FLORIDA BEACON

From the President's Desk Ryan Goldman



Florida Association of Environmental Professionals

Spring 2020



Hello Fellow FAEP Members,

I would like to take this opportunity to thank the previous FAEP board for their contributions and efforts over the past term. The FAEP and its individual chapters continue to hold successful and creative events focused on professional development and networking that are at this organization's core. Thank you in particular to the efforts of the previous lineage of presidents, including Tim Perry and Amy Guilfoyle. Your knowledge and guidance of the statewide organization has been invaluable and appreciated as you propelled this group forward, and I thank you for your efforts mentoring me into this position. It is my goal to continue your work to encourage, support, and promote environmental professionals through educational and networking opportunities. It is important at this time to also thank the administration of this organization, Bruce and Teri Hasbrouck, for their combined historical and logistical knowledge that has supported this organization and our mission for so many years.

As we plan to move forward, I would be remiss if I did not mention how we propose to adapt in the new environment of COVID-19 and other similar disruptions. The FAEP prioritizes the membership experience and will focus on promoting events, including webinars, professional learning and certifications, networking, and the distribution of information, in safe and virtual formats. Providing member benefits is paramount to retaining our base and expanding our collective member community. As we move away from face-to-face networking during this time, I am confident that as a group we will be able to provide valuable experiences and communication platforms that will be beneficial while allowing us to remain on the forefront in the field of environmental science.

Please stay safe during these uncertain times and continue to follow our numerous forms of communication, including email, social media, and online newsletters, to find out about events and environmental news affecting our state.

Sincerely, Ryan Goldman FAEP President

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Check the last page of our newsletter to determine if you qualify for a discount on your FAEP membership!

Next FAEP Board Meeting!!

The next FAEP Board of Directors Meeting is May 25, 2020 at 12:00

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Big Changes to the Migratory Bird Treaty Act are Ruffling Feathers

The federal government is finalizing a major re-interpretation of the Migratory Bird Treaty Act (MBTA). The MBTA has been around for over 100 years and has allowed the U.S. Fish and Wildlife Service to pursue criminal charges for causing harm or death, or "take", to over 1000 species of birds – virtually every native bird found in the United States: ducks, egrets, sandpipers, sparrows, warblers, hawks, etc. This applied to intentional bird take without a permit/license (e.g., illegal poaching) as well as unintentional bird take (e.g., incidental deaths from routine and legal commercial/industrial activities and non-routine accidents like chemical spills). The re-interpretation would continue to keep the protection against intentional take, but eliminate the protection against unintentional take. The re-interpretation is based on a December 2017 legal opinion in Memorandum M-37050 by the Department of the Interior. Proponents of the re-interpretation generally argue that the threat of prosecution for unintentional take has an overly detrimental effect on industry and commerce. For example, some petroleum and energy companies are concerned about being criminally prosecuted for routine use of oil waste pits and bird strikes at windmills. Opponents generally argue that criminal prosecution is typically only pursued in cases of gross negligence (e.g., Deepwater Horizon and Exxon Valdez oil spills) and that the historical MBTA interpretation is the incentive that makes corporations come to the table and take reasonable and prudent steps to minimize incidental take.

The federal government solicited feedback from the public during a comment period which ended on March 19, 2020. Approximately 7,500 comments were submitted. The next step for the government is to prepare an Environmental Impact Statement. Although the rule isn't officially codified yet, the legal opinion has existed for over two years and there are widespread reports that projects and activities are already proceeding as if the rule is in full effect. In the coming months, expect legal challenges to the rule. And there has been some bipartisan support in Congress to introduce legislation to restore some of the protections against unintentional take, so watch for new laws. To see the proposed rule, public and the NEPA comments, documentation, go https://www.regulations.gov/ and search for "FWS-HQ-MB-2018-0090". The proposed rule doesn't change the protections for birds specifically listed as threatened or endangered – those are still protected under the Endangered Species Act, the Bald and Golden Eagle Protection Act, and state laws. If you have questions about the MBTA or environmental compliance with wildlife, you don't need to "wing it" - contact John Abbott at john.abbott@wginc.com.



