

# Effects of Coastal Salinity Exposure on Coastal Wetlands



**Researchers:** J. Kacey Peterson and Jenneke M. Visser

**Project Type:** Undergraduate Research Project

**Funding Sources:** Louisiana Sea Grant UROP

**Project Status:** Completed

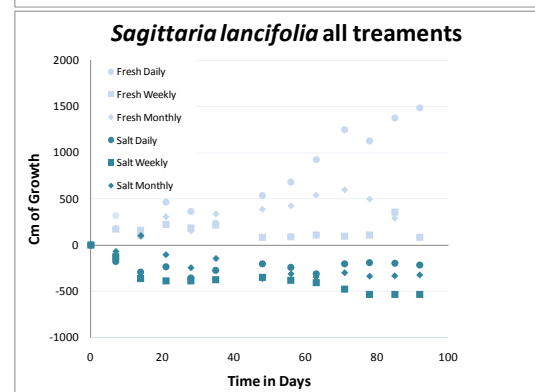
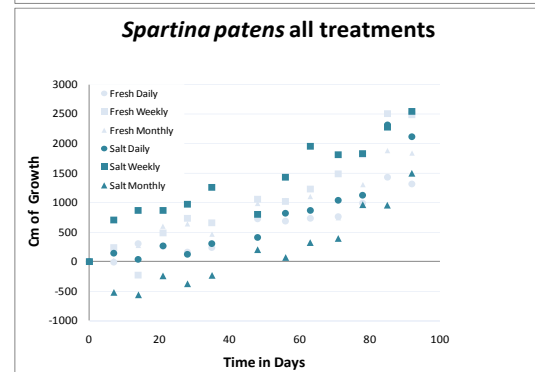
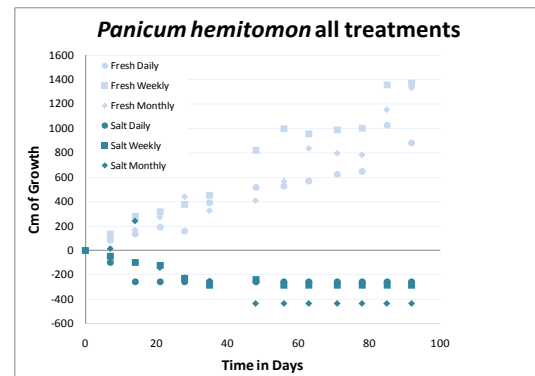
## Summary:

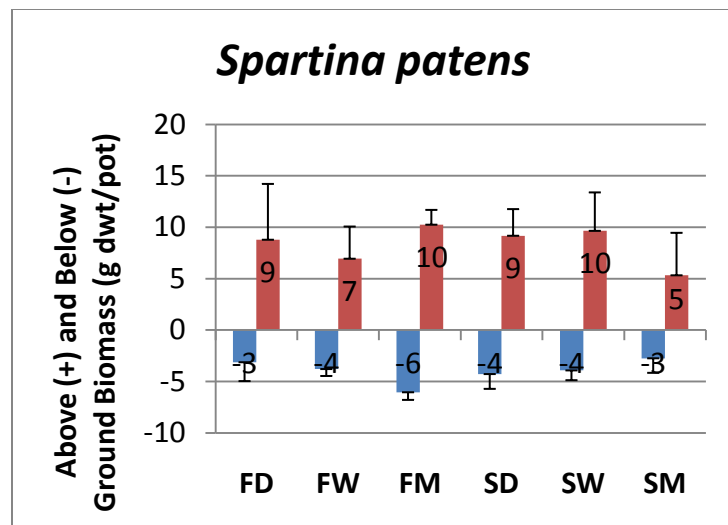
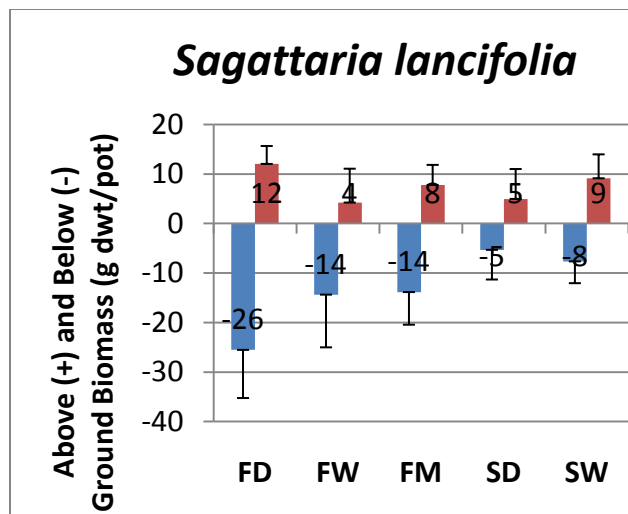
Coastal flooding has always been an environmental hot topic for Southern Louisiana. Flooding events have greatly impacted Louisiana's eroding coastline and its vegetation pending the flood duration and salinity of the water. This is why, for his undergraduate coastal restoration research project, Kacey Peterson decided to determine how flood duration and water salinity affects the plant growth of three key coastal vegetation species, *Spartina patens*, *Panicum hemitomon*, and *Sagittaria lancifolia*.

After 92 days of observation and analysis at the Center for Ecology and Environmental



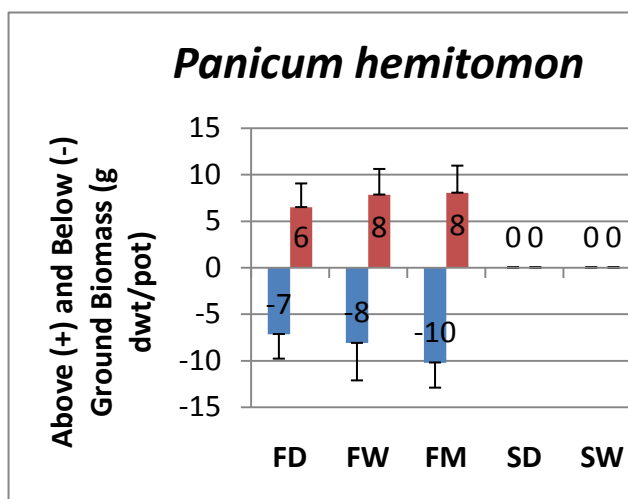
Technology, Kacey concluded that water salinity and flood duration does have some affect on a few major types of coastal vegetation. His results were as followed: *Panicum hemitomon* decreased in size and died after being exposed to salty flood waters, but was unaffected by the flooding with fresh water. *Sagittaria lancifolia* increased in size with daily exposure to fresh flood waters, did not grow much when exposed to longer flooding events with fresh water, and slightly decreased in size when flooded with saline water. *Spartina patens* grew equally well in all treatment combinations.





*Sagittaria lancifolia* under fresh conditions seems to have higher biomass under the daily flooding treatment and similar biomass for the weekly and monthly treatments

*Spartina patens* showed little response to the treatments (Figure 2). However, biomass in the most stressful treatment (Monthly flooding with 6 ppt) had the lowest biomass both above and belowground



The belowground biomass does not seem to be significantly different than the aboveground, but no statistical tests have been done to confirm this. *Panicum hemitomon* died in the saline treatments and so no biomass was harvested. There is an indication that both above and belowground biomass increased with flooding duration.

