



HARBOR HAPPENINGS

Working together to protect the natural environment from Venice to Bonita Springs to Winter Haven

Water quality and flow from Lake Hancock improved

The Southwest Florida Water Management District has completed construction of two major projects centered at Lake Hancock to restore flows and improve water quality in the upper Peace River. See page 5 for details. This photo, taken Sept. 9, 2015, is the view looking northeast of planted and recruited wetland vegetation in the Lake Hancock Treatment Wetland.

Summer 2016: Volume 20, Issue 2





Program update by Dr. Lisa B. Beever, Director

For my last column as the Director of the Charlotte Harbor National Estuary Program, I wanted to review my first column from Spring 2002 of *Harbor Happenings* to see if I kept my promises.

After describing who I was, what I was working on and how wonderful you are, here is the promise I made:

I plan to work with all of you to achieve the goals of the *Comprehensive Conservation and Management Plan* and realize your vision of a prosperous, healthy, biodiverse greater Charlotte Harbor System. Together, we are going to do great things.

We have done great things together.

The big news this month is seagrass acreage in every one of our segments increased since they were all mapped in 2008. We now have more seagrass acreage than mapped from 1950s aerial photographs. Adjusting upward for areas that were too turbid to map, there were 68,000 acres of seagrass in the 1950s. By 2014, there were 71,104 acres! That is nearly 5 square miles of seagrass. Granted, the weather was good for seagrass growth. However, projects to reduce pollutant loads into the estuaries and reduce direct impacts on seagrass have been implemented across our watersheds by our partners.

The most controversial issue when I started was phosphate mining. The Area-wide Environmental Impact Statement (AEIS) that CHNEP requested in 2000, and over the years, was completed in 2013. A major

“Under Lisa’s direction, the CHNEP has focused on development of a management plan based on science, an inclusive communication strategy and an engaged professional staff, making every contact with the Program leaving one excited and enthusiastic—and bringing the Program deserved national recognition.

Thank you Lisa for all that you have done, maturing the Program and leaving it with a multitude of achievements for your successor to build upon.
— Jon Iglehart, Director of District Management for the Florida Department of Environmental Protection and Co-Chair of the CHNEP Policy Committee

feature of the AEIS is the addition of off-site mitigation to augment existing on-site reclamation requirements. Mosaic will acquire 831 acres of land to restore a portion of the Horse Creek floodplain and protect and restore the headwaters of the Myakka River. Another 601 acres will be restored on existing Mosaic property where reclamation pursuant to permits of the time had been completed. Overall, nearly 14 miles of freshwater streams will be created, restored and better connected across the landscape.

Land acquisition to protect wildlife habitat, water flows and water quality has been a significant objective of CHNEP’s vision. During my tenure, our partners have acquired more than 146,000 acres of habitat. More than half of our acquisition acreage has been the Babcock Ranch Preserve. CHNEP was the first to help fund the Babcock Preservation Partnership and provided staff assistance to the effort. The other half has been through the wonderful efforts of counties, cities, water management districts, state of Florida, federal government,

Apply by June 13 for CHNEP Director

The CHNEP director manages and directs all activities of the CHNEP, a grant-funded, committee-guided program. Learn more about the program and the selection process by visiting www.CHNEP.org. (The link to the application is posted at www.ci.punta-gorda.fl.us/depts/hr/employment.html.) Complete applications must be received by 4:30 p.m. on June 13. The Policy Committee will interview short-listed applicants on Aug. 11, with a possible start date of Oct. 1.

nonprofit land conservation organizations and the phosphate industry. Through letters of support, funding support for local conservation efforts, providing land acquisition vision maps and testimony at public meetings, the CHNEP Program Office has assisted in these efforts.

Since the spring of 2002, we have moved successfully from planning to implementation. We take on controversial subjects and find acceptable solutions. Our outreach programs reach more people than ever before. We filled large research needs and established robust ongoing monitoring programs.

What has not changed? The Management Conference of our four committees is CHNEP’s most valuable asset. Our active and engaged conference members are at the heart of our accomplishments. Thank you so much for your dedication to the greater Charlotte Harbor System!

I expect to see great things from the Charlotte Harbor National Estuary Program as we step into our collective future.



CHNEP Friends

PO Box 511422, Punta Gorda FL 33951-1422

www.CHNEPfriends.org

The CHNEP enjoys the assistance of the 501(c)3 not-for-profit known as the Friends of Charlotte Harbor Estuary (aka CHNEP Friends).



Charlotte Harbor National Estuary Program

326 West Marion Ave.

Punta Gorda, FL 33950-4416

941/575-5090 • Toll-Free 866/835-5785

Fax 941/575-3365 • www.CHNEP.org

The CHNEP is a partnership that protects the natural environment from Venice to Bonita Springs to Winter Haven.

Dr. Lisa B. Beever, Director • lbeever@chnep.org | 941/575-3392

Jaime Boswell, Environmental Scientist • jboswell@chnep.org | 941/575-5090

Liz Donley, Deputy Director • ldonley@chnep.org | 941/575-3390

Maran Hilgendorf, Communications Mgr • Maran@chnep.org | 941/575-3374

Judy Ott, Program Scientist • jott@chnep.org | 941/575-3385

Harbor Happenings Summer 2016: Volume 20, Issue 2

The CHNEP publishes this free quarterly magazine in cooperation with the CHNEP Friends to provide information about the environmental “happenings” in the CHNEP study area. News items, photographs and letters are welcome and may be submitted to the editor by mail or email. Deadlines are February 1, May 1, July 1 and November 1. The magazine is typically distributed in January, April, July and, with the calendar, by November.

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

Request a free three-year subscription by contacting the editor. You will be reminded to renew your subscription after three years.

EDITOR: Maran Hilgendorf, Maran@chnep.org

CONTRIBUTORS: Doug Alderson, Vince Bacalan, Lisa Beever, Jason Boeckman, Pam Burt, Philip Flood, Whitney Gray, Laura Greeno, Janie Hagberg, Joelle Hammes, John Hazard, Maran Hilgendorf, Diane Hines, Jon Iglehart, Kris Kaufman, Doug MacGregor, Melissa Nell, Cathy Olson, Nancy Payton, Marlene Rodak, Kharli Rose, David C. Scott, Paula Sklodowski, Nathan Silveira, Liz Sparks, Ruth Spies, Janice Sylvain, Terry A. Tattar, Cassandra Thomas, Jeremiah “JP” Van Horn, Barbara Herrmann Welch

Increase in seagrass coverage

Shown in seagrass mapping studies in the estuaries within the CHNEP region

Seagrasses are an important barometer of a bay's health because they require relatively clean water to flourish, thus they are sensitive to changes in water clarity and quality.

Documenting the extent of seagrass and how it changes over time is a valuable tool for scientists. These maps are used as a tool for measuring and tracking biological integrity of estuaries as it relates to water quality conditions. Seagrass generally grows in waters less than six feet deep, but in the clear waters around Boca Grande Pass it can be found in water 8 to 10 feet deep.

The Southwest Florida Water Management District's (SWFWMD) Surface Water Improvement and Management (SWIM) Program maps seagrass in five estuaries spanning the five coastal counties of Pinellas, Hillsborough, Manatee, Sarasota and Charlotte. This is the third consecutive survey by the SWFWMD to show increases for the Charlotte Harbor system from 2008 values. The study also shows gains in Lemon Bay and Sarasota Bay.

The results show Charlotte Harbor gained 985 acres of seagrass between 2012 and 2014. The area now collectively supports 19,896 acres of seagrass beds, the largest amount of seagrass measured since 1996. Seagrass acreage in Charlotte Harbor has remained around 18,000 acres since 2000, making 2014 estimates another significant gain toward the protection and recovery of seagrass in the system. Lemon Bay, a smaller system, gained 166 acres, a 5.4 percent increase.

The South Florida Water Management District (SFWM) mapped seagrasses in the CHNEP region in 1999, 2003, 2006, 2008 and 2014.

The SWFWMD began its formal seagrass mapping program in 1988 as a tool to assess seagrass. Every two years, maps are produced from aerial photographs and then verified for accuracy by conducting field surveys. The results are used to track trends in seagrass and to evaluate ongoing water quality improvement efforts. The SFWM follows similar methods using the same contractors but produces maps every two to four years, depending on budget constraints.



Visit www.CHNEP.org to view similar seagrass maps for the entire CHNEP study area.

