



## Coastal Kingdom highlights unique coastal habitats



“Guys, this is one of the coolest things,” says Tony Mills as he stands knee deep in the water on a dark night. The sounds of frog calls echo around him. “Behind me I’ll bet there are 25 or 30 alligators and what we can see are the eye shines...” This scene is part of the fourth episode of *Coastal Kingdom*, “Creatures of

the Night.” *Coastal Kingdom* is a collection of half hour programs highlighting native animals and plants of the Lowcountry.

Typically, nature shows are filmed in exotic locales and feature plants and animals that the viewer will probably never see. While interesting and informative, this type of program does not help viewers develop a sense of place and an appreciation of their natural surroundings. *Coastal Kingdom* is filmed in the Lowcountry and features flora and fauna that we all might see in our own backyards. The purpose of

the program is to help people understand and appreciate the importance of local habitats and the animals and plants that live in them.

To date, LCI staff and the County Channel have produced and filmed four half hour *Coastal Kingdom* programs. The first show focused on reptiles and amphibians. The second program in the series features lowcountry mammals such as armadillos, possums, flying squirrels and white tailed deer. An episode on “The Saltmarsh” showcases crabs, squid and other marine invertebrates and was produced and aired in June. The latest addition to the series, “Creatures of the Night,” debuted in early September and features alligators, horseshoe crabs and insects. The staff has already begun production and filming of “Sharks and Rays,” the fifth program in the series focusing on the lowcountry’s diverse assemblage of elasmobranch fishes (fish with cartilaginous skeletons).



*Marsh view: (below) Producers Scott Grooms and Rob Lewis along with Tony Mills filming an episode of Coastal Kingdom on a bluff overlooking the salt marsh. (photo courtesy of Beaufort County Television)*

Episodes of *Coastal Kingdom* are broadcast in rotation on The County Channel on Wednesday nights at 8 p.m. The shows are also available on DVD so that school teachers can use them in their classes. In July, *Coastal Kingdom* was awarded four national “Telly” awards. These awards are given to the best local, regional, and cable programs. *Coastal Kingdom* received a first place award for videography and won second place in the Environmental, Nature, and People’s Choice categories.

The series is written and hosted by LCI’s Tony Mills and filmed and edited by Rob Lewis and Scott Grooms of Beaufort County. Mills’ son, Ben Mills, wrote and recorded music that will be used in all future episodes. Four disc DVD sets are available at the Beaufort County office and at the Spring Island Nature Store.



## Targeted education programs promote conservation and appreciation of Port Royal Sound

LCI's "train the trainers" model is central to the education and outreach programs the Institute conducts. Using this model, LCI is able to maximize its impact and to disseminate the conservation message widely throughout the Port Royal Sound system by educating community members, decision makers, and those who teach the next generation of community leaders. It is important that people understand that Port Royal Sound is different from any other area on the east coast due to the high tidal amplitude, high salinity, and deep waters. These differences make it a hotspot for biodiversity, and conservation must be approached with different strategies here.

The Master Naturalist program is an excellent tool for communicating our message to people who volunteer in their communities. Often, those who take the course are already highly involved—as docents for state parks or nature centers, as leaders in civic organizations, or as volunteers with education programs. The Master Naturalist classes are filled each spring and fall. After completing the course graduates return to their communities with the message of "what makes Port Royal Sound unique" and

a new appreciation of our local environment.

Teachers who complete the Master Naturalist for educators program also serve an important role in teaching their students to have a sense of place, to

### By the numbers:

- Number of teachers who have completed the teacher Master Naturalist program: **27**
- Number of Master Naturalists: **394**
- Number of people educated directly by LCI staff and volunteers so far this year: **over 2,600** (nearly double last year!)

be interested in nature, and to be excited about learning about the place in which they live. The experiences they gain while participating in the class allow them to teach from personal experience by telling stories about the things they have seen and done.