Submitted by the South Florida Chapter of FAEP Photograph courtesy of Barry Heimlich

Florida Beacon

Florida Manta Rays

I moved to Florida after finishing my undergraduate degree to work on sea turtle nesting beaches. For five years, I surveyed the beaches of south Florida while working for Ecological Associates Inc. and the Loggerhead Marine Life Center. In 2010, while working on the beach, I began to notice large black rays swimming by in very shallow water. I had no idea manta rays populated Florida waters, and a preliminary google search yielded few results. I convinced a

friend to take me out on a boat to look for mantas and I had my first in-water experience with a manta ray. I was swimming in the water and the manta ray swam under me, turned up-side down and investigated me for an entire minute. I was BLOWN away. I had no idea how curious manta rays were and my interest was piqued.

After going to grad school and taking an international job on a sailboat, in 2016 I moved back to Florida and decided to see if it would be feasible to study the manta rays of Florida. My first question was "Can manta rays be reliably located with boat-based surveys?" On my days off from my full-time



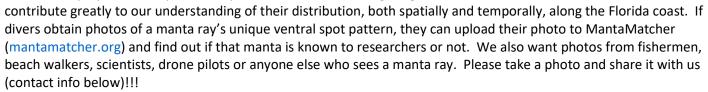
job, my boyfriend and I went out to see if we could find manta rays and found out we could! In 2017, I partnered with the Marine Megafauna Foundation and the Florida Manta Project was born.

We are embarking on our fifth year of manta ray surveys, and while we have learned a lot, we still have many questions. Our two principal findings are (1) that south Florida is a nursery ground for young manta rays, and (2) we have documented a high frequency of negative anthropogenic interactions of manta rays with boaters and fishermen. Manta rays are endangered worldwide and in 2018 they were listed on the U.S. Endangered Species Act. However, we still don't understand enough about movements and ecology of Florida manta rays to designate critical habitat.

Our current and future projects focus on understanding manta ray movements, site fidelity and habitat use, as well as mitigating negative anthropogenic interactions. We are using satellite and acoustic telemetry,

along with aerial, drone and boat-based surveys to understand the spatio-temporal distribution of manta rays along the Florida coast. Recently, we completed surveys of recreational fishermen to understand their knowledge of, experience with, and attitudes towards manta rays. These results will be used to design a campaign to reduce manta ray fishing line entanglement. We find that awareness of manta rays among the Florida public is quite low. We are doing outreach and presentations to inform the public on manta ray biology and conservation, as well as designing an education curriculum that will be made freely available to any interested educators.

We are also recruiting citizens to engage in science and report their manta ray sightings. We are the first project to study manta rays in south Florida, and sightings from citizens can



Please check out our social media channels on Facebook (Marine Megafauna Foundation: Americas) and Instagram (Jessica Pate is @floridamantagirl). Manta sightings can be reported on MantaMatcher, social media or email (jessica.pate@marinemegafauna.org). We would like to thank all the wonderful volunteers and funding agencies (Kansas City Zoo, Disney Conservation Fund and Brevard Zoo) for making this work possible.

Written by Jessica Pate and submitted by the Treasure Coast Chapter of FAEP Photographs courtesy of Bethany Augliere.

Florida Beacon



Environmental Science and Engineering

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Kristin Jacobs

State representative Kristin Jacobs passed away on April 11, 2020. FAEP offers condolences to those who loved her, including her family, friends, and those with whom she worked. Florida will benefit from her legacy for many, many years.