Segment	Restoration Target	2014 Target	Total Seagrass Target Acres	2008 Acres	2012 Acres	2014 Acres	% Target
Dona and Roberts Bay	21		112	187	181	203	181%
Upper Lemon Bay			1,009	1,148	1,276	1,357	134%
Lower Lemon Bay	380		2,882	2,607	2,785	2,893	100%
Tidal Myakka		37	456	311	287	419	92%
Tidal Peace	591	327	975	247	389	648	66%
West Wall	199		2,106	2,049	2,150	2,222	106%
East Wall	433	246	3,898	2,691	3,499	3,652	94%
Cape Haze		21	6,998	6,672	6,849	6,977	100%
Bokeelia			3,342	3,689		4,086	122%
Pine Island Sound			26,837	27,507		29,114	108%
Matlacha Pass	1,733	1,043	9,315	7,995		8,272	89%
San Carlos Bay			4,372	6,489		7,167	164%
Tidal Caloosahatchee*	6		93	300		411	442%
Esterio Bay	591		3,662	3,590		3,683	101%
Total	3,954	1,674	66,057	65,462	21,357	71,104	136%

Green = fully met restoration target; Purple = made progress toward meeting restoration target; Orange = no longer meeting targets and restoration is needed.

Seagrasses stabilize sediments and help absorb excess nutrients from land runoff. They support hundreds of species of fish at various stages of their lives.

There are three main species of seagrass—flowering plants that live underwater—in the CHNEP area and each has its own unique requirements for light and salinity.

Shoal grass is a narrow-bladed grass often found in areas that experience diverse conditions. This grass is very tolerant, being found in the mouth of rivers where salinity and light fluctuate depending on freshwater flow out of the rivers, in very shallow waters where it becomes exposed during extreme low tides, and in deep waters where light is limited.



Turtle grass is a wide-bladed species that is found throughout the estuary in areas where the salinity and light are more stable.



Manatee grass generally does best in areas with higher salinity, but it can tolerate relatively low light conditions.



Because the estuaries are shallow, loss of seagrass by boat propeller scarring has been a significant issue. The CHNEP created a short video to help boaters learn how to spot seagrasses and how to minimize damage if a boat does run aground. Visit www.CHNEP.org or YouTube (channel CHNEP1995) to learn more.

Careers to help protect and manage our water for people and the environment

Jeremiah “JP” Van Horn and Nathan Silveira

Have you ever wondered how we get the water that we use on a daily basis? It may seem simple to some, but the process that brings crisp, clean H₂O to our homes every day is actually quite intricate.

Most of the water we use in Florida comes from the aquifer located underground. First, the water is pumped from the ground and treated to remove any odor, color and taste issues. To ensure the water is safe for public use, it is disinfected with ultraviolet, ozone, chlorine or all of these. Next the water is monitored as it travels through the distribution system to users, making certain the water is clean and safe for all uses.

In your own home, the water that goes down the drain travels into the collection system. In this system, the water runs downhill to the lowest spot in the area and is pumped to the next lowest spot. After reaching the wastewater treatment plant, the water is screened to remove any trash. It is then biologically treated with human microbiology to remove nutrients such as phosphorus and nitrogen. When in heavy concentrations, these nutrients can cause problems to the environment. Once this treatment is completed, the water is disinfected to be used to irrigate yards and golf courses, replenish lakes and rivers and recharge the aquifer.

If the above description of the water supply cycle interests you, there is a wide range of jobs available in the water industry: operations, administration, technology, laboratory, instrumentation, mechanical, electrical, etc. Recent studies indicate that licensed operators in the water industry are aging, which will create job opportunities for those seeking employment in this field. A study in 2015 found the average age of an operator was 50 and approximately 53% of licensed operators were over the age of 51 (www.frwa.net/uploads/4/2/3/5/42359811/operatorcertificationupdate.pdf).

The Florida Water and Pollution Control Operators Association (FWPCOA) is an organization of members who are engaged in the production, treatment and distribution of drinking water; the collection, treatment and disposal of wastewater; and the collec-

tion and treatment of storm water. To help organize and provide better service, Florida is divided into 13 regions. The FWPCOA's purpose is to protect the health of the citizens and preserve the natural resources. This is accomplished by advancing the professional status of water and wastewater operators, providing a licensing system and arranging training programs. The FWPCOA works in cooperation with the Florida Section of the

American Water Works Association (FS/AWWA), the Florida Water Environment Association (FWEA), the Florida Department of Environmental Protection (FDEP), the Florida Department of Health and the Florida Educational System.

For more information about job training and job opportunities, visit the Florida Water & Pollution Control Operators Association website at www.fwpcoa.org.



Two Lake Hancock projects have been completed to restore flows and improve water quality in the upper Peace River. See page 5 for details.

TOP: A pumping station moves water from Lake Hancock into the 1,000-acre constructed wetland. *Photo by Maran Hilgendorf.*

RIGHT: When water is released from the wetland, it travels over the structure on the right to add oxygen. *Photo by Lisa Beever.*



Water Facts

- The average Floridian uses about 124 gallons of water a day.
- Typically, outdoor water use accounts for up to 50 percent of water consumed by households.
- A faucet that leaks one drop per second will waste 3,000 gallons of water in one year. Many homes lose more water from leaky taps than they need for cooking and drinking.
- Typically less than 1 percent of all water treated for drinking is actually consumed by people, and 99 percent of all water treated for drinking is used for things such as showers, lawn sprinkling, flushing toilets, etc.
- Approximately 85 percent of our water supply comes from ground water pumped from aquifers.
- There are 56,000 community public water systems in the United States, of which 32,500 are investor-owned. They process 34 billion gallons of water daily.
- It cost \$3.5 billion to operate the water systems throughout the country annually. If all community water systems had to be replaced, it would cost more than \$175 billion.

SOURCE: [http://sumter.ifas.ufl.edu/FYN/Water percent20facts percent20trivia.shtml](http://sumter.ifas.ufl.edu/FYN/Water%20facts%20percent20trivia.shtml)

Lake Hancock Lake Level Modification and Outfall Treatment Projects

Southwest Florida Water Management District

Lake Hancock is a 4,500-acre lake in the headwaters of the Peace River. The Peace River extends 120 miles south of Lake Hancock to Charlotte Harbor, an estuary of national significance and a Surface Water Improvement and Management (SWIM) priority water body. (In 1987, the Florida Legislature created the SWIM Act to protect, restore and maintain Florida's highly threatened surface water bodies.)

Over the last 150 years, land-use changes and water withdrawals have altered the hydrology—the water flow—of the upper Peace River watershed. These activities have significantly reduced the watershed's ability to store and recharge rainfall and have resulted in lower local and regional groundwater levels, extended periods of low or nonexistent flows in the upper Peace River during dry months, degraded water quality and altered ecosystems.

The Southwest Florida Water Management District (SWFWMD) has completed construction of two major projects centered at Lake Hancock to restore flows and improve water quality in the upper Peace River.

The first project provides added storage in Lake Hancock by raising the normal operating level of the lake by 1.3 feet. The higher lake level will reduce the number of days the river experiences low flows that are below established levels and can be harmful to the ecosystem. This will improve the health of the river and help to reverse some of the impacts from groundwater withdrawals and land-use changes in the watershed.

Water levels in the lake are maintained by a water-control structure located at the outlet stream from the lake. The old structure was built in the 1960s and was only capable of maintaining an elevation of 98.7 feet (National Geodetic Vertical Datum of 1929 [NGVD29]). This structure was breached during high flows in the 2004 hurricane season. A new structure was built to maintain the higher elevation in the lake and store more water, thereby providing better flood protection in addition to storage. Construction was completed in April 2013. Additional conveyance improvement projects necessary to raise the lake level were completed in April 2015. The control structure was raised to the new elevation in August 2015. The lake quickly



View looking east of the constructed treatment wetland located at the south shore of Lake Hancock in Polk County in January 2014.

filled and by September 2015 it had reached the new operating level of 100 feet NGVD29.

