

FALL 2012 Bay Soundings

BAYSOUNDINGS.COM

COVERING THE TAMPA BAY WATERSHED

Cousteau
Creates a
Splash in
St. Petersburg
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How Does Tampa Bay Stack Up?

By Victoria Parsons

With the national organization Restore America's Estuaries (R.A.E.) hosting its sixth annual conference at the Tampa Convention Center Oct. 20 to 25, we thought it would be

a good time to see how Tampa Bay stacks up against other estuaries around the country.

On nearly every measure – from water quality to restoration and conservation – the home team plays a strong game. “I don’t think most people in the Tampa Bay region realize just how far we have come in protecting our namesake body of water,” says Capt. Peter Clark, executive director of Tampa Bay Watch and vice chair of R.A.E.

The Tampa Bay Estuary Program tracks water quality in key bay segments with a “traffic light” graphic highlighting areas where water quality standards are met in green, segments that need extra attention in yellow and using red to show where thresholds have not been achieved.

“Forty years ago, parts of the bay were so polluted that *60 Minutes* taped a segment showing noxious sewage off Bayshore Boulevard. We still have a problem child – Old Tampa Bay – but every other bay segment meets or exceeds water quality standards.”

A 2007 report from National Oceanic and Atmospheric Administration named Boston Harbor and Tampa Bay as the only two “improving” estuaries in the country. Boston ended decades of wastewater discharges into its harbor by building a \$3.4 billion pipe to carry wastewater offshore. In Tampa Bay, a decades-long public-private partnership has resulted in dramatic cuts to nitrogen loads with a corresponding increase in sea-grass beds.

The challenge, of course, is maintaining those standards as the region’s population continues to increase, notes Suzanne Cooper, principal planner for the Tampa Bay Regional Planning Council and its Agency on Bay Management. “We’ve managed to cut nutrients by more than 400 tons annually since 1995 even as our population has continued to grow,” she said. “It’s getting harder every year though. We’ve already picked the low-hanging fruit. We must continue to re-

duce nitrogen loading so that our region can prosper.” (See related story page 4.)

Across the country, it’s clear that development is the leading cause of water quality and habitat degradation. “More people equal more problems, but people still want to live on coasts,” Clark says.

“More than half of the people in the United States live within 100 miles of the coast and coastal communities are growing three times faster than counties elsewhere in the country.”

Restore America’s Estuaries, based outside Washington D.C., represents an alliance of eleven community-based conservation organizations working to protect and restore the vital habitats. They range from Tampa Bay to Narragansett Bay in Rhode Island on the east coast

How Does Tampa Bay Stack Up?
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ESTUARY QUALITY REPORT				
Year	Old Tampa Bay	Hillsborough Bay	Middle Tampa Bay	Lower Tampa Bay
2001	Yellow	Green	Yellow	Yellow
2002	Yellow	Green	Green	Green
2003	Red	Yellow	Green	Yellow
2004	Red	Green	Green	Yellow
2005	Green	Green	Yellow	Yellow
2006	Green	Green	Green	Green
2007	Green	Green	Green	Green
2008	Yellow	Green	Green	Yellow
2009	Yellow	Yellow	Green	Green
2010	Green	Green	Green	Green
2011	Red	Green	Yellow	Green

Recycling Makes Cents for Florida

The state of recycling in Florida is like the proverbial glass of water. Depending on your point of view, it’s either half-empty or half-full.

On the half-full side, nearly every large city in the state has curbside pick-up, and Floridians are recycling more than 30% of their trash. On the half-empty side, St. Petersburg is the only large city in the state that requires its residents to deliver

their recyclables to collection centers. But even that has a flip side – Pinellas is still ranked as among the top 20 counties for total recycling because its residents participate even if it isn’t convenient. “Pinellas is one of the most environmentally aware counties in the state,” notes Ron Henricks, environmental administrator for the waste reduction section of the Florida Department of Environmental Protection.

And yet another contradiction: In 2008, the legislature mandated that local governments recycle 75% of their solid waste by 2020



to minimize the need for landfills. Last year, however, it decided to count trash burned in waste-to-energy (WTE) plants as recycled material. Although WTE will boost recycling rates in Hillsborough from 42% to 67%, and from 32% to 59% in Pinellas, many people question whether burning trash is truly recycling even if it does produce energy.

“Florida is the only state in the nation that counts WTE as recycling,” Henricks adds. The **Recycling Makes Cents for Florida**
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If you’re already getting a regular edition by email, you’ll start getting twice-a-month updates beginning in November. We’ll publish new stories, add calendar events and update recently published stories on the most important issues facing the bay. We’ll also be on Facebook for more timely communications.

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**Pounds to Ounces:
The Zero-Waste Project** Pg. 8-9

Allen Burdett: 45 Years Protecting Florida's Natural Spaces

When 16-year-old Allen Burdett came home with a diamond back rattlesnake, instead of throwing them both out, his mom sent him to the library to get a book on snakes. They kept the snake for six years, in a garage that sometimes housed hundreds of reptiles ranging from gentle garter snakes to an occasional cottonmouth and an always-hungry crocodile rescued when a museum in Sulphur Springs closed its doors.

That love for all kinds of critters, combined with a knack for book knowledge, has been a hallmark of Burdett's career spanning nearly 45 years.

In fact, by the time he joined the Board of Conservation (now known as the Florida Department of Environmental Protection) in 1968, he'd already made a name for himself in Tampa Bay. Still a student at the University of South Florida, he had done the sampling that helped stop the last phase of dredge and fill in Boca Ciega Bay.

"The rules were different then," he says in his typically understated fashion. Developers could buy seagrass beds or mangrove forests for nearly nothing, dredge canals and create valuable waterfront land. Even the federal government, through its Soil Conservation Service, dug canals through wetlands to drain them so they could be used for more valuable services like farming, logging and ranching.

"The thinking was the more land we had, the more productive it would be. No one considered the productivity of a seagrass bed."

These days, he's trekking through the Green Swamp, directing contractors on where to block ditches or put culverts under roads to return the land to a more natural system. "We haven't walked every inch but we've covered a lot of land," he says.

He starts by reviewing decades' worth of aerial photos, looking for changes and trying to track natural flows by observing the vegetation. For instance, oak trees can tolerate a few inches of standing water occasionally but a large number of small oak trees mixed within a cypress stand indicates that water levels are changing.

Even the latest technology still requires feet on the ground to confirm what's happening. Case in point: Burdett and his supervisor, Judy Ashton, discovered Simpson's Hole deep in the Giddon Lake area of the Green Swamp only because they heard running water. "We were in the middle of a big pond and we could hear a lot of water tumbling down a shaft, probably into large caverns that connect directly to the aquifer."

Green Swamp is somewhat of a misnomer. "This is not just a big flat swamp," he says. You need to be on the ground to get the rhythm of the system, to see the patterns and understand the interconnections. It's a detective game I really enjoy."

From a more technical perspective, water levels must be calibrated to within 1/100th of a foot to successfully restore the area, which can be challenging in a swamp where it's difficult to detect even the direction of water flow. Burdett laughs when he tells the story of one farmer who dug an illegal ditch to drain his land – and then discovered that his farm was actually lower than the river so water backed up and flooded him out instead of flowing off.



Photo courtesy Allen Burdett

Allen Burdett (far right) led an expedition of staffers from FDEP's Tampa office deep inside the Green Swamp where they discovered a forest of ancient cypress trees.

"We need to hold water in the Green Swamp as long as we can so it has a chance to percolate back into the aquifer," he says. Keeping water levels high also is critical for wildlife. A heron rookery, for example, is dependent on high water because that allows alligators in – and they keep raccoons out so baby birds have a chance to survive.

Along with helping to protect critical habitat in places like the Green Swamp, Burdett has been involved in multiple coastal restoration initiatives including the award-winning Emerson Point Preserve in Manatee County. "Allen has worked on an incredible array of environmental projects and I've had the good fortune to work with him on several of them," says Charlie Hunsicker, director of Manatee County's Natural Resources Department.

Back in the Green Swamp, Burdett spends a lot of time slogging through wetlands where snakes and alligators guard their territories because it's easier than cutting his way through overgrown palmettos laced with native grape and catbrier vines. Still, it's a far cry from his earlier days at FDEP.

One of three biologists across the state charged with evaluating the impact of development plans on natural resources, he was responsible for a territory that stretched

from Crystal River to Marco Island on the west coast and from Melbourne to Cape Canaveral on the east. "There were a lot of times when I showed up to look at a site prior to approving a permit and found that construction was well underway," he said. "We only had three or four people in charge of enforcement too. They didn't always want to hear about problems because they already had more than 200 active cases on their desks."

And as concerned as some people are about environmental protection today, Florida has made enormous strides since Burdett first joined DEP. "It was the wild, wild west back then," he quips.

"The rules were different then. The thinking was the more land we had, the more productive it would be. No one considered the productivity of a seagrass bed."



Explore Tampa Bay's magnificent waterworld and watershed with *Bay Soundings*, a quarterly news journal covering Florida's largest open-water estuary. *Bay Soundings* chronicles the news and issues affecting the bay, while profiling the people, places and creatures that make it so compelling. Thanks to generous community support, *Bay Soundings* is distributed free of charge to local and national subscribers. Interested readers may subscribe online at www.baysoundings.com or send an email to circulation@baysoundings.com. Bulk copies also are available for distribution through area attractions, schools, businesses and civic organizations.

TALK BACK

We welcome letters to the editor on topics covered in *Bay Soundings* as well as articles or story ideas on issues impacting Tampa Bay and the region's natural resources. Send letters to editor@baysoundings.com.

SEND US YOUR NEWS

We're always interested in news about community organizations involved in Tampa Bay, and our calendar page highlights upcoming bay-related events and activities. Send news to editor@baysoundings.com.

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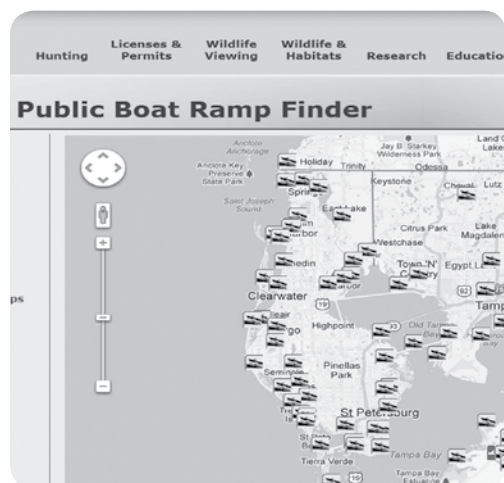
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A new program developed by the Florida Fish and Wildlife Conservation Commission helps boaters find the nearest ramp by combining data from city, county and state files. The service is free for both visitors and residents.

Find a Boat Ramp Fast

Boaters can find nearby boat ramps quickly and easily with a new website created by the Florida Fish and Wildlife Conservation Commission. "There are 214 government agencies and 250 commercial businesses that operate 1,800 publically accessible boat ramps throughout Florida," notes Bill Sargent, FWC research analyst. "While many of these entities have great websites for their own boat ramps, this is the first that is a single source to locate any boat ramp anywhere in Florida. Whether you want to go boating in your neighborhood or on the other side of the state, the public boat ramp finder can help you find a place to launch your trailered boat."

