

aqua-notes

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SOLUTIONS

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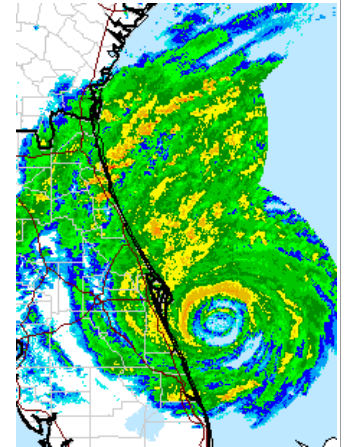
November 2016

Mark your calendars...

- November 14-17—American Water Resources Association annual conference, Orlando FL. See <http://www.awra.org/meetings/Orlando2016/>
- More on back page!

Hurricane Matthew

While my thoughts are certainly with those who are still recovering from Hurricane Matthew (whether coastal erosion or flooding from the storm surge), I have to say that we were really lucky. As bad as they were, the impacts in north-east Florida could have been so much worse. We did not experience the full strength of the storm as the eye stayed east of the Florida coast. We were on the weaker (western) side of the storm. (The northeast quadrant brings the strongest storm conditions). Yes, most people lost power, but almost all had that restored within three days—truly impressive work by the utility companies considering the huge number of people and businesses affected. Hopefully we will have to deal with another hurricane in 2017, but if so, we will be ready!



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Hurricane Preparedness

Hopefully you had ample hurricane supplies when Matthew (or Hermine) hit Florida this summer. As a reminder, your basic disaster supply kit should contain these items (for a full list, see <https://www.ready.gov/kit>).

- One gallon of water per person per day (for at least three days). Add extra water for pets.
- At least three days' worth of non-perishable food (preferably ready-to-eat food items). Manual can opener. Camping (propane) stove and fuel [do not use indoors!]
- Battery-powered or hand-crank radio (with extra batteries).
- Flashlight (with extra batteries).

In preparation for the storm, it is a good idea to fill vehicles with gasoline, and have a supply of fuel for your generator (if you have one). Charge your cell phones and turn them off when not in use to preserve the battery life. (Hopefully you will be able to charge them from your car following the storm if your electricity is off.)

Have you found a FAD?

One dictionary definition of the word “fad” is, “A fashion that is taken up with great enthusiasm for a brief period of time; a craze.” However, that’s not the type of FAD that this article refers to. Instead, I’m referring to Fish Aggregating Devices, called by the acronym FAD. FADs are artificial floating objects, specifically constructed to attract fish for the purposes of commercial fishing. FADs can be anchored to the sea floor, or can be free-floating. Anchored FADs are typically used by small-scale commercial fishermen (e.g. in the Caribbean), while free-floating FADs are used by commercial tuna fishing fleets. The tuna fishers use purse seine nets to harvest tuna that aggregate under these drifting rafts.

Historically most commonly used in the Pacific Ocean, free-floating FADs have started washing up on Florida’s east coast beaches in recent years. Typically, these FADs consist of a floating raft, submerged synthetic netting, and a satellite buoy (to allow a fishing vessel to return to a specific location to gather the catch.) Synthetic rope or webbing often secures the components to the raft, and the webbing beneath the device can extend to depths of more than 250 feet.

In the Indian Ocean, concern has been raised about the entanglement risk that drifting FADs pose to sea turtles, which may crawl onto the net-covered top of the raft, or may swim into the webbing below the raft. There are few regulations governing these FADs and little is known about their use in the Atlantic Ocean. Concern has also been expressed by scientists that the drifting FADs might cause tuna to deviate from their normal migratory paths. This could result in tuna finding themselves in areas that do not have appropriate food resources.

Some FWC biologists are interested in learning more about the frequency and extent of FADs in Florida waters (and on Florida shores.) If you find a FAD washed up on a Florida beach, please [let Maia know](#), and she will pass on the information. Photographs and GPS coordinates would be greatly appreciated!



