

## Mark your calendars...

- November 15-20—St. Johns County Fair. See <http://www.stjohnsfair.com/>
- December 9—Clean Marina and Boatyard Ceremony at Huckins Yacht Corporation, Jacksonville 1 pm
- January 19—Arbor Day program at St. Johns County Agricultural Center
- More on back page!

## Apologies

For those (few) of you who wait anxiously at the beginning of each third month for the arrival of the Sea Grant newsletter, I apologize for the lateness of this issue. I had to go out of town unexpectedly at the end of October for a couple of weeks and was not able to work on the newsletter until mid-November. I hope you will find this issue worth the wait!



Exploring tidepools at Marineland during October's "Exploring our Environment" class. Photo by Sue Osborne. For information about the next class, see back page.

*M. P. McGuire*

Maia McGuire, PhD  
Marine Extension Agent

## New resources available for boaters in NE Florida!

Two new boating guides are available for boaters in NE Florida. These are 22x34 inch folded maps that contain information that is useful and relevant to boaters. The Duval Boating and Angling Guide was produced by Florida Sea Grant and Duval Audubon Society in partnership with the Florida Marine Research Institute. This 2-color guide contains a map of the Duval waterways on one side and information about the natural history of the area on the other side. It is available at most Duval area marinas and many boat dealers and tackle shops. The St. Augustine Waterways Guide was produced by Florida Sea Grant for the St. Augustine Ports, Waterways and Beaches Commission. This full-color guide has an aerial composite image of the waterways around downtown St. Augustine on one side and information about the history and natural history of the region on the other. These guides are available at most St. Augustine marinas and at the St. Augustine Visitors and Convention Bureau. Both guides can also be picked up at the St. Johns County Agricultural Center.

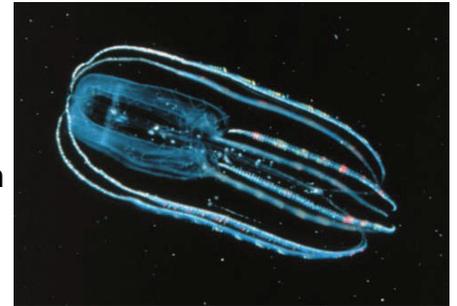
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## 4-H students show their knowledge about marine life

On Saturday, October 29, 4-H youth from around the state competed in the annual Marine Ecology Judging Event at Camp Ocala in central Florida. The competition included identification of marine and coastal plants, invertebrates and vertebrates, knowledge of the primary habitat in which each species lives and knowledge of general marine biology. All youth competed as individuals but could also compete in teams of 3 or 4 (the top 3 scores for each team were used to calculate the team score). St. Johns County 4-H member Maggie Leach placed first overall in the junior (age 8-12) category. Maggie teamed with Kiara Yee, Justin Van Dyke and Wesley O'Dell to place third in the junior team category. Congratulations! Other youth from NE Florida who participated in the competition were Rebecca Vitagliano and Tina Ten Broeck from Flagler County, Anna and Kristen DeLee from Nassau County and Caleb Kulpa from St. Johns County.

Several NE Florida 4-H members also won prizes in the marine photo competition, which is held in conjunction with the marine judging event. Kudos to Maggie Leach, Austin Davis, Rosa Bledsoe, Alicia Gray and Abby Kulpa from St. Johns County and to Christina Alkire from Flagler County.



The ctenophore or comb jelly is one of the animals 4-H youth learned to identify for the marine judging competition.

## Right Whale Volunteers Needed

Each year between December and March, coastal waters off southern Georgia and northeastern Florida become calving grounds for the highly endangered Northern Right Whale. Volunteers help spot and track the movement of the female whales (and their calves) during this time period. Training classes will be held at the following times and locations (for other locations, please call the Marine Resources Council at 321-725-7775):

### Saturday, Dec. 17:

9:30-11 am—City Island Library Center, 105 E Magnolia Ave., Daytona Beach (386-257-6036)

1-2:30 pm—Whitney Lab, 9505 Ocean Shore Blvd., Marineland (904-669-8615)

### Friday Jan 6:

2-3:30 pm—Amelia Island Plantation Conference Center, 6800 First Coast Hwy, Amelia Island (904-261-6161)

### Saturday Jan 7:

2-3:30 pm—New Smyrna Beach Library, 1001 S Dixie Hwy, New Smyrna Beach (386-424-2901)



Additionally, there will be an orientation meeting for those volunteers who can dedicate a set amount of time each week to conduct specific watch rotations (volunteers should attend one of the other classes prior to this meeting). The orientation meeting will be from 10-11:30 am on Saturday January 7, 2006 at the Whitney Lab in Marineland. Call 904-669-8615 for more information.

