EFFECTS OF REPEATED HURRICANE DISTURBANCE ON DISSOLVED ORGANIC MATTER CYCLING ALONG AN AQUATIC CONTINUUM IN NORTHEAST FLORIDA

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Hurricane disturbance causes large-scale changes to coastal waterways and has significant effects on biogeochemical cycling that can spread from coastal to inland areas. Hurricanes Matthew, Irma, and Dorian have all impacted waterways along the east coast of Florida within the past 4 years, although the impacts from each storm varied depending on wind speed, precipitation, and storm surge impact. In order to study these differences and the effects of repetitive hurricane influence along the aquatic continuum, a salinity gradient from a freshwater stream to the Intracoastal-Waterway between St. Augustine and Marineland, FL were studied. Hurricanes Matthew and Dorian were both dry windy storms with little rainfall, as opposed to Hurricane Irma that inundated the study site and surrounding watershed with 8 inches of rainfall. Due to the uniqueness of these storms and environmental conditions prior to storm impact, effects on carbon, nutrients, and anthropogenic inputs being transported into waterways and carried downstream by the storms varied greatly. By compiling data from weather stations, YSI data sondes, and grab sampling along this continuum, it was possible to see the results of periodic and repeated hurricanes on riverine- estuarine biogeochemical cycling. As hurricane frequency and intensity are predicted to increase in the future, it is important to understand how hurricanes of different intensities impact this area in the short-term and how repeated hurricanes can influence biogeochemical dynamics in the long-term.

PRESENTER BIO: Ms. Schafer is a 4th year PhD student in the soil and water sciences department at the University of Florida studying the effects of hurricanes on dissolved organic matter cycling along an aquatic continuum in St. Augustine, FL.