We have made a concerted effort this year to develop and strengthen relationships with partner organizations who also disseminate environmental information to students and to the public. We



*Turtle tales: Charles Manker and Karen Heitman investigate a box turtle encountered on a Master Naturalist field trip to Congaree National Park. (photo by Camille Myers).*



*Earth Day: LCI volunteers Mary Harris and Kathryn Madden at LCI's booth during the Port Royal Earth Day celebration held at the opening of the farmers' market in April.*

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hosted several staff development seminars with organizations such as the SC Department of Natural Resources, the Coastal Discovery Museum, and the Sea Pines Nature Center to network, swap ideas about educational programs and discuss how to share the message of Port Royal Sound's uniqueness with the public. In addition, Tony Mills and Kristen Marshall Mattson led summer camp education programs with the Beaufort Soil and Water Conservation District Ecocamp, Edisto State Park, and Colleton County Museum Ecocamp. By partnering with other organizations, we are able to maximize the impact of local environmental education.



*Learning about the lowcountry: Educators Tony Mills and Kristen Marshall Mattson lead a training session for the docents of the Coastal Discovery Museum in Hilton Head. (photo by Chris Hefter)*

## Habitat restoration for native birds completed

In the fall of 2009, LCI received a \$2,000 grant from SC Department of Health and Environmental Control to complete a restoration project to enhance habitat for native birds on the Whale Branch Middle School campus. We began by creating new habitat by installing student-built bird nesting boxes and providing bird feeders as supplemental food sources. In the spring, we planted native plants along the edge of the marsh to provide additional food sources (berries and other fruits), nesting ma-

terial, attractive habitat for insects that adults can feed to their young during the breeding season, and cover for the birds. Fifteen Master Naturalist volunteers and students from each class planted more than 200 native plants to restore the marsh buffer, increasing its habitat value for wildlife. The project created an outdoor classroom for the students to learn to observe and study birds, and will be used as part of the STEM curriculum to improve their math and science skills.



*Native plant flower power: (left) Students and volunteers arrange native plants along the marsh buffer. (right) Sixth grade students plant a red cedar, a tree that provides excellent cover and berries for food in the winter.*



## Research projects answer important questions

Research and conservation projects that are supported and funded by LCI are carefully selected to fulfill our mission of promoting the protection of the Lowcountry's natural resources in the most effective way. By learning more about our local ecology, we can encourage better decision-making and land-use practices. This year, we have continued to support ongoing projects and funded some new ones that

will provide much-needed information to the citizens and leaders of Beaufort County. Water quality is of the utmost importance in the Port Royal Sound system—the local economy, recreation, and tourism depend on the creeks and sounds being clean and supporting a healthy fishery. The research that LCI funds will provide answers that will help us better manage and protect our natural resources.

Compound: Bifenthrin

Moderate Concern

***Pesticide danger:** Thanks to funding from LCI Lisa Wickliffe, a graduate student at USC, is creating a list of pesticides commonly used in Beaufort County and evaluating the toxicity of each. Many pesticides have the potential to negatively impact larval fish and crustaceans in tidal creeks, but the information regarding toxicity of these compounds is often difficult to find. She will show which chemicals are highly dangerous to marine life, and suggest safer alternatives that can be used when treatment is necessary. She will also hold a public forum to present her results to the community.*

***Osprey observation:** LCI has again teamed up with the Sea Island Flyfishers of Lady's Island, Parris Island Natural Resources, Fripp Audubon Club, and the LowCountry Master Naturalist Association to complete the second year of osprey nesting surveys in Beaufort County. Of the 105 nests observed, 80 were active nests and 54% of them produced at least 1 chick. (photo by Dianne Fauvette).*



***Breeding bird habitat:** Clemson graduate student Jessica Gorzo, who has been studying painted buntings for the last three years, completed her final field season this summer. She expanded her study to include bird surveys of 24 local golf courses. She will correlate bird community with habitat type to determine which habitats support the highest diversity of birds. Initial results suggest that courses that maintain marsh buffer vegetation, like the one above, have higher breeding bird diversity, including greater numbers of the painted bunting.*



