, damaged its many oxbows, and connected it to Lake Okeechobee. Numerous structures allow the water flow to be controlled for water supply and boat traffic. The farthest west of five locks, the Franklin Lock and Dam separates the freshwater of the river from the saltwater of the estuary. The Charlotte Harbor NEP study area includes only the 30-mile reach of the river in Lee County from Franklin Lock to the Gulf of Mexico. The NEP part of the watershed is dominated by urban development. The receiving estuary provides critical wildlife and aquatic habitat and nursery areas.
The watershed covers a region of diverse and important rural and urban communities and an environment worth protecting. Fishing, agriculture, mining, tourism, retirement and construction compose the economic base. We receive uncounted benefits from estuaries that are difficult to quantify, such as clean air to breathe and the area’s scenic beauty.

*The estuary is the point where man, the sea and the land meet and challenge each other.*
Any estuary is really the summation of the whole basin. To think of it as nothing but the harbor is to ignore the greater part.
— Hal Borland (paraphrased)
At a Glance

The beauty, natural diversity and tropical and subtropical climate are some of the reasons why more and more people vacation in and move to the Charlotte Harbor area. In 1960, the population in the study area was approximately 350,000. By 2000, the population increased to 1.5 million. By 2020, it is expected to near 2 million, with 80 percent living near the coast. During the cold months the population in the watershed swells by approximately 30 percent with those who enjoy the warmer climate and beauty of the area.

The NEP study area, a 4,400-square-mile watershed, includes 16 cities and all or most of seven counties. (A very small portion of four other counties lie within the study area.) The area stretches from Venice to Bonita Springs to Winter Haven. It includes 30 miles of the Caloosahatchee River, 105 miles of the Peace River and 66 miles of the Myakka River. Agriculture occurs on approximately a third of the study area, residential and commercial development occur on another third, and the final third is split between mining, conservation land and open waters.

Barrier islands protect the estuaries and the mainland from damaging storm waves and floods and create a quiet place for mangroves, seagrasses, fish and birds to flourish. From north to south, these islands are Manasota Key, Don Pedro Complex, Little Gasparilla, Gasparilla, Cayo Costa, North Captiva, Captiva, Sanibel, Estero, Lovers Key and Big and Little Hickory. Passes allow saltwater from the Gulf of Mexico to mix with the freshwater from the land. From north to south, these openings, which are mostly passes, are Venice Inlet, Stump Pass, Gasparilla Pass, Boca Grande Pass, Captiva Pass, Redfish Pass, Blind Pass, San Carlos Bay, Matanzas Pass, Big Carlos Pass, New Pass and Big Hickory Pass.

More than 175,000 acres of submerged resources are designated as six Florida Aquatic Preserves to be “preserved in essentially natural conditions for future generations to enjoy.” They are known as Lemon Bay, Gasparilla Sound/Charlotte Harbor, Cape Haze, Pine Island Sound, Matlacha Pass and Estero Bay, Charlotte Harbor and Estero Bay State Buffer Preserve includes approximately 45,000 acres of land adjacent to the Aquatic Preserves. These lands provide a buffer between human uses of the watershed and natural resources in the estuaries. They are known as the Punta Gorda, Cape Coral, Cape Haze, Port Charlotte and Estero Management Areas. From the mouth of the Caloosahatchee River north to Placida, approximately 84 percent of the shoreline is protected in a Buffer Preserve.

The Charlotte Harbor estuarine system is the second largest open water estuary in Florida, the ninth largest in the Gulf of Mexico and the eighteenth largest in the country. The watershed for the Charlotte Harbor estuarine system is approximately eight percent of the state of Florida.

Land conserved in the watershed is managed by different agencies for different purposes.
administers five refuges in Lee and Charlotte counties — J.N. “Ding” Darling, Pine Island, Matlacha Pass, Island Bay (Cape Haze) and Caloosahatchee. Many state parks and other protected lands are located in the watershed. The five state parks are Barrier Island GEPark, which includes Stump Pass Beach, Don Pedro Island, Gasparilla Island and Cayo Costa State Park; the Myakka River, Florida’s largest state park with 45 square miles of woodlands, wetlands and prairie; Oscar Scherer, with 1,400 acres of pine flatwoods and scrubby flatwoods; Highlands Hammock, with virgin hardwood forest, cypress swamp, pine flatwoods, sand pine scrub, scrubby flatwoods, bayheads and marsh; and the 712-acre Lovers Key complex, which includes Black Island, Lovers Key, Inner Key and Long Key. The 8,593-acre Myakka State Forest, Paynes Creek and Koreshan State Historic Sites, the 65,770-acre Babcock/Webb and 13,243-acre Yucca Pens Unit Wildlife Management Areas as well as portions of the CREW Wildlife and Environmental Area and the Pineland Archeological Site are all located in the study area.

