Florida Fish and Wildlife Conservation Commission

Living on the Edge: CWCI Newsletter - Spring 2017

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Welcome to the Spring edition of *Living on the Edge*, the newsletter of the Coastal Wildlife Conservation Initiative! This is a quarterly newsletter to update Florida Fish and Wildlife Conservation Commission (FWC) staff, partners and members of the public interested in Florida's coastal issues about current projects and other points of interest. Regular highlights will include featured projects related to coastal wildlife, interviews with our staff or partners, special seasonal considerations, news and events, and current funding opportunities. If you are interested in spreading the word about your project or someone who is doing a fantastic job in coastal conservation, please contact the CWCI Coordinator, Fara Ilami, at fara.ilami@myfwc.com.

The Coastal Wildlife Conservation Initiative is an FWC-led multi-agency strategy to address threats to coastal wildlife and habitats, while considering human interests and uses of Florida's coastal areas. The goal is a statewide, cooperative process to protect coastal wildlife populations, conserve and manage coastal ecosystems, and achieve balance between conservation and opportunities for recreation, commercial activities and responsible development.

Calendar: Upcoming Meetings, Webinars, and Events

Florida Marine Science Educators Association Annual Conference, May 4-7, 2017, St. Augustine, FL

Florida Coastal Management Program Meeting, May 16-17, 2017, St. Augustine, FL

Climate and Resilience Community of Practice Meeting, May 16-18, 2017, Covington, LA

Citizen Science Association Conference, May 17-20, 2017, Twin Cities, MN

Society of Wetland Scientists Annual Meeting, June 5-8, 2017, San Juan, Puerto Rico

World Oceans Day: Bailey-Matthews National Shell Museum Bunche Beach Preserve Cleanup, June 8, 2017, Fort Myers, FL

Gordon Conference on Coastal Ocean Dynamics,

Hot Topic: Earth Day!

April 22 is Earth Day, and this year there are more ways to participate than ever. From mangrove plantings and coastal clean-ups to Ecofests and more, everyone can find a way to make their conservation mark. There is even a lionfish derby for those who want to fight invasive species. For more information about events in your area, check with local news outlets or Eventbrite. In addition, Earth Day is the perfect time to make or renew long-term commitments to conservation, such as using less plastic, recycling, reducing your carbon footprint and eating less meat. If you would like to take action to conserve coastal wildlife and habitat as part of your Earth Day pledge, contact the CWCI Coordinator for ideas and opportunities.

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Featured Project: Preventing Crow Predation of Shorebird and Seabird Nests

June 11-16, 2017, Biddeford, ME

Capitol Hill Ocean Week, June 13-15, 2017, Washington, D.C.

National Marine Educators Association Annual Conference, June 25-29, 2017, Charleston, SC

Regional Sea Level Changes and Coastal Impacts, July 10-14, 2017, New York, NY

International Congress for Conservation Biology, July 23-27, 2017, Cartagena, Columbia

4th International Marine Protected Areas Congress, September 4-8, 2017, La Serena – Coquimbo, Chile

Estuarine Coastal Sciences Association Conference, October 16-20, 2017, Shanghai, China

ASBPA National Coastal Conference, October 24-27, 2017, Fort Lauderdale, FL

Coastal and Estuarine Research Federation 24th Biennial Conference, November 5-9, 2017, Providence, RI

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Coastal News Snippets

People can help nesting sea turtles! March 1, 2017

FWC promotes boating safety in Lee, Charlotte and Sarasota counties, March 2, 2017

Be a citizen-scientist this horseshoe crab spawning season, March 9, 2017

Keep a lookout for manatees in motion this spring, March 22, 2017

In Southwest Florida, shorebirds and seabirds have had relatively low productivity. This is due, in part, to predation of their eggs and young by fish crows. The fish crow's diet is highly variable but includes a large proportion of marine and other invertebrates, carrion, bird eggs, berries, fruit and seeds. Dr. Beth Forys, Professor of Biology at Eckerd College, has been trying to find an effective way to deter crows from predating shorebird and seabird nests.

Dr. Forys considered using a number of techniques. Lethal control of fish crows was considered but rejected, due to the difficulty of implementing it on urban beaches, ethical reasons, expense and concerns that crows from neighboring territories would simply move into the vacated territory.

