



Llama in Patagonia; Ponies in Iceland.  
Photos: Wayne Bennett

### **This Month's Program: November 15, 2018 Nature Photography Tips by Wayne Bennett**

Have you ever looked at a photo and thought, I wish I could create an image like that? Well, you can! According to Orange Audubon Society's November 15th speaker Wayne Bennett, it's a matter of learning how to see things with a creative eye...how to understand what it is you want to accomplish and how to get there...understanding which lens to use...how to think "out of the box"... looking for the little things that can make a big difference in your imagery.

This is early enough to inspire some great shots for the Chertok Nature Photography Contest, which has an entry deadline of April 18, 2019.

Wayne has been a professional photographer for the past 25 years, specializing in nature photography.

He has traveled and photographed on all continents except Antarctica as well

as all over the United States. Wayne is proud to be a charter member of the North American Nature Photographers Association (NANPA) and the Orlando Camera Club (OCC). He was the second President of the OCC.

He is held in high esteem within the OCC; for example, in its annual photo competition, the Photo of the Year earns the Wayne Bennett Award. Among the awards for his own photography, Wayne had an image selected as Highly Honored in the 2009 Nature's Best Contest. This photo was displayed at the Smithsonian until May 2010.

He has taught photography with the national Great American Photography Weekends group for 15 years and at the Disney Institute for 5 years. Wayne also recently assisted Orange Audubon Society as photo judge for its 30th annual Chertok Photo Contest and will co-lead a Sunrise Photography and Birding Trip at the North Shore Birding Festival, with Julie Lee, also of the OCC. You can see Wayne's beautiful photography at <http://waynebennettphotography.com/>.

Join us November 15th at 7:00 p.m. for a great program. Location below.

*Rick Baird, Programs Chair*

### **November Monthly Field Trip: November 17, 2018, Lighthouse Point Park, Ponce Inlet**

Orange Audubon Society's (OAS) Saturday, November 17th field trip will be to Lighthouse Point Park. This Volusia County park in Ponce Inlet has a nice boardwalk where we will look for late migrant songbirds in the hammock, and when we exit onto the well-preserved dunes, we'll observe beach birds. We will bird the Ponce Inlet jetty and mouth of the Halifax River, looking for gulls, terns, shorebirds and wading birds.



Lighthouse Point Park Photo: Larry Martin

Meet us in Port Orange at 8:30 a.m. (Daylight savings time will be over by then). Park entry is \$10 per car, so we will carpool from the parking lot near U.S. 1 (Ridgewood Avenue) and Dunlawton Blvd, near the Hardees, 4096 S. Ridgewood Ave., Port Orange. The trip is free and no registration is necessary. For information, contact me at [lmartin5@msn.com](mailto:lmartin5@msn.com) or (407) 647-5834. On day of the trip, you can reach me at (407) 252-1182.

*Larry Martin, Field Trips Chair*

### **Holiday Gift Shopping**

Orange Audubon's nature-inspired adult and youth t-shirts and hoodies, tote bags, signs and mugs will be sold November 3-4 at Lake Eola (p.3) and before the November 15th program starting 6:30 p.m. Checks and credit cards accepted.

Orange Audubon Society programs are free and no reservations are necessary.

Programs are the 3rd Thursday of each month (September-June)  
and all but June start at 7:00 p.m.  
in the Camellia Room at

**Harry P. Leu Gardens**

1920 North Forest Ave., Orlando, FL 32803

For map and directions, visit:

[www.leugardens.org/plan/directions/](http://www.leugardens.org/plan/directions/)





## Exciting News - New Birding Park & Potential Nature Center Site

For many years Orange Audubon Society (OAS) has been looking for a nature center site near Lake Apopka. Back when Peggy Cox was president (1998-2002), the nature center committee decided to focus on Lake Apopka, due to its diverse wildlife and the need for more nature education resources in the area. The lake water quality continues to improve, the area has spectacular vistas, and properties abutting the North Shore were becoming prime real estate. For OAS to buy land in the area was cost-prohibitive. Previously the Friends of Lake Apopka's Jim Thomas (OAS president, 1969-71) partnered with the City of Oakland to develop the Oakland Nature Preserve on the south shore. But more nature education resources are still needed, especially in fast growing northwest Orange County where the City of Apopka has become the county's second largest city after the City of Orlando. More nature viewing and education opportunities were also needed for the thousands of out-of-town visitors to the Lake Apopka North Shore, a globally Important Bird Area.

An interesting opportunity arose when the St. Johns River Water Management District made a list of properties not essential for its water protection efforts. These properties could be surplussed to a municipal government or if there was no acceptable proposal, might be sold on the open market. On that list was the Hickerson Flowers nursery site on Lust Road at the beginning the Lake Apopka Wildlife Drive that opened in 2015.