Preservation 2000, a land and water conservation state program, acquired more than 1 million acres throughout Florida during the 1990s. In 1999, Florida Forever was created as a follow on program. Funds from this bond program will continue to help several agencies acquire and manage conservation lands. Land has also been acquired for conservation through the efforts of the Southwest and South Florida Water Management Districts; Lee, Sarasota and Polk counties; land trusts and others. (Charlotte and Manatee counties are researching county initiated land acquisition programs.) Land trusts actively working to acquire environmentally sensitive land in the NEP study area include Calusa Land Trust and Nature Preserve of Pine Island, Conservancy of Southwest Florida, CREW Land & Water Trust, Florida Trail Land Trust, Inc., Gasparilla Island Conservation & Improvement Association, Inc., Great Outdoors Conservancy, Greater Everglades Land Trust, Green Horizon Land Trust, Lemon Bay Conservancy, Inc., The Myakka Conservancy, Sanibel-Captiva Conservation Foundation, Southwest Florida Land Preservation Trust, The Nature Conservancy, Trust for Public Land and Barrier Island Trust.

Manatees, dolphins, sharks, sea turtles, wood storks, roseate spoonbills, gopher tortoises, American alligators and mangroves are but a few of the species found in Charlotte Harbor. Among the species documented, 452 fish, 331 bird, 2,100 plant, 39 mammal, 67 reptile and 27 amphibian species are found in the study area. As of 1990, 86 species were federally or state listed as threatened or endangered species, including the Florida black bear, manatee, wood stork, Florida scrub jay and brown pelican. The area is internationally famous for seashelling, snook fishing and the world’s richest tarpon fishing tournament. Mangroves are one of Florida’s true natives. The three species known as the red, black and white mangroves thrive in salty environments because they are able to obtain freshwater from saltwater. Some secrete excess salt through their leaves, others block absorption of salt at their roots. Turtle grass, manatee grass and shoal grass are the three common species of seagrasses — flowering plants that live underwater — found in the study area.
Grants

Charlotte Harbor NEP offers grants to Florida citizens, organizations, businesses, government agencies, schools, colleges and universities in order to further partnerships that will protect the Charlotte Harbor estuary by improving the ecological integrity of the greater Charlotte Harbor watershed. These grants are an important component of implementing the CCMP.

The research, monitoring, restoration and educational projects supported by these grants benefit the natural resources in the watershed, enhance our technical knowledge and/or improve community awareness. Projects vary greatly in scope and scale, ranging from biological surveys, wetland restoration projects and volunteer water quality monitoring to curriculum development and environmental education activities. Many projects are funded in cooperation with other sources. Consequently, the total value of the project is often much greater than the support provided by the Charlotte Harbor NEP.

From 1996 to 2002, the Charlotte Harbor NEP supported 77 projects. Each year proposals are reviewed and selected on a competitive basis. From 1996 to 1998, the Charlotte Harbor NEP supported Early Action Demonstration projects. These projects have long-term applicability and transferability and serve as models for addressing resource management issues.

Annually since 1999 the Charlotte Harbor NEP has requested proposals for Research and Restoration Partners projects and applications for Mini-Grant projects. Projects must address a program goal and priority problem and must occur in the Charlotte Harbor watershed. Projects must demonstrate value to the community, incorporate a permanent management strategy, and inform and educate. Restoration Partners projects must also have long-term applicability and serve as models for addressing habitat improvement and resource management challenges.

A Directory of Grant-Supported Projects and grant applications are available from the Program Office and is on the web site. A listing of the initiated projects follow.

Requests for proposals are typically announced in September of each year. Proposals selected for support may begin as early as February.

