A Bay Grasses in Classes Publication

New Directions for BGIC Discussed at 2018 Teacher Retreat

Thanks to all who attended the 2018 BGIC Teacher Retreat. We really appreciate you all taking a half-day out of your break to help us set up for another successful year! As we mentioned at the retreat, we are making some changes to the program this year that we hope will allow for better lesson integration and a more involved but less stressful experience for both students and teachers. We are working toward streamlining our lectures to fit better with course curricula and focusing on relevant issues for the area.

Aside from reworking the way we integrate the BGIC program and communicate ideas, we are continuing to transition the nurseries to growing new species and seeking new sites for transplanting. We will be transitioning a number of nurseries to growing Juncus roemerianus and Spartina patens to more accurately meet the restoration needs of our partners.

Juncusus and Spartina patens both tend to occupy higher-elevation marsh areas compared to Spartina alterniflora and Paspalum. This is important for our purposes because some of the new sites we will be restoring, such as Robinson Preserve, are large enough to encompass a whole coastal ecosystem of wetland plants, from low marsh to higher-elevation ecosystems. We will be monitoring the nurseries with new species diligently in order to optimize the way we raise them in a nursery setting. For those of you who are taking on the challenge of raising one of these new species at your school, thank you for your help! We are very excited to start growing!

The Lowdown on Red Tide

Most of us living in the Tampa Bay area have heard about red tides or algae blooms at some point. But what are they exactly? What triggers them? And why do they cause so many fish die-offs?

Red tides are caused by a drastic increase in the population of algae in the water—typically a species known as Karenia brevis. When their ideal conditions are met (warm water, lots of sun and high concentrations of nutrients such as nitrogen), they multiply very quickly.

These microscopic, single-celled algae produce a toxin called brevetoxin that can block certain neural pathways, affecting the motor functions of many marine species, including fish, birds, turtles, manatees, and dolphins. Even a whole shark, found dead recently on the shore of Sanibel Island is thought to have died from brevetoxin exposure. Humans too can get very sick if they swim in a red tide or eat fish or shellfish caught during a red tide.

Spotted in Florida:

Giant Whale Sharks

Over the summer, several whale sharks were seen near Anna Maria Island in Manatee County. Whale sharks are the biggest fish in the ocean, sometimes growing more than 30 feet long, weighing over 20 tons and living for 150 years! They are filter feeders, possessing only tiny, practically harmless teeth. This means that they eat by indiscriminately sifting plankton, eggs, small fish and other particles out of the water either by swimming forward with their mouth open, or by repeatedly opening and closing their mouth in order to create a flow of water from mouth to gills. Before exiting through the gills, the water passes through specialized filtration pads that sift out the suspended particles.

If you encounter a whale shark, do not stress the animal out by touching it, swimming too close or swimming in its path. Instead, take photos from the boat and contact Bob Huetter at the Mote Marine Lab’s Center for Shark Research at 941-302-0976 to report the sighting.

Juncus, or black needle rush, can easily grow to several feet tall and gets its name from the sharp point on its end.

Seasonal Nursery Care & Reminders

Don’t forget to look for freshwater weeds and algae!

- Remember, salting the nursery during the rainy season won’t do you much good. You will need to wait until the rainy weather slows; otherwise, the rain will greatly dilute the salt.
- If you have a new species such as Juncus or patens growing in your nursery, keep a careful eye on it so that we can address any problems early.
- Don’t forget to send home the BGIC waiver form with your students so that our liability is covered and they are able to participate in the BGIC program.

The observation tower at Robinson Preserve: one of the potential future BGIC plantings locations.

This newsletter is produced by the Bay Grasses in Classes team of Tampa Bay Watch, Inc., a nonprofit environmental stewardship program dedicated to the scientific and charitable purpose of monitoring, protecting, and restoring the Tampa Bay estuary. Visit tampabaywatch.org/bgc.
It's Summer in the Marshes

**Australian Pine**
*Casuarina equisetifolia*
- Deciduous trees that inhabit coastal areas and can grow to be over 100 feet tall
- Contribute greatly to beach erosion by outcompeting native, erosion-buffering wetland plants (such as the grasses in BGIC nurseries) for space and sunlight
- Have larger and fewer roots than most native, coastal plants and are thus poorly suited to holding sediments in place along the shoreline.

**Lionfish**
*Pterois volitans*
- A marine fish from the Indo-Pacific that has colonized the Caribbean, the Gulf of Mexico, and much of the East Coast of the United States
- Has no natural predators in these areas and is a rather indiscriminatory predator
- As a result, the species has spread very rapidly, devastating many native fish populations

**Brazilian Pepper**
*Schinus terebinthifolius*
- A shrub from South America that was initially introduced to Florida as an ornamental plant
- Tends to coalesce into dense canopies, out-competing other plants for space and sunlight, similarly to Australian Pine
- Its leaves and berries are toxic and acidify the soil when they decompose, making it hard for other plants to establish themselves nearby.

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**Notes from a Mystery Marsh Resident**

I am a type of ray found anywhere from the Caribbean to the Northeast region of the U.S.
I got my name from my strange-looking snout.
I typically grow to about three feet long from wingtip to wingtip—much smaller than my dune relative, the spotted eagle ray.

What am I? The first person to submit the right answer to newmarsh@bgicbaywatch.org wins a prize!

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Salt Marsh
*Spartina alterniflora*