The second project will improve water quality as releases are made from the lake. The SWFWMD completed construction of a 1,000-acre constructed wetland in June 2014. The project is located at the south shore of Lake Hancock at a site that was once used as a phosphatic waste clay (clay that was in the ground, below surficial sands, and mixed with phosphate and sand) settling area during phosphate mining that took place in the region from the 1950s to 1980s. Earthen berms remaining from the mining operations were improved and used to contain water in the constructed wetland. Precision grading leveled the pits to achieve about 900 acres of emergent marsh. A pump station was constructed at the south shore of the lake to pump water into the containment areas. Water flows slowly across the wetland and makes its way to the discharge point, a journey that takes from one to two weeks. Physical, chemical and biological processes occur in the wetland, which reduce nitrogen and phosphorus loads in the water. The objective of the project is to reduce by 27 percent the annual nitrogen load that would have been discharged from the lake to the Peace River. Operation of the system to date has focused on promoting growth of emergent wetland vegetation to achieve nearly complete coverage across the wetland cells.

The use of aquatic plant-based systems for water quality improvement has been an expanding field since the 1970s when it was discovered in research conducted in natural wetlands receiving pollutant discharges. More than 600 systems in the U.S. and more than 6,000 in the world operate to provide final treatment of wastewaters prior to surface discharge.

As a result of the physical, biological and chemical processes that take place in a vegetated aquatic environment, many pollutants—biodegradable organics, metal and nutrients—in the water are transformed or inactivated, effectively reducing concentrations of nearly all pollutants.

SOURCE: Wetland Solutions, Inc., March 2010



View on November 2013 of recently completed water control structure P-11 at the outlet from Lake Hancock to South Saddle Creek in Polk County.

Volunteers plant and study red mangrove propagules along canals in North Cape Coral

Terry A. Tattar and David C. Scott*

The shorelines of the north spreader canals in Cape Coral have been invaded by invasive exotics and are impacted by boat wakes. The exotics have mostly been eradicated, but sections along the shorelines now lack the native vegetation that is needed to stabilize the shorelines. Wakes from powerboats have caused erosion in the soft sandy bank substrate. It appeared that these impacted shorelines would benefit from planting red mangrove *Rhizophora mangle* propagules in an attempt to establish a fringing mangrove forest along the canal shorelines.

The Florida Department of Environmental Protection (DEP), the custodian of these shorelines, was contacted and agreed to permit both the planting and the collection of local red mangrove propagules in September 2015. After the DEP identified sections of the north spreader canals suitable for red mangrove planting, 10,000 mature red mangrove propagules were collected from local canal water by David and Susan Scott and were stored floating in a 1,000-gallon container of canal water.

“Mangrove Mania,” a mangrove planting event, was scheduled for Sept. 19, 2015, which is International Coastal Cleanup Day. This event involved the coordination of more than 200 volunteer planters and was sponsored by Keep Lee County Beautiful Inc., and supported by Marine Forest Research, Inc., Northwest Cape Coral Homeowners Association, Captain Jack Charters, Gulf Coast Kayak, Cape Coral Parks and Recreation and Cape Coral Environmental Services. The Cape Coral Police, Lee County Sheriff’s Office and the YGPS Kayak Club provided assistance and safety on the water.

Volunteers assembled on the morning of Sept. 19 at Tropicana Park in Cape Coral. Many kayaked, but most ferried to the planting sites on a pontoon boat operated by Captain Jack Charters. After some planting instructions from mangrove researchers David Scott and Terry Tattar, the volunteers began planting. Despite wading in abnormally high water along the canal shorelines, the volunteers planted more than 10,000 red mangrove propagules along 1200 meters of permitted shoreline in approximately two hours. When the planting was completed, the



Student Nia Valez measures mangrove seedling growth and student Audrey Rebsock records data.

volunteers were provided a lunch by Keep Lee County Beautiful and Cape Coral Parks and Recreation.

In March 2016, six months after planting, 11 seventh-grade science students from the North Fort Myers Academy for the Arts, under the direction of science teacher Joelle Hammes, conducted a field study of the growth and health condition of the young mangrove trees. Many of these students had also been volunteer planters. To research the plots, students were ferried by pontoon boat by Captain Jack Charters. Armed with meter sticks and clipboards, groups of two or three students measured terminal shoot growth of red mangrove seedlings in eight research plots. Each student group also rated the health of 20 seedlings in each plot. In addition, metal identification tags were placed on 40 trees for future monitoring. Students found that approximately 80% of the propagules that survived six months along the canals had grown an average of 25 cm. Plans are to have the students return every six months to measure the growth of the new mangrove forest along the canals.

Volunteer planters and student scientists all agreed that there is still much more impacted canal shoreline that would benefit from planting of red mangroves. “Mangrove Mania 2” has been scheduled to again coincide with International Coastal Cleanup Day on Sept. 17, 2016.

* Terry A. Tattar, Ph.D., Professor Emeritus of Microbiology at the University of Massachusetts. David C. Scott, Professional Geologist dba Marine Forest Research Inc. in Cape Coral.



Close-up of red mangrove seedlings after six months growth. Note metal tag on a seedling at right that will be used for future growth measurements.

The CHNEP will hold a one-day workshop in September with the Northwest Neighborhood Association to provide greater communication between regulatory and environmental organizations and local residents. This educational effort will include water quality, hydrology, fish and wildlife habitat and stewardship issues. Learn more and register to attend by visiting www.EventBrite.com, search for CHNEP but change the location to Florida.

The CHNEP, on an as-requested basis, has held public conferences that focus on smaller regions within the CHNEP study area. These have focused on the Caloosahatchee River (2003), Lemon Bay (2004), Cape Coral canals (2005), Peace River (2006), Estero Bay (2007) and the Everglades (2008). A request for a public conference was submitted to the CHNEP by Doug Kidd on behalf of the Northwest Neighborhood Association in Cape Coral.



Keeping the Wild in Florida since 1936!

The Charlotte Harbor National Estuary Program is celebrating two decades of work by community stakeholders to improve the health of the water, habitat and living resources of Southwest Florida's estuaries – where fresh and saltwater mix – from Venice to Bonita Springs to Winter Haven.

In 1995, then Florida Governor Lawton Chiles submitted to the U.S. Environmental Protection Agency a nomination to designate the greater Charlotte Harbor estuarine system as an estuary of national significance. The nomination was accepted and the Charlotte Harbor National Estuary Program is now one of only 28 across the United States.

The collegial partnership of citizens, elected officials, resource managers, and commercial and recreational resource users works together as an advocate for the 4,700-square-mile estuarine watershed by building consensus that is based on sound science.

It is Charlotte Harbor National Estuary Program's outreach program to school students through its Adventures in the Charlotte Harbor Watershed that caught Florida Wildlife Federation's attention and support. The

Florida Wildlife Federation recognizes the Charlotte Harbor National Estuary Program as Conservation Organization of the Year

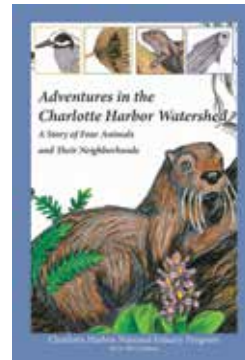
educational program includes not only the coastal schools, but also the often overlooked "upstream" and rural schools.

By engaging local schools and communities throughout the watershed, Charlotte Harbor National Estuary Program is focused on improving water quality in the estuaries while maintaining the integrity of the watershed as a whole. The program not only strengthens the land-water connection, but is also building a multi-generational appreciation of the Charlotte Harbor estuarine watershed.

For its comprehensive and effective outreach programs to school children across the Charlotte Harbor watershed, the Federation is pleased to honor the Charlotte Harbor National Estuary Program as its 2016 Conservation Organization of the Year.

Florida Wildlife Federation will hold its 79th annual Conservation Awards Banquet on June 25 at the Bradenton Courtyard Marriott Riverwalk. Learn more by contacting dhines@fwfonline.org.

The CHNEP published this 60-page book as a tool to help children better understand the natural environment of southwest Florida. Readers learn about the envi-



ronment through the adventures of a yellow-crowned night-heron on the Caloosahatchee River, an alligator on the Peace River, an otter on the Myakka River and a mullet in the estuaries.

The creation of the book was only possible because of the generosity and talents of many people. *Adventures* was written by Carol Mahler and illustrated by Rachel Rebekah Renne. Sidebars were written by Charles O'Connor, Melissa Nell, Desiree Companion, Kayton Nedza, Curtis Porterfield and Anita Forester.

