

150 Sawgrass Road
Bunnell, FL 32110
386-437-7464

VOLUME 13, ISSUE 3

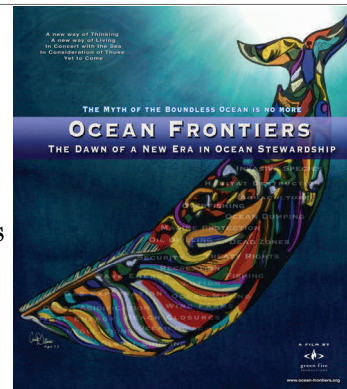
August, 2013

Mark your calendars...

- August 10, Back2School Beach Festival and screening of *Ocean Frontiers* film. See panel on right and <http://keepersoftwarecoast.org/3rd-annual-back2school-beach-fest/> for more information.
- More on back page!

Ocean Frontiers

Coastal and Marine Spatial Planning. The term is not very “user-friendly,” but the concept is simple. There are many different people and groups that utilize coastal and marine resources for many purposes. Sometimes those uses conflict. Coastal and Marine Spatial Planning takes all potential users into account when making decisions about permitting, zoning, extractive use etc. This ensures that habitats and species are protected as much as possible, while allowing industry to travel through, extract and use resources needed for economic viability. This concept is demonstrated in four case studies profiled in the film, *Ocean Frontiers*, which will be shown at 8:30 pm at the St Augustine Amphitheatre on August 10 as part of Keepers of the Coast’s “Back2School Beach Fest.” Frank Gromling (Ocean Publishing) and I will lead a discussion following the 60-minute film. We hope to see many of you there! For more information about the film, see www.ocean-frontiers.net.



Inside this issue:

Kemps ridleys	2
Sharks	2-3

M. P. McGuire

Maia McGuire, PhD
Marine Extension Agent

Whale-related news

People often want to know how they can be involved in helping protect marine and coastal resources. There is currently a public comment period about whether or not to make a rule permanent that requires ships to slow down in areas of high whale densities. The rule is due to expire in December. Public comment is accepted until August 6. You can view the rule and submit your comments at <http://www.regulations.gov/#!submitComment;D=NOAA-NMFS-2012-0058-0001>

We’ve just finished a cetacean (whale and dolphin) curriculum, which contains 9 lessons focusing on North Atlantic right whales. The curriculum was designed for 4th grade, but information is appropriate for many grade levels (and adults!). The lessons can be viewed and downloaded at <http://stjohns.ifas.ufl.edu/sea/rightwhalecurriculum.html>.

Kemps ridley sea turtles

Of the five species of sea turtles that can be found in Florida waters, the rarest and least-known is the Kemp's ridley sea turtle. Kemp's ridleys are relatively small, reaching lengths of only two feet and weighing up to 100 pounds. They eat swimming crabs, fish, jellyfish and various mollusks (e.g. snails and clams). They are the most endangered of the sea turtles because of overharvesting of nesting females and eggs. Kemp's ridley sea turtles nest in what is called an "arribada"—female turtles all nest along a very short stretch of beach near Rancho Nuevo, Mexico, over a short period of time. This has made them extremely vulnerable to human harvest. In 1986, Mexico and the United States developed a plan to protect the Kemp's ridley sea turtles in Mexico.

A few Kemp's ridley sea turtles nest along the Texas coast, and occasional nests are found in the Florida panhandle. This year for the first time in at least 25 years, a Kemp's ridley turtle has nested at Sebastian Inlet State Park on the east coast of Florida. Kemp's ridley sea turtles are occasionally found washed ashore on local beaches. In July, a juvenile Kemp's ridley nicknamed "Crimson" was released back into the ocean at Washington Oaks Gardens state park, following 4 months of rehabilitation. Crimson had been found at the Matanzas Inlet and was suffering from pneumonia. The staff at the Marine Science Center in Volusia County, which has a turtle rehabilitation facility, nursed him back to health.



Photo credit: Ken Wooten/Marine Photobank

Ken Wooten Photography

Sharks

Sharks have been in the news quite a bit this year—starting with reports of the tagged white shark named Mary Lee off Jacksonville Beach, continuing with the Ocearch mission that tagged a white shark near the mouth of the St. Johns river, and more recently, Guy Harvey's screening of his new film about tiger sharks at the Flagler Auditorium. There is a lot of research being done on sharks, many species of which are threatened by illegal "finning." In shark finning, sharks are caught but only their fins are removed, and the rest of the shark is thrown overboard. The fins are sold for the oriental shark fin soup industry. Many fishery managers are concerned about how to best protect these often-feared fishes.