Non-lethal methods also were explored. Dr. Forys first attempted to replicate experiments that had been used successfully with other crow species employing effigies (dead crows) to scare the fish crows away from a black skimmer colony. This was not successful, most likely because of the fish crows' high intelligence level and the fact that effigies were placed after the onset of the black skimmer breeding season (previous studies had demonstrated success with effigies erected before crows had eaten many eggs).

Last year a new method was tried — Conditioned Taste Aversion. CTA involves the use of emetic eggs (eggs injected with a substance which will make crows quickly vomit, but does not harm them) in order to teach the crows to avoid eggs. CTA has been used successfully in other areas when deployed before the onset of shorebird nesting. This study was trying to determine if egg predation could be decreased once shorebird nesting begins. Results showed that areas where

Living Shoreline Initiatives Aim to Stem Erosion at the GTM NERR, March 22, 2017

Artificial Mangroves Could Bring Back Vanishing Habitats in Florida, March 26, 2017

Litter is present throughout the world's oceans: 1,220 species affected, March 27, 2017

Miami's fight against rising seas, April 4, 2017

From Toxic Dump to Wetland in Florida, April 10, 2017

Help keep nesting waterbirds safe: Give them space, April 13, 2017

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the emetic eggs were used had fewer real eggs taken by crows. However, the cost and complexity of getting the chemical licensed in the state for large-scale use is prohibitive.

This year Forys and her team are trying to re-educate the crows by using electrified eggs placed in nest scrapes and accompanied by decoys. When a crow tries to grab or peck one of the treated eggs, it gets a mild shock that appears to startle the unsuspecting birds. Preliminary results indicate that the crows quickly learn to avoid the decoys and eggs. The crows' response to the mild shock appears to be one of surprise followed by a healthy suspicion of the nests and eggs. The study will be replicated at five additional sites. Researchers will continue to monitor fake nests as well as real ones at these sites to see how long the effects last and crows remain wary of shorebird nests. Results from this study will be reported in The Wrackline, the newsletter of the Florida Shorebird Alliance.

Photographs courtesy of Dr. Beth Forys

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Spring Wildlife Tips: Don't Attract Coastal Predators

Spring begins the annual influx of people recreating on Florida's beaches, and this coincides with breeding season for many species of coastal wildlife. Many endangered or threatened coastal species are subject to predation by other wildlife such as ghost crabs, crows, laughing gulls, raccoons, foxes

and coyotes. Even domesticated dogs and cats can be potential predators.

The risk of predation is high for eggs or defenseless young, and it grows even higher when trash and other predator attractants are present on or near the beach. For example, raccoons are often found rummaging through trash cans for food scraps. If trash cans are on the beach near a nesting area, raccoons could more easily find shorebird eggs. Crows and gulls also frequent areas where picnickers leave food scraps at the beach, and both will take shorebird eggs and young. Outdoor housecats and feral cats can eat beach mice and birds. Dogs that are not on a leash can dig up and eat sea turtle eggs. Some predation is natural, with ghost crabs, for example, being major predators of shorebird eggs.

However, it is important to realize that human food sources effect coastal predators in two ways. First, food sources such as trash cans routinely attract predators to areas where they otherwise only may have gone occasionally. Secondly, regular availability of human food over time can cause predator populations to become higher than they would be otherwise, because more available food means they can reproduce more successfully.

Help prevent human-subsidized predation on the coast:

- Throw away all trash in covered containers or – better yet – pack it out and dispose of it away from the beach (for example, at home). Trash includes food leftovers and packaging, charcoal, fish scraps and pet waste.
- Do not leave food out for feral cats or other animals. If you must feed your pets outside, promptly remove bowls and other materials associated with food when they are done eating.
- Do not walk your dog where it may present a disturbance or threat to wildlife — this includes designated Critical Wildlife Areas, roped or flagged areas, dunes and anywhere that shorebirds are present.
- Keep your dog as far away from wildlife as possible. Do not allow a dog to disturb or chase birds or dig near turtle nests.
- Avoid walking your dog on the beach at night during the March-October sea turtle nesting season.

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Staff/Partner Spotlight: Beth Forys, Ph.D.

1. **What is your title?** Professor of Environmental Science & Biology

2. **What organization do you work for?** Eckerd College, St. Petersburg, FL

3. **What type of work do you do?** I am a professor who teaches Conservation Biology, GIS and Ornithology at a liberal arts college. In addition, I do research on shore/seabird conservation.