The site, at www.MyFWC.com/BoatRamps, is continually updated by FWC staff and collaborating agencies to ensure that it is up-to-date. Boaters are encouraged to report updates or corrections via email to BoatRamps@myFWC.com.

Wildlife Refuges Are Economic Engines

Wildlife refuges aren't just for animals. Humans who live nearby benefit too, according to a new report from the U.S. Fish and Wildlife Service that analyzed home prices near 93 national wildlife refuges. Property values of homes within a half-mile of a refuge and within eight miles of an urban center are valued at 7-9% higher in the southeast, 4-5% higher in the northeast and 3-6% higher in California/Nevada.

The report is particularly important in growing regions like Tampa Bay because the most significant differences were seen in urban areas where preserves and nature parks are at a premium.

Developers, of course, have known for years that homesites near open spaces increase prices, but being near a refuge creates an even higher value, the report indicates. The 14 national refuges in the southeast – including three in the Tampa Bay region – add \$122 million to the price of homes near them.

As part of the effort to show Congress the value of wildlife refuges, USFWS is also updating their studies on economic impacts in terms of tourist spending. A 2006 report indicates that 34.8 million visits to American wildlife refuges generated \$1.7 billion in sales, nearly 27,000 jobs and \$542.8 million in employment income in regional economies.

To read the report, visit <http://www.fws.gov/refuges/about/pdfs/NWRSAmenityReportApril-2012withCovers8.pdf>.



Up to one-third of bee colonies may have disappeared for reasons scientists don't yet understand. Parasites found in California may play a role in their deaths; citizen-scientists are asked to report any "ZomBees" they discover.

ZomBees in Florida?

Are parasites turning honeybees into "ZomBees" that abandon their hives, wander aimlessly and then die in clumps under light fixtures? Some researchers believe that a species of fly called *Apocephalus borealis* may be a cause of mysterious bee deaths across the country. The fly lays eggs inside the body of the honeybee, which then serves as an incubator. As the fly larvae grow, they devour nutrients in the bee's body until the bee goes berserk and then dies.

University of Florida entomologist James Ellis says the parasites may not be a primary cause of Colony Collapse Disorder, but are likely to cause general colony losses. "We have a similar climate to parts of California so I suspect the fly could do damage in Florida as well," he notes. "It's hard to guess what level of damage they may cause."

One study in California shows that 77% of colonies had the parasites, and researchers are collecting information to determine if the fly is causing problems in other states. Citizen-scientists can participate in the ZomBee Watch by collecting dead or sick bees in a container. If the bees are infected, fly larvae will appear about seven days after a bee dies.

Report parasites to www.zombeewatch.org. For more information about bees in Florida, visit www.UFhoneybee.com.

"Smart" Irrigation Controllers Flunk Texas Drought Test

None of the nine "smart" irrigation controllers tested during last year's drought in Texas consistently provided the correct amount of water – but many of them did better than standard "dumb" controllers set by homeowners.

Texas AgriLife Extension Service is in its fifth year of evaluating the controllers, which either download landscape water requirements from off-site service providers or use on-site sensors to calculate it themselves. The data is then used to determine site-specific watering requirements and to operate the irrigation system automatically.

"The controllers are still inconsistent," said Guy Fipps, AgriLife Extension irrigation engineer.

Fipps and Charles Swanson, an AgriLife Extension landscape irrigation specialist, tested nine commercial smart controllers during a 152-day period. The results show that:

- During the drought, evapotranspiration was 30-50% higher than average years. Some controllers did not adjust to the extreme conditions and applied inadequate amounts of water.
- Two of the nine controllers consistently applied excessive water, nearly twice what plants required.
- For all seasons combined, the controllers provided proper amounts of irrigation 37% of the time, 35% irrigated excessively and 28% irrigated inadequately.
- Four controllers provided proper amounts of water for five zones for one or more seasons.
- There was no consistency between the performance of controllers with on-site sensors and those that retrieved evapotranspiration data from a remote site. The big problem in 2011 seemed to be that controllers could not handle the extreme heat and drought conditions.

Fipps also noted that three manufacturers upgraded their units for the 2012 tests. He expects the smart controllers to continue to get smarter, which should contribute to urban water conservation.

"Some Texas cities and water utilities are now mandating smart controllers," Swanson said. "If these controllers are to become re-

quirements across the state, then it is important that they continue to be evaluated formally under Texas conditions."

Complete results of the tests are available online at <http://itc.tamu.edu/smart.php>.



Photo courtesy University of Florida

While populations across the state are booming, both male and female alligators exposed to toxic chemicals found in Lake Apopka near Orlando show anomalies that may indicate issues in other animals.

Toxins Impact Alligators in Polluted Lake Apopka

Five-month-old female alligators exposed to toxins found in a polluted Florida lake show changes in ovarian gene function and decreased body weight at hatching, but paradoxically showed accelerated growth rates in the months after hatching, according to a study at the University of Florida.

Like bees, alligators are a species whose relative well-being in a given environment is indicative of the health of their ecosystem, and scientists say the study may have broader implications for ovarian function and obesity in other animals.

Previous research demonstrated that repeated contact with chemical runoff from spills in Lake Apopka near Orlando caused male alligators to develop smaller sexual organs and lose normal patterns of sexual function.

In addition, the researchers explored the parallels between the exposure to toxins in alligators and potential environmentally induced human reproductive diseases.

"Even though we're studying alligators, what makes endocrinology so powerful is that the chemical structure of most of the steroid and thyroid hormones are identical among vertebrates, from fish to people," said Ashley Boggs, a postdoctoral researcher at the Medical University of South Carolina who also studies alligators near Cape Canaveral. "It's not just about your genes but also about what you've been exposed to throughout your whole life, from embryonic development to puberty to reproduction."



Wanted: Recipes for Elephant!

By Suzanne Cooper

You've heard the quip about tackling insurmountable tasks: *"How do you eat an elephant? One bite at a time!"*

That's the idea behind nitrogen management in the Tampa Bay watershed. Most people – even our local leaders – don't necessarily find it to be a particularly interesting topic, but controlling nitrogen loading is crucial to the region's environmental and economic health. Each small bite we take of this "elephant" will result in a healthier and more productive Tampa Bay.

State and federal agencies have determined that Tampa Bay has too much nitrogen pouring into it -- primarily from the land, in stormwater runoff containing fertilizer from yards and agriculture, pet waste, auto emissions, and so on. They have mandated that nitrogen loadings be kept at current levels. That wouldn't be too hard if the region wasn't expecting to approve any new construction or redevelopment, any new industry, or any new roads. In other words, we'd be okay as long as everybody has the job they want and nobody else ever wants to move to Tampa Bay.

The science can get complicated, but all plant life, including algae, requires equal amounts of nitrogen and phosphorus. Nitrogen is our limiting nutrient because phosphorus is so naturally abundant in the Tampa Bay region that it would be impossible to control it enough to make a difference. (This is not the case in other parts of the country – or even the state – where phosphate does not occur naturally in such high levels.)

So the "elephant we're eating" is controlling the amount of nitrogen released into our water and air, thus limiting the growth of organisms that use up the oxygen in our bay waters, preventing seagrasses from

growing and causing fish kills. And if we could actually reduce the amount of nitrogen that is released to below the current level, we have "room" in the calculations for growth, redevelopment, new homes, new industry and new jobs.

Do you see the elephant yet?

The first chewy bites of this elephant have been taken over the past decade or so. An award-winning framework for reducing nitrogen loading, called the Nitrogen Management Consortium, was created after the Tampa Bay Estuary Program identified excess nitrogen as the chief reason that seagrasses were declining in the bay. This is a collaboration of the region's local governments and private entities. Most of the participants have reduced emissions or discharges into the bay or its tributaries, or implemented stormwater improvement projects. More than 400 tons per year have been removed from the bay since 1995 – resulting in dramatic improvements to bay waters and air quality.

Some more bites were taken earlier this year. The Nitrogen Management Consortium is comprised primarily of stormwater and wastewater managers from local governments and industry – people who control tons of nitrogen or spend their days focused on preventing pollution. They've made amazing strides, but they've pretty much reached their limit, at least from an economically feasible perspective. (It's possible but much more expensive to clean up nitrogen once it's been released. See *Bay Soundings*, Spring 2011 for more information.)

Now we need to reach past the stormwater managers and point sources to get local government planning staffs and policy makers up to speed on the state and federal mandates. Although controlling nitrogen might not be their primary job, growth may come to a screeching halt if they don't help "eat this elephant."

Over the past 20 years or so, many cost-effective and attractive techniques have been developed to reduce nitrogen loadings in stormwater runoff – now the primary source of contaminants that reach Tampa Bay. These technologies can be used in either new development



Low-impact development calls for as much rain to be retained on site as possible, minimizing contamination caused by stormwater. Left, a rain garden in Alabama, center and bottom, the Florida Aquarium parking lot in downtown Tampa.

Photos courtesy Alabama Cooperative Extension Service and Ekistics Design Studio



or redevelopment projects – but they're usually not recognized, and may actually be prohibited in local building codes.

Across the country, a tremendous reduction in nitrogen has been documented with techniques like pervious pavement, rain gardens, roadside swales and curb-less parking lots. At two workshops earlier this year we opened discussions about incorporating these types of alternative building standards into various local building codes. It has been a learning process, and led us to think about how best to present the concepts in the future.

That's where the recipes for elephant come in!

Each local government has a vision of itself, sometimes right down to a formula for requiring a set number of parking spaces -- and it's not always easy to modify that vision. Land developers and their consultants aren't likely to try to incorporate runoff-reducing methods unless they are sure that the permitting entities have embraced them already; otherwise they could end up wasting enormous amounts of time and money.

So to break the log jam we'll be feeding the elephant to these two groups in bite-size pieces, along with side dishes (reports) on how important limiting nitrogen is to the health of Tampa Bay, what it means for future growth (or not!) in local municipalities, how



nitrogen-limiting strategies have worked in other places, and the cost of compliance (or non-compliance) for governments, developers, and the general citizenry. But those bites must be "palatable" in terms of public acceptance, budgetary feasibility and fairness of implementation.

We think this effort will result in more sustainable neighborhoods, lower costs to local governments, continued growth and redevelopment of our region, and improved water quality and habitat in the Tampa Bay ecosystem.

And the elephant will be gone before we know it!

Suzanne Cooper, AICP, is a principal planner for the Tampa Bay Regional Planning Council and staff to its Agency on Bay Management.



Photo courtesy University of Florida

A bioswale under construction in Gainesville is designed to take advantage of a naturally hilly site.

Southwest Florida Gears Up for "Once-in-a-Lifetime Opportunity"

National Estuary Programs across southwest Florida are gearing up to help facilitate the development of a comprehensive regional environmental restoration plan, investing fines paid by BP for the 2010 Deepwater Horizon oil spill in what could be the most significant restoration initiative ever in the Gulf of Mexico. No one knows how much money is involved or when it will become available, but Holly Greening, executive director of the Tampa Bay Estuary Program, calls it a "once-in-a-lifetime opportunity."