On Friday October 26, 2018 the City of Apopka officially acquired the approximately 70-acre Hickerson site. This surplus of the Hickerson property to the City is in partnership with OAS to develop a passive Gateway Birding Park. Apopka Mayor Bryan Nelson, in his October 30th "State of the City 2018" address, listed among the recent accomplishments of the City the closing of this deal, and OAS will be meeting with the City and District staff starting this month to plan the clean-up of the site and future efforts, hopefully to finally implement a proposal we drafted 2 1/2 years ago.

As OAS wrote in its Memorandum of Understanding (MOU) with the City, this property is an upland site, whereas most of the North Shore is wetlands. It is habitat for sparrows, buntings, and other upland species. Birders will enjoy walking around the property looking for these species. Second, this old nursery site has concrete pads, which were the foundations of greenhouses and may be used for parking. Parking will be helpful for carpooling on the Lake Apopka Wildlife Drive on the days it is open. Further, District staff have suggested that they can make a walk-in entrance from the Gateway Birding Park to the Drive, that would allow cycling and pedestrian entry on days the Drive is closed.

Although the immediate plans are for a passive birding site with few amenities, OAS and the City will apply for grants in anticipation of long-term potential use of the site for our Nature and Environmental Education Center (NEEC).

We are ecstatic and exhausted from the effort of bringing this deal to fruition and know that there is much work ahead. I thank my NEEC Committee co-chair Bob Stamps, who along with his wife Loretta Satterthwaite (both past OAS presidents), and other members of the committee, gave critical support for this effort. Longtime OAS member and field trip leader Bob Sanders brought the acute need to preserve this nursery site to OAS' attention at the 2016 summer board meeting. Bob, accompanied by Larry Martin and Joyce and Bill Stefancic, led a year-long bird survey from September 2016 to 2017, documenting 107 bird species that use the property. Thanks also to past Apopka Mayor Joe Kilsheimer and Paul Faircloth, formerly of Mosquito Creek Outdoors, for bringing our idea of the Gateway Birding Park to the District in 2016 and continuing negotiations through 2017. And of course to the District staff who helped make this happen.

Thanks everyone for your patience. We are not there yet, but we have made massive strides forward in pursuing a place to grow and enhance OAS' conservation and educational efforts. If you have skills and/or materials to donate toward this endeavor, please let me know. We will soon be calling for volunteers for a site clean-up effort, so email me if you would like to participate. I can be reached at (407) 637-2525 or [info@orangeaudubonfl.org](mailto:info@orangeaudubonfl.org). *Deborah Green, President*



The purpose and dedication of Orange Audubon Society (OAS) is to promote public understanding of, and an interest in, wildlife and the environment that supports it.

OAS' education programs foster the recognition of the tangible and intangible values in the remaining natural areas of Florida and the world, and our responsibility for the conservation of the Earth's natural ecosystems and the services that they provide for the health of the planet.

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The OASis (*Orange Audubon Society information source*) newsletter is published monthly from September through June. The newsletter is posted on the OAS website, and the link is e-mailed to OAS members.

To add your email address to our distribution list or report a change in email address, contact [newsletter@orangeaudubonfl.org](mailto:newsletter@orangeaudubonfl.org).

For other membership information, contact: Mike Daley  
[miked129e@gmail.com](mailto:miked129e@gmail.com)  
(407) 417-7818

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**It's Fiesta Time!! — Volunteers Still Needed**

November 3 and 4, 2018 will be the City of Orlando's Lake Eola Fiesta in the Park Arts and Crafts Festival, which is Orange Audubon Society's biggest public outreach event. We hope you come on out and buy some of our nature merchandise, learn about conservation issues and upcoming trips, and let us know your ideas for our chapter. If you would like to help with outreach on Saturday or Sunday, please contact me at info@orangeaudubonfl.org or 407-637-2525. It's always more fun with more people. Thank you!  
*Deborah Green*

**Florida Native Plant event November 3, 2018**

The Cuplet Fern Chapter, Florida Native Plant Society, is hosting a workshop with noted author Ginny Stibolt on November 3rd from 9 a.m. to noon. The workshop will provide a step-by-step guide to landscaping and maintaining Florida native plants. Ms. Stibolt will sell and autograph books, including her latest, *Climate-Wise Landscaping: Practical Actions for a Sustainable Future*. Location is the Sanford Chamber of Commerce, 400 East 1st Street, Sanford, FL 32771. Click [this link](#) to purchase tickets. If you have any questions, email cupletfern@gmail.com.



Whooooo Done It? Burrowing Owl Portrait. 2018 Chertok Photo Contest. Fourth Place, Youth category. Photo: Alayna Hew

**Owl Prowl November 9, 2018**

Join the Audubon Center for Birds of Prey on Friday, November 9th, from 6:30-8 p.m. for a sneak peek into what owls do at night. Meet owl ambassadors up close, participate in owl crafts, activities and learn how to search for owls in your own neighborhood. \$5 per person, registration required. Email auduboncbop@audubon.org to register.