In 2001 micro-grants began being offered to help establish and maintain environmental education efforts and further partnerships to help implement the CCMP. These grants provide up to $250 and are available year round.
Research and Monitoring Initiated from 1997 to 2002

Determining the Light Requirements of Seagrasses in Charlotte Harbor
Mote Marine Laboratory
Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network
FDEP Charlotte Harbor Aquatic and State Buffer Preserves
Nutrient Loadings and Eutrophication in the Peace River Watershed
Charlotte Harbor Environmental Center
Lake Marianna Water Quality Improvement Project
Polk County Natural Resources
Tidal Caloosahatchee River Benthic Survey
The Center for Systematics and Taxonomy
A Rapid Bioassessment Program for Estero Bay Tributaries
Florida Gulf Coast University
Peace/Myakka Watershed Monitoring Program
Charlotte Harbor Environmental Center
Moftacho Pass Benthic Survey
Center for Systematics and Taxonomy
Effects of Heavy Metals and Pesticides on Health and Physiology of Oysters in the Caloosahatchee Estuary
Florida Gulf Coast University
Benthic Invertebrate Fauna Calibration of the Estero Bay Watershed Assessment
The Conservancy of Southwest Florida
Project Identification of a Chemical/Biological Signature for Onsite Sewage Treatment Disposal Systems (CSTDS) Effluent
Polk County
Assessing the Densities and Potential Water Quality Impacts of Septic Tank Systems in the Peace and Myakka River Basins
Charlotte Harbor Environmental Center and James R.E. Smith
Dynamics of Tree Mortality and Mangrove Recruitment within Black Mangrove Die-offs in Southwest Florida
University of Massachusetts and Florida Department of Environmental Protection
Taxonomic Identification, Relative Abundance and Toxin(s) Present in Cyanobacteria Blooms in Lakes Hancock and Banana
Polk County
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 and Lee County 2020 Conservation Program

Restoration Projects Initiated from 1997 to 2002

Myakka River Exotic Removal
FDEP Myakka River State Park
Punta Gorda Habitat Restoration and Nature Park
City of Punta Gorda
Three Lakes, Back to Nature
FDEP Charlotte Harbor Aquatic and State Buffer Preserves
Edison Community College Oak Hammock Restoration
Florida Native Plant Society
Myakka River State Park Dry Prairie Restoration
FDEP Myakka River State Park
Punta Gorda Waterfront Juvenile Fisheries Habitat
Charlotte Harbor Reef Association
A Freshwater Pond Boardwalk at Winkler Point
FDEP Estero Bay Aquatic and State Buffer Preserves
Pick Preserve Teaching Shelter and Nature Trail
Sanibel-Captiva Conservation Foundation

continued
Frannie’s Preserve Invasive Exotic Removal Project
Sanibel-Captiva Conservation Foundation
Cedar Point Coastal Strand Creation
Charlotte Harbor Environmental Center
Melaleuca Eradication and Habitat Restoration Project
FDEP Estero Bay Aquatic and State Buffer Preserves
Deer Prairie Slough Restoration Project
Sarasota County National Resources
High Marsh Restoration at Charlotte Harbor State Buffer Preserve
FDEP Charlotte Harbor Aquatic and State Buffer Preserves
Isolated Wetland Restoration at the Charlotte Harbor State Buffer Preserve
FDEP Charlotte Harbor Aquatic and State Buffer Preserves
Venetian Waterway Park Eradication of Brazilian Peppers Project
Venice Area Beautification, Inc. Feasibility Assessment for the Environmental Restoration of Selected “Old Mine Lands” in the Upper Peace River Watershed
Charlotte Harbor Environmental Center and Trust for Public Lands
Gulf Ridge Preserve Restoration Project
Sanibel-Captiva Conservation Foundation
Community-Based Restoration of Oyster Reefs and Enhancement of Essential Fish Habitat in Charlotte Harbor Watershed
Florida Gulf Coast University, Lee County School District and Florida Sea Grant Extension Program

