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October 20, 2017

Georgia Southern University

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The COSM Aggregate

October 20, 2017



College News

Department of Biology researchers bring fish hatchery
back to life

 Department of Biology researc...



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Although the Bo Ginn Fish Hatchery has been idle for many years, the Georgia Southern Department of Biology will soon put it to use to conduct cutting-edge research. The University signed a memorandum of understanding with the U.S. Fish & Wildlife Service (USFWS) to allow University biology students and faculty to use the facility, located in Magnolia Springs near Millen, Georgia, as a resource to better understand the future of ecosystems in the southeastern U.S.

Events

Tree of Heaven is native to China, but became popular in Europe.

Scientific Stories, Frame by Frame

Using Sequential Art for Science Education

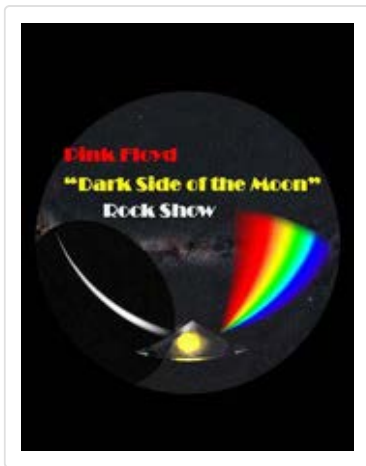
Catch ALL the RAINFALL!

Dr. John Van Stan

But, enthusiasm waned as this tree began to consume gardens and parks.

2:00 pm Thursday, October 26, 2017
Zach S. Henderson Library (2nd Floor)

* attendance verification provided



Pink Floyd "Dark Side of the Moon" Rock Show

When: Friday, November 3, 2017

Where: Georgia Southern Planetarium (Math/Physics Bldg.)

Based on Pink Floyd's 1973 album of humanitarian, political and philosophical empathy, Dark Side of the Moon is one of the most startling and bizarre laser light shows of all time! Considered by many critics to be the album that brought the commercial breakthrough to Pink Floyd, Dark Side of the Moon offers a mixture of psychedelic, rock and jazz sounds. Its sonic backdrops and atmospheric soundscapes combined with a unique assortment of sound effects yield an emotional resonance. When accompanied by a diverse and unusual display of laser art, the overall feel is a dramatic and haunting atmosphere.

This show is suitable for viewers of middle school ages and up. **Showtimes are 4, 5, 6, 7, 8, 9 and 10 p.m.** Visit the Georgia Southern Planetarium [website](#) for ticket information. Admission is free!

Sigma Xi Distinguished Lecturer: Beth Middleton, Ph.D.

November 6, 2017

Biological Sciences, 1109

Beth Middleton, Ph.D., is a research ecologist with the Wetland and Aquatic Research Center, U.S. Geological Survey in Lafayette, LA. Her research focuses on how increased hurricane activity related to climate change may alter wetlands across large geographical areas. Her most recent studies are on hydrologic remediation and vegetation response, and she applies those findings to natural resource conservation. She is a Sigma Xi Distinguished Lecturer, and President of the Society of Wetland Scientists.



11:15 a.m. Presentation Abstract: Wind and salt: reassembly of coastal vegetation following hurricanes

After hurricanes, coastal wetlands affected by saltwater surge, flooding and wind may have different recovery trajectories. For example, four North American hurricanes have differed in their effects on tidal baldcypress swamps. In 2017, Hurricane Harvey flooded Big Thicket National Preserve (TX) with copious amounts of freshwater while Hurricane Irma subjected St. Marks National Wildlife Refuge (FL) to wind damage. Earlier storms such as Hurricanes Katrina and Sandy had different storm signatures because of high winds and salinity intrusion, respectively. One set of vegetation structure studies compared salt water, freshwater flooding and wind-driven impacts of these hurricanes along coastal wetland gradients along the Gulf and Atlantic Coasts. In these studies, *T. distichum* was resilient to wind and prolonged freshwater inundation, but not to salinity. Seed bank studies of various vegetation and gradient types examined the responses of multiple species to various water regimes (unflooded but saturated vs. flooded to 8 cm) and salinity levels (0, 1, and 5 ppt). In these studies, post-hurricane environments of flooding and salinity mostly suppressed regeneration in these coastal wetlands, even at low salinity levels (1 and 5 ppt). Overall, these studies indicate that hurricanes differ in their ability to drive long term changes in vegetation depending on the levels of structural damage and subsequent regeneration. The resulting trajectories of forest composition will depend on the individualistic responses of species to post-hurricane environments and the frequency and intensity of these disturbances.

4:00 p.m. Presentation Abstract: Climate, land-use change and wetlands

The nature of climate and land-use change will dictate approaches to successful wetland conservation. The Intergovernmental Panel on Climate Change suggests that future wetlands may have increased episodes of drought and flooding, extreme temperatures and high CO₂. Along sinking coasts, especially freshwater wetland species may be impacted by increased salinity intrusion, flooding, and hurricane activity. These days, increasing human demand for freshwater is having a major impact on both inland and coastal wetlands. The focal issue of this talk is on freshwater tree death on the coast of Texas where drought, over-extraction of water, and other causes has led to an inadequate supply of freshwater to wetlands. Research has examined minimum flows of water necessary to maintain the function of riverine wetlands in situations where water extraction has reduced freshwater flow. My very recent work is on the role of mega-flooding events (e.g., Hurricane Harvey and Irma) to freshen groundwater along the Gulf Coast of the United States. Emerging research along the Mississippi (US) and Murray Rivers (Australia) suggest that even short periods of freshwater flow improve the health of freshwater trees in salt-water intruded estuaries, so that precipitation may produce the same health improvement. Another threat to these forests is a lack of regeneration, and relict forests are emerging in the southeastern US. More research directed toward solutions to climate-induced problems may help managers develop approaches to vegetation stress in future restored and natural wetlands. Another idea that may need reconsideration is that of the

reestablishment of presettlement conditions, which may be an unattainable target for restoration in future environments. Management problems can only be resolved through the dialogue of members of the public and professions skilled in multidisciplinary team-work. Overall, the essential fix is the fostering of a strong land-people connection.



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- Biology
- Chemistry and Biochemistry
- Geology and Geography
- Mathematical Sciences
- Military Science/ROTC
- Physics

 [Georgia Southern Univ...](#)  cosm@georgiasouther...
 [\(912\) 478-5111](tel:(912)478-5111)  cosm.georgiasouthern...

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