**Wekiwa Bird Survey November 10, 2018**

Orange Audubon Society continues monthly bird surveys at Wekiwa Springs State Park, repeating surveys done in the 1990s. Most survey dates are the second Saturdays. The next one will be November 10th. Start time is 7:30 a.m. You do not have to be an expert birder to join, but willingness to walk in sandy and possibly wet areas is required. If interested, contact Kathy at riglingk@aol.com or (407) 488-9559.

**Youth Field Trip November 10, 2018**

The first Youth Field Trip of the season will be on November 10, 2018 at Mead Botanical Garden. Note that this is a week later than listed in our brochure. We will start the walk at 9:00 a.m. in the parking lot. Children must be accompanied by an adult. Address is 1300 S Denning Dr, Winter Park, FL 32789. Free. Please RSVP if you want us to bring loaner binoculars. Contact me at gonzalezm94@outlook.com or (239) 404-9248.



*Melissa Gonzalez, Education Chair*

**Green PLACE Photo Walk November 10, 2018**

Orange Audubon Society (OAS) offers a November 10th field trip with a photographer and naturalist to an Orange County Green PLACE property. The Lake Lucie Conservation Area near Apopka has mesic hammocks and ephemeral wetlands with butterflies, birds and other wildlife. This 166-acre property was purchased in 2005, in part for its aquifer recharge value and as a potential Gopher Tortoise relocation site.

Beth Jackson of Orange County Environmental Protection Division will lead the walk, and OAS' Susan Kirby will provide photography tips. Bring sunscreen and water and wear long pants and closed-toed shoes. Location is 43 Rainey Road, Sorrento, FL 32776. Time is 9 a.m. to 11:30 a.m.. The walk is free and no reservations are necessary. If any questions, call Beth at (407) 836-1481 prior to the event or (321) 689-7466 the day of the event.

**Limited Edition Field Trip to Lake Apopka North Shore, Clay Island November 10, 2018**

On Saturday, November 10th, Bob Sanders will lead a Limited Edition Field Trip to the Lake Apopka North Shore, Clay Island area. This is an opportunity to drive through areas normally closed to vehicles and to find early overwintering ducks, other waterfowl, raptors, and songbirds.

Limited Edition Field Trips are limited to 15 people. Cost per trip is \$10 for members and \$15 for non-members. Reservations (required) will be taken on a first-come, first-served basis the week prior to the trip. Contact Bob at (407) 459-5617.



**FOLA 40 Bike Ride November 11, 2018**

On Sunday, November 11, 2018, the Friends of Lake Apopka (FOLA) will hold its 2nd annual ride around Lake Apopka, the "FOLA 40." The Lake Apopka Loop Trail is gravel and suitable for hybrid, mountain, or cyclo-cross bikes, not for road bikes with narrow tires. For the 8-mile, 16-mile and 32-mile options, check in at Magnolia Park, 2929 S Binion Rd., Apopka. The 40-mile option leaves from 104 S Lakeview Ave, Winter Garden, FL 34787 (the City Pavilion). Check-ins are at 8:30 a.m. and the ride starts at 9 a.m.

This annual ride raises awareness about:

1. Efforts to restore Lake Apopka
  2. Two amazing trails (West Orange/South Lake & Lake Apopka Loop)
  3. The need to connect the two trails
- Registration is required with a fee of \$45. Registrants receive a "FOLA 40" t-shirt and a free beverage at the Crooked Can Brewing Company, 426 W Plant St, Winter Garden.

## Audubon Assembly and OAS' Young Board Members

At the statewide Audubon Assembly, Orange Audubon Society (OAS) Secretary Linda Gaunt and I enjoyed being mentors for the Conservation Leadership Initiative (CLI). There had been over 100 students from colleges around the state applying for CLI, so the 25 students selected were the cream of the crop. We hope the two bright young University of Central Florida (UCF) biology students that Linda and I co-mentored will become involved with OAS. Our education chair Melissa Gonzalez coordinated the students at CLI this year as she did last year, and we were proud to see her in a statewide leadership role.



Left, OAS' Melissa Gonzalez (right) coordinating the 2018 Conservation Leadership Initiative, Right, OAS' Gabbie Buendia on the Diversity panel. *Photos courtesy CLI.*

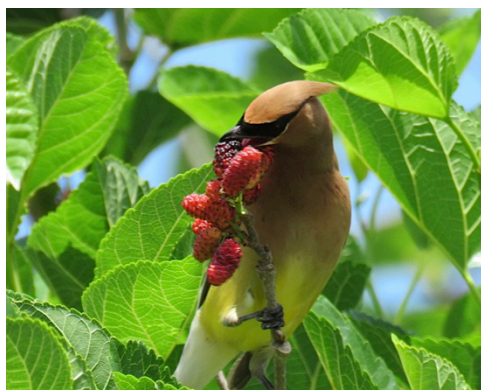
Board member and education committee member Gabbie Buendia, who is a senior at Rollins College, was a participant in CLI two years ago. Through contacts with Dr. Deohn Ferris, National Audubon Society's vice president for equity, diversity and inclusion, Gabbie was invited to present on a panel at Assembly, entitled "Wildlife Advocacy and Conservation Strengthened Through Equity, Diversity, and Inclusion." Speaking remotely using the program Zoom, Gabbie did an impressive job.