The penalties will be divided into three major pots; the regional planning effort is focusing on the 30% allocation to the Gulf Coast Ecosystem Restoration Council because it is specifically targeted toward environmental restoration. Assuming a \$15 billion penalty, the council could distribute \$300 million per year for 15 years – "a chance to do something really significant for the environment in the Gulf of Mexico and along its coast," Greening said.

Although the Council has not been formally established, the Tampa Bay, Sarasota Bay and Charlotte Harbor National Estuary Programs (NEPs) have requested input on possible projects from local governments and non-profit organizations in a region spanning the Ten Thousand Islands in Collier County to Crystal River in Citrus County.

"We provided all our partners including local governments and non-profits with templates for their environmental projects and guidelines for applying," Greening said. "We've requested information, including how 'shovel ready' – or how quickly they can start construction – their projects might be for inclusion in the regional plan."

The Gulf Restoration Council must publish a draft comprehensive plan within 180 days of its formation, so being ahead of the curve could make a major difference when funds are awarded, Greening adds. It's an incredibly fast track:

- Templates for restoration projects were developed and distributed in September
- Local governments and partners must complete proposals by Nov. 1
- Members of the three NEP management boards will review them
- Members of the three NEP policy boards will meet jointly to further review potential projects and finalize recommendations.

The NEP policy boards are composed primarily of elected representatives, so their stamp of approval may carry extra weight with a council whose voting members include



Photo courtesy National Oceanic and Atmospheric Administration

The BP Deepwater Horizon spill spewed about 50,000 barrels of oil per day for three months. Fines levied under the Clean Water Act will be used to fund the largest restoration initiative ever in the Gulf of Mexico.

governors from the five Gulf coast states and one federal official. And if NEP partners propose projects that fall within the realm of the individual Comprehensive Conservation and Management Plans (CCMPs), then they have the added benefit of working within a framework that's already received approval from the federal government.

Along with environmental impacts, the templates also cover information of particular interest to policy makers, including number of jobs created, economic benefits of the restoration and its impact on community resilience as sea levels continue to rise.

RESTORE Act Shares Funds Across Gulf Coast

The RESTORE Act directs 80% of fines paid by BP back to the five states bordering the Gulf of Mexico. (The fines are separate from the damages paid to restore ecosystems and economies directly harmed by the oil spill, so they can be used to address wider issues.)

Under the Clean Water Act, BP must pay a fine based on what appears to be a simple calculation -- the number of barrels spilled multiplied by a set dollar amount per barrel.

Both numbers, however, are being challenged by BP. The government estimates that 4.9 billion barrels of oil were lost during the 87-day disaster; BP says it was significantly less. The penalty per barrel will be determined based partially on whether a court rules that BP was "negligent" or "grossly negligent" in the spill that also killed 11 people. CWA calls for a base penalty of

\$1,100 per barrel if the spill is deemed to be accidental. If it was caused by negligence, that penalty rises to \$4,300 per barrel.

Depending upon a final settlement, that works out to somewhere between \$5.5 billion and \$22 billion -- with most experts using \$15 billion as a good starting place for potential projects. "If BP decides to settle, it could happen tomorrow, but if they go to court, it could take years. We think it's prudent for us to be ready for it to happen tomorrow," Greening said.

Along with funds directed to the Gulf Coast Restoration Council, other allocations may benefit ecosystems in Tampa Bay:

- 35% of the funds, or \$70 million per state per year (assuming a \$15 billion payout), will go directly to Gulf Coast counties for environmental and economic restoration. TBEP staff estimates that between \$500,000 and \$2 million per year may be available for Hillsborough, Manatee and Pinellas counties.
- An additional 30% of the funds (a minimum of \$15 million per year per state) will be distributed to the five Gulf States based on the number of miles of oiled shorelines and other factors. In Florida, these funds will be allocated through a consortium of the 23 Gulf coast counties with money directed at either economic or environmental restoration.
- The remaining five percent will be dedicated to research and monitoring of Gulf Coast ecosystem restoration and fisheries, and to support regional Centers of Excel-

lence like the Florida Institute of Oceanography headquartered at the University of South Florida in St. Petersburg.

"This focus on research and monitoring is very welcome," Greening adds. "There is usually not a long-term funding commitment by granting agencies for monitoring so we don't often have the opportunity to track the impact of our restoration activities."

Tampa Bay Environmental Fund Now Accepting Grant Applications

The Pinellas County Environmental Fund, which provided critical start-up funding to *Bay Soundings* when publication began in 2002, has been revived. Now known as the Tampa Bay Environmental Fund, TBEP is a strategic partnership between the Tampa Bay Estuary Program, the National Fish and Wildlife Foundation and other public and private entities focused on the restoration and protection of Tampa Bay. Approximately \$750,000 is expected to be available for the 2013 funding cycle in grants of \$50,000 to \$200,000. Funds will be awarded based on priorities detailed in the TBEP Comprehensive Conservation and Management Plan (CCMP), including:

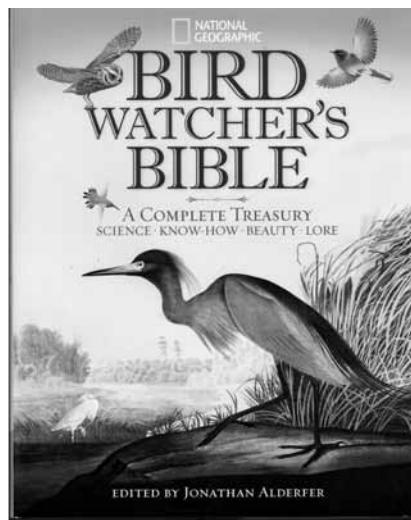
- Recover additional seagrass beds and prevent increases in nitrogen entering the bay by implementing innovative stormwater management projects and programs
- "Restore the historic balance" of coastal wetland habitats
- Restore additional salt barren (salt-ern) habitat in Tampa Bay
- Restore and protect connectivity and function of fisheries habitat in the bay's tidal streams and creeks
- Benefit declining, threatened or endangered species at the state or federal level, or as identified in the CCMP, through addressing long-term solutions to the conservation of a species and/or restoring associated habitat.

More information and an online application are available at http://www.nfwf.org/AM/Template.cfm?Section=Charter_Programs_List&CONTENTID=25867&TEMPLATE=/CM/ContentDisplay.cfm. Grant applications must be completed by Nov. 19 to be considered for this funding cycle.

Great Books Make Great Gifts

By Victoria Parsons

If you've always wanted to be one of those people who finish their holiday shopping before Thanksgiving, consider these books for the people on your list. I know I'd be delighted to see any of them under my tree!



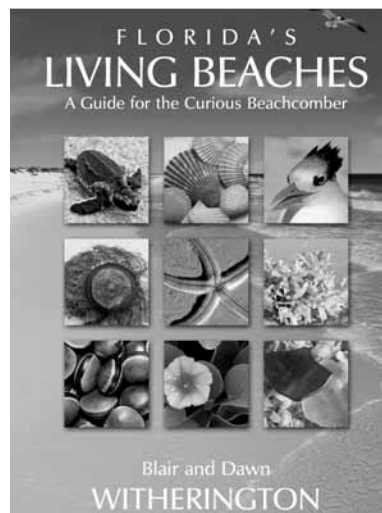
The Bird-Watcher's Bible

When National Geographic offered to send me a copy of their new “*Bird Watcher's Bible*,” I jumped at the chance to see what I thought would be the latest high-tech bird guide. It's both more and less than I expected. You won't want to take this book on a birding expedition, but the subtitle explains it well: “*A Treasury of Beauty, Lore, Science and Know-How*.”

Beautifully illustrated with ancient drawings as well as cutting-edge photography, the *Bird Watcher's Bible* covers everything from the history of bird-watching to tips on becoming a better birder and attracting birds to your backyard.

Scientists will love the detailed but easily understood sections on anatomy and migration; historians will revel in a separate chapter on birds through the ages. Even economists may learn something new about birds from China's “Four Pests Campaign.” In the 1950s people were encouraged to kill the Eurasian tree sparrow blamed for widespread seed loss. They were so successful in killing sparrows that locusts swarmed and devastated crops, contributing to the Great Chinese Famine.

Edited by Jonathan Alderfer, who also led the team that created National Geographic's best-selling *Field Guide to the Birds of North America*, this book would be a great gift for a bird lover who wants to learn more about the world of ornithology.



Florida's Living Beaches

To paraphrase an old advertising campaign – anyone who loves Florida's beaches won't want to leave home without this new book from Pineapple Press.

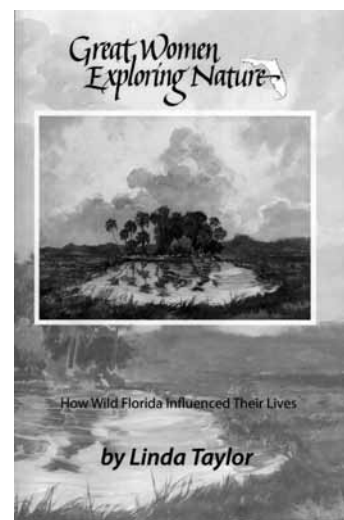
“*Florida's Living Beaches: A Guide for the Curious Beachcomber*” is a rich resource while walking a wrack line (where seaweed and other debris collect on the beach, see page 8) but it's so entertaining that you may discover yourself sharing tidbits about the creatures you've seen in a comfortable conversation. It's beautifully arranged with most topics covered in a full page highlighted by a map color-coded to show winter and summer distribution.

Along with descriptions of the living creatures found on a beach, the book describes everything from sand ripples and beach dunes to “verte-bits,” the pieces of bony skeletons that evoke curiosity in kids of all ages. Beach plants are covered too, as are the fascinating “seabeans” that drift ashore.

Most sections include a “Did you know?” commentary that brings the science alive. For instance, did you know that red mangrove propagules – what we called sea pencils as kids – can survive for a year before they float to a beach where they can root? And fire coral isn't really coral, it's a hydroid more closely related to jellyfish than the living reef it so closely resembles.

And the scaredy cats out there will be pleased to know that broken seashells cause more lacerations than sharks -- and you're more likely to be killed by a falling coconut than eaten by a shark.

But while this is a fun book to take to the beach, it's serious science too. It was written by Blair Witherington, a researcher with the Florida Fish and Wildlife Research Institute, and illustrated by his wife Dawn. Their other books, also available from Pineapple Press, include *Florida's Seashells*, *Living Beaches of Georgia and the Carolinas* and *Seashells of Georgia and the Carolinas*.



Great Women Exploring Nature

Most Floridians recognize the names of women whose love of nature helped preserve our state's natural resources, like Rachel Carson, Marjory Stoneman Douglas, Marjorie Kinnan Rawlings and Anne Morrow Lindbergh. “*Great Women Exploring Nature: How Wild Florida Influenced their Lives*” is a series of short biographies on those leading ladies as well as lesser-known but influential players.