"Never without a smile on her face, even as she battled cancer, we all know her to have been a tireless advocate for

Florida's environment, wildlife and families." -House Speaker Jose Oliva

"She was a groundbreaking environmental leader whose sheer will and warm, engaging personality turned adversaries into friends. She was smart and tough and stood up for her beliefs, always backing them with facts and data." -Representative Debbie Wasserman Schultz

Kristin Jacobs has clearly made Florida a better and safer place to live and play. Kristin truly left her legislative impact on Florida." -Representative Barbara Watson

"She left a positive mark on our state through her tireless environmental advocacy. Any time I visit one of Florida's springs or other natural places, I will think of her." -Representative Kionne McGhee



Central Florida Drought May Last Months, Forecasters Say

Central Florida faces intensifying drought even with decent rain chances for the next few days. For lawns and landscaping, March and April typically account for the region's cruel season with rising temperatures and sunlight and little rainfall. But March was a toaster, the hottest on record for the Orlando area and one the driest, resulting from a climate shift that landed much of Florida on the drought map by the end of the month.

In its regular Thursday morning update, the U.S. Drought Monitor expanded Florida's drought coverage from 67 percent to 83 percent of the state. The monitor provides a weekly map and analysis from university, state, federal and non-profit group experts.

"Over the past 90 days, Central Florida has seen rainfall deficits ranging from 4 inches to 6 inches," said David Simeral, a U.S. Drought Monitor analyst and climate scientist with the Desert Research Institute in Nevada. "The on-going dryness has led to stream flows around the state dipping well below normal levels. We're also hearing reports of negative impacts to pasturelands around the state due to lack of rainfall and anomalously warm temperatures."

While this is the dry season for much of the state, only 6 percent of Florida was in drought status this time last year. Most of the state is at level of moderate drought, while a section of Panhandle is in severe drought, and a coastal area along Miami and Fort Lauderdale is not in drought status but is deemed to be abnormally dry.

The St. Johns River Water Management District, regulating rivers, lakes and wells from Orlando to Jacksonville, has issued a warning that rainfall is 6 inches below normal for the past three months and nearly a foot below normal for the past year. Central Florida's annual rainfall on average is about 50 inches.

Continued on next page......

Florida Beacon

Drought continued...

As a result, levels in the critical Floridan Aquifer, which supplies nearly all of Central Florida's drinking water, have dropped 15 inches during the past month, according to the water-management district. The state climatologist, David Zierdan, said drier conditions are increasing the threat of wildfires but wildfire counts have remained fairly low.

Zierdan said that might be attributed to the COVID-19 stay-home orders, resulting in fewer people visiting forests and other places prone to fires. "Around 80 percent of Florida wildfires are from human-caused ignition," he said. The popular notion that high temperatures and humidity will slow the spread of the coronavirus was dampened Wednesday by a report from the National Academies of Sciences.

"Given the lack of immunity to the SARS-CoV-2 across the world, if there is an effect of temperature and humidity on transmission, it may not be as apparent as with other respiratory viruses for which there is at least some preexisting partial immunity," states the report, referring to the virus that causes COVID-19. Even if there is an effect, Florida's climate may not cooperate anytime soon with the rise of its signature, summertime sogginess.

The U.S. Center for Climate Prediction expects Florida's drought to persist into June. Also facing months of drought are south Texas, the Four Corners area of the Southwest and California. Normal rainfall for Orlando is about 2.5 inches in April and 3.5 inches in May.

On average, the region's rainy season launches on May 27, according to National Weather Service calculations, and June's normal rainfall jumps to nearly 7 inches.

From the Orlando Sentinel

UMBC's Rickesh Patel Determines How Mantis Shrimp Find their Way Home

Mantis shrimps have earned fame for their powerful punching limbs, incredibly unusual eyes, and vivid exoskeletons. And, it turns out, they're also really good at finding their way home. Through a series of painstaking experiments with these often-uncooperative creatures, Rickesh Patel has produced new findings on mantis shrimp navigation, published today in Current Biology.