OAS now has four young biologists/environmental scientists on our board: Melissa, who recently began working for the Florida Park Service District 3 based out of Wekiwa Springs State Park; Gabbie, who in her senior year at Rollins serves as Sustainability Coordinator for Environmental Studies; Marah Green, who graduated from UCF two years ago and works for the Florida Department of Environmental Protection; and Victoria Schwartz, who completed her masters in Biology at University of South Carolina and recently secured work at Wekiwa Springs State Park. While Marah and Victoria did not go through CLI, it was certainly easier to recruit them for the board with Melissa and Gabbie already active board members. CLI is a success!

*Deborah Green, President*

## Project Feeder Watch

Enjoy feeding birds at your home? No matter how small or large your feeding station is you can provide valuable scientific data to the Cornell Lab of Ornithology's Project Feeder Watch. You don't even need a feeder to participate as long as you either have a bird bath or plantings to attract birds. Any age or skill level is welcome. It is a great way to engage children with observing nature. Data can be entered online or mailed. Your data is saved for you to view from all the years that you have participated. From Feeder Watch data, scientists note declining populations such as the Painted Bunting in Florida, so that timely action can be taken. To learn more about this worthy and fun project visit <https://feederwatch.org>.



Cedar Waxwing feeding on mulberries. *Photo: Kathy Rigling.*

*Kathy Rigling, First Vice President*



Maria Paasch, past board member, tells participants about nest boxes at Backyard Biodiversity Day. *Photo: Deborah Green.*

## NestWatch and Nest Boxes

NestWatch is a nationwide monitoring program run by Cornell Laboratory of Ornithology. In order to track status and trends in the reproductive biology of birds, this citizen science program accumulates data on when nesting occurs, number of eggs laid, how many eggs hatch, and how many hatchlings survive. The NestWatch database shows how breeding bird populations may be changing over time as a result of climate change, habitat degradation and loss, expansion of urban areas, and the introduction of non-native plants and animals. You can become a certified NestWatcher [through this link](#), find a bird nest using our helpful tips, visit the nest every 3-4 days and record what you see, and then report this information on Cornell's website.

Note that the NestWatch program has a web page on [Right Bird, Right House](#). Orange Audubon Society (OAS) past president Richard Poole has been making, installing, and monitoring nest boxes for over 30 years. Richard disagrees with information presented in Cornell's nest box making instructions. See his article under the link [Want to Build a Bird Box?](#) on the bottom left of the front page of the OAS website.

When OAS has nest boxes for sale at outreach events, people come by and then say, I'm going to make one of my own. We recommend buying the boxes Richard makes, with all the refinements based on his 30 years of experience, and that he donates for OAS to sell. Save yourself a lot of trouble and help OAS' fund-raising. To request that we bring a box for the November 15th meeting, email Deborah at [info@orangeaudubonfl.org](mailto:info@orangeaudubonfl.org).

*In case you missed it ...*

## Coexisting with Panthers by Jennifer Korn

Orange Audubon Society's (OAS) October speaker was Dr. Jennifer Korn, presenting on behalf of Defenders of Wildlife. Dr. Korn stated that the Florida panther is just a wildcat, but under the Endangered Species Act there are protections for isolated populations. Panthers were once found throughout the south, but since the 1970s there hadn't been a female north of the Caloosahatchee River. Then in November 2016 a female was recorded by her prints on Babcock Ranch, east of Fort Myers. Females have smaller prints than males. In March 2017 two kittens were recorded on camera. Researchers believe she lost her first litter and had a second litter. A second female was recorded north of the river, near Fisheating Creek on private land.

The average home range of a male panther is 200 square miles, the size of 4 Magic Kingdoms. A female's range is about 80 square miles. Males weigh about 135 pounds, while females are only about 85 pounds. Panthers breed year-round in thick palmetto areas, bearing 2-3 kittens. These stay with their mother for 9 months to 1 1/2 years.

Many people see a bobcat and think they've seen a panther, but a panther's tail is longer. Bobcats do get long and leggy, according to Korn, but they only weigh around 25 pounds. Someone always asks her about seeing a black panther. All of the Florida panthers are shades of tan, not black. The



Panther crossing under overpass Photo: USFWS

gene for melanism is tied with gene for spotting, so jaguars and leopards, that are spotted, have black phases. Bobcats are rarely black.

Deer and pigs are the prey of panthers, along with armadillos, rabbits and sometimes pets and domestic cattle. Of course landowners don't like losing livestock, but fortunately many are happy that panthers eat wild pigs. Their best recourse is predator proof pens.

