

aqua-notes

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May, 2017

Mark your calendars...

- 4-H summer day camps for youth— see http://www.flaglercounty.org/document_center/4-H/2017%204-H%20Summer%20Day%20Camp%20Brochure.pdf
- More on back page!

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Microplastics project getting noticed!

Some of you might have seen an Associated Press article in April that featured our Florida Microplastic Awareness Project. The article was picked up nationally by over 300 outlets, and internationally by more than two dozen! We were honored to receive a Champions for Change award from the University of Florida in April, as well as the 2017 outstanding team award from the Association of Natural Resource Extension Professionals. NOAA has hosted a series of webinars this year focused on microplastics; their Debris Free Ocean page contains links to each of those (the link to the site is on plasticaware.org in the Multimedia and Outreach Materials section.)



M. P. McGuire

Maia McGuire, PhD
Marine Extension Agent

World Oceans Day

June 8 is World Oceans Day. We will have exhibits and presentations from 1-7 pm at the UF/IFAS Extension Flagler County Office (including Whitney Lab Traveling Zoo Touch tanks from 1-3 pm, plastic recycling information, Sea turtle presentation at 5 pm) and will be screening the award-winning film, Sonic Sea, from 6-7 pm. The film highlights the issue of how noise in the ocean affects marine organisms. Featuring Sylvia Earle and Jean-Michel Cousteau, this film suggests ways to help protect marine life from this threat. A \$5 donation is suggested to cover costs associated with the film .



Mangroves

When I first became the UF/IFAS Extension Sea Grant agent for Flagler County in 2001, I was told that a hard freeze a few years earlier had stunted many of the black mangrove trees that were growing along the intracoastal waterway. Since then, these salt-tolerant trees have not faced an extended freeze, and they have been joined in our area by Florida's other two mangrove species, the white and red mangroves. Scientists recently analyzed 28 years of satellite imagery and temperature records from northeast Florida, and found that the area of mangrove forests has doubled at the northern end of their historic range (St. Augustine) on the east coast of Florida. This expansion is associated with a reduction in the frequency of "extreme" cold events (days colder than -4°C).

In developed mangrove forests, the three true mangroves found in Florida generally occupy different positions along the shoreline. The red mangrove is characterized by its "prop roots." These arch out from the trunk and down from lower branches and help stabilize the tree. Red mangroves often grow where their roots are continually submerged by water, and they are typically the mangrove that is growing closest to the water. Just landward of the red mangroves are the black mangroves. Black mangroves also have unusual roots. Their roots send up "pneumatophores" (breathing roots) which stick vertically out of the sediment. They look like a bunch of small sticks. They help the black mangroves get oxygen to their roots, which are often buried in anoxic mud. The white mangrove is generally the furthest from the water.

Both red and black mangroves form distinctive embryos called propagules. Those of the red mangrove are elongated and somewhat cigar-shaped. The propagules of the black mangrove look a bit like lima beans. Both can often be found on local beaches—some have traveled from areas to our south, while others may come from local mangrove trees. When the propagules fall off the parent plants, they will often start to grow roots as they float in the water. If they wash into a suitable area, the propagules' roots will quickly grow into the sediment and the leaves will soon emerge.

While mangroves are quite salt-tolerant, and have adaptations to help them deal with growing in or near sea water, they do not require salt water. However, because most trees cannot tolerate salty conditions, mangroves will thrive along the coastline, without having to outcompete other trees. They do especially well in low energy, muddy habitats.

Mangroves are protected in Florida by the Department of Environmental Protection, which has established rules that govern trimming of these trees. Property owners who are wishing to reduce the height of mangroves may be required to obtain a permit, and should contact an authorized professional mangrove trimmer to ensure that no laws are violated (see <http://www.dep.state.fl.us/water/wetlands/mangroves/>).