4. **What projects have you recently been working on?** Since 2009 I have been banding least terns and black skimmers in Pinellas County (working with master bander Marianne Korosy - Audubon Florida). This data is being used to measure survivorship and movements of these imperiled species. In addition, I've also been doing research to determine the best method of discouraging fish crows from taking shorebird and seabird eggs (see “Featured Project” for more information).

5. **How does your work relate to the CWCI?** We are trying to protect coastal wildlife populations.

6. **How long have you been working in the coastal environment, and what are some lessons you have learned?** I have been doing research in coastal environments for 29 years. One important lesson that I have learned is that while it is very important to protect more pristine areas, more human-impacted areas can also play a role in conservation of coastal ecosystems and populations. I have seen populations of shore and seabirds thrive even in urbanized areas, provided we have a strong public education component, enforcement and predator management. These species enhance the experience of beach visitors because they are beautiful and interesting to watch.

7. **What do you think is the greatest threat to coastal ecosystems, and what action(s) should be undertaken to address it?** The two greatest threats that I've experienced:

    1. Global environmental change has resulted in sea-level rise and an increase in storm frequency and intensity. This has led to an increase in over-wash events of shore and seabird nests, often resulting in

mortality of eggs and chicks. I'm not sure how to address this at a local level, but clearly steps need to be taken to decrease greenhouse gases at a global scale.

2. Increase in human activity on beaches impacts shore and seabirds in terms of direct disturbance of the birds and an increase in native and nonnative predators. When people get too close to bird nests, they often scare the adults off the nests, leaving the eggs and young susceptible to predation and overheating. Human trash increases predators. Environmental education through various methods (including bird steward) is helpful to protect nests and colonies. Working with local municipalities and law enforcement on trash removal and citing people for having fireworks and dogs is also key.

8. **What is your favorite coastal animal, and why?** I honestly do not have a favorite animal. I've been fascinated by every species I've studied, so I'm the perfect person to study species that need help, but are not getting much attention.

9. **Do you have a message you would like to share with readers of this newsletter?** I would like to mention that none of the conservation or research I've done would be possible without amazing volunteers and partnerships with nonprofits, county, state and federal biologists and managers. I think the integrative approach that the CWCI takes is the best way to protect our valuable coastal ecosystems.

Critter of the Quarter: No-see-ums

Florida's coastal areas are world renowned and attract millions of visitors each year. These habitats and Florida's moderate climate provide numerous recreational opportunities, including boating and fishing, hiking, wildlife viewing or just soaking up the sun on the state's beautiful beaches. These pleasant activities can be painfully interrupted by one of Florida's most ubiquitous but unseen denizens, the no-see-um. Also known as biting midges or sandflies, these flies, relatives of

mosquitoes, are often felt but not seen. They leave their victims with painful and irritating bites, which can lead to long-lasting wounds.

Florida is home to more than 47 species of biting midges, mostly in the genus Culicoides (Insecta: Diptera: Ceratopogonidae). Salt marshes and mangroves are major habitats for no-see-ums in Florida, although they can also utilize areas with wet, organic soils that are not inundated. For this reason, biting midges are often associated with livestock operations.

As their name implies, no-see-ums are very small, usually less than 1/8th of an inch long. They have a relatively short reproductive cycle of between two to six weeks from egg to larva to pupa to adult. Biting midges utilize anautogenous reproduction, which means females require a meal of blood to begin their reproductive cycle. Only females have a proboscis (elongated mouthpart) that is adapted for blood-sucking. The number of eggs produced, usually between 50 and 110, depends on the species and the size of their last blood meal. Larvae are not aquatic but require moisture for development.

Through their blood-sucking, no-see-ums are sometimes vectors for disease-causing organisms, including filarial worms and viruses. The pain and itching associated with no-see-um bites are an allergic reaction to proteins in the fly's saliva. Topical antihistamines may bring some relief, but the reaction may last as long as a week.

The University of Florida's Institute for Food and Agricultural Sciences recommends installation of screens with smaller mesh for windows and patios to exclude no-see-ums and avoid the painful effects of their bites. Due to their small size, midges can pass through standard mesh "mosquito" screening. Additionally, fans can help deter no-see-ums, which are weak fliers. Most repellents for flies and mosquitoes also work well for no-see-ums and should be applied before outdoor activities, but one should always follow the directions on the label.