There is not a single case of a Florida panther attacking a human in Florida. Out west people hiking in remote areas are occasionally attacked.

## The Palm Warbler: Easy to Find, Easy to Love

Palm Warblers have arrived in my neighborhood for the winter.

Birders love this common songbird because, unlike many other warblers, it is conspicuous. It can be easily found foraging on open ground and identified by the incessant bobbing of its tail and bright yellow under-tail coverts.

Slightly larger than your average warbler, it has a plump belly and upright posture typical of a pipit. The adult non-breeder (August-March) looks drab compared to other warblers. The dull brownish-olive uppers, drab streaked plumage, dull brown crown, pale yellow breast and belly, and pale eyebrow are not very exciting.

In contrast, the more attractive adult breeding species (April-August) has a jaunty rufous crown and lovely rufous breast streaks, making for a pleasing combination of rufous, bright yellow, and olive-brown. The yellow under-tail coverts are distinctive in all plumages and populations, however. The call is a husky *chik*.

During migration and winter Palm Warblers use weedy fields, forest edges, and other areas with scattered trees and shrubs to forage for insects and berries. They breed in the great boreal forest of Canada and the far-north U.S. where they use bogs with evergreen trees and thick ground cover. This enormous boreal forest—covering 1.5 billion acres—is the summer home to billions of migratory birds and an estimated 98 percent of all Palm Warblers.

In winter Palm Warblers migrate to the southeastern U.S., the Yucatan Peninsula, Caribbean Island, and eastern Nicaragua south to Panama. They are one of the earlier migrants to return to their breeding grounds in the spring, often completing migration two months before most other warblers.

Their winter range includes much of the Atlantic coast of North America, extending as far north as southern Nova Scotia. The Palm Warbler has been observed during Christmas Bird Counts in Massachusetts every year since 1900 and consistently since 1958 in Nova Scotia. And it has been recorded as a vagrant to Iceland. What a remarkable bird!

Linda Carpenter



Palm Warbler. February 2017, Lake Apopka Wildlife Drive. Photo: Lynn Marie Folts

The panther named M34 that biologist Joe Guthrie collared near Sebring traveled 800 miles while he still had his radio transmitter. Landscape level conservation is needed. With Florida Forever dollars still not flowing, the important tool is conservation easements for ranchers, since ranches do provide good habitat. Ranches where the Caloosahatchee River is narrowest (near I-80) are where panthers are most likely to cross.

Dr. Korn is working with FDOT on planned highway crossings, in particular trying to get crossings on I-4. Adding shelves or fencing to create a safe path for crossing might cost \$4 million, mostly for fill dirt, far less than any overpass. Deer will cross these pathways as well as bear and panthers. Dr. Korn wants to know of any credible panther sightings. Contact her at [jmk@johnsoneng.com](mailto:jmk@johnsoneng.com). Deborah Green

## Fall Mead Walks

Orange Audubon Society's Mead Botanical Garden bird walks allowed us to see about 20 warbler species, including Black-throated Green, Bay-breasted, Chestnut-sided, and Cape May. Other highlights were Baltimore Oriole, Yellow-billed Cuckoo, Carolina Chickadee, Acadian Flycatcher, and the ever-popular Barred Owl. John Thomson and Renee Thomas, as usual, did a great job as guest leaders. Thanks to Linda Gaunt and Linda Carpenter for helping with sign-in. Also thanks to Tom Rodriguez and Lori Mathis for lending their birding expertise to enhance the experience for us all.

Hope to see everyone again when we do the spring migration walks at Mead in April. Larry Martin

## Audubon Assembly Panel Recap: Florida's Coastal Water Crises: What's Aggravating Algae Blooms and Red Tides and How We Can Help

A special session at this year's Audubon Assembly, during one of the worst red tide and blue-green algal blooms in Florida's history, featured leading experts who spoke on Harmful Algal Blooms. Panelists reaffirmed that a combination of excess nutrient pollution and increasingly warmer temperatures are causing the problems, and they explored the roles of septic tanks, biosolids, reclaimed water, fertilizer, agricultural wastes, and the loss of filtering wetlands in Florida's nutrient pollution.

The panel's headline speaker was Dr. Edith Widder, a bioluminescence expert, deep ocean explorer, inventor, 2016 MacArthur Fellow, and founder of Ocean Research & Conservation Association. Dr. Widder distinguished three types of Harmful Algal Blooms. First is red tide, which is caused by a dinoflagellate (a type of alga), *Karenia brevis* that occurs in saltwater. *K. brevis* occurs in the Gulf of Mexico and blooms almost every year, generally in late summer or early fall, particularly between Clearwater and Sanibel Island.