Education Projects Initiated from 1996 to 2002

Myakka Connectivity Project
Myakka Conservancy
Charlotte Harbor Conference
Mote Marine Laboratory
Keep the Estuary Clean
Hardee County Outdoor Classroom
Florida Yards & Neighborhoods Program for Charlotte Harbor
Charlotte Harbor Environmental Center and Charlotte County Cooperative Extension Service
History of the Upper Peace River Watershed
Fort Meade High School
Estuaries-For Kids’ Sake
Myakka River Elementary School
Keeping the Peace Water Conservation
Port Charlotte Middle School
A Study of Old Mill Pond
Fort Meade High School
Watershed Education Workshop
Charlotte Harbor Environmental Center
Lake Hancock Monitoring and Education
George Jenkins High School
Treasures of the Sea
Town of Fort Myers Beach
Upper Peace River Education Strategy
Charlotte Harbor Environmental Center
Estuary Awareness and Education Project
Florida Atlantic University Center for Environmental Studies
Boater’s Guide to Charlotte Harbor
Florida Sea Grant Charlotte County Cooperative Extension Service
Knowing Our Ecosystems
4-H Sharks Club of Charlotte County
Seagrass Education in Lemon Bay
Charlotte Harbor Environmental Center
Peace River Basin Agricultural Education Initiative
Central Florida Resource Conservation and Development Council
Calusa Land Trust Junior Ranger Program
Calusa Land Trust and Nature Preserve of Pine Island, Inc.
Charlotte Harbor User Education Project
Florida Sea Grant Charlotte County Cooperative Extension Service
Lakeside Education Display
Lakes Education/Action Drive
Marine Cleanup aka Monofilament Madness
Keep Lee County Beautiful
Courtland Waterway — Restoration 2000
Charlotte Harbor Environmental Center
Don’t Dump It!
Coloosachatchee River Citizen’s Association
Beneath the Crest of a Wave: A Seagrass Adventure
Charlotte Harbor Environmental Center
The Extinction of Experience
Charlotte Harbor Environmental Center
Estuary Education through Art
Carol Mahler
Pick Preserve Bird Blind
Sanibel Captiva Conservation Foundation with The Sanibel School
Fire on the Buffer
Friends of the Charlotte Harbor Aquatic Preserves, Inc.
Upper Peace River-Educational and Interpretive Kayak Programs
City of Fort Meade Leisure Services
Sailing Through the Environment of Charlotte Harbor
LA Ainger Middle School, Rotonda West
Grandmother’s Garden
Susan Hendry
Keep our Creeks Clean
J. Colin English Elementary School
Mapping Marine Resources with GIS
Lee County School District
Southwest Florida Amphibian Monitoring Network
CREW Land and Water Trust
Florida Native Plants and Habitats — An Outdoor Classroom at Manatee Park
Lee County Parks and Recreation and Florida Native Plant Society Cococlopa Chapter
Aquatic nuisance Species
Surveillance and Education Network Southwest Florida Watershed Council
Experience Estero Bay
Estero Bay Buddies
An Outdoor Study Along the Peace River
Fort Meade Middle-Senior High School
Gopher Tortoise Habitat Restoration
Estero Bay Buddies
Resources Available

Charlotte Harbor NEP is pleased to offer several publications free of charge to provide information to help you become part of the solution. To request printed copies, visit the Program website (www.charlotteharbornep.org) or contact the Program Office (239/995-1777). The publications are also available on the program website as PDF files. New resources are listed on the website as they are created.

 Harbour Happenings Newsletter
 Want to receive information on a regular basis? Subscribe to this free newsletter. Four times a year the 12-page newsletter provides current information on program activities as well as topics and issues of concern in the greater Charlotte Harbor watershed.

 Management Plan
 Comprehensive Conservation and Management Plan (CCMP)
 This document is a summary of this plan. The CCMP represents the participants' commitment to the future. Volume 1 (272 pages) outlines the plan developed during the planning phase and includes priority actions, goals and objectives. Volume 2 (448 pages) describes preliminary implementation projects as provided by their sponsoring organizations. March 2000.

 General Documents
 The Story of the Greater Charlotte Harbor Watershed
 Written for the general public, this book characterizes the state of the natural systems and major resource management issues throughout the area and provides an overview of the physical, biological, historical and economic aspects of the greater Charlotte Harbor watershed. 92 pages. 1998; revised 2002.

 Our Southwest Florida Natural Resources and Economy
 One-year snapshot of the economic benefits from current uses of the region’s natural resources. 4 pages. 1999.

 This event highlighted the Program’s goals for education, information management and synthesis of existing data. 274 pages. March 1997.