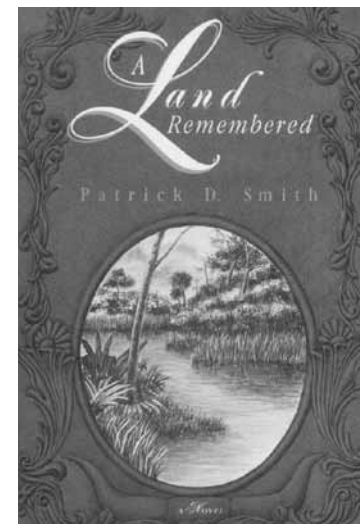
The easy-to-read chapters are both interesting and inspiring. Few women of those times were encouraged to become activists, particularly on topics like conservation and ecology. Authors like Nora Hurston and Harriet Beecher Stowe are most often recognized for accomplishments beyond conservation but both were deeply connected to natural Florida. I was particularly fascinated to read about women I'd never heard of, even though I've lived here all my life:

- Jackie Cochran became one of the greatest aviators ever. When she died in 1980, she held more speed, altitude and distance records than any other pilot – male or female.
- Mina Miller Edison, Thomas Edison's

second wife, was a pioneer of environmental protection in Florida.

- Myrtle Scharrer Betz, born in 1895 on what is now known as Caladesi Island, was a visionary who sold the island she inherited with the restriction that it remain a wildlife refuge.

Written by Dunedin businesswoman Linda Taylor, *Great Women Exploring Nature* also encourages its readers to learn more about these amazing women with recommended readings and places to explore.



A Land Remembered

Bay Soundings usually reviews new books that our readers probably haven't had a chance to peruse, but we chose to include Patrick D. Smith's “*A Land Remembered*” when *Florida Monthly* magazine readers named it their favorite book for the 10th year in a row. I loved it when it was first published in 1984, and it was even more enjoyable re-reading it wearing a “reviewer's hat.”

Starting in 1858 when the MacIvey family arrived in a state with wide-open prairies and virgin forests, the book tracks the clan through 1968 as the third generation recognizes that growth for growth's sake has not been a good choice.

My favorite sections are marked with a series of Post-Its – but there were too many to really highlight in this short space. Suffice it to say that there were sections where I laughed out loud, held my breath until the heroes survived yet another near-catastrophe, and delighted in descriptions of birds, plants and animals that no longer roam the wide-open spaces Smith describes so well. (I cringed at the vivid portrayal of swarming mosquitoes though.)

And if you still haven't decided you need to read (or re-read) *A Land Remembered*, check out Jeff Klinkenberg's column in the St. Petersburg Times earlier this year about the book's amazing author at <http://www.tampabay.com/features/humaninterest/a-land-remembered-and-patrick-smith-must-be-included-in-florida-history/1232583>.

USF students train Community Stepping Stones teens to carefully handle the trash they find along the beach.



Community Stepping Stones staff and student artists who created the mural (many other volunteers and students were involved along the way).

The 12' x 8' mural is composed of thousands of pieces of detritus cleaned off rivers, bays and beaches. Visitors are invited to participate in a scavenger hunt to find surprising items.



ONE WATERWAY ONE TAMPA BAY

At-Risk Teens Interpret Waterway Connectivity

By Sigrid Tidmore

Estuary field science came alive for a group of Sulphur Springs teens when they decided to create a mural about how our daily lives impact Tampa Bay's estuaries and waterways. One Waterway One Tampa Bay, a 12-by-8-foot portable, mosaic mural and art installation made entirely of plastic refuse, made its debut at the Hillsborough Community College Art Gallery earlier this summer to resounding accolades for creativity, communication and community engagement.

Funded by a mini-grant from the Tampa Bay Estuary Program, the teens learned about coastal life through museum and aquarium trips, field expeditions and river, bay and beach clean ups. The young people were deeply distressed by the quantities of re-

fuse they found, even in pristine areas, which led them to further investigations. Experts from the Tampa Museum of Photographic Arts helped train the youth in photographic documentation techniques.

With volunteers from the University of South Florida as well as neighbors and friends from across the region, students collected river and bay flotsam and then turned the cleaned items into mosaic pieces. Those who have seen the mural are immediately drawn to touch the vast diversity of found detritus – for while it makes a beautiful picture, the net result tells a disturbing story of unintended consequences. Visitors are invited to participate in a scavenger hunt to find 40+ surprising items that make up the design – everything from bicycle tires to hypodermic needles.

The traveling mural is frequently displayed surrounded by strands of thousands of plastic bottles which remind visitors that the Americans use 1500 water bottles every second of every day (and less than 20% are recycled.) The result: our waterways and oceans are being poisoned and our precious estuaries are endangered.

The mural will be displayed at the National Conference on Coastal and Estuarine Habitat Restoration (Oct. 20-25) at the Tampa Convention Center, then reside on the V.I.P. suite level of the Tampa Bay Times Forum for the next year.

The teens and staff behind this exhibition are part of Community Stepping Stones, a nonprofit learning center offering an integrated arts curriculum designed to inspire, educate, and prepare at-risk youth to

become successful adults. Using expressive arts projects, teens tackle core subjects such as science and mathematics that require them to think critically, investigate, innovate and find practical solutions. The fun of imagination increases knowledge retention and encourages a joy for learning - thus improving in-school performance.

Community Stepping Stones' campus in historic Mann Wagon Park is perched on the banks of the Hillsborough River at the top of the Tampa Bay estuary system (where salt and fresh water first meet.) Manatees, alligators, waterfowl and a large assortment of turtle and fish are common sites along the peaceful riverbanks. To find out more about this project or Community Stepping Stones: call 813-957-1720 or visit [www. CommunitySteppingStones.org](http://www.CommunitySteppingStones.org).

Pounds to Ounces!

The Zero-Waste Project

By Avalon Theisen

Do you know how much waste leaves your house every day and goes to landfills or incinerators? Kids, like adults, may not think too much about the amount of trash we produce -- or where it goes when we throw it "away."

You'd be surprised at how quickly it adds up though. An EPA study from 2008 shows Americans produce an average of 4.5 pounds of trash daily per person, and that only 33%, or 1.5 pounds, is recycled or composted. Some scientists believe we could divert, or change the path of, more than 70% of waste by recycling and reusing it. Obviously landfills and incinerators pose some environmental threats, so how do we improve our ratio of trash to recycling or reusing? What can kids do to help?

I asked some of my friends and family to help me with a project that had two goals. The first goal was to see how much recyclable, compostable and trash material leaves our homes each week. The second goal was to see how much trash they could divert to recycling and composting if they really put their minds to it.

To make the process easy, I made a chart showing groups of common household items that are often thrown away, but could be recycled or composted. The chart might change depending on the county or city where you live because not all places recycle the same things at the same places. For example, in our county, we can't recycle all



Avalon Theisen weighs sorted items from the project chart. - Photo by Deborah Theisen



Facundo Kluser stands on a scale to weigh his recyclable items. - Photo by Delfia Kluser

CATEGORY	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	TOTAL WEIGHT
PAPER: No glass boxes, frozen food boxes, milk or juice cartons, no glossy or waxy cardboard, must be clean and dry (Kleenex and newspaper only)	3.6							3.6
Cardboard boxes, magazines, catalogs and telephone books (Remove any plastic or non-paper)				.5	1.2			1.7
Office paper & other paper						1.1		1.1
Cardboard (like cereal boxes, toilet paper/liner boxes, etc.)	5	.4						.9
PLASTIC: No aluminum foil or foil containers, plastic or metal hangers, household batteries, aluminum or glass, no bubble gum, light bulbs, etc.								
Plastic bottles and other food and beverage containers (like for soda and soup) (Remove ALL labels to give to trash, do not reuse)								
Plastic bottles and other food and beverage (like for soda and soup) (Remove ALL labels to give to trash, do not reuse)								
Plastic bottles and other food and beverage (like for soda and soup) (Remove ALL labels to give to trash, do not reuse)								
Plastic bottles and other food and beverage (like for soda and soup) (Remove ALL labels to give to trash, do not reuse)								
COMPOST: (Compost items are all weighed together in a bag, they are not separated. It is recommended to NOT compost meat, fish, dairy and grease/oil) (Not products, such as butter or margarine, or they attract pests, small very badly, break down slowly and cause the balance of other food and vegetable waste.)								
Food and vegetable scraps								
Food made from flour (bread, donuts, crackers, pizza crust, etc.) (Do not compost or compost: rice, barley, etc.)	1.0		1.0	6.6	4.3			12.9
Grass, leaves, twigs, etc.								
Old tires								
Car tires and parts								

Each family completed charts (available online at www.conserveitforward.org) showing what they threw away and what they were able to recycle.



Andrew Goldstein gives his family a well-deserved "thumbs up" for increasing the number of filled recyclable bags. Photo by Brenda Goldstein

TOTAL WEIGHT OF ITEMS THAT COULD HAVE BEEN DIVERTED FROM TRASH TO RECYCLING OR COMPOSTING	20.2						
Current Recycling Bin (based on your normal recycling habits, not new items you sorted from this chart)	5.6	2.8					8.4
Current Compost Pile (based on your normal composting habits, not new items you sorted from this chart)							
TOTAL WEIGHT OF ITEMS THAT YOU NORMALLY WOULD HAVE RECYCLED OR COMPOSTED	8.4						
Trash that gets put out or turned in for waste management; this includes any household waste that you could not recycle or compost (see the category notes in bold above)	.5	.8	8.8	.4	6.9	.7	18.1
TOTAL WEIGHT OF TRASH	18.1						
Plastic bags: Number of new ones that came into your home, not the weight	2		16				18
For the last few items, if they left your home for recycling or trash, please circle "yes" or "no" and whether they were Recycled or Trash. No weights are needed.							
Electronics waste ("E-waste") includes cell phones, computers, etc.)	YES	NO	RECYCLED	TRASH			
Batteries	YES	NO	RECYCLED	TRASH			
Refrigerators/Air Conditioners	YES	NO	RECYCLED	TRASH			
Tires	YES	NO	RECYCLED	TRASH			
Flammable	YES	NO	RECYCLED	TRASH			
Flammable	YES	NO	RECYCLED	TRASH			



Above, Nicole Mohammad places her recycling bin at the curb. Above right, three-year-old Jenny Kluser shows that kids of all ages can recycle. Photo Deborah Theisen, Delfia Luser

Paige and Faith Anne Scarbrough fill recycle bins with paper products. Photo by Erika Scarbrough



plastics curbside. For items such as electronics, chemicals and batteries, we have special drop off locations because they need to be disposed of with special care. So another benefit of the chart is that it helps remind you what the rules are where you live.

To see how much difference we can make, we weighed our trash and recycling one week without doing anything differently from what we've always done. The second week, we looked at every item to see if there was any way to recycle, reuse or compost it.

To weigh a group of items for the project, combine them in a lightweight bag or other container, weigh it and record it on the chart. Since they are such a big problem in the environment, I also included a line for the number of new plastic shopping bags that came into the house over the week.

It turned out that we create even more trash than the EPA's "average" – about 5.74 pounds per person per day – and recycle or compost only 17%, or 1 pound, of it. The exciting news is that after tracking our trash for one week, our recycling and composting skyrocketed to 64%, or 3.66 pounds per person per day!