Red tide causes acute respiratory distress because the *K. brevis* microorganism releases a neurotoxin called brevetoxin. Florida Fish and Wildlife Conservation Commission (FWC) scientists routinely take water samples from shellfish beds throughout the state and if *K. brevis* concentrations exceed a given threshold, FWC closes affected shellfish beds to prevent sickness by people eating them. Red tide is stimulated by nutrient pollution, primarily nitrogen.

In early October this year, dead fish began washing ashore along the Atlantic Coast in Palm Beach County. Amounts of *K. brevis* were high enough to cause fish kills and respiratory distress. Since red tide is rare on the Atlantic coast, the *K. brevis* is thought to have traveled with currents from the Gulf Coast.

Brown tide, also called Texas brown tide, was first documented blooming in state waters in 2012. It is caused by a type of marine algae called *Aureoumbra lagunensis*, which does not emit a toxin. Like red tide, outbreaks of brown tide have been linked to primarily nitrogen pollution. Occurring again in 2016 from Titusville to the Mosquito Lagoon near New Smyrna Beach, these algal blooms block sunlight needed by the seagrasses

that support much of the lagoon's marine life. Oysters and scallops dependent on seagrasses die.

Finally, in freshwater, there are blooms of a blue-green algae (cyanobacteria) called *Microcystis aeruginosa*. Blooms are also caused by nutrient pollution, but primarily phosphorus. *Microcystis* releases a liver toxin (hepatotoxin) called microcystin, which can cause acute poisoning and chronic liver damage. Lake Okeechobee is an ideal habitat for cyanobacteria because it is shallow, sunny, and laden with nutrients from Florida's agriculture.



Lake Okeechobee water going through the St. Lucie structure on its way to the estuary. Photo: Jacqui Thurlow-Lippisch.

National headlines from 2016 were about "disgusting, 'guacamole-thick' goop" invading Florida's coastline. Excess water from Lake Okeechobee, pumped west to Port Charlotte through the Caloosahatchee River and east to Port St. Lucie through the Port St. Lucie Canal, is obviously the cause. Although a reservoir to accept excess water from Lake Okeechobee has been approved, it will take 9 to 10 years to build, and only if that state and federal money continues to be appropriated.

Cyanobacteria die as they reach saltwater, but their impact is not over. The red tide microorganism *K. brevis* can actually feed on cyanobacteria directly, although it is not clear if it consumes *Microcystis*. According to Dr. Widder, as *Microcystis* cells die, they break down to release nitrogen and phosphorus, which stimulates growth of *K. brevis*. Cape Coral and Port St. Lucie, at the mouths of the estuaries, experience the compounded effects of *K. brevis* and *Microcystis*.

Focusing on the sources of the nutrient pollution in Florida's water bodies, Dr. Widder stated that the major sources are agriculture's fertilizer runoff and

human waste. She used Blue Cypress Lake in Indian River County to illustrate the problem of human waste.

As background, a wastewater (sewage) treatment plant receives what is flushed down our toilets. In the plant, much of the organic material is broken down through the work of beneficial bacteria. Through settling processes, the liquid, called effluent, is separated. After all the breakdown work by beneficial bacteria is completed, disinfection is applied to kill these beneficial and any harmful microorganisms. At this point the effluent looks like fresh water and is pumped to re-created wetlands like Orlando Wetlands Park or Viera Wetlands, spread on wetlands adjacent to the plant, or used for commercial or residential irrigation as reclaimed water. Most treatment plants are not required to remove phosphorus and nitrogen from reclaimed water. Recipients of the reclaimed water are generally pleased that, with its included nutrients, it greens up their lawns.

The sludge that remains after dewatering, called Class B biosolids, is a disposal nightmare for wastewater utilities. Special presses are used to dry it so it is compact enough to be transported, often to farms or ranches. The farmers receive this free fertilizer and actually make money by allowing the biosolids to be dumped on their land. Some wastewater utilities put the biosolids through further treatment so the waste can be incorporated into fertilizer that is safe enough to be sold to homeowners, a process pioneered by the City of Milwaukee with Milorganite. Other plants take it to a landfill or incinerate it. A very few make energy out of it. All of these options are much more expensive than land disposal.

In efforts to protect the Northern Everglades watershed and coasts, in 2007 state legislation was passed requiring any land application of biosolids in the Kissimmee, St. Lucie, and Caloosahatchee River watersheds to demonstrate no-net loading for phosphorus.

Now going back to Blue Cypress Lake, which is part of the northward-flowing St. Johns River basin—not in the Kissimmee River watershed and not part of the 2007 restriction. The disposal of Class B biosolids

## Audubon Assembly Panel Recap: Florida's Coastal Water Crises: What's Aggravating Algae Blooms and Red Tides and How We Can Help, continued



Osprey family on Blue Cypress Lake. Photo: Paul Eisenbrown

increased in this lake's watershed after the 2007 ban took effect in other areas in 2012.

Located in Indian River County near Fellsmere, Blue Cypress Lake is the headwaters of the St. Johns River and was one of the most pristine of Florida lakes. It hosts more than 300 osprey nests.