This project has only been possible because of the generosity of many, including sponsors. The Jelks Family Foundation supported the second and sixth editions (2009 and 2013). An anonymous donor supported the fourth edition (2011) in memory of Virgil I. Pitstick. The Hildred Schloss Revocable Trust supported the fifth edition (2012). Florida Wildlife Federation supported the seventh, eighth and ninth editions (2014, 2014–2015 and 2014–2015).

For the ninth year, the CHNEP is pleased to have provided the book to approximately 18,000 school children. School districts that participate in the CHNEP — Lee, Charlotte, Sarasota, Manatee, Polk, Hardee, DeSoto and Highlands counties — give the books to their third-, fourth- or fifth-grade students (their choice).

A PDF of the book is available free, along with videos, coloring sheets curriculum and more at www.CHNEP.org/Adventures.



Students from Manatee Elementary School in Lee County became Adventurers by helping to create the read-a-long video of *Adventures in the Charlotte Harbor Watershed* book. The videos, available on CHNEP's channel on YouTube (CHNEP1995), were produced by Lee County School District and feature author Carol Mahler, illustrator Rachel Renne and educators and scientists. Photo by Pam Burt.



Plant regrowth after a fire in the Charlotte Harbor Preserve State Park, Cape Coral. Photo by Gail Stenger, <http://winecoastersblog.wordpress.com>.

Wildfires in Florida's natural environment

Fire is a natural part of the Florida ecosystems. It is believed that before 1900, lightning strikes started fires in susceptible areas every 3 to 10 years. Because of the frequency, the fires were of lower intensity, which kept forests open and clear of thick brush and shrubs. Fire regularly burns accumulated fuel. Today, about 5,000 wildfires occur each year in Florida, with the most active time being December to June.

The majority of Florida's native plant and animals communities are dependent on fire to maintain their vigor and diversity. These communities, in turn, are critical to a healthy ecosystem. Florida's wet season (June to November) and dry season (December to May) combined with abundant sunshine is ideal for plant growth. Wildfires helped shape the landscape and determine the endemic (native) plant and animal species. For example, the thick bark on pine trees insulate the tree from the heat and the "self-pruning" of lower branches eliminates ladder fuels that might carry a ground fire into the canopy. Seedlings are in their grass stage and are less likely to burn.

Florida's unique geography is a key reason why Florida earns the distinction of lightning capitol of the United States. The warm and moist environment combined with strong summer sunshine heats the ground and causes warm air to rise. The small frontal boundaries along the east and west coasts, called sea breezes, collide and generate thunderstorms. All thunderstorms contain lightning.

SOURCE: <http://www.floridadisaster.org/kids/lightning.htm>



Using Florida Forest Service's Fire Management Information Systems (FMIS) Internet Mapping Tool (<http://tlhforucs02.doacs.state.fl.us/fmis.dataviewer>) it is possible to see where all existing/active wildfires are in Florida, where all open burn authorizations are or are planned to be on any particular day and other incidents that the Florida Forest Service has responsibility for resolving. (It does not show all wildfires.) These data are real time.

“Fire ensures thriving, renewed habitat with pine overstory, shrub understorey and herbaceous groundcover,” explained Carla Kappmeyer in the Spring 2001 issue of Harbor Happenings. “These provide a variety of food sources and vegetative structure for a diversity of wildlife, including the bald eagle, red-shouldered hawk, Florida scrub-jay, gopher tortoise, fox squirrels and eastern diamondback rattlesnake. Fire is critical to the survival of the red-cockaded woodpecker. Mature open pine lands maintained as a fire climax community provide essential habitat for this cavity nester, which is now highly endangered as a result of the exclusion of fire, forestry harvest of immature trees and loss of habitat.”

The wildland urban interface has gained increasing importance as more Americans build homes in rural settings adjacent to public lands. This interface is roughly defined as the zone where natural areas and development meet, according to the U.S. Fish & Wildlife Service.

Fire policies in the United States in the early 1900s were enacted with the goal of suppressing all fires. These policies have now changed.

The applied use of fire in managed ecosystems is known as prescribed fire or prescribed burning. It is an effective tool used year-round to reduce overgrowth of plants that provide fuel to fire. In 1990, the Florida Legislature passed the Prescribed Fire Act to promote the importance of prescribed fire and to provide liability protection.

Prescribed fire has many benefits in nature:

- Restore and maintain natural communities
- Reduce chances of destructive wildfires
- Perpetuate fire-adapted plants and animals
- Cycle nutrients (Complex organic molecules break down to smaller ones.)
- Control tree diseases
- Open scenic vistas
- Protect homes

Temporary inconveniences include smoke, embers and ash. Wind may allow embers to travel a mile from a fire.

When fires are not feasible, mechanical treatment, herbicides and livestock grazing are employed.

Prescribed burns are conducted year-round by highly trained, certified personnel. The prescription details the required conditions that must exist in order for a prescribed burn to take place. These include environmental conditions such as soil moisture, fuel conditions and recent rainfall, as well as forecasted and actual weather conditions including temperature, relative humidity, wind speed and wind direction. Following a predefined prescription allows fire management officers to establish the desired fire behavior, including intensity, flame length, direction of fire spread and smoke. The prescription also identifies the number of qualified fire personnel needed to conduct the burn as well as the number and types of equipment required to safely complete the burn.



Prescribed fire is an effective tool to reduce overgrowth of plants that provide fuel to any fire. The majority of Florida’s native plant and animals communities are dependent on fire to maintain their vigor and diversity. Plants quickly regrow as can be seen in the top photograph.

Protect your property from wildfires

- Build and maintain your property with wildfire in mind. Use building materials that are fire resistant and design a defensible landscape for protection.
- Carefully plan your landscaping within 30 feet of buildings. Alter arrangements of plants and use plants that are less likely to ignite from a wildfire; burn less intensely when they do ignite; accumulate less debris; are low growing; have open, loose branches; and are drought resistant.
- Remove invasive exotic plants such as cogon grass and melaleuca trees that are known to be highly flammable.
- Do not place horticultural debris near your home, adjacent to property boundaries or, if you share a boundary with a conservation area or preserve, on the fireline.
- Thin trees so the treetop crowns are 10 to 15 feet part. Prune limbs so the lowest branches are 6 to 10 feet from the ground. Trim vines and shrubs that can carry a ground fire into the treetops. Remove dense fuels and trim overhanging branches.
- There are other considerations to keeping your property safe.

- Store propane gas tanks 50 feet from any structure;
- know your water sources and have a 100’ hose at the ready; and
- remove needles from roofs and gutters.



Learn more

- Contact Local Natural resources staff.
- Florida Division of Forestry (www.fl-dof.com/field_operations/index.html)
- Firewise Communities USA (www.firewise.org) helps prevent and reduce losses to wildfires and encourages community participation in applying Firewise principles.
- IFAS Fire in the Wildlife-Urban Interface: Selecting and Maintaining Firewise Plants for Landscaping
- Ready, Set, Go! Wildlife Action Plan Saving Lives and Property through Advance Planning (www.freshfromflorida.com/content/download/31059/764167/Ready_Set_Go.pdf)
- U.S. Fish & Wildlife Service (www.fws.gov/fire/living_with_fire/wildland_urban_interface.shtml).



Do you have a song to share?

Entries sought by Aug. 1 for CHNEP Song Contest

Have you written and performed a song that captures the beauty or issues of the natural environment of southwest Florida (as defined by the CHNEP)? The CHNEP would like you to submit your songs for use in the CHNEP Citizens Academy and elsewhere. Prizes up to \$600 will be awarded.

The rules are simple. Each person may submit up to three entries by Aug. 1, 2016, either electronically to Maran@chnep.org or by mail to CHNEP Songs, 326 W. Marion Ave., Punta Gorda, FL 33950.

There is no fee to enter. This contest is open to amateur and professional songwriters of any age. You retain ownership of the songs submitted. By entering this contest, you are allowing the CHNEP to use the songs in its materials and at events and allowing others

to perform your song for CHNEP purposes. You will be asked to perform at select events.

The songs must be original but can be of any genre and must be two to ten minutes long. An entry consists of a (1) digitized audio performance, (2) a lyric sheet or sheet music and (3) an entry form available at www.CHNEP.org/songs. A music video may be submitted but is not required to participate.

The song writer can have others perform the song. There is no requirement as to when the song was written or recorded.

The winning entries will be selected by the CHNEP Citizens Advisory Committee. Submissions are judged on lyrics, likeability, creativity, originality, melody and arrangement. Production/recording quality and vocal ability may also be considered.