Patel, a Ph.D. candidate in biological sciences at UMBC, found that the species of mantis shrimp he investigated relies on the sun, patterns in polarized light, and internal cues—in that order—to navigate directly back to their non-

descript burrows. These straight-line returns often follow forays that meander and zig zag as the shrimp looks for a meal or a mate. The ability to get home quickly comes in handy when seeking shelter in the presence of a predator, or a perceived one, as Patel noted on his first research fieldwork expedition.

After his first year at UMBC, Patel traveled with Tom Cronin's lab to Lizard Island in the Great Barrier Reef to collect mantis shrimps for study. "As soon as they notice you, they'll turn around and zip straight to some sort of shelter," Patel says. Like a true scientist, "That got me wondering how they go about finding their way home."

Read more at University of Maryland Baltimore County

Image: Neogonodactylus oerstedii is a shallow-water species of mantis

shrimp. It was the species used in the very first study of mantis shrimp navigation by Rickesh Patel at University of Maryland, Baltimore County. In a creative set of experiments, Patel found that the shrimp use the sun, polarized light patterns, and internal cues (in that order) to determine their distance and direction from their home burrows after trips out to seek food or mates. (Credit: Rickesh Patel)

From Environmental News Network



Florida Beacon

Colossal Oysters Have Disappeared from Florida's Most 'Pristine' Coastlines

Hundreds of years ago, colossal oysters were commonplace across much of Florida's northern Gulf Coast. Today, those oysters have disappeared, leaving behind a new generation roughly a third smaller – a massive decline that continues to have both economic and environmental impacts on a region considered by many to be the last remaining unspoiled coastlines in the Gulf.

The loss of these colossal oysters is at the center of new research from an interdisciplinary team of scientists at the University of South Florida. Led by Integrative Biology PhD student Stephen Hesterberg, School of Geosciences faculty member Gregory Herbert, PhD, and Anthropology faculty member Thomas Pluckhahn, PhD, researchers utilized prehistoric oyster shells, excavated from archaeological sites near Crystal River, Florida to measure how much oyster size has changed in the area and learn more about the factors that have led to it. The intent is to better understand the habitats of the distant past to help inform the conservation efforts of today.

"Most policy makers and conservationists working in this area are only considering the last 50 years – when we first began actively monitoring these habitats," said Herbert. "Using archaeological data, our work shows that what these systems looked like 100 or 1,000 years ago matters for conservation efforts

now."

The region researchers explored is of significant importance, particularly within the oyster industry. Crystal River is within Florida's 'Big Bend' region and is considered one of the last remaining pristine coastal zones with natural oyster fisheries in the United States. However, because this work illustrates huge changes there that were previously unrecognized, researchers now believe the region may not be as pristine as once thought.

Read more at University of South Florida (USF Innovation).

Image: Prehistoric oysters from Crystal River are 55% larger than modern oysters.

(Credit: University of South Florida)



From Environmental News Network

Science Shorts ~ NPR Short Wave ~ the Science Behind the Headlines			
The 7-day COVID-19 Crash	Some patients with COVID – 19 are experiencing a crash after about a week of showing symptoms of the disease. The Cause?		
Science is not for everyone. Until its not.	Brandon Taylor's story has a happy ending. Today he's a successful writer whose debut novel "Real Life" received glowing reviews earlier this year. But his success only underscores what science lost when Brandon walked away from a graduate biochemistry program in 2016. He tells host Maddie Sofia why he left and what he misses.		
The peculiar physics of Wiffle Balls	Wiffle Balls are a lightweight alternative to baseballs, better suited for backyards then sports stadiums. The design of the Wiffle Ball guarantees you don't need a strong arm to throw a curve ball. But how does that happen? Engineering professor Jenn Stroud Rossman explains.		
Honey Bees Need Your Help, Honey A deadly triangle of factors is killing off U.S. honeybees. Last Year, fort percent of honeybee colonies died in the U.S. continuing an alarming tentomologist Sammy Ramsey tells host Maddie Sofia about the "three and what listeners can do to help- our fuzzy-flighted friends."			