Fishes? Yes, sharks are fishes. They are in the group of fishes that does not have bony skeletons, but rather has skeletons made of cartilage. This group also includes rays and skates. Because sharks do not have bony skeletons, our only fossil record of these animals is from their teeth. We have all probably seen shark jaws-- in photographs, at museums/nature centers or in shell shops. The Florida Museum of Natural History in Gainesville has a fabulous fossil exhibit. Part of the fossil exhibit is "shark jaw row," which contains a series of shark jaws ranging from two to nine feet in height. The largest jaw is a reconstruction of a megalodon shark, the largest shark that ever lived. Sharks grow many rows



NOAA Office of Law Enforcement agent counting shark fins. Photo credit: NOAA

Sharks (cont.)

of teeth in their jaws, and are able to rapidly replace teeth that break or fall out by moving a new tooth into position to replace the missing one.

Jaws are not the only places where sharks have teeth. Sharks have thousands of tiny “skin teeth,” also called “dermal denticles.” As their name implies, these teeth are embedded in the shark’s skin. The teeth point towards the tail, and contribute to the sharks’ ability to swim fast through the water by reducing drag and increasing thrust. Some indigenous people have used shark skin as sandpaper. If you run your hand over shark skin from the head to the tail, the skin feels smooth. If you reverse the direction of your hand movement, you will feel the roughness. Each species of shark has its own shape of dermal denticles. Some sharks, like the silky shark, have small denticles, so their skin does not feel particularly rough in either direction. Others have much larger denticles. Denticles are shed over time and will re-grow.

Did you know?

- Unlike most bony fishes, sharks do not use a swim bladder for buoyancy. Instead, they have large oil-filled livers that keep them afloat. A shark’s liver can make up 5-25% of its body weight, and can fill 90% of the body cavity.
- When a shark eats something that upsets its stomach (for example, tiger sharks eat sea turtles, shell and all!), it can turn its stomach inside out through its mouth and empty out the object that is upsetting it (such as the turtle shell).
- Some sharks need to swim constantly in order to keep enough water flowing over their gills to allow them to breathe. Some sharks are able to pump water over their gills. Some sharks will hang out in areas that have strong currents and allow the water to flow through their gills that way.

There are many types of sharks that are found in Florida’s waters. Along the east coast of Florida, while shark bites are not uncommon, they occur when sharks (usually in the murky waters of the surf zone) accidentally bite a person. People can reduce their chance of being bitten by avoiding being in the water at times when sharks are most actively feeding (dawn and dusk), by not wearing shiny jewelry or watches in the water (these reflect sunlight like small silvery fish do), by not getting in the water if bleeding, by avoiding areas where people are fishing. People in groups are less likely to be bitten than individuals.

To learn more about Florida’s sharks, check out the University of Florida’s Museum of Natural History website at <http://www.flmnh.ufl.edu/fish/Sharks/sharks.htm>. You can find educational information about sharks, and can also check out the international shark attack files. UF/IFAS Extension has a document titled “Common Sharks of Florida” that can be viewed or downloaded from <http://edis.ifas.ufl.edu/sg062>.



Photo credit: NOAA





We're now on Facebook—check out [facebook.com/NEFLSeaGrant](https://www.facebook.com/NEFLSeaGrant) and “like” it to keep informed about coastal topics in the region. Don't have a Facebook account? That's OK—you can view the page without one :)

NE Florida Sea Grant Extension Program
150 Sawgrass Road
Bunnell, FL 32110

Phone: 386-437-7464

Fax: 386-586-2102

E-mail: mpmcg@ufl.edu

<http://stjohns.ifas.ufl.edu/sea/seagrant.htm>

More “Mark your calendars”

- August 31, 10:30 am: Educator’s Aquatic Species Collecting Permit workshop, Rockledge, FL. See www.fmsea.org/events/asw for details.
- September 27-28: National Estuaries Day, Guana Tolomato Matanzas National Estuarine Research Reserve. Check www.gtmnerr.org/events.htm for more information.
- October 11-November 15: Freshwater Wetlands Master Naturalist class, Volusia County. See www.masternaturalist.org for more information or to register.
- October 11-19: Wildlife Monitoring Special Topic class, Florida Master Naturalist Program, Brevard County. See www.masternaturalist.org for more information or to register.
- October 24-26: Florida Association of Science Teachers conference, Miami. See www.fastscience.org for more information.

Please check the calendar at <http://calendar.ifas.ufl.edu> for other environmental education programs around the state.

Aqua Notes is provided as one of the many services relating to educational programs offered by the University of Florida/IFAS cooperative extension service. This publication is available on the Web at <http://stjohns.ifas.ufl.edu>. The use of websites or product names in this publication is not a guarantee, warranty or endorsement of the sites/products named and does not signify that they are approved to the exclusion of others. For more information about this document, contact Maia McGuire at the Flagler County Extension Service at 386-437-7464.

The Foundation for The Gator Nation

An Equal Opportunity Institution