Listen to the winning entries from past contests at www.CHNEP.org/songs.

2013

- Gordon Mac Martin, *Save Our Estuaries*
- Papa Tommy, *In The Mangroves*
- Papa Tommy, *Day Excursion*
- Bobby Covington, *It's Always Sunny In Southwest Florida*

2014

- Rosie Emery, *Rhythm and Flow*
- Thomas Treffi, *Peace River Bend*
- Joe Virga, *West Florida Waltz*

2015

- Tim Cain, *Mother Nature*
- Thomas Treffi, *Myakka River, Be my river refuge*

CHNEP Environmental Education participants learn of resources to help be more effective

The sixth annual CHNEP Environmental Education Workshop was held May 18 at WGPU Public Media. It was an opportunity for more than 50 people who work with and are concerned about environmental education to network and learn more about solutions

to issues facing the natural environment of southwest Florida.

Paula Sklodowski with WGPU shared information about PBS LearningMedia (www.PBSLearningMedia.org). PBS is America's largest and most trusted classroom, with 220

million children and adults nationwide engaged in its programming and content. PBS Learning Media now offers more than 120,000 free digital resources for teachers and students in grades PreK-12.

"This is a great resource that's available to anyone who teaches," explained Ms. Sklodowski. "Setting up a free account is easy and lets you organize your favorite resources, puzzles and more to enhance your lessons."

One resource is a tool that allows for the creation of custom word searches. The word search here includes words often heard in conjunction with the CHNEP. As a tool, word searches help bolster vocabulary.



You'll have to attend virtually by watching the CHNEP video of Lara Milligan's talk to find out what caused the reaction shown above! UF/IFAS Extension developed the Florida Waters Stewardship Program to bring people together to learn about Florida's water resources and provide them with a foundation of knowledge and skills to work with others toward positive change through stewardship actions. We connect participants to each other, to local water resources and to other experts in the field. The class is a great foundation to positively impacting our communities.

Word Search: CHNEP

Words can go horizontally, vertically and diagonally in all eight directions. Words may overlap.

M	Y	G	L	U	U	T	N	L	N	W	N	U	D	N	R	O	P
C	W	B	C	T	I	X	Q	R	E	T	A	W	M	H	Z	Y	W
S	X	S	T	E	W	A	R	D	S	H	I	P	M	Y	R	N	E
E	I	V	L	M	P	F	C	S	K	E	E	R	C	A	N	W	T
V	V	V	F	Y	O	X	K	R	D	R	R	F	U	O	O	T	L
O	Y	T	I	D	I	B	R	U	T	O	A	T	R	C	W	A	A
R	T	Y	C	Z	V	N	V	C	B	I	S	W	S	I	G	T	N
G	I	L	C	J	Z	X	V	E	L	E	C	E	Z	P	B	I	D
N	N	U	Y	K	L	T	N	U	Q	N	H	S	B	O	B	B	S
A	I	Y	C	W	R	R	K	G	S	S	P	A	F	R	H	A	S
M	L	F	P	R	E	S	J	P	R	B	A	Y	L	T	Y	H	S
B	A	Q	W	T	B	G	E	A	S	N	U	I	X	B	D	V	E
R	S	H	L	H	M	O	M	S	V	N	R	J	G	U	R	B	A
I	P	A	E	D	E	D	S	W	S	J	F	N	N	S	O	K	G
V	S	R	Y	H	F	Z	Z	T	Y	A	Z	Q	I	Z	L	C	R
E	V	W	A	T	E	R	S	H	E	D	P	F	E	J	O	M	A
R	U	C	H	L	O	R	O	P	H	Y	L	L	O	X	G	L	S
S	R	H	S	I	K	C	A	R	B	W	D	I	H	H	Y	X	S

Find these words:

- | | |
|-------------|-------------|
| BAY | RIVERS |
| BRACKISH | SALINITY |
| CHLOROPHYLL | SALTERN |
| CREEKS | SEAGRASS |
| ESTUARY | STEWARDSHIP |
| HABITAT | SUBTROPIC |
| HYDROLOGY | TURBIDITY |
| MANGROVES | WATER |
| MARSHES | WATERSHED |
| PASSES | WETLANDS |

The key is posted at www.CHNEP.org.

Health of coastal waters assessed in coastal condition report

The overall condition of the coastal waters of the Gulf Coast region is rated fair, with an overall condition score of 2.4. The water quality index for the region's coastal waters is rated fair; the benthic index is rated fair to poor; the sediment quality and coastal habitat indices are rated poor; and the fish tissue contaminants index is rated good. The overall condition rating of 2.4 represents no significant change from the ratings of 2.4 and 2.2 observed in the previous reports (NCCR II and III), but still represents an improvement in overall condition since the early 1990s. Learn more at www.epa.gov/national-aquatic-resource-surveys/ncca.

Coastal waters in the United States consist of a variety of habitats, including estuaries, bays, sounds, coastal wetlands, coral reefs, intertidal zones, mangrove and kelp forests, seagrass meadows, and coastal ocean and upwelling areas (i.e., deep water rising to surface). These coastal areas encompass a wide diversity of ecosystems that result from the tidal exchanges that occur between freshwater rivers and saline ocean waters within coastal estuaries. Coastal habitats provide spawning grounds, nursery areas, shelter and food sources critical for the survival of finfish, shellfish, birds and other wildlife populations that contribute substantially to the economic health of our nation.

Section 305(b) of the Clean Water Act requires that the states report to the U.S. Environmental Protection Agency (EPA), and that the EPA report to Congress on the condition of the nation's waters, including coastal waters. As part of this process, coastal states provide valuable information about the condition of their coastal resources to the EPA; however, because the individual states use a variety of approaches for data collection and evaluation, it has been difficult to compare this information among states or on a national basis.

To better address questions about national coastal condition, the EPA, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Fish and Wildlife Service (FWS) agreed to participate in a multi-agency effort to assess the condition of the nation's coastal resources. The agencies chose to use nationally consistent monitoring surveys to minimize the problems created by compiling data collected using multiple approaches. The results of these assessments are compiled periodically into a National Coastal Condition Report (NCCR). This series of reports contains one of the most comprehensive ecological assessments of the condition of our nation's coastal bays and estuaries. The assessment presented in the fourth NCCR, is based on data collected from 2003 to 2006 from more than 3,100 coastal sites.

The first NCCR, published in 2001, reported that the nation's coastal resources were in fair to poor condition. The report used available

data collected from 1990 to 1996 to characterize about 70% of the nation's conterminous coastal waters. The second NCCR was based on available data from 1997 to 2000. The report data were representative of 100% of the coastal waters of the conterminous 48 states and Puerto Rico and showed that the nation's coastal waters were slightly improved and rated in fair condition overall.

The fourth NCCR presents four main types of data: (1) coastal monitoring data, (2) national coastal ocean condition data, (3) offshore fisheries data, and (4) advisory and closure data. The ratings of coastal condition in this report are based primarily on coastal monitoring data because these are the most comprehensive and nationally consistent data available related to coastal condition.

In addition to rating coastal condition based on coastal monitoring data, the NCCR IV summarizes available information related to coastal condition associated with various coastal ocean shelf regions, offshore fisheries, state-issued fish consumption advisories in coastal waters, and beach advisories and closures. Although not directly comparable, this information, together with descriptions of individual monitoring programs, helps paint a picture of the overall condition of the nation's coastal resources.

REPRINTED from the *National Coastal Condition Report IV*, September 2012.