It sounds difficult and complicated, but it really wasn't. Everything on the chart was very easy to change, such as putting food scraps in a container to compost instead of just dumping them in a trashcan. (Our next column will probably focus on how kids can grow their own food using those food scraps as compost!)

One other important thing we learned from tracking trash: even though the participating families used reusable bags occasionally, an average of 11 plastic shopping bags still entered their homes weekly. So if 572 plastic bags come into a house every year, think how many plastic shopping bags you could save (or should I say "rescue") yearly with just a few reusable shopping bags!

If we all share in the responsibility of decreasing the amount of waste that goes into landfills and incinerators, then eventually we may be able to reach zero waste. To start your own Pounds to Ounces Zero Waste Project, visit www.ConserveltForward.org.

Avalon Theisen created ConserveltForward.com to help other kids learn how to protect their environment and has earned numerous awards for her efforts. Now 11 years old, she's a 2012 recipient of the Gloria Barron Prize for Young Heroes for people who have made a significant positive difference to people and our planet.



Top, as vegetarians the Theisens have more plant waste than many families. Avalon started a new vermiculture bin to recycle that waste. Middle, food scraps are easy to separate and saving them from the waste stream makes a big difference in the weight of material saved. Below, Nicole Mohammad helps Avalon sprinkle food scraps into the compost bin.

Photos by Deborah Theisen



Cousteau Creates a Splash in St. Petersburg

Son of legendary ocean conservationist opens US headquarters at USF

By Marcia Biggs

With a Mediterranean headquarters and dive center established in Spain, Cousteau Divers quietly opened its U.S. headquarters on May 21 in a small non-descript office at the University of South Florida's College of Marine Science on the St. Petersburg waterfront.

It was a giant step for St. Petersburg toward its goal of building an internationally known center for marine research and conservation in the region. Uniting a worldwide community of divers who act as "citizen scientists" by recording and uploading their underwater observations, Pierre-Yves Cousteau hopes to continue the legacy of ocean study and marine conservation begun by his legendary father Jacques Cousteau.

"We are going to be developing and working with recreational divers to record the health of the oceans," said Cousteau. "I selected St. Petersburg as my North American headquarters because I realized just how powerful the research programs and education and businesses are that relate to the ocean. ... We'll be working on getting real-time diagnostic readings along the coast, in

the gulf and the Caribbean."

The story of how Cousteau came to St. Petersburg is one of happenstance, vision, fortitude and a remarkable coming together of local business, education and marine science communities. The initial cog that started this wheel in motion clicked in late 2010 when Peter Betzer, president and CEO of the St. Petersburg Downtown Partnership, met Pierre-Yves, the youngest son of Jacques Cousteau, in Spain during a business trip.

"The history of the partnership has always been to take on major projects that would improve our downtown in some way," explained Betzer. In Cousteau Divers Inc., he saw an ocean of possibilities for St. Petersburg, not only in business partnerships with the city, but also for the USF College of Marine Science and tourism as well.

"I told him the city of St. Petersburg has the greatest collection of sensor development people for the marine environment that I know of and suggested he think about paying us a visit," said Betzer.

In November of 2011, Cousteau flew to



Pierre-Yves Cousteau led a group of Boy Scouts and students from Canterbury School of Florida on a dive excursion to the St. Pete Beach Artificial Reef. Photo by Marcia Biggs

St. Petersburg where he was welcomed by a contingent of Tampa Bay movers and shakers, including the Dali Museum's chief architect Yann Weymouth, Tampa restaurateur Maryann Ferenc, Pier Aquarium President E. Howard Rutherford, and Betzer. During a visit to Canterbury School of Florida in St. Petersburg, where marine studies is an established program for students in kindergarten through high school, Cousteau was impressed with what he saw.

Betzer suggested that Cousteau partner with the school, thereby creating a mutually beneficial relationship: the students could help in his research while he would bring the school international recognition, as well as help to educate a new generation of ocean conservationists.

On January 20, Cousteau announced Canterbury School of Florida as the first Cousteau Divers partner school in the world. The newly dedicated Cousteau Center for Marine Studies is a state-of-the-art 2,800-square-foot marine studies facility open to all students at Canterbury. In May, the same weekend that his new office officially opened, two dive boats filled with students, Boy Scouts and staff traveled with Cousteau five miles off the coast to the St. Pete Beach Artificial Reef. For many students it was their first time diving; for Cousteau it was the beginning of his North American program.

Over at the USF College of Marine Science, Mark Luther, the director of the USF Ocean Monitoring and Prediction Lab, offered Cousteau office space in his lab. Here, scientists and students collect data from stations on winds, waves, currents, tides, temperatures, salinity and nutrients which is then provided to NOAA.

"I saw Cousteau Divers' mission as being an extension of what we do," said Luther, "but using the divers themselves as platforms of opportunity to collect data. One of our main focuses will be figuring out how to take the kinds of data that Cousteau divers collect on their logs and get it into this global data system."

Presently, a Mediterranean dive course and dive log is available. Developing a dive log that can be specifically used for the Caribbean and North America is the task of new US Coordinator Stephanie Stefanski. In addition, a dive log app for cellular phones is being researched.

"We're developing dive logs and guidebooks in English, French and Spanish," she explained, "so any member diver can do a dive, fill out the log, and upload their information to our site."

Cousteau's passion for ocean conservation is a driving force in his quest to study and protect the marine environment. "In relation to the gulf, you are blessed here with amazing natural resources," said Cousteau during his May visit. "We hope to be working on several conservation projects here as well. For example, there is not a single protected marine area along the entire west coast of Florida. We'll work on getting some sanctuaries established."

Long-term, Cousteau plans to open a series of certified Cousteau Diver centers around the world's oceans, where trained instructors will teach new and experienced divers or snorkelers how to gather and upload data for the database.

Certified divers can sign up for membership in Cousteau Divers on the web site and upload their underwater images and observations by going to www.CousteauDivers.org

Underwater photography by Stephanie Stanfanski

START FROM THE BACK

New Landscaping Concept Makes it Easy to Transform Your Landscape

Sue Scott just wants the back ten feet of your yard – at least at first.

If you follow her simple landscape design, you'll create an attractive natural area that provides an oasis for birds as well as privacy for your family. Persuade your neighbors to join the effort, and your backyard can become part of a corridor that helps transform suburbia back to a habitat where wildlife can thrive.

"Most people want to make their landscapes more natural, but they're not sure where to start," says Scott, an environmental consultant who created a concept called the "Back Ten Feet" and is developing a reality television show. "What we've done is create easy designs for the back ten feet of your yard with native plants that don't need much maintenance. It's the starting point for converting boring, unproductive turf into a drought-tolerant landscape that helps keep our water clean and our yards safe for children, pets, birds and butterflies."

Once homeowners see how beautiful their backyard has become – and how much easier it is to maintain native plants than lawn and clipped hedges – the hope is that they will incorporate the same principles through their entire landscapes. "The back ten feet is a no-brainer, something anyone can do," she said. "Once they see how beautiful native plants can be, they'll probably go even further."

Scott worked with native plant nurseries across the state, including Wilcox Nursery in Largo, Florida Native Plant Nursery in Sarasota, Treemart in Tampa and Restless Natives in Tarpon Springs, to develop planting guides for local communities. Each calls for eight to 13 plants specifically selected for that region, typically at a cost of about \$150 for the average 80-foot-wide yard.

Plans for Tampa Bay backyards vary slightly because some spots in Pinellas County are practically tropical while locations in Pasco are more temperate, notes Bruce Turley, owner of Wilcox Nursery. Anchor plants used in nearly every design include beautyberry, Walter's viburnum and wax myrtle because they're cold- and drought-tolerant, and provide critical habitat for both birds and butterflies.

"What we've done is try to address the biggest single obstacle that stops people from planting natives – their concern about what the neighbors will think," Turley said. "These plants are all very attractive year-round to both people and to wildlife."

Along with the focus on sustainability and ecosystem diversity, many people are rethinking their landscapes as local governments face the dual challenges of limited water supplies and the pollution caused by too much fertilizer. "The rules have changed," Turley notes. "It's no longer acceptable to use unlimited amounts of water and fertilizer to maintain large expanses of turfgrass."

Start Now for Spring Beauty

Although natives can be planted nearly any time of year, Fall is a good time to start a back ten-foot garden, Scott adds. Begin by killing the lawn and weeds along your property line. "You can kill grass without chemicals if you put down a thick layer of newspaper and then cover it with mulch," she notes. "Wait four to six weeks for the lawn to die, then you can dig through the mulch to plant the natives."

Tree trimmers and local utilities often offer free mulch but it's not always available at a convenient time. Rather than buying mulch in bags, consider getting together with your neighbors and having a load delivered – it's less expensive and you can minimize your waste by not purchasing plastic bags. The most important thing, however, is to avoid cypress mulch, she said. "They're cutting down cypress trees and



Above, one row of "Back Ten Feet" plantings inspired a second row. The smaller plants in the foreground will grow to fill in the space. Below, native plants designed to attract birds and butterflies offer privacy for residents too. Photos courtesy Sue Scott

"What we've done is try to address the biggest single obstacle that stops people from planting natives – their concern about what the neighbors will think. These plants are all very attractive year-round to both people and to wildlife."

– Bruce Turley

destroying important wetlands to get it."

Scott suggests buying plants in three-gallon pots and then following the design exactly as shown. "It might look a little sparse the first year, but you will be amazed at how rapidly the plants will grow in," she said.

And while planting too close together might look better initially, it's more important to focus on the long term, Turley adds. The goal is to create a design that minimizes maintenance so you must give plants enough room to grow to their natural size.

"The worst thing that ever happened to gardens is power equipment," he quips. "If you plant the back ten feet as designed, all you'll need to do is an occasional light pruning with a pair of clippers. That allows the plants to grow to their natural size so they can flower and fruit – providing food for butterflies and birds."

THE BACK TEN FEET WITH SUE SCOTT
WELCOME LIFE INTO YOUR LANDSCAPE

Hillsborough County

Be sure to add more larval host plants for butterflies:
 Pipevine, corkysm, passionvine, creeping charlie

10 feet
80 feet

BB = Beauty Berry: Berries 4 birds, nectar 4 butterflies
 BS = Blue Stem (dwarf) Palmetto: fruit 4 birds, nectar, fragrant
 C = Coontie: larval 4 atala butterfly
 FP = Florida Privet: nectar, berries 4 birds, windbreak
 TB = Tough Buckthorn: nectar, berries, nesting thorny plant
 WM = Wax Myrtle: Berries 4 birds, larval 4 butterflies
 WV = Walter's Viburnum: nectar, great nesting

WEBSITES for more information:
www.PlantRealFlorida.org
www.wilcoxnursery.com
www.treemart.com
www.tbep.org www.befloridian.org
www.fnps.org www.fleppc.org

Add a bird bath & water source on the ground

Facebook: The Back Ten Feet With Sue Scott
www.backtenfeet.com
backtenfeet@gmail.com

Learn more:

www.backtenfeet.com includes plant lists for counties across the state along with videos detailing how and why to plant natives.