***Retreat:** A gator entering the water after being approached by humans. Research completed on Spring Island demonstrates that negative conditioning decreases human/gator interactions and increases safety for people in areas gators inhabit. Researchers Tom Murphy and George Rock estimate that 42 adult alligators and 55 juveniles live in the 31 acres of freshwater ponds on Spring Island. (photo by Camille Myers).*



## LCI & Clemson launch Learning Expeditions Schools program

This spring Executive Director Chris Marsh approached Clemson University's Youth Learning Institute about initiating a joint venture in Beaufort County schools. The program, called the Learning Expeditions Schools, is being piloted this year in Shanklin and Shell Point Elementary Schools. It ties together an emphasis on experiential learning and an interdisciplinary curriculum based on environmental themes, and helps teachers create more effective grade-level teams.

The interdisciplinary lessons include field trips, virtual field trips using video and PowerPoint programs, and hands-on activities in the classroom. These lessons use science standards to teach students how geography and climate determine plant communities present which, in turn, influence the economy and the history of the region. Math is integrated into all lessons through science and history-



*Field lessons: 5th grade students from Shanklin Elementary had the opportunity to go on an overnight, out of school field trip to Clemson's Camp Sewee. The school's budget has been restructured to include adequate funding for field trips for all students.*

based word problems. The initial results from the program are extremely promising. Since last year when Chris began working with the principal and teachers of Shanklin Elementary, PASS test scores have risen significantly. The school's ranking rose from 11th to 4th out of 13 elementary schools in the district.

Thanks to funding from three family foundations, Sulatha Shetty (see page 6) will work with Chris during the next 12 months to expand the program to include Shell Point Elementary and Robert Smalls Middle School, which receives its students from the elementary schools now in the program.



## LCI continues to promote new stormwater practices

Jasper County encompasses the upper sections of the watersheds for the Okatie-Colleton, the Broad and the New Rivers. In August LCI helped move Jasper County toward adopting a more stringent stormwater ordinance by providing them with a \$10,000 grant. These funds, along with additional funds provided by the Port Royal Sound Fund, ensured that Jasper County met their requirement of local matching funds which enabled them to receive a \$40,000 grant from the state of South Carolina. These funds are being used to rewrite the county's stormwater ordinance so that, like the new Beaufort County ordinance, it restricts volume as well as quality of stormwater.

In February LCI initiated an ongoing series of workshops for engineers and other professionals involved in developing best management practices to control stormwater. Chris Marsh led the professionals on a field visit to Spring Island's nature preserves to show the group that heavily forested areas have a greater capacity to retain stormwater than their engineering models predicted. This is because in coastal habitats, the flat terrain has numerous natural swales and flat areas that do not drain. During the second meeting held in August, the group discussed ways to create additional stormwater retention in the areas that drain into the headwaters of the Okatie River.

## Welcome Sulatha!

Sulatha Shetty joined the LCI staff as a curriculum specialist in September. Her position will be funded for 12 months by support from three family foundations. Her responsibilities include assisting Chris with teacher workshops, developing nature-based lessons and field trips, and modeling lessons for teachers. Sulatha (pronounced "Soo-letta") received a Bachelor's degree in accounting and a Master's degree in business from Mangalore University in India. For the past six years she worked in the media center at Shell Point Elementary where she provided technology support to teachers. Sulatha has outstanding people skills, excelled in the Master Naturalist course, and has had a wealth of life experiences. These qualities make her an ideal person to help develop and share lessons that integrate math, science, and social studies.



The mission of the LowCountry Institute is to provide responsible leadership in the conservation and use of Lowcountry natural resources – its biodiversity, pristine waters and ecological landscapes – by fostering learning opportunities and helping local policymakers, landowners and residents make informed decisions.

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