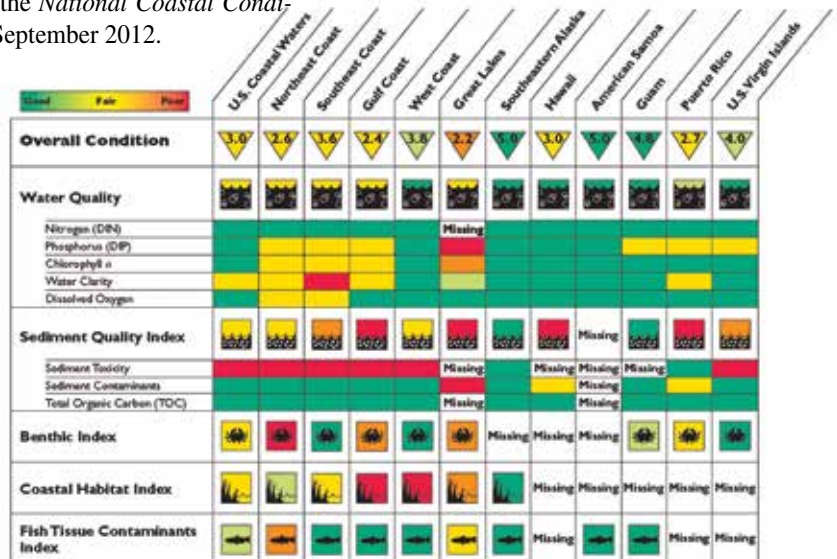
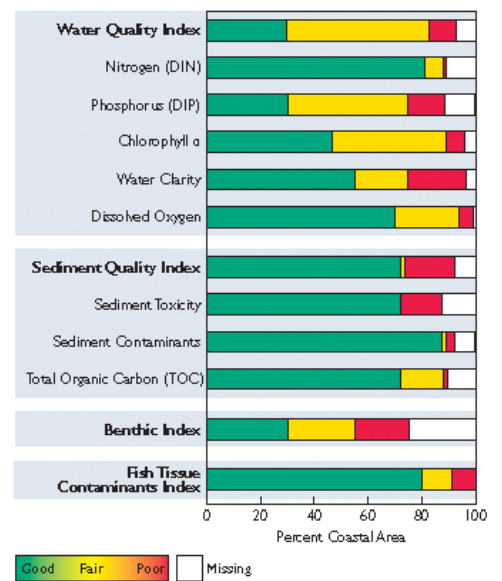
ABOVE: The overall condition of Gulf Coast coastal waters is rated fair.

RIGHT: Percentage of coastal area achieving each ranking for all indices and component indicators for the Gulf Coast Region.

SOURCE: U.S. EPA/NCA.

Why be concerned about coastal condition?

The activities of municipalities, commerce, industry and tourism create environmental pressures that threaten the very resources that make coastal living desirable. Development pressures result in substantial changes along many areas of the coastal zone. Climate-change impacts and other emerging issues are expected to cause even more pressures.



CHNEP grants: Do you have an idea on how to protect the natural environment?

The CHNEP is proud to have supported more than 800 projects with grants. Examples of projects supported by CHNEP are provided below and on page 14.

The CHNEP offers micro-grants, usually up to \$250, to assist others in their efforts to help implement the CCMP, a plan to protect the natural environment from Venice to Bonita Springs to Winter Haven. While all projects help implement the CCMP, they are varied in their purpose and scope. Projects must be completed between Oct. 1 and Aug. 31.

The CHNEP offers Public Outreach Grants once a year. The maximum grant request is \$5,000 but most applications are funded in the \$2,500 to \$3,000 range. Applications for projects, which can begin no earlier than Nov. 2016, are due Sept. 2.

Guidance for these grants is available at www.CHNEP.org/grants.html.

Paths

Marlene Rodak, FNPS Coccoloba Chapter

I believe we follow paths in life. Sometimes we have forks in the road and have to choose. So I try to pick the path that feels right or most natural. In my experience with the Florida Native Plant Society Coccoloba Chapter, it serves me well.

A native plant sale at Koreshan State Historic Site on Valentine's Day certainly felt like the right path. There was a nice crowd of people who were engaged and interested in learning about native plants. The park was happy to have us there, as were the other vendors in the farmers market. When park volunteer Vin Pagliaro approached us about helping plant the pots and urns around the park, we liked the path even more.

During a site visit around the park with some Coccoloba board members, Vin mentioned a dilapidated nursery and a few eyebrows were raised. When we arrived at the nursery, we were all smiles!

Last summer, the CHNEP and the Coccoloba Chapter conducted several interviews to understand the native plant business and evaluate our outreach. As a result of that analysis, the Coccoloba Chapter realized they need to "schlepp" plants to every outreach event. Why? Because whether we are taking a field trip or hosting a class or workshop, we are teaching people about native plants. However, once they leave, they realize that purchasing native plants is confusing and difficult. They must drive by a lot of big box stores and other nurseries to get to a native plant nursery—if they even know where one is!

By bringing a dozen or so native plants to events, people can touch, feel and smell them. People are engaged and excited about them. If they are actually able to purchase them, it closes the gap between when they learn about native plants and when they actually buy them and plant them in their yards.

This made great sense philosophically, but it meant bringing plants in addition to everything else we bring to conduct outreach events. Plus, we had to purchase and store them before and between events. So you can imagine how excited we were to have a nursery to store and maintain native plants.

After being awarded a CHNEP micro-grant, we were able to purchase materials to repair the nursery. Between Koreshan and Coccoloba volunteers, the nursery was up and running in no time at all. We purchased plants for the park and for the remaining outreach projects.

We were on a great path and all these other people were joining us! In addition to Coccoloba volunteers, we invited Koreshan volunteers and new neighborhood volunteers to get involved.

Before long, we realized that we needed to be teaching people about native plants every Sunday at the Koreshan's year round farmers market. That type of commitment is monumental to the Coccoloba Chapter, but the park helps tremendously to ease the burden.

Sometimes everything just falls into place. You think it's just us on a path, but everybody is trying to get to the same place. Soon you have a whole group of people on that path and it leads to a beautiful little native plant nursery.



The nursery at Koreshan is off-limits to the public. It is a very special place.

As we were getting the nursery up and running, we noticed a baby gopher tortoise had created a burrow next to one of the 4" x 4" supports for the nursery. Most of the time, the tortoise hangs out at the burrow's "front door," but about mid-afternoon will stroll out and eat weeds. A gopher apple plant was planted and weeds to which the tortoise is accustomed were left. No herbicides here!

There are two other very large tortoises around. One day, while gathering up plants for an event, I saw one. I walked over, hunkered down and held out a blooming coreopsis. The tortoise walked over, bit off a flower and chewed it up. Then he or she walked to the side of the plant, bit off another flower and chewed it up before walking on.



Freshwater Marshes: A world of wet

Kharli Rose

If you live, work or play anywhere near a freshwater marsh, you better bring your boots, and likely a hat. These wetlands are prone to flood and are out in the open. Though messy for us, the plants used to identify this area have adapted well to their waterlogged environment. To live or drown was their fate, and they chose to emerge. Emergent plants are rooted beneath the water's surface, but have stems and leaves that emerge from the water. Grasses and herbaceous emergent vegetation are the main plants here, but communities vary based on local geology, hydrology and fire.

Freshwater marshes occur within flatwoods depressions; along broad, shallow lake and river shorelines; and scattered in open areas within hardwood, dry prairie and cypress swamps. Portions of freshwater lakes, rivers and canals that are dominated by floating-leaved plants, such as lotus, spatterdock, duckweed and water hyacinths, are included in this category. A freshwater marsh can be further identified as a depression marsh, floodplain marsh, basin marsh, coastal interdunal swale, marl prairie, wet prairie, slough or swale.

The flatness of south Florida can create very large and broad freshwater marshes, with the Everglades being the largest in the state. An assortment of pickerelweed, sawgrass, maidencane, arrowhead, fire flag, cattail, spikerush, bulrush, white water lily, watershield and numerous sedges dominate freshwater marshes and wet prairies. Many subcategories of this habitat, such as sawgrass marsh or maidencane prairie, were created because of the overwhelming amount of ruling plant species.

No matter the name, these communities provide critical sanctuary for wildlife to survive, even during floods and droughts. If marshes did not exist in Florida, neither would the snail kite; and its specialized meal of apple snails would likely explode. Wading birds are commonly linked with these wet wonderlands, but many migratory waterfowl also depend on them as safe wintering spots. Alligators, panthers, rabbits, frogs, minks, muskrats, crane flies and nematodes are only a handful of species that rely on these systems.



Sandhill Cranes, Charlotte County. Photo by Ruth Spies, 2008.

Unfortunately, nearly 45 percent of wetlands have been lost since Florida became a state. Those in unprotected areas have suffered from direct habitat conversion for agriculture and development. Widespread ditching, diking and hydrologic fragmentation from roadways and municipal and agricultural groundwater withdrawal are also to blame. Agricultural discharge and nutrient unload-

ing, and added invasive plant infestations, could drastically change the composition of soils and plant communities. Small wetlands are undervalued and frequently altered, even though they are the only sites for certain Florida species to either live or reproduce. If you live near or can visit a wetland, taking a closer look may be worth a boot full of water to see how it is overflowing with value.