The Suncoast chapter of the Florida Native Plant Society (<http://suncoast.fnpschapters.org>) hosts an annual plant sale as part of the University of South Florida's fall plant festival at the botanical gardens, October 13 and 14 at 12210 USF Pine Drive, Tampa.

In Pinellas, the FNPS chapter (<http://pinellas.fnpschapters.org>) hosts its plant sale November 10 at Wilcox Nursery, 12501 Indian Rocks Road, Largo.

The Pasco FNPS chapter (<http://naturecoast.fnpschapters.org>) will

hold its native plant sale Oct. 20 at the Land O'Lakes Community Center, 5401 Land O Lakes Blvd.

The Serenoa FNPS (<http://serenoa.fnpschapters.org>) in Sarasota/Manatee counties hosts its Fall plant sale on October 6 at Sweetbay Nursery, 10824 Erie Road in Parrish.

For people outside Florida or interested in a more complex design for their landscapes, Cornell Lab of Ornithology has created <http://app.yardmap.org> as a citizen science project that collects data on yards, parks and schools and then provide tools to help people make better decisions about how to manage landscapes sustainably.

How Does Tampa Bay Stack Up?

Continued from page 1

and Puget Sound to San Francisco Bay on the west. (The National Estuary Program, a federal program administered by the U.S. Environmental Protection Agency, encompasses 28 estuaries located along U.S. coasts and in Puerto Rico that have been designated as estuaries of national significance. Some, including Tampa Bay and San Francisco, have members of both groups working on protecting and restoring their bays.)

Of course, it's difficult to compare estuaries on an apple-to-apple basis because they're more like tomatoes and bananas. Some are very large with multiple government agencies involved – Chesapeake Bay's watershed spans six states and Galveston Bay Foundation in Texas works with 94 separate government agencies. Some estuaries, including Chesapeake Bay, Long Island Sound and Tampa Bay, give themselves report cards every year, while others make it more difficult for residents to track changes in their bays. Even the issues are diverse. Some estuaries consider toxic contaminants to be a key issue, others are mostly concerned with nutrients, pH or fecal coliform.

In fact, only one feature seems to be consistent across all estuaries: Stormwater, flowing off roofs and over yards and parking lots, is now a more important threat than industrial plants or even wastewater treatment facilities. "It's much easier to clean up water coming out of a pipe (single source) than it is to capture and treat millions of gallons of stormwater," Cooper said.

Here's a look at the estuaries whose representatives will be in Tampa for the R.A.E. convention:

Chesapeake Bay Foundation represents the largest estuary in the nation. Recent reports indicate that the bay is showing signs of improvement with a new focus on short-term milestones rather than multi-decade goals. Still, it scored a D+ from the University of Maryland's Center for Environmental Science last year.

Coalition for Coastal Louisiana is focused on protecting three million acres of wetlands – the nation's only true riverine delta – even as the state loses 25 square miles of land to erosion and sea level rise every year. That habitat is critical to the entire Gulf of Mexico, supporting 25% of the nation's commercial fisheries. Although it's been hammered by everything from hurricanes to oil spills, the terrible damage has resulted in increased focus (and funding) on the region's issues.

Galveston Bay Foundation reports relatively good water quality because the bay is shallow, well-mixed and well-aerated with most problems concentrated in the western tributaries where municipal and industrial de-



Above, the Golden Gate bridge defines San Francisco Bay but natural habitats make it one of America's top estuaries. Left, sand dunes on North Carolina's beaches help protect them from erosion. Below, educational programs are an important focus for the Galveston Bay Foundation.

Photos courtesy Save The Bay, North Carolina Coastal Federation and the Galveston Bay Foundation.

velopment is concentrated. A unique effort to restore intertidal marsh involves raising the bay bottom through the use of terraces, mounds and levees followed by transplanting native marsh vegetation to those areas.

Save the Bay is an advocate for action to protect and improve water quality in Narragansett Bay, Rhode Island. Once considered the most industrialized estuary in the world, the bay is battling its way back from centuries of human impacts. Save the Bay focuses on restoring critical habitat and educating residents, particularly students, about the value of the bay and the effect of human impacts on it.

North Carolina Coastal Federation is a unique organization that covers the entire coast of North Carolina – a total of 2.4 million acres of estuaries, sounds and tidal creeks. Water quality depends upon the degree of development in upstream watersheds but the trend is downward as more people move to the coast. To protect water quality, the federa-

tion is involved in building living shorelines, restoring oyster reefs, converting farms back to wetlands and low-impact development. **People for Puget Sound** is a community-based organization that implements scientifically based restoration and conservation initiatives in the nation's second-largest estuary. Within the last 10 years, iconic Puget Sound species such as orcas, Chinook salmon and steelhead have been placed on the Endangered Species list. Toxic contaminants also are a particular concern.

Save the Bay was formed in 1961 to stop developers from filling shallow inshore waters in San Francisco Bay. Water quality has improved over the past 40 years but the rate of improvement has slowed. Most popular food fish are recommended only for limited consumption and bacterial contamination is still a problem during the rainy season. Large-scale habitat restoration has transformed hay fields back to tidal marsh but 90% of wetlands have been lost over the last 150 years.

Save the Sound, a program of the Connecticut Fund for the Environment, targets the Long Island Sound which stretches 110 miles between New York and Connecticut. A recent report card gave restoration and protection efforts among the two states a grade of C+, with good marks for coastal habitats and beach litter, but low grades for raw sewage.

See It Like a Native!

Where do you take hundreds of curious tourists to show off what you love most about Tampa Bay? Check out these field trips scheduled during the R.A.E. conference – they're not open to the public but they'll give you some ideas for your next visitors.

Tampa Bay Watch Education Center/ Classroom Boat Excursion begins with a tour of the educational facilities, then participants will board a 32-foot classroom boat for an eco-tour, including a stop at the pristine Shell Key Preserve and an otter trawl pull.

Oyster Reef Shoreline Stabilization and Ecosystem Restoration at MacDill Air Force Base field trip focuses on living shorelines that are being re-established to help prevent erosion. The walking tour also skirts coastal restoration projects created in partnership with Southwest Florida Water Management District.

Crystal River National Wildlife Refuge and Homosassa Springs State Wildlife Park are home to hundreds of wintering manatees. This habitat is considered a key factor in the species recovery; the tour will focus on restoration efforts underway to protect and enhance the springs.

Cockroach Bay, Lost River Preserve and the Terra Ceia tours highlight 25 years of restoration efforts, with stops at up to six sites including "before," current construction and "after" restoration.

Hillsborough Bay Birding and Wildlife Tour at the Richard T. Paul Alafia Bank Bird Sanctuary aboard the Florida Aquarium's *Bay Spirit II*. Although October is not the peak birding season, expect to see brown pelicans, cormorants, herons, egrets, ibis, roseate spoonbills, American oystercatchers, and Caspian, royal, sandwich, gull-billed, and Forsters terns.

Airboat Tour of Hillsborough Bay Community-Based Restoration Projects gives participants a close-up view of habitat restoration including oyster, wetland and upland restoration efforts at Schultz Nature Preserve, Whiskey Stump Key and Green Key.

Weedon Island Preserve, a field session highlighting the diverse ecosystems in this 3,700-acre preserve. Tour mangrove tunnels and seagrass flats by canoe or kayak, then hike the boardwalks and upland trails of the preserve, visiting multiple restoration sites.

Egmont Key State Park and Snorkeling at Fort Dade, a tour of the historic island featuring updates on its beach restoration and invasive removal projects, followed by a snorkeling expedition to the submerged remains of a fort built during the Spanish American War.

Recycling Makes Cents for Florida

Continued from page 1

Environmental constraints of landfills, coupled with the natural aversion to locating them anywhere near peoples' homes, have resulted in just one new landfill permitted in Florida over the last 10 years.

At the same time, global markets are recognizing the value of recycled materials. It takes significantly less energy to manufacture commodities like glass, aluminum, plastic bottles and paper from recycled materials than virgin materials – even before you begin to count the value of natural resources like trees, bauxite and petroleum.

That means that the price of recycled materials is rising. The cost of recycled plastic, for instance, doubled over the past few years as the price of petroleum skyrocketed. Glass is made from sand, but requires a lot of energy to manufacture. Paper and used electronic components can travel to China relatively inexpensively because the ships that deliver goods to American ports would otherwise return home empty. In fact, one expert has referred to US recycled paper as a “Chinese forest of sorts.”

In most cases, payment for recycled materials goes directly to the service provider, but that may change, at least in Hillsborough County where new bids for trash collection have been requested. Several innovative companies have set up shop here, in large part

because of the international access offered through the Port of Tampa.

Easier Said Than Done

Across the state, meeting the 75% goal will be challenging within the current infrastructure. (See pages 8 and 9 for a detailed look at how kids counted every ounce they threw away.) Some is out of the hands of the average resident: construction debris, for instance, represents about 25% of total municipal trash but only about 27% is recycled. Schools are another biggie. Each student produces a half-pound of waste per day. If schools could recycle 75% of their waste, we'd achieve 6% of the statewide goal while the schools save money. Pasco earned nearly \$70,000 from the sale of recycled materials in 2008, while saving \$145,000 in landfill fees. Composting organic materials offers even greater savings – about \$704 per 1,000 students, plus producing 1,300 25-pound bags of high-quality soil amendment that could be sold or used in community gardens.

Finally, the commercial sector – small business but not manufacturing or agriculture – generates about 67% of total municipal waste but only a few counties require commercial recycling. The highest overall recycling rate in the state has been earned by Sarasota County, where residents demanded commercial recycling beginning in 1991. Commercial customers pay collection costs but most save money because the recycling rate is now 53%.

Bottle Bill is “Win-Win,” Says Lobbyist.

Big business and environmentalists aren't always on the same side, but glassmaker Owens Illinois Corporation is leading the charge for a deposit on beverage containers in Florida. “It's a win-win for everyone,” says lobbyist Phil Leary.

Beverage containers are the most common litter on Florida's roads, parks and beaches. Aluminum and glass also are the most valuable recycled commodity and there is significant demand for those materials in the state. “Floridians use about 36 million beverage containers every day but only about 16% are recycled so the rest end up as litter or in landfills,” Leary said.

Owens Illinois currently imports recycled glass from other states because there isn't enough recycled product available in Florida. “If we can use 50% recycled glass, we cut our energy use by 50% – and our carbon emissions by 50%,” Leary said. “That's why our company

has pledged to use 50% recycled glass in all batches by 2020.”

Beverage makers and retailers are fighting the deposit bill, although both groups could win if the legislation were passed, Leary said. “Making bottles is a competitive business so manufacturers would pass the cost savings on to their buyers. Retailers could set aside a few parking spots as collection centers, then return the deposit to customers as coupons to their stores.”

A University of Florida study published last year concludes that the impact on beverage consumption “is likely to be zero for all practical purposes.” Experience in other states indicates that deposits reduce beverage container litter up to 84% and total litter up to 65%.

Owens Illinois and Sierra Club are kicking off a grassroots effort to get a bottle deposit bill on the 2013 legislative agenda.