Black mangroves—all the "sticks" in the ground are pneumatophores

Portuguese Man-o-War

When we have strong onshore breezes for several days in a row, it is not unusual for rafts of floating Sargassum seaweed to wash up on Flagler County beaches. This golden-brown seaweed is unusual because it does not need to be attached to the sea floor. The seaweed has small spherical capsules that are filled with gas—these act as floats to keep the seaweed at the ocean's surface.

Sargassum is just one component of a community of drifting organisms. Another very visible drifter is the Portuguese Man-o-War. This cousin of the jellyfish looks like an inflated plastic bag with blue, pink or purple edges. When Sargassum washes ashore, it is often accompanied by Man-o-War. The Man-o-War consists of colonies of tiny individual animals that function together as a community. Some parts of the Man-o-War are specialized for capturing food. Others are responsible for digesting food, maintaining the float or reproduction.



A Portuguese Man-o-War sitting on some Sargassum seaweed

The tentacles of the Portuguese Man-o-War can extend for 30 to 100 feet in length. The tentacles contain stinging cells called nematocysts. When viewed under a microscope, the nematocysts look like tiny harpoons. Mechanical triggers (touching them) can cause the nematocysts to “fire,” and the results for people can be quite painful. When the Man-o-War enters the surf zone, its tentacles can become broken off. Swimmers should be aware that they can be stung by these tentacles even if they cannot see a float nearby. Also, even a dried up Man-o-War on the beach can sting if its tentacles are touched.

Man-o-War stings can be quite extreme, as the tentacles tend to stick to a person's skin, resulting in elongated welts. People should not try and remove the tentacles with bare hands, as that will result in additional stings to the fingers. Use of gloves, a towel, a credit card or even a stick to remove the tentacles from the skin is suggested. The treatment of Man-o-War stings is somewhat controversial, with different studies showing different results. In general, warm water seems to provide some relief. Some people may have serious reactions to these stings, so people should call the Florida Poison Information Center Network at 1-800-222-1222 or call 911 if they begin to have trouble breathing, feel faint or have chest pain.

When Sargassum and Man-o-War wash up on the beaches, some of the other members of their communities may also be seen. “Blue buttons” and “by the wind sailors” are relatives of the Man-o-War, although their nematocysts do not penetrate human skin, so we do not get stung by them. Blue buttons are small (often about ½” in diameter) discs that have a thin layer of blue-purple animal tissue on their lower surface. By the wind sailors are a bit larger (up to about 2” in length) and have an oval base with a triangular “sail.” They also have blue-purple animal tissue on their lower surface. Occasionally purple sea snails (which produce a bubble raft which allows them to float around with the Man-o-War community) or purple sea slugs may also wash up on the beach.

Both the sea slug and the snails will feed on Portuguese Man-o-War and/or blue buttons or by the wind sailors. The slug will actually incorporate the nematocysts from the Man-o-War into its body, so handling these small purple slugs might also result in painful stings.

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 :)

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More “Mark your calendars”

- May 13—St Johns County Elementary STEM Fair. 8 am to 11 am. Palencia Elementary School. For more information, contact Brian Morgan at brian.morgan@stjohns.k12.fl.us. Come and check out my elementary curricula (manatees, whales & dolphins, sea turtles) and try some of the activities!
- Many marine/environmental summer day camps are available in the First Coast region—Marineland, Whitney Lab, GTMNERR, St. Augustine Alligator Farm (see <http://fun4auggiekids.com/Camps/Nature-and-Animal-Camps/>) and St. Augustine Lighthouse & Museum (see http://www.staugustinelighthouse.org/education/Summer_Camp) are some of the options.
- June 14-16—Volusia County. Florida Master Naturalist Program-Wildlife Monitoring Course. See www.masternaturalist.ifas.ufl.edu for more information or to register.
- Oct 6-Nov 10—Volusia County. Florida Master Naturalist Program-Coastal Systems Course. See www.masternaturalist.ifas.ufl.edu for more information or to register

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

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