For more information on these seldom seen but often felt members of Florida's fauna, please visit the following sites:

http://entnemdept.ufl.edu/creatures/aquatic/biting_midges.htm

http://freshfromflorida.s3.amazonaws.com/arthropods-of-florida-vol-10.pdf

Photograph courtesy of Dr. Roxanne Connelly, Florida Medical Entomology Laboratory, University of Florida

Funding Opportunities

NRCS **Regional Conservation Partnership Program** — RCPP will make awards to locally driven, public-private partnerships that improve the nation's water quality, combat drought, enhance soil health, support wildlife habitat and protect agricultural viability. The deadline is **April 21, 2017**.

J.M. Kaplan Fund **J.M.K. Innovation Prize** — The Prize seeks to support innovation in the fields of the environment, heritage conservation and social justice. Non-profit organizations and mission-driven for-profits organizations are eligible. The deadline is **April 28, 2017.**

NPS **Land and Water Conservation Fund State and Local Assistance Program** — The National Park Service provides matching grants to states and through states to local governments for the acquisition and development of lands and waters for outdoor recreation purposes. Search grants.gov for P17AS00112. Applications must have been reviewed and cleared by NPS for final submission by the deadline, **April 28, 2017**.

The Lawrence Foundation Grants — The foundation is focused on making grants to support environmental, human services and other causes. The foundation makes grants to U.S.-based qualified charitable organizations. Applications are due **April 30, 2017**.

Conservation Alliance — Seeks to protect threatened wild places throughout North America for their habitat and recreational values. Accepts grant applications from non-profit organizations with a focus on protection of a specific wild land or waterway, engaging grassroots citizen action in support of the conservation effort, and demonstrating a clear recreational benefit. Organizations must be nominated before applying for grant requests. Nominations are due by **May 1, 2017** and proposals are due **June 1, 2017**.

NAS **Gulf Research Program Research-Practice Grants** — Research-practice grants aim to advance science and its application by (1) accelerating knowledge transfer from researchers to practitioners, thereby facilitating implementation; and/or (2) encouraging the use of practitioners' knowledge and lessons learned from experience to inform research. Proposed projects must be hypothesis-driven and seek to improve science and practice by bringing together researchers, practitioners, or other relevant

perspectives. Mandatory letter of intent is due **May 3, 2017.** Full proposals are due **June 28, 2017.**

U.S. Fish and Wildlife Service **2017 National Fish Habitat Action Plan —** Projects should support national and regional science and coordination activities to protect, restore or enhance fish habitats. Applications are accepted on a rolling basis through **May 31, 2017.**

U.S. Fish and Wildlife Service **National Coastal Wetlands Conservation Grants** — Awards are to protect, restore and enhance coastal wetland ecosystems and associated uplands. The grants are funded through the Sport Fish Restoration and Boating Trust Fund, which is supported by excise taxes on fishing equipment and motorboat fuel. Search grants.gov for F17AS00108. The deadline is **June 30, 2017**.

Northrup Grumman — Supports communities, projects and organizations, particularly where its employees live and work, with financial, in-kind and volunteer resources. Grants are awarded to accredited schools and 501(c)(3) nonprofit organizations for projects focused on education and the environment, among others. Requests for funding will be accepted beginning February 1, 2017 through **June 30, 2017**.

U.S. Fish and Wildlife Service **North American Wetlands Conservation Act Standard Grants** — Public-private matching grants support long-term protection, restoration and/or enhancement of wetlands and associated upland habitats. U.S. Standard Grants Cycle 2 applications are due **July 14, 2017**. U.S. small grants applications are due **October 19, 2017**.

Rockefeller Family Fund — Grant making currently has an environment program focus on the challenges of climate change with an emphasis on public education. Letters of inquiry (LOI) may be submitted at any time.

Surdna Foundation Grantmaking — Grant making to nonprofit organizations in the priority areas of Sustainable Environments, Strong Local Economies and Thriving Cultures. Letters of inquiry (LOI) may be submitted at any time.

Waitt Foundation Rapid Ocean Conservation (ROC) Grants — This opportunity provides small grants with a quick turnaround time for solutions to emerging conservation issues. The funding cycle is open to new applications. Proposals are reviewed monthly on a rolling basis, although some application take additional time to evaluate.

Wells Fargo Environmental Grant Program — Environmental grant program focuses on addressing local environmental priorities in communities and providing support

that fosters innovation to help accelerate a “green” economy. One letter of inquiry per year per organization is accepted.

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