Soil and Water Sciences Department Graduate Student Research Seminar

Speaker: Tracey Schafer
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Title: Hurricane Impacts on Water Quality and Dissolved Organic Matter Cycling Along an Aquatic Continuum

Date: Friday, February 7, 2020
Time: 3:00 pm – 4:00 pm
Location: McCarty Hall A, Room G186

Hurricanes are landscape-scale disturbances that impact biogeochemical cycling, as well as the biotic and abiotic properties of aquatic systems. Hurricanes Matthew, Irma, and Dorian have impacted northeastern Florida over the past 5 years and altered conditions across the study system, a blackwater-river to estuary complex. Water quality was monitored during and after Hurricane Irma, revealing shifts in dissolved organic matter (DOM) loading, altered salinity dynamics, and reshaped landscapes across the system for only a short interval, demonstrating ecosystem resiliency.

In order to better understand impacts of storm disturbance within this system and determine how common Florida storms (e.g. thunderstorms and nor’easters) compare to hurricanes, export of DOM and net ecosystem metabolic (NEM) characteristics were examined. All precipitation events had similar effects on DOM export, but hurricanes had a significantly greater impact on NEM characteristics. Additionally, altered salinity dynamics associated with hurricane passage can alter the photochemical properties of DOM, as seen in irradiation experiments using DOM source material of the three dominant vegetative species across the system. Analyses showed unique characteristics across source material, indicating a need for additional photochemical research from specific DOM sources to improve photochemical models. Overall, hurricanes can be disruptive forces that change riverine-estuarine biogeochemistry in significant ways and are important considerations as tropical cyclone intensity and frequency increases as oceans continue to warm.

This seminar can be viewed via live or watched later via this link: [Tracey Schafer](#). Viewers of the live stream may now ask questions by clicking on the message icon at the bottom. Questions will be read at the end during the question and answer portion. In addition, all seminars are archived for viewing on our [SWSD Seminar Page](#).