Florida Beacon

One Benefit from Coronavirus Closing Beaches? There's Hope for a Strong Turtle Nesting Season

Around the world, people have seen a few unexpected benefits from staying home to contain the new coronavirus. Blue skies made a rare appearance in Chinese cities, a change of pace from the smog. Clear water began flowing through canals in Venice, Italy. And now in South Florida, the shutdown of beaches could give sea turtles some of the best nesting conditions in the coming weeks as the season picks up, turtle experts say. The coronavirus-related closure of beaches has led to few, if any, people on the sands, so turtles won't be disrupted by them as they come ashore to place their eggs.

"What we find is fewer humans leads to turtles successfully nesting, as opposed to [the turtles] turning around and going to the water," said Justin Perrault, the director of research at the Loggerhead Marinelife Center, a Juno Beach-based nonprofit that tracks sea turtle nests along Florida's eastern coast. "The fewer the interruptions, the better the turtles are going to be this summer," said Jeanette Wyneken, a professor of biological sciences at Florida Atlantic University and director of FAU's marine lab at the Gumbo Limbo Environmental Complex in Boca Raton.

It's too early in the season to find a direct impact of coronavirus and closed beaches on sea turtles, Perrault said. The turtles' nesting season kicked off March 1, but is expected to pick up in late April or early May.

Perrault said a study he is working on, coupled with prior research, suggests that turtles favor nesting on beach locations with fewer people. Nesting on the weekends typically has been the most unfavorable for turtles, because that's when beaches were packed with beachgoers.

Sea turtles use up a lot of energy making it onto shore, especially when they are pregnant. And when they're frightened by people, lights, sounds or smells, they'll turn around and head back to the water. This is what researchers refer to as a "false crawl," and that results in fewer nests.

"We're finding significantly higher false crawl rates on weekend days as compared to weekdays," Perrault said. "So potentially, the reason is increased human presence on the beach does lead to more false crawls."

Some species of turtles set records for the number of nests they lay every other year. Researchers do not fully understand the phenomenon, but data from wildlife agencies such as the Florida Fish and Wildlife Conservation Commission shows that these turtles will have a record high year, then a low year, then the next year, they will beat

the previous record. According to Nova Southeastern University's College of Natural Sciences and Oceanography, loggerheads and green turtle eggs hatch in about 45 to 55 days. Leatherback eggs can take a bit longer, at around 70 to 80 days, if not longer.

According to the U.S. Fish and Wildlife Service, all species of sea turtles found in the U.S. are endangered or threatened. They enjoy certain legal protections in this country, but threats to their habitats remain, as do illegal trades in the U.S. and around the world. There are only seven species of sea turtles in the world and most of those species can be seen in South Florida.



Loggerheads nest most frequently on local beaches, followed by green, leatherback and occasionally, hawksbill and Kemp's ridley. According to data from the Florida Fish and Wildlife Conservation Commission, a sample of Florida's coastal cities last year showed that green turtles made nests at a record high, while loggerheads and leatherbacks were relatively low by historical standards.

South Florida Sun Sentinel

Florida Beacon

Federalism and CERCLA at the U.S. Supreme Court: Who Decides How Much Cleanup Is Enough?

~ Travis Moore Hearne, Mechanik Nuccio Hearne & Wester ~

This term, the U.S. Supreme Court heard oral arguments in the case of *Atlantic Richfield Co. v. Christian*, an appeal from the Montana Supreme Court decision which allowed owners of property within the Anaconda Smelter Superfund site to utilize state tort law to compel additional cleanup of properties within the Superfund area in excess of EPA-approved remedies. The case revolves around the question of whether EPA-directed remedies under CERCLA constitute a "ceiling" or a "floor" on remediation of Superfund sites. In other words, may property owners use state tort law to compel additional cleanup? Or is EPA the sole central source of remediation requirements on Superfund sites?