 Abstracts of the Charlotte Harbor Watershed Summit, February 7 to 9, 2002
 This public conference and technical symposium highlighted water quality, hydrology, fish and wildlife, land use and restoration research and educational activities. 72 pages. February 2002. A compact disk (CD) is available of PowerPoint presentations used during the Summit.

 Directory of Environmental Education Programs in the Greater Charlotte Harbor Watershed
 Provides information on public environmental education programs and providers in the study area. 74 pages. November 1997; revised September 2002.

 Estimated Economic Value of Resources
 Measures the economic value of activities, amenities and nonuse satisfaction levels dependent on the natural resources of the watershed. 92 pages. 1998; revised 2002.

 Videos and Posters
 The Network of an Estuary: Charlotte Harbor National Estuary Program
 Clyde Butcher and 17 members of the Charlotte Harbor NEP Management Conference tell the story of the value of our local estuaries, the importance of the NEP and issues of concern and actions undertaken by the Program’s partners during this 27-minute video. Libraries within the NEP study area have copies available on loan. VHS and DVD copies are available free to those who plan to show the program to audiences. Copies for personal use are available at cost ($5 for a VHS copy and $9 for a DVD copy).
Keep it Picture Perfect
This 30-second public service announcement (PSA) encourages viewers not to litter, to keep our lands and waters picture perfect. VHS copies are available free to those who plan to show the program to audiences.

Myakka Hydric Hammock
Photographer Clyde Butcher donated the black-and-white image of the Myakka Canopy Trail in this 22 inch wide x 19.5 inch high poster.

Lake Hancock: Where the Peace Begins
Photographer Clyde Butcher donated the black-and-white image of Lake Hancock in this 17 inch wide x 24 inch high poster.

Osprey Poster
Artist Diane Pierce features a captivating, real-life osprey/river scene in this 24x34-inch poster.

Educational Ecosystem Poster
Artist Shelly Castle depicts the biodiversity of plants and animals in the greater Charlotte Harbor watershed and portrays their interaction with the environment in this 26 x 39-inch poster. The poster also includes a drawing of the Charlotte Harbor NEP study area.

Technical Documents
Base Programs Analysis Volume 1: Description of the Existing Laws, Policy and Resource Management Structure in the Greater Charlotte Harbor Watershed
Reviews current institutional management structure of natural resources in the study area, provides a brief snapshot of the socioeconomic conditions and describes the current public and private regulatory programs. 162 pages. April 1998.

Base Programs Analysis Volume 2: Connections and Gaps
Identifies how natural resource management programs are successfully linked and identifies the weaknesses of those linkages to adequately manage the area’s natural resources. 36 pages. August 1998.

Synthesis of Existing Information Volume 1

Synthesis of Existing Information Volume 2
Appendices for Volume 1, includes data on rainfall, streamflow, surface water quality, pollution potential models and land use. 551 pages. April 1999.

Compendium of Current Monitoring Programs in the Greater Charlotte Harbor Watershed
Provides information on all existing land, air and water monitoring programs that pertain to the study area. 187 pages. October 1997.

Long Term Monitoring Strategy and Gap Analysis
Identifies additional monitoring required and inconsistent protocols used by existing programs. 100 pages. February 2000.

Data Management, Analysis and Exchange Strategy
Provides information about technical information available, facilitates the exchange of this information and supports efforts for the analysis of scientific information. 79 pages. June 1999.

Speakers Are Available!
Speakers from the Charlotte Harbor National Estuary Program offer a free slide program to interested groups and organizations. The presentation focuses on the efforts of hundreds of people working together to ensure the health of the greater Charlotte Harbor watershed. Local participation is crucial to the Program’s success. To learn more about the efforts of the Charlotte Harbor National Estuary Program, please contact the Program Office at 239/995-1777 and request that a presentation be made to your organization.

Become a Steward
Stewardship is critical to the continued preservation, restoration and enhancement of the Charlotte Harbor estuarine system. This careful and responsible management of our natural resource is entrusted to the care of the people who live in, work in and enjoy the estuaries and watersheds.

The Charlotte Harbor NEP brings citizens, elected officials, resource managers, and commercial and recreational resource users together as partners who will work as advocates for the estuarine system by building consensus based on sound science and assessment.