CHNEP on Tumblr blog

Sign up to receive CHNEP's weekly messages from Tumblr featuring amazing reminders of the natural environment in southwest Florida. The photos were submitted to the CHNEP for its calendars. Each message includes an introduction to the landscape, plant or animal featured that week. It's easy. Go to www.tumblr.com, set up your account, search for CHNEP and select "follow."

At least bittern may have been right under your nose but went unnoticed as the small, camouflaged heron is one of the most difficult North American marsh birds to spot. Thanks to its habit of straddling reeds, it can feed in water too deep for the wading strategy of other herons. In hiding, it may point its bill upward and sways to resemble wind-blown vegetation.



Least Bittern in Breeding Colors, Venice. Photo by John Hazard, 2012.

Southwest Florida's Great Florida Birding and Wildlife Trail

Whitney Gray, Great Florida Birding and Wildlife Trail

Southwest Florida is an amazing area full of natural beauty. There are so many places to see native wildlife and habitats that the choices can be overwhelming. The Great Florida Birding and Wildlife Trail (GFBWT) can help you find watchable wildlife!

The GFBWT is a network of more than 500 sites across the state offering great opportunities to view Florida wildlife and habitats. There are nearly 50 GFBWT sites in the CHNEP study area alone, located in state parks, county parks, water management district properties, wildlife management areas, national wildlife refuges and more.

The GFBWT, a program of the Florida Fish and Wildlife Conservation Commission, was established in the late 1990s with funding from the Florida Department of Transportation. To pursue the mission of conserving and enhancing Florida's wildlife habitat by promoting birding activities, conservation education and economic opportunity, the GFBWT works to encourage Florida residents and visitors to get outside and see Florida's wildlife firsthand.

To help find these great places while you're on the road, look for roadway signs guiding you to the nearest GFBWT site. Or you can visit the website (www.floridagbirdingtrail.com) and use the Trip Planner to find a destination that suits your interests and needs.

GFBWT sites in the CHNEP study area offer a diverse assortment of wildlife viewing opportunities. T. Mabry Carlton Memorial Reserve is a Sarasota County park located in Venice. This site offers a little bit of everything. Trails wander through hardwood hammock and pine flatwoods (listen for Bachman's sparrows) and around freshwater marsh and forested swamp. A nice assortment of upland birds can be seen here year round, including several species of warblers, brown-headed nuthatch and five species of woodpecker.

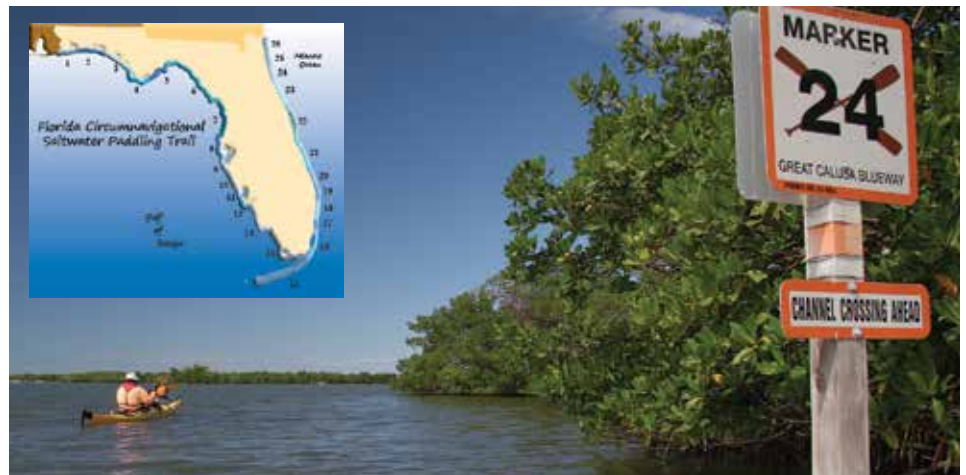
In 1941, the Commission of Game and Freshwater Fish, the predecessor agency of the Florida Fish and Wildlife Conservation Commission, purchased land in Charlotte County for wildlife management. Today this land is part of the 65,758-acre Fred C. Babcock-Cecil M. Webb Wildlife Management Area. Surrounded by residential development, Babcock/Webb is among the

last undeveloped expanses of hydric (wet) pine flatwoods in southwest Florida, and it's within five miles of Punta Gorda. Freshwater wetland and upland birds abound, including swallow-tailed kite, wood stork and the federally endangered red-cockaded woodpecker.

For coastal birds, the Point Ybel Lighthouse Park, a city park on Sanibel Island, is a gold mine! Even though it's a small site, it is a known hotspot during migration. Be there at sunrise after weather patterns produce a large migration event and you could witness one of the most phenomenal fallouts anywhere on Florida's coastline. More than 200 species of birds have been recorded here, some in large numbers such as the sighting of 300 pomarine jaegers in 2000.

Of course, birding is just one type of wildlife to watch on the GFBWT! Many sites offer great opportunities to see butterflies, amphibians, reptiles and more.

A guide to the GFBWT sites in south Florida can be purchased on *Amazon.com* as an e-book that can be used on a Kindle device or smartphone app. Many thanks to the CHNEP for the microgrant that made the e-book possible!



A sea kayaker passes a trail marker along the Calusa Blueway in Lee County, segment 12 of the trail. Photo by Doug Alderson.

Florida Circumnavigational Saltwater Paddling Trail

Are you ready for an adventure? Take three or four months to paddle by sea kayak the 1,515-mile Florida Circumnavigational Saltwater Paddling Trail. Of course you can paddle portions of any of the 26 segments of the trail any amount of time you have available. Three segments—10, 11 and 12—hug the CHNEP coastline.

The CT includes every Florida coastal habitat type, from barrier island dune systems to salt marsh to mangroves, historical sites, points of interest, fishing communities and urban centers.

The trail is a long-term priority of the Florida Department of Environmental Protection, coordinated by the Office of Greenways and Trails. It has incorporated and partnered with several existing local and regional trails and several county blueway trails. (Each coastal county that participates in the CHNEP has a blueway trail.) The nonprofit Florida Paddling Trails Association (www.floridapaddlingtrails.com/) was formed in 2007 to act as volunteer stewards of the CT and other paddling trails.

Segment guides, photos and maps can be downloaded at no charge from www.dep.state.fl.us/gwt/paddling/saltwater.htm. A printed guide is available for purchase on *Amazon.com*, with proceeds directed to the Florida Paddling Trails Association.

Join us. The Charlotte Harbor National Estuary Program (CHNEP) is a partnership working to protect the natural environment of Florida from Venice to Bonita Springs to Winter Haven. The CHNEP offers programs to help its partners in their efforts to protect the natural environment and to fulfill the CHNEP management plan. The CHNEP is pleased to invite you. . .

CHNEP Meetings and Events

The CHNEP partnership is guided by its Management Conference of four committees. The Policy Committee establishes general policies and goals for the Program and executes ultimate authority in program administration. The Management Committee develops and reviews work plans, funding requests, work products and other activities. The Citizens Advisory Committee (CAC) provides a mechanism for citizen input and helps develop and promote public information and education programs. The Technical Advisory Committee (TAC) is the scientific and technical voice of the program.

All meetings are open, but the public is encouraged to join the Citizens Advisory Committee. Membership is open to all who are interested in protecting the natural environment bounded by Venice, Estero Bay and Winter Haven.

These dates are tentative. Confirm dates and obtain locations and agendas at www.CHNEP.org. Additional meetings and events are also posted on this website.

2016

CHNEP: Review applications received for director	July 14
CHNEP 2017 Calendar entries due	July 15
Technical Advisory Committee (TAC)	July 21
Management Committee	July 29
CHNEP Song Writing Contest entries due	Aug. 1
Citizens Advisory Committee (CAC)	Aug. 3
Policy Committee	Aug. 11
NAI Certified Interpretive Guide Training*	Aug. 23–26
Public Outreach Grant applications due	Sept. 7
Conservation Lands Workshop*	Sept. 7
Northwest Cape Coral Neighborhood Assn. Workshop*	Sept. TBD
Technical Advisory Committee (TAC)	Oct. 13
Citizens Advisory Committee (CAC)	Oct. 19
Communicating Your Science Training*	Oct. 26
Management Committee	Oct. 28
Policy Committee	Nov. 10
Charlotte Harbor Nature Festival*	Nov. 19

* For details and to register, go to www.EventBrite.com, search for CHNEP.