“If I were king, I'd have two strategies to meet the (75% recycling) goal,” Henricks said. “First you need to address commercial accounts but then I'd make all cities set up Pay As You Throw (PAYT) programs.” Rather than picking up as much trash as a resident generates, trash pick-up is treated

like a utility service and charged by the pound while collecting recyclable material is free. Gainesville, one of the few cities in Florida with a PAYT program, saw an 18% decrease in waste and 25% increase in recyclables its first year – plus a savings of nearly \$200,000.



Photo credits: Melanie Higgins, John Miller and Carol Cassels. Top left, black skimmers and gulls at sunset. Top right, a male bluebird at Flatwood Park. Below, a flock of watchers checks out the birds.

Citizen Scientists

Continued from back page

tional Audubon Society learn more about how birds are doing – and how to protect them and the environment we share. Last year, participants turned in more than 104,000 checklists online, creating the continent's largest instantaneous snapshot of bird populations ever recorded. Learn more at www.birdcount.org

- Just as the CBC counts wintering birds and the GBBC counts migratory birds, the Florida Breeding Bird Atlas (FBBA) documents birds that rely on our state's habitats to raise their young. Volunteers work through the Florida Ornithological Society, the Florida Fish and Wildlife Conservation Commission, Audubon Florida and the U.S. Geological Service to survey separate 1038 sections over a five-year period. Data will be compared with the first BBA conducted 25 years ago, giving clear information about current bird species use of Florida and changes in recent years. Beginning birders can be partnered with experts. Learn more at www.fosbirds.org

- The North American Migration Count (NAMC), coordinated by the Cornell Laboratory of Ornithology, uses citizen-scientists to document the status of bird migration on one specific day. Contact your local Audubon chapter or visit <http://www.birds.cornell.edu/allaboutbirds/conservation/involved/migration> for more information.
- Project Colony Watch is a volunteer citizen scientist program of Audubon's Florida Coastal Islands Sanctuaries to protect birds nesting in colonies. Several islands in Tampa Bay are designated as Important Bird Areas because they host significant numbers of threatened or endangered birds. If you know of a colony of nesting birds and would like to help protect it, our Audubon staff at the Florida Coastal Islands Sanctuaries at 813-623-6826, mrachal@audubon.org or apaul@audubon.org
- Jay Watch volunteers focus on assessing the population and habitat of Florida's only endemic bird species, the Florida Scrub-Jay. Each summer, volunteers are paired with field biologists to survey scrub-jay populations and, on alternate years, they also monitor vegetation conditions. Hun-

dreds of volunteers have documented more than 800 jays on multiple sites in as many as 14 counties. Learn more at <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/florida/volunteer/jay-watch-volunteer-to-monitor-florida-scrub-jays.xml> or contact Marianne Korosy at mkorosy@audubon.org

- Bird Stewards help protect birds nesting on beaches and their young by educating people, answering questions and protecting their nests from disturbance. Stewards receive training from Audubon, then are stationed on beaches near nesting bird sites with spotting scopes and binoculars so nesting activity can be observed without causing a disturbance. They distribute literature and provide information on the nesting behaviors of the different species, how various disruptions impact nesting success, and ways to reduce disruptions. Learn more at <http://www.baysoundings.com/summer2011/Stories/Stewards-Protect-Beach-Nesting-Birds.asp>

Ann Paul is regional coordinator for Audubon Florida, Mark Rachal is sanctuary manager for the Florida Coastal Islands Sanctuaries.

QUARTERLY CALENDAR

The *Bay Soundings* calendar lists some of our favorite events and top trips, but there are many more events online at www.baysoundings.com where you will also find more complete information on each of the outings. It's compiled months in advance so we strongly suggest that you contact organizers to confirm. To allow additional space for events, contact information is listed at the bottom of the page.

october

Oct 6 & 7, 9am-3pm, Florida Native Plant Society landscape tour.

Oct 11, 7-8pm, Naturalist Reading Group at Boyd Hill Nature Preserve.

Oct 11, 9am-noon, Agency for Bay Management, Tampa Bay Regional Planning Council.

Oct 12, 6-10pm, Kid's Night Outside at Boyd Hill Nature Preserve.

Oct 13, 10-11am, Pinellas Energy Efficiency Project 2.0, Brooker Creek Preserve.

Oct 13, 8am, Field Trip to John Chestnut Park with Clearwater Audubon Society.

Oct 14, 11:30am, Alligator Walk at Boyd Hill Nature Preserve.

Oct 16, 7pm, Night Hike at Boyd Hill Nature Preserve.

Oct 19, 7-8pm, Bats of America, Weedon Island Preserve.

Oct 20-25, Restore America's Estuaries 6th National Conference on Coastal and Estuarine Habitat, Tampa Convention Center, visit www.estuaries.org.

Oct 20, 7:30am, Join Tampa Audubon Society and tour Blackwater Creek.

Oct 20, 7:15am, Clearwater Audubon field trip to Ft. DeSoto Park.

Oct 20, 9am-3:30pm, Egmont Key regular workday on the island.

Oct 20, Give A Day with Tampa Bay Estuary Program, invasive plant removal at Al Palonis Park, Tampa.

Oct 20, 10-11:30am, Bats, Myth and Reality, Brooker Creek Preserve.

Oct 20, 10am, Fall Native Plant Sale, Land O'Lakes Community Center.

Oct 20-21, Florida Native American Indian Society, Heart's Breath Flute Circle at Withlacoochee River Park, visit www.silverhawkflutegathering.com.

Oct 21, 10am, Gopher Tortoise Hike, Boyd Hill Nature Preserve.

Oct 26, 7- 8:30pm, Family Campfire Night at Boyd Hill Nature Preserve.

Oct 25-27, Audubon Assembly, Conserve Water to Sustain Life,



The Hillsborough River: Human Connections, presented by the University of South Florida Humanities Institute Oct 20 to Nov 7 with a series of events celebrating the river. Topics ranging from art, literature and history to archeology and ecology, so there will be something for everyone. Visit <http://hillsborough-river-connection.org/> for more information.

ONGOING EVENTS

Second and Fourth Thursdays, Book Time at Brooker Creek and Wee Time at Weedon Island.

Wednesdays, Boyd Hill Nature Preserve, Jungle Boogie for ages 3 and 4.

First Saturdays, 8-11am, Bird Walk with St. Petersburg Audubon at Boyd Hill Nature Preserve or Moccasin Lake Nature Park

with Clearwater Audubon.

Second Saturdays, 9am, Lettuce Lake Park for beginning birders with Tampa Audubon Society.

Most Saturdays and many Sundays, 10-11am, Guided Nature Walks at Fort De Soto Park.

Most Saturdays, guided hikes at Brooker Creek and Weedon Island. Scheduled

often "Great Weedon Bird Quest."

Various Dates and Times, Coast Guard Auxiliary Safe Boating Courses available throughout West Central Florida. Visit www.cgaux.org.

Oct 6, 20 & Nov 10, 17, 7:30-9am, Sunrise Kayaking with Mote scientists.

Oct 14, 21 & 28, Nov 4, 11 & 18, 1-2:30pm, Organic

Gardening for Children, Boyd Hill Nature Preserve.

Nov 17 & Dec 15, 9-11am, Manatee County's Master Naturalist Wetlands Hike.

Nov 29 to Jan 4, 6-10pm, celebrate the season as Florida Botanical Gardens is transformed into holiday wonderland with 425,000 lights.

Hyatt Regency Sarasota. Visit <http://fl.audubon.org/audubon-assembly-2012>

Oct 27, 10am-4pm, Marine Quest, Florida Fish and Wildlife Research Institute open house with Science Festival at The Pier Aquarium, downtown St. Petersburg.

Oct 27, 8am, Clearwater Audubon Society field trip to Dunedin Hammock Park.

Oct 27, 9am-1pm Fall Open House at Camp Bayou. Visit <http://campbayou.org>.

Oct 27, 9am-4pm, Wildflower Festival: Brooker Creek Preserve.

Oct 27, 10-11am, Pinellas Energy Efficiency Project 2.0: Brooker Creek Preserve.

Oct 28, 7:45am, Tampa Audubon Society hikes Cockroach Bay Preserve.

november

Nov 3 & 4, 10am-4pm, Art Arbor Festival at Boyd Hill Nature Preserve.

Nov 3, 8am, Give a Day for the Bay, Gamble Creek Island in Manatee County, sponsored by the Tampa Bay Estuary Program.

Nov 3, 8am, Morning Nature Walk with West Pasco Audubon.

Nov 3, 9am-5pm, Youth Ocean

Conservation Summit, Mote Marine Laboratory.

Nov 3, 8am, Gopher Weedon 7 Km Trail Run through native habitats to benefit Friends of Weedon Island. Visit www.fowi.org.

Nov 3, 9am-5pm, Youth Ocean Conservation Summit, Mote Marine Lab.

Nov 3, 6-10pm, Tampa Bay Watch's 6th Annual Evening for the Bay fundraiser.

Nov 4, 8am, Raccoon Run 5k, Boyd Hill Nature Preserve.

Nov 8, 1:30-4pm, Tampa Bay Estuary Program Management Board, Tampa Bay Regional Planning Council.

Nov 9, 10am-noon, Tampa Bay Estuary Program Policy Board Meeting, Tampa Bay Regional Planning Council.

Nov 10 & 11, 9am-4pm, Egmont Key State Park's annual fund raiser - Discover the Island. Visit www.egmontkey.info.

Nov 10, 8am, Field Trip at Possum Branch/Alligator Lake with Clearwater Audubon Society.

Nov 13, 1-4pm, Tampa Bay Estuary Program Manatee Awareness Coalition, Weedon Island Preserve.

Nov 17, 8am, Anclote Key Sandbar field trip with West Pasco Audubon Society.

Nov 17, 8am, Field Trip at Kapok/Cliff Stevens Park with Clearwater Audubon Society.

Nov 17, 8am, Sawgrass Lake Park Field Trip with St. Petersburg Audubon Society.

Nov 19-21, 9am-4pm, Fall Nature Camps, Boyd Hill Nature Preserve.

Nov 25, 9am, Tampa Audubon Society field trip to Cypress Creek.

Nov 29 to Dec 2, St. Petersburg Power & Sailboat Show, downtown St. Petersburg.

december

Dec 1, 8am, Morning Nature Walk at Starkey Park with West Pasco Audubon.

Dec 1, 9:30am, Tampa Audubon Society field trip to Shell Key Preserve.

Dec 8, 8am, Roosevelt Wetlands Bird Walk with St. Petersburg Audubon.

Dec 8, 9am, Bike Safari, Boyd Hill Nature Preserve.

Dec 8, 8am, Field Trip at Honeymoon Island State Park with Clearwater Audubon.

Dec 9, 11:30am, Alligator Walk, Boyd Hill Nature Preserve.

Dec 15, 7:15am, Field trip to Circle Bar-B Ranch with Clearwater Audubon.

Dec 15, St. Petersburg Audubon's

113th Annual Christmas Bird Count.

Dec 15, 9am, Tampa Audubon Society, Al Lopez Park 'Bird n Brunch' program.

Dec 16, Sunrise, Alafia Circle Christmas Bird Count, Tampa Audubon Society.

Dec 18, 5:30pm. Night Hike, Boyd Hill Nature Preserve.