## Harmful algae blooms/red tides

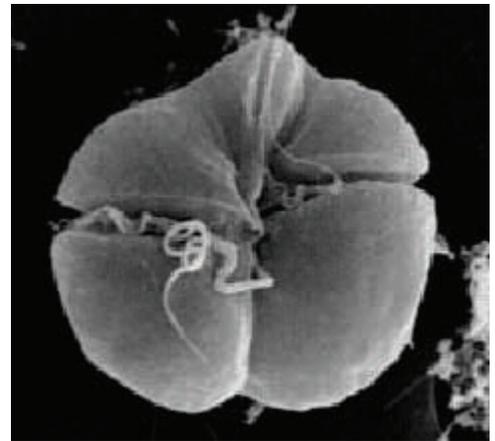
Florida red tides are caused by blooms of microscopic plant-like organisms called dinoflagellates. These dinoflagellates are present in low densities in our coastal waters year-round. At times, they grow very rapidly, resulting in a phenomenon referred to as a bloom. A bloom may appear as red, light or dark green, brown or clear in color. Florida red tide blooms (also called simply harmful algal blooms, or HABs) start offshore. They seem to be caused by oceanic and meteorological events, but the actual trigger is unknown. Also unknown is what role (if any) coastal pollution plays in these blooms. Blooms have been reported in all months of the year, and a bloom can last for days, weeks or months. Blooms are usually an annual occurrence in the Gulf of Mexico, but occur only occasionally off Florida's Atlantic coast.

Red tide dinoflagellates (scientific name *Karenia brevis*) produce a toxin called brevetoxin. Brevetoxin can be released into both the water and the air. During a bloom, these toxins can affect the central nervous systems of fish, birds, mammals and other animals. The primary effect on humans is irritation to the respiratory system (coughing, sneezing and teary eyes)—this is particularly acute for people who suffer from asthma. Human effects are most likely when the winds are blowing onshore. The effects are temporary and disappear within a few hours of exposure to the HAB. People who swim in areas affected by red tide might experience skin irritation and burning eyes.

Slow-moving or bottom-dwelling fish are the most likely fish to be affected by HABs. The toxin produced by the bloom can paralyze fishes' gills resulting in death from lack of oxygen. Sometimes large numbers of fish are killed—people are asked to report fish kills to the Florida Fish and Wildlife Research Institute by calling 1-800-636-0511. There are no reported cases of human illness caused by eating freshly-caught fish during a bloom, however it is never advisable to eat fish that appear sick or lethargic. Fish that are caught live are safe to eat as long as they are filleted. Filter-feeding shellfish like oysters and clams may accumulate high levels of toxins in their organs and eating contaminated clams or oysters can result in neurotoxic shellfish poisoning. During HABs, there is a ban on local shellfish harvesting, even in areas that would otherwise be approved for shellfish harvest. It takes shellfish several weeks of exposure to uncontaminated water to purge the red tide toxins from their systems. Commercial seafood (purchased in restaurants or grocery stores) is safe to eat as commercial seafood is monitored by the government. Shrimp and crabs are safe to eat during a red tide.

Marine mammals can also be affected by red tides. A recent study revealed that brevetoxin accumulates on seagrass blades and can be found associated with seagrasses long after a bloom has ended. Scientists believe that manatees become ill and die from ingesting large quantities of brevetoxin while they graze on these marine plants. Mass mortality of manatees weeks or months after a red tide bloom occurred in southwest Florida in 1996 and 2002. In 2004, a mass stranding of dolphins in Florida's panhandle was also linked to brevetoxin. In this case, it is thought that the dolphins ate fish which had eaten red tide dinoflagellates and had accumulated high concentrations of brevetoxins in their organs. The brevetoxins did not affect the fish as they did not contact the fishes' gills. The study was conducted by researchers from the Florida Fish and Wildlife Conservation Commission, University of North Carolina at Wilmington and Mote Marine Laboratory and was published in the June 9, 2005 issue of the journal *Nature*.

Scientists are studying red tides to try and find ways to predict bloom formation. Additional studies are trying to determine what impact coastal pollution, particularly nutrient runoff, may have on blooms. More information about red tides, including the status of current blooms, can be found at [www.redtideonline.com](http://www.redtideonline.com).



Electron micrograph of the Florida red tide dinoflagellate, *Karenia brevis*. From NOAA



NE Florida Sea Grant Extension Program  
3125 Agricultural Center Drive  
St. Augustine, FL 32092

Phone: 904-209-0430  
Fax: 904-209-0431  
E-mail: [mpmcguire@ifas.ufl.edu](mailto:mpmcguire@ifas.ufl.edu)  
<http://stjohns.ifas.ufl.edu>

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### More “Mark your calendars”

- February 1-22, 2006—Coastal Master Naturalist class (St. Johns and Flagler Counties). See [www.masternaturalist.org](http://www.masternaturalist.org) to register.
- February 4—Water Education Festival at MOSH, Jacksonville. FREE!
- February 16—First Coast Regional Envirothon, Lake Fretwell, Jacksonville. For more information, call Diane at 904-266-0088 x 191
- February 23-March 30—Coastal Master Naturalist class (Volusia County). See [www.masternaturalist.org](http://www.masternaturalist.org) to register.
- April 10-14—Exploring our Environment—from the ocean to the river. GTM NERR office in Marineland. Download a registration brochure from <http://stjohns.ifas.ufl.edu> (click on Sea Grant and follow the education link.)
- April 22-23—Washington Oaks State Park Earth Day
- April 28-30—Florida Marine Science Educators Association annual conference, Crystal River
- April 29—St. Johns County Earth Day, St. Augustine Amphitheatre

Please check the calendars at <http://calendar.ifas.ufl.edu> and [www.enviroedjax.org](http://www.enviroedjax.org) for other environmental education programs around the state.

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