The St. Johns Water Management District tests water in the Blue Cypress Lake and in June 2018 phosphorus reached its highest concentration in 39 years. Widder and staff found extremely toxic levels of microcystin measuring at 4700 parts per billion. The World Health Organization sets the limit for microcystin in water used for recreation at 10 ppb. This was a clear-cut case of the hazards of land application of biosolids when it reaches a certain amount, and the Department of Environmental Protection in 2018 shut down land application near Blue Cypress Lake through the current rainy season.

Dr. Widder reminded us that there are also "contaminants of emerging concern" in biosolids that are not removed by the treatment processes. Hormones given to stock animals, pharmaceuticals, and flame retardants are several she mentioned. The problem lies in our growing population: In 1980 there were 10 million, but there are now 21 million Floridians.

On a hopeful note, she cited that in the Chesapeake Bay area, utilities can only land apply a set amount of biosolids. The result: phosphorus has been reduced, and sea grasses have come back.

Dr. Widder also pointed out that septic tanks have been correctly identified as culprits in water pollution in some areas. However, in Tampa only 4% of the nutrients are from septic and in the Indian River Lagoon only 9.6%.

Dr. Paul Gray, Audubon Florida's

Everglades Science Coordinator, next informed us that nutrient pollution carried from Central Florida to Lake Okeechobee by large amounts of rain water after Hurricane Irma caused problems in 2018 by washing extra nutrients into the 450,000-acre lake from developments and farm fields. This is non-point pollution, in which rather than coming out of a pipe, it flows off properties in streams and waterways. For decades, farmers drained water off the fields and into the lake, making it unnaturally enriched with phosphorus and nitrogen. "Legacy nutrients" from 100+ years of fertilizing and solid waste dumping remain. In recent years, tougher regulations have curbed some of the practices, but agricultural runoff is still a major issue. He said there has been too little emphasis on best management practices in agriculture.

The biggest months for algal blooms are July and August. This July at one point up to 90% of Lake Okeechobee's open water area was covered in algae. Dr. Gray said filter marshes, like the Stormwater Treatment Areas (artificial filter wetlands) south of Lake Okeechobee established by the South Florida Water Management District, are very good at cleaning water going south to the Everglades and the same type of treatment should be used elsewhere.

Elizabeth Perez, President of Collective Water Resources, LLC, spoke about how stormwater utilities are the stepchildren of municipal utilities and yet so important in Florida where we have so much flooding from excess rainfall. Beneficial programs are Low Impact Development and leaving green infrastructure (intact vegetated areas).

Jason Lauritsen, Director of Audubon Florida's Corkscrew Swamp Sanctuary, spoke about how the hydrology of Corkscrew was affected by developments in the region. Short-hydroperiod wetlands—inundated less than 6 months of the year—have declined by 70%. Short-hydroperiod wetlands, essential habitat for Wood Storks foraging early in the nesting season, are relatively easy and inexpensive to drain or fill, so they have historically been lost in much greater proportion than other wetlands. Shallow wetlands are also vulnerable to degradation caused by non-native

invasive plants that tend to flourish at the margins of the disturbed landscape due to rapidly fluctuating water levels.

Chris Farrell, Audubon Florida's Northeast Florida Policy Associate, who had worked on the Central Florida Water Initiative—the water management district/utility effort to plan regionally for water supply—said that overuse of reclaimed water introduces nutrients into the system.

Julie Hill-Gabriel, Esq., Vice President of Water Conservation, National Audubon Society, then asked each panelist to name their top solutions to these water quality problems.

Paul Gray said it took 40 years to ban the killing of wading birds for their plumes for ladies' hats, so we can't expect solutions overnight, but enforcement of water quality laws would really help. Dr. Widder said that waste-to-energy plants utilizing dried biosolids could help and that she was watching a plant in Dakar, Senegal. For safety and effectiveness, there needs to be control the phosphorus ash and liquid ammonia at the end of the process.

Chris Farrell said that treatment wetlands like Orlando Wetlands Park, Wakodahatchee Wetlands near West Palm and the new Sweetwater Wetlands in Gainesville are great solutions since they mimic natural wetlands and allow birdlife to thrive while providing people with a place to visit. Jason Lauritsen said we need enforcement of laws so there is no additional loss of natural wetlands. Elizabeth Perez said stormwater utilities need to be supported by their municipalities. Fertilizer ordinances, including those with a "black-out period" during the summer rainy season when no fertilizers are allowed to be applied, are important. Pinellas County and now Seminole County have good models with a black-out period. Dr. Widder added that grass clipping ordinances would help because the grass clippings going down storm drains add to nitrogen loading.

The panel helped us clear up a lot of confusion about what is going on and pointed to effective methods to reduce the problem. Here's hoping we have the political will to do as they suggest.