Dec 22, Clearwater Audubon Society Christmas Bird Count.

january

Jan 1, 6am-Noon, St. Pete Audubon's Annual Rich Paul New Year's Day Birding Open at Ft. De Soto Park.

Jan 5, 8am, West Pasco Audubon Morning Nature Walk at Starkey Park.

Contact information

Agency on Bay Management, Tampa Bay Regional Planning Council, Pinellas Park, 727-570-5151, ext. 32 or www.tbrpc.org

Boyd Hill Nature Preserve, St. Petersburg, 727- 893-7326 or www.stpete.org/boyd

Brooker Creek Environmental Education Center, Tarpon Springs, 727-582-2100 or www.pinellascountyextension.org

Camp Bayou, Ruskin, 813-641-8545 or www.campbayou.org

Clearwater Audubon Society, 727-518-6241 or www.clearwateraudubon.org

Florida Botanical Gardens, Largo, 727-582-2100 or flbg.org

Heritage Village, Largo 727-582-2233 or www.pinellascounty.org/heritage

Manatee County Extension, 941-722-4524 or <http://manatee.ifas.ufl.edu>

Pasco Native Plant Society, 727-849-2335 or <http://www.pasconativeplants.org>

Pinellas County Extension, 727-582-2100 or www.pinellas.ifas.ufl.edu

St. Petersburg Audubon Society, www.stpeteaudubon.org or 727-526-3725

Tampa Audubon Society, www.tampaaudubon.org

Tampa Bay Estuary Program, St. Petersburg, 727-893-2765 or www.tbep.org. For Give a Day for the Bay information, email colleen@tbep.org

Tampa Bay Watch, Tierra Verde, www.tampabaywatch.org or 727-867-8166

Weedon Island Preserve Cultural and Natural History Center, St. Petersburg, 727-453-6500 or www.pinellascountyextension.org

Commentary & Opinion

A New Era in Habitat Restoration?

Public-Private Partnerships Promise Ecological Benefits

By Thomas F. Ries

Tampa Bay can boast of more restoration projects per square mile than nearly any other estuary in the world. Since 1989, 87 habitat restoration projects have been implemented within the Tampa Bay watershed resulting in over 3,042 acres of new or improved estuarine and coastal habitat. Just to our south, an additional 37 projects totaling approximately 237 acres were constructed in the Sarasota Bay region.

Almost 100% of these projects were performed on publicly owned parcels – or lands owned by a city, county, state, or water management district. That's because it is far easier and much quicker to restore public lands, and it avoids the potential negative public perceptions that could occur if tax dollars were invested in privately held lands.

This has been a good model for the last 25 years, and Tampa Bay has clearly benefited, but the time has come to reconsider that single-minded focus for a number of reasons. To start with, the availability of public land is limited. More than 80% of the property in Florida is privately held, so publicly owned sites for habitat restoration are becoming tougher to find.

This isn't a bad reality; it just means that many of the publically held parcels are, in general, functioning ecosystems. Most of those government-owned parcels that are impaired have already been targeted for habitat restoration – and the fact that there are fewer publicly held sites that still require restoration shows how far we have come.

Even so, there are still many properties that could be critical components in a comprehensive ecosystem restoration plan but may never fully meet their potential simply because those lands are not publically owned.

As we move into the future, we must develop habitat restoration endeavors that are ecologically driven. In other words, the identification of potential habitat restoration sites should be based upon ecological needs, not whether there's a publicly owned parcel available.

I would even go so far as to say that the next wave of habitat restoration must demand that sites be prioritized based primarily upon the ecological needs of the region, such as restoring

low-salinity stretches of a tidal river, focusing on habitats that were disproportionately lost, or targeting areas that have little or no critical habitat remaining.

Only after this exercise is completed should jurisdictional boundaries be considered. Birds, fish, and animals don't recognize these artificial boundaries, neither should resource managers!

Of course we recognize that developing the partnerships necessary to restore private property with public funds will not be easy. There are a series of real and perceived issues that must be addressed before these types of projects can be undertaken. For example, some of the real issues include:

- Who will be responsible for ongoing maintenance?
- What kind of public access will be allowed?
- How will private land owners be prevented from developing the land at a later date?

An agreement to ensure that restored areas will remain natural and continue to provide ecological benefits to the region may be the most critical issue. A binding legal instrument must be forged and documented so future decision makers cannot undo restoration efforts funded by the public.

The first Public-Private Partnership (P3) in Tampa Bay was implemented between the Southwest Florida Water Management District (SWFWMD) and Tampa Electric Company (TECO). It took over two years to finalize the legal agreements. The good news is that now that the path has been blazed, more recent agreements have been executed much more quickly.

The primary instrument which documents the agreement is the recording of a Conservation Easement (CE). This is a legal document that essentially acts as a layer placed over the restoration area which severely restricts the future land use of the parcel. The CE can be crafted to allow some agreed-upon activities, such as passive site access via the deployment of nature trails or educational kiosks, but restricts activities

like paved parking lots, buildings or other significant site alterations.

In spite of these future land use restrictions, many private land owners are still interested in partnering because they understand the importance of functioning ecosystems, or because the partnership provides positive public relations. Families also may use CEs to ensure that their legacy remains in a natural state for future generations. In some cases it can also lower their tax burden because many counties apply lower tax rates to lands under CEs.

It is imperative that these CEs are held by an entity that can track and enforce the agreement. Water management districts or state agencies are typical CE holders who have the legal authority to ensure that the investment of public funds continues to provide benefits to taxpayers.

If carefully crafted, the resulting agreement can be tremendously beneficial for all participating parties – and the region's ecosystem. The Newman Branch Creek Fisheries Enhancement near TECO's power plant in Apollo Beach is the perfect example. This site was targeted because it had the important low-salinity conditions which are critical for juvenile fish species. It also had been historically dredged and clearly needed restoration

TECO provided 12 acres of land on both sides of the creek and SWFWMD and the National Oceanic and Atmospheric Administration provided funding to restore and create freshwater ponds and estuarine habitats, as well as to

remove acres of invasive, non-native vegetation.

It had tremendous benefits for all parties: a cost-effective restoration opportunity for SWFWMD, educational opportunities for TECO's Stewardship program at the popular Manatee Viewing Center and critical fisheries habitat for the bay's ecosystem. It was even named the Environmental Project of the Year by the Hillsborough County Planning Commission in 2009.

TECO was so pleased with its first P3 that a second phase covering another 12 acres of critical estuarine habitat was completed in September 2012. TECO purchased a portion of this land, about 4.5 acres for \$465,000 as their in-kind commitment. With this as match, Ecosphere Restoration Institute was able to secure grants of \$55,000 from the U.S. Fish and Wildlife Service, \$77,500 from the Gulf of Mexico Program, and \$50,000 from SWFWMD. Planning has begun for a third phase on 24 acres upstream with a partnership that has grown to encompass the Florida Aquarium and the Florida Fish and Wildlife Conservation Commission.

This shows P3s provide an effective method of continuing the restoration of environs in Florida. From a landowner's perspective it creates the opportunity for positive publicity about a company's stewardship program or helps protect a family's legacy and potential savings on property tax expenses. For resource managers, P3s open the door to create critical habitats where they are most needed and effective. Finally, if the CEs are crafted correctly, they provide assurances that the public resources are protected in perpetuity. P3s represent a possible new era for habitat restoration projects!

Tom Ries is executive vice president of Scheda Ecological Associates, Inc. and president of Ecosphere Restoration Institute, a not-for-profit organization he founded in 2003 to create partnerships with local governments and landowners.

"I would even go so far as to say that the next wave of habitat restoration must demand that sites be prioritized based primarily upon the ecological needs of the region."

–Thomas F. Ries



A BIG THANKS

to the following sponsors for making Bay Soundings possible with our deepest appreciation for your commitment to celebrating and preserving Florida's largest open-water estuary.

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If you or your company would like information on becoming a sponsor of Bay Soundings, please contact Suzanne Cooper at the Tampa Bay Regional Planning Council, 727-570-5151, ext. 32, or email suzanne@tbrpc.org

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Citizen-Scientists Discover New Traditions

By Ann Paul and Mark Rachal

As you finalize plans for a festive holiday season, consider adding a new tradition to your family's annual rituals: Join your local Audubon Society for the 113th Christmas Bird Count (CBC). The world's longest-running wildlife census, it actually grew out of an even older holiday tradition known as the Christmas Side Hunt. People would

choose sides and go afield with their guns -- whoever brought in the most feathered and furred quarry won.

Beginning on Christmas Day 1900, ornithologist Frank Chapman proposed a new holiday tradition that would count birds rather than kill them. That first year, 27 participants in locations across the country counted about 90 species. Last year, 60,000

people identified 646 species, counting 5.7 million birds in just the U.S. alone.

This Christmas, regional chapters of Audubon are coordinating events from Dec. 14 to Jan. 5, 2013 -- the multiple dates allow birders to participate in more than one event.

There is a clear methodology to the CBC but it doesn't require specific expertise to participate. "Count Compliers" identify teams to cover specific spots within a circle with a 15-mile diameter that stays the same from year to year. Each team includes at least one expert birder but spotters who look for birds in different directions and compilers who write down data as the experts count birds also are critical to the success of the CBC.

In addition, if your home is within the boundaries of a count circle, you can report birds that visit your feeder if you sign up with the Count Complier in advance.

On the "big day," hundreds of local residents will brave winter weather armed with binoculars, bird guides and checklist, typically in place before dawn to catch the early birds. Often family teams survey the same location year after year, so they know which birds to look for. In other cases, experts can survey their location in advance to determine which birds are most likely to be seen when the time comes to count them.

Of course, there's always a friendly competition among the teams to count unusual birds, then everyone meets afterward for a CBC supper to share their

experiences. "The CBC day is a lot of fun for me personally," says Dave Bowman, count compiler for both the Alafia and Tampa CBCs. "It's just great to be outside, in the field, on a treasure hunt, looking for birds, with my friends."

Dates hadn't been finalized for individual chapters as Bay Soundings went to press in late September, but they'll be posted at www.fosbirds.org by mid-November. Or, if your holiday season is already overflowing, Audubon offers opportunities year-round for citizen-scientists.

- Audubon EagleWatch uses trained volunteers to track many of the state's 1,200 nesting pairs of bald eagles. The nesting season extends from October 1 through May 15, with individual pairs often returning to the same nesting territory year after year. Learn more at <http://www.baysoundings.com/fall2011/Stories/national-treasure.asp> or contact Matt Smith at Audubon's Center for Birds of Prey, 407-644-0190, mcsmith@audubon.org or <http://fl.audubon.org/audubon-eaglewatch>
- Great Backyard Bird Count (GBBC) held February 15-18, 2013, is an annual event that engages bird watchers of all ages in counting birds to create real-time snapshots of where birds are across the U.S. and Canada. Each checklist submitted by citizen scientists helps researchers at the Cornell Lab of Ornithology and the Na-



Photo Carol Cassels

The Christmas Bird Count needs expert birders but less-experienced helpers are used to spot birds and then to count them.

Citizen Scientists
Continued on page 13