A drift FAD tag found at Blowing Rocks in October, 2016



A drift FAD at Washington Oaks State Gardens’ beach in 2015.

Post-hurricane dune recovery/restoration

One of the biggest challenges facing our coastal communities after being impacted by a hurricane, tropical storm or nor'easter is making decisions about how to respond to beach erosion. In areas where homes or roads are at risk of falling into the ocean, the immediate desire is to provide protection to those structures—usually with a seawall of some sort. A longer-term goal is often to try and restore the dune system at the beach—both in order to help protect the coastal area landward of the dune, and to try and restore ecosystem function of the beach/dune system.

On paper, it sounds like these decisions should be simple and straightforward. However, in practice, the beach system, especially on barrier islands, is dynamic. Human activities along the coastline (including dredging of inlets, construction of breakwaters and seawalls, installation of structures to try and stabilize dunes or beach sand, construction of roads and buildings) often impede the natural barrier island dynamics. We are in an era of sea level rise. Under natural conditions, barrier islands respond to sea level rise with a gradual shift westward of the dune system. Historically, inlets along the eastern coast of the southern US migrate southward over time. When we build structures or dredge inlets, we disrupt the natural flow of sand and change the way that wave energy impacts the beaches.

A report titled “Best Management Practices for Shoreline Stabilization to Avoid and Minimize Adverse Environmental Impacts” was prepared for the US Fish and Wildlife Service in November 2009. You can read the full report [here](#). The abstract states, “Shoreline stabilization projects can cause significant adverse environmental impacts to the coastal ecosystem...The first approach that best avoids and minimizes adverse environmental impacts from shoreline management is to ‘do nothing’ and retreat roads and structures away from the shorelines as sea level rises and climate changes, and to prevent new development in naturally hazardous or migrating areas.” However, the report recognizes that the “do nothing” approach is not always feasible or acceptable. It goes on to outline some best management practices for dune and beach restoration.

A 2013 publication titled, “Restoration of Coastal Dunes” contains fifteen chapters, each of which discusses a particular case study related to restoring dunes. The concluding chapter includes this paragraph, “Because coastal dunes consist of very dynamic landforms and dynamic communities, heterogeneous and diverse, their restoration is anything but a simple and straightforward activity. The commonly used definition of ecological restoration¹ does not seem to apply to these environments, because there are many scenarios of recovery that can be looked for in a coastal dune restoration project. That is, the health, integrity, and sustainability of coastal dunes can refer to many situations...It is obvious that the restoration of coastal dunes has many goals, facets, and mechanisms.”

It is clear that there is no easy answer to the question, “How do we restore the beach?”

¹ “The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed, It is an intentional activity that initiates or accelerates ecosystem recovery with respect to its health, integrity and sustainability.”

We're now on Facebook—check out 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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Mark your Calendars!

- Right whale introductory talks (for new volunteers, surveyors and spotters alike, and anyone wanting to know how to spot right whales):
 - Sat. Dec. 3 (11 am—12:30 pm) Southeast Branch Library, 6670 US 1 South, St Augustine
 - Tues Dec. 6 (10-11:30 am) Flagler County Public Library, 2500 Palm Coast Parkway, NW, Palm Coast
 - Thurs Dec. 8 (6-7 pm) Ocean Art Gallery, 206 Moody Blvd., Flagler Beach
 - Sat. Dec 10 (10-11:30 am) Ormond Beach Public Library, 30 S. Beach St., Ormond Beach
- Right whale survey training class (for all volunteers): Fri. Dec 30 (2:30—5 pm). Center for Marine Studies, Whitney Lab, 9505 Ocean Shore Blvd., Marineland.

Post-Hurricane Resources

- [UF/IFAS Extension's Disaster Preparation and Recovery website](#)
- Florida Department of Environmental Protection's [Engineering, Hydrology and Geology Program](#) (technical support for FL's beach erosion control program)
- [FEMA website](#)
- Florida [small business emergency bridge loan program](#) (must apply by Nov 11, 2016)

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