I. History of The Anaconda Smelter Superfund Site

The Anaconda Smelter Superfund site is enormous, encompassing a 300-square mile area with over 9,000 residents. The site was the former global hub of the Anaconda Copper mining Company's smelting operations from 1884 until 1980. In 1977, Anaconda- which at one point was the nation's fourth -largest company and employed 75% of Montana's workforce- was acquired by Atlantic Richfield, which closed the smelter in 1980, a short three years before the enactment of CERCLA in 1983. Shortly thereafter, EPA designated the site a Superfund site.

Historical smelting operations had left a staggering amount of contamination behind: 230 million cubic yards of tailings, 30 million cubic yards of furnace slag, and 500,000 cubic yards of flue dust, with arsenic and lead contamination spread over a 20,000-acre area. For decades, the smelting operation emitted up to 62 tons of arsenic and ten tons of lead each day. Since 1983, cleanup proceeded pursuant to EPA's Records of Decision ("RODs"), which are incorporated into formal administrative orders that govern the cleanup that Atlantic Richfield must undertake. These RODs and administrative orders are finalized only after EPA has facilitated public engagement and comment on the measures they contain. This process resulted in EPA requiring Atlantic Richfield to excavate and replace up to 18-inches of residential soils containing arsenic in excess of 250 ppm and to implement source-control measures and well monitoring and replacement to limit exposure to contaminated groundwater. To date, Atlantic Richfield has spent over \$450 million to remediate over 340 residential properties.

II. The Lawsuit

In 2008, a group of landowners of residential properties within the Superfund site sued Atlantic Richfield on a variety of common law claims including trespass, nuisance, and strict liability. The landowners sought five types of damages related to loss of property value and loss of enjoyment of property and income. One of these claims was for "restoration damages," which, under Montana law, are money damages that must be spent on remedial activities to restore property to the condition it was in before the tortious trespass occurred. Under Montana law restoration damages, the Plaintiffs sought to apply an arsenic soil action level of 8 ppm, to require two feet of soul removal on their properties, to install permeable walls to remove arsenic from groundwater, and to dispose of excavated soils at locations farther away than those mandated by EPA. All of these remedies would require Atlantic Richfield to conduct additional remediation in excess of what EPA had mandated. Atlantic Richfield conceded that all of the other types of damages were permissible but challenged the award of restoration damages on the theory that such a state law requirement to conduct remediation over and above the remediation required by EPA was prohibited by CERCLA.

Atlantic Richfield advanced three theories supporting this argument. First, it argued that the Plaintiffs' suit for restoration damages constituted a "challenge" to EPA's selected remedy and that CERCLA's timing of review provision divests courts of subject matter jurisdiction to hear such challenges. Second, it argued that the Plaintiffs are Potentially Responsible Parties ("PRPs"), that CERCLA prohibits PRPs from conducting remedial activities without EPA's approval, and that, therefore, Plaintiffs' desired remediation would violate CERCLA. Third, it argued that the Plaintiffs' desired remedy, if granted, would impose inconsistent remediation obligations under federal and state law, which is prohibited under the doctrine of conflict preemption. Read more about this important case here.

Florida Beacon

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Did you know that FAEP provides a discount on our membership to employers who have 5 or more members? If your company or organization qualifies for the Group Membership you save \$5 on each FAEP new member or renewing member, lowering the FAEP membership fee from \$40 to \$35 for everyone from your company or organization. If your company or organization is on this list, you are eligible to join or renew at the discounted Group rate. Some of our member organizations renew all of their employee-members at the same time with a single payment. The FAEP Board would like to extend a thank you to the following employers for supporting their employee's professional development and the FAEP mission:

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Florida Beacon

Published Quarterly by the
Florida Association of Environmental Professionals
Teri Hasbrouck, Editor
PO Box 7416
St. Petersburg, FL 33734
Email: info@faep-fl.org

If you would like to submit an article to the Beacon contact the editor at info@faep-fl.org.

Florida Beacon