Did you miss a CHNEP event?

The CHNEP has hosted many events to provide opportunities to solve a problem and enhance capabilities to protect the natural environment of southwest Florida. Most presentations given at these events are available as PDF files from www.CHNEP.org. Since 2012, most presentations, including those from the latest CHNEP Environmental Education Workshop on May 18, have also been saved as videos by combining the PDF of the presentation and the voice of the speaker. These are linked on the website and posted on CHNEP's YouTube channel CHNEP1995.

These videos help fulfill our plan to protect the environment and have become the CHNEP equivalent to TED Talks, a nonprofit organization devoted to Ideas Worth Spreading.

To learn more and register for the programs below, go to www.EventBrite.com, search for CHNEP but change the location to Florida.

NAI Certified Interpretive Guide Training: Aug. 23-26

The National Association for Interpretation offers professional-level certification for interpreters around the world. Certification is a way to document that you possess skills and knowledge that allow you to perform effectively in the interpretive profession. With thanks to Florida Aquarium and Sarasota County, the CHNEP will host this training.

CHNEP Conservation Lands Workshop: Wed., Sept. 7

This fifth annual workshop is an opportunity for those who work with and are concerned about conservation lands to network and learn more about solutions to issues facing these lands in southwest Florida. It will again be held at the Charlotte Harbor Event & Conference Center in Punta Gorda. There is no fee to participate but we ask that you register by Aug. 29. Lunch and refreshments will be provided.

Communicating Your Science Training: Wed., Oct. 26

This interactive training led by COMPASS will prepare scientists to share in clear, lively terms what they do, what they know and why it matters. The training will empower participants to find the relevance of their science for the audiences we most want to reach—policymakers, journalists, the public and other scientists. Participants will build the knowledge, skills and networks needed to effectively engage in public discourse about the environment. With thanks to the Gulf of Mexico Coastal Training Program and Sarasota County, the CHNEP will host this training at Lemon Bay Park.

Charlotte Harbor Nature Festival: Sat., Nov. 19

An annual exciting and informative event since 2002 for residents and visitors to learn about the natural environment of southwest Florida. Visit YouTube (CHNEP1995 channel) to see short videos of the festivals held since 2011.

Charlotte Harbor Watershed Summit: March 28-30, 2017

Stay tuned for more details on this all-things research, restoration and environmental in the Charlotte Harbor watershed!



Project WILD uses educational practices that are proven effective for greater student engagement and achievement. Plus, it is interdisciplinary, active fun learning—and all free! A workshop teaser included participating in a few of the best WILD lessons around. Here a person's wing "span" was measured and compared to native birds.



PO Box 511422

Punta Gorda FL 33951-1422

Help Protect the Natural Environment —

Encourage Others to Subscribe

CHNEP publications have been promoted, essentially by word of mouth. Would you help spread the word and encourage others to subscribe so that we can reach more southwest Florida residents?

Two informative and free CHNEP publications are the *Harbor Happenings* magazine, published since 1997, and the calendar, published since 2005. Both are written for the interested public and provide information about the “happenings” in the CHNEP study area that help implement the *Comprehensive Conservation and Management Plan* to protect the natural environment from Venice to Bonita Springs to Winter Haven. The calendar showcases the beauty and diversity of the native, natural environment of southwest Florida through donated images.

Approximately 50 people help produce each issue of *Harbor Happenings* and more than 200 people contribute images to be considered for each CHNEP calendar. More than 100 locations distribute copies of *Harbor Happenings* to their staff, volunteers and patrons; the number doubles for the calendars.

To help manage subscriptions, subscribers of the free *Harbor Happenings* magazine are now required to renew their subscription every three years. Everyone who has received the magazine for more than three years – and who is receiving this issue – has renewed at least once. We’re proud that nearly 5,000 copies of each issue are sent to subscribers and another 4,000 are distributed by our partners and at events. Another 2,000 issues are distributed as a digital file to those who subscribe through Constant Contact.

All of this has been possible, essentially by word of mouth. Would you help spread the word and encourage others to subscribe so that we can reach more southwest Florida residents? All subscriber options are described at www.CHNEP.org/subscribe. To receive 10 or more copies of each issue for distribution, please email your request, address and brief explanation of how the issues will be used to Maran@chnep.org. Quantities most often requested are 10, 20, 30, 40, 60, 80, 100 and 200. Thank you!

Don't forget. . .

CHNEP 2017 Calendar Entries are due July 15

If you have captured the beauty and diversity of the native, natural environment in southwest Florida (as defined by the CHNEP) in a photograph or painting, please enter up to three images for consideration in the CHNEP 2017 calendar. It’s free and easy. To submit your entries, complete the entry form and submit your images by July 15. If you can, please complete the online release form at www.surveymonkey.com/r/CHNEPCalendarEntryForm and send your images to CHNEP by email (Maran@chnep.org) by using a file sharing service such as DropBox or by mail.



Thanks to those who have donated images, the CHNEP has been able to create centerfold posters on fire (see poster in this issue), alligators, monarchs, gopher tortoise, beach-nesting birds, invasive exotic trees, mangroves, butterflies and birds.



PO Box 511422

Punta Gorda FL 33951-1422

This will be your last issue until you renew.

Renew your subscription by Sept. 15 if you wish to continue to receive free *Harbor Happenings* magazines and a free 2017 calendar in the mail.

You are receiving this version of *Harbor Happenings* because you've been receiving the magazine for more than three years. For some of you, this is the second three-year cycle when you've been asked to renew. We hope you have valued it! Since 1997, the magazine has provided information on the environmental "happenings" in southwest Florida as a tool to educate, inform and motivate. Since 2005, the calendar has shown the beauty and diversity of the natural environment through donated images. Each 9" x 12" featured image is also suitable for framing!

To continue to receive the quarterly 16-page magazine and yearly calendar, you must renew your subscription. You may renew at any time but we need to hear from you by Sept. 15 to receive the 2017 calendar in the mail.

There are two ways to renew:

(1) Complete the online form at www.CHNEP.org/subscribe. (2) Mail this page to CHNEP *Harbor Happenings*, P.O. Box 511422, Punta Gorda, FL 33951-1422. If you can, please complete the online form.

The online subscription form allows subscribers to provide multiple addresses and indicate where to send particular issues. Our goal is to mail *Harbor Happenings* in early January, April, July and by November with the calendar. You may also provide this information if you mail in your renewal. The online form describes other ways you may receive *Harbor Happenings*; however, the calendar will only be mailed to those who receive the magazine through the mail.

One reminder will be mailed to you in August as a postcard. No action is required to cancel your subscription.

We hope you'll continue as a member of CHNEP's partnership to protect the natural environment.

If time slips by and you want an issue or the calendar, you can stop by one of the 200+ locations to pick up a free copy. Each publication will also continue to be available as a PDF file from www.CHNEP.org.

Help Protect the Natural Environment — Encourage Others to Subscribe

CHNEP publications have been promoted, essentially by word of mouth.

We're proud that nearly 5,000 copies of each issue are sent to subscribers and another 4,000 are distributed by our partners and at events. Another 2,000 issues are distributed as a digital file to those who subscribe through Constant Contact.

Would you help spread the word and encourage others to subscribe so that we can reach more southwest Florida residents? All subscriber options are described at www.CHNEP.org/subscribe. To receive 10 or more copies of each issue for distribution, please email your request, address and brief explanation of how the issues will be used to Maran@chnep.org. Quantities most often requested are 10, 20, 30, 40, 60, 80, 100 and 200. Thank you!

Don't forget! CHNEP Calendar Entries are due July 15

If you have captured the beauty and diversity of the native, natural environment in southwest Florida (as defined by the CHNEP) in a photograph or painting, please enter up to three images for consideration in the CHNEP 2017 calendar. It's free and easy. To submit your entries, complete the entry form and submit your images by July 15. If you can, please complete the online release form at www.surveymonkey.com/r/CHNEPCalendarEntryForm and send your images to CHNEP by email (Maran@chnep.org) by using a file sharing service such as DropBox or by mail.



Thanks to those who have donated images, the CHNEP has been able to create posters on fire (in this issue), alligators, monarchs, gopher tortoise, beach-nesting birds, mangroves, butterflies and birds.