To learn more, visit the Program website, contact the Program Office, participate in the many activities the Program offers through its partners, such as wading trips, nature festivals, symposiums and more, and join the Technical and Citizens Advisory Committees.
Thoughts From Charlotte Harbor NEP Management Conference Members

The completion of the Charlotte Harbor NEP Comprehensive Conservation and Management Plan provides a significant opportunity for advocacy to protect, preserve and restore the Charlotte Harbor estuary. A number of important decision-making activities such as minimum flows and total maximum daily loads that will occur in the near future and which must consider a range of interests. The Estuary Program is now poised to provide technical and outreach assistance for these decisions to assure the estuary is given equal consideration with other competing interests.

— Tom Welborn, U.S. EPA Region 4

The Charlotte Harbor NEP is all about the preservation and enhancement of the estuarine system. Success in this endeavor adds up to a higher quality of life for ourselves and our descendants.

— Fran Stallings, Ph. D., Environmental Confederation of Southwest Florida

Estuaries provide that mixing zone where the ocean meets the freshwater of rivers and streams. The marshes of estuaries are more productive, on an acre for acre basis, than the wheat and corn fields of the Great Plains. Estuarine marshes also absorb and dissipate flood waters and storm surges. We need to do everything possible to protect these valuable resources.

— Annon Bozeman, U.S. Army Corps of Engineers

It is nice to know that the efforts we make in improving the quality and flow of the water to our lakes will not only improve our resource but also all of the waters downstream.

— Beverly Sidenstick, League of Women Voters

The CCMP represents a truly unique opportunity to apply ecosystem management principles that focus on partnerships between the public and the governmental agencies that participate in the Charlotte Harbor National Estuary Program. The environmental resources and amenities of Charlotte Harbor will directly benefit by applying the CCMP, as will the quality of life by the watershed’s citizens.

— Andreas Mage, Jr., National Marine Fisheries Service

The future of Charlotte Harbor, its watershed, its wildlife and the land depends on citizens speaking out to ensure the environmental integrity of the natural systems. The Charlotte Harbor NEP is providing everyone a voice in our future.

— Ellen Hawkinson, Peace River Audubon

The implementation of the CCMP will serve as a stepping stone for the restoration and improvement of the estuary for our children and the future.

— Ed Higby, Polk County Industry Community Advisory Panel (ICAP)
We are so very lucky, for uncountable reasons, to have the opportunity to live near such healthy, diverse estuaries as those found throughout the Charlotte Harbor region. The Florida Legislature recognized the value of the Charlotte Harbor estuaries when they designated six Aquatic Preserves to preserve these exceptional submerged resources for future generations to enjoy. The guidance, citizen support and interagency cooperation fostered by the Charlotte Harbor NEP helps make accomplishment of that dream a reality.

— Judy Ott, FDEP Charlotte Harbor Aquatic Preserves

The technical information and the scientific community relationships developed will be a valuable resource in the future to promote better characterizations, of and to determine the threats to, the estuary. The coordinated estuary-wide water quality monitoring plan is an excellent example of the power of these technical cooperative efforts.

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

Now that the CCMP is completed after five years of incredibly hard work by a large and devoted number of volunteers, all of us — organizations, businesses, government entities, non-profits and particularly individuals have a well-defined path to follow for the future health of our Charlotte Harbor estuaries.

— Anna Bowditch, Charlotte Harbor Advisory Committee and Boca Grande resident

The Charlotte Harbor NEP’s outreach program provides a powerful mechanism to inform and involve the public regarding significant activities affecting the Charlotte Harbor estuary. An informed and active public provides the foundation and support for balanced decisions that protect the unique and valuable resources of this nationally important resource.

— Bob Howard, U.S. EPA Region 4

Photographs provided by:
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- Mote Marine Laboratory
- Lee County Convention and Visitors Bureau
- Charlotte County Convention and Visitors Bureau
- Polk County Convention and Visitors Bureau
- Sarasota County Convention and Visitors Bureau
- Charlotte Harbor NEP staff

Committing To Our Future
The Charlotte Harbor National Estuary Program’s Comprehensive Conservation and Management Plan (CCMP) is a starting point, a time to take stock in what we have accomplished.

To those who contributed time and energy, your efforts are realized in this plan. And for those citizens of and visitors to the greater Charlotte Harbor watershed who are learning about our issues for the first time, we hope you will join us in our efforts to protect the health of this special region. The Plan is our commitment to the future.

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