*Deborah Green*

**Birding, Wolf Encounters and Quest for Bison and Wild Horses: The Florida Panhandle Beckons**

Orange Audubon Society's (OAS) annual overnight Panhandle trip on December 6-9, 2018 is a definite GO. In Hurricane Michael's wake Seacrest Wolf Preserve and the St. Marks National Wildlife Refuge closed briefly, but they have since reopened. Join us December 6th for the once-in-a-lifetime opportunity to interact with magnificent North American wolves at Seacrest, a nonprofit organization dedicated to conservation of wolves through education. Enjoy guided birding December 7th with Jim Cox in the Red Hills Region of Florida and Georgia, where fire ecology is a key to healthy longleaf pine and wiregrass communities supporting 64 threatened and endangered plant and animal species; December 8th with Jeff O'Connell at St. Marks, home to 250 bird species and a prime wintering ground for migrants; and Deborah Green at Paynes Prairie Preserve State Park, home to 300 bird species and small, illusive herds of wild horses and bison.

Seacrest-only participants meet Thursday for lunch and a private afternoon tour. We suggest that weekenders meet Wednesday at Tall Timbers Research Station in Tallahassee. The weekend field trip fee is \$100 for OAS members/\$115 for nonmembers and includes local guides, 4 lunches, a grill night dinner, and admission to Seacrest. Birding-only is \$65/\$80 with 3 lunches and a grill dinner and Seacrest-only, including lunch, is \$45/\$55.

Lodging is first come, first served at Tall Timbers' Walter Lodge with 8 private bedrooms (double occupancy; twin beds), 5 shared bathrooms, and a large open living, dining and kitchen area), priority given to weekend participants. If we fill the lodge each night, the discounted rate is \$37.50/night plus tax per room. Rustic camping on the grounds at the lodge is available free. Reserve promptly to enjoy 3-4 nights under ancient longleaf pines or book a hotel of your choice. The I-10 at Thomasville Road area is recommended for weekenders. Seacrest-only participants may prefer lodging in Chipley or Bonifay. For registration, lodging and other details contact me at [mwilliams@cfl.rr.com](mailto:mwilliams@cfl.rr.com) or (407) 644-0796.

*Teresa Williams, Treasurer/Trip Organizer*



Susan Kirby petting one of Seacrest's wolves with Brook Rohman waiting her turn. Photo: Teresa Williams

**NOVEMBER/DECEMBER/JANUARY CALENDAR OF EVENTS**

**Fiesta in the Park, Lake Eola**

November 3-4, 2018  
Contact Teresa at (407) 644-0796

**November Wekiwa Springs State Park Bird Survey**

November 10, 2018  
Contact Kathy at (407) 488-9559

**Limited Edition Field Trip to Lake Apopka North Shore, Clay Island**

November 10, 2018  
Contact Bob at (407) 459-5617

**Youth Field Trip to Mead Botanical Garden**

November 10, 2018  
Contact Melissa at (239) 404-9248

**Green Place Nature & Photography Hike to Lake Lucie Conservation Area, Apopka**

November 10, 2018  
Contact Beth at (407) 836-1481

**November Program: Nature Photography Tips - Wayne Bennett**

November 15, 2018  
Contact Rick at (407) 277-3357

**November Field Trip: Lighthouse Point Park**

November 17, 2018  
Contact Larry at (407) 647-5834

**Birds of Prey Identification Field Trip, Lake Apopka**

December 2, 2018  
Contact Bob at (407) 459-5617

**December Wekiwa Springs State Park Bird Survey**

December 8, 2018  
Contact Kathy at (407) 488-9559

**N. Florida Birding, Quest for Bison and Wild Horses & N. American Wolf Encounter**

December 6-9, 2018  
Contact Teresa at (407) 644-0796

**Christmas Bird Counts:** Contact the compiler to participate.

- **Bay Lake:** December 15, 2018  
Contact John Thomson at [jthomton@hotmail.com](mailto:jthomton@hotmail.com)
- **Wekiva River:** December 15, 2018  
Contact Jay Exum at [jay.h.exum@gmail.com](mailto:jay.h.exum@gmail.com)
- **Kissimmee Valley:** December 16, 2018  
Contact Chris Newton at [dexterdevon68@gmail.com](mailto:dexterdevon68@gmail.com)
- **Econlockhatchee:** December 29, 2018  
Contact Lorne Malo at [lornemalo@bellsouth.net](mailto:lornemalo@bellsouth.net)
- **Clermont:** January 5, 2019  
Contact John Thomson at [jthomton@hotmail.com](mailto:jthomton@hotmail.com)

**Limited Edition Field Trip to Lake Jesup Conservation Area, Marl Bed Flats, Sanford**

December 16, 2018  
Contact Bob at (407) 459-5617

**December Program: The Galapagos - Robert & Flo Sena and Ecotourism & Climate Change - Mike Gunter**

December 21, 2018  
Contact Rick at (407) 277-3357

**North Shore Birding Festival**

January 17-21, 2019  
Contact Deborah at (407) 637-2525