CHALLENGES AND OPPORTUNITIES FOR SUSTAINING SOUTHEASTERN US COASTAL WETLANDS

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Estuaries are experiencing increasing pressure from encroaching development, altered watershed dynamics, rising seas, and increasing intensity, frequency, and duration of storm events. Worldwide humans are altering landscapes, ecological habitats, the hydrologic and hydraulic characteristics of watersheds, and the overall balance of the basic functions of the planet (Rockström et al., 2009). As populations in coastal areas swell the impacts of human activities; pollution, shoreline hardening, over harvesting, and other impacts are magnifying these pressures. With these rapidly changing inputs to already complex ecosystems it is difficult to identify the greatest threats. The goal of this study is to identify the most important threats to these ecosystems, the knowledge gaps relevant to these questions, and potential strategies for protection and management of coastal wetlands.

The study encompasses the coastal counties of the southeastern United States from Mississippi through North Carolina. These communities are highly dependent on coastal wetlands and reefs for shellfish harvesting and tourism revenue yet the region has experienced significant population increases including estuaries vital for livelihood (Dwight Trueblood et al., 2013). To address these questions population and land use data were analyzed, experts in estuary management and science were surveyed, and outcomes from stakeholder workshops were synthesized. Coastal counties in this region experienced an average increase of 26% in population density from 1996 to 2016. Correspondingly, surveyed experts reported that development, upstream alterations to freshwater flow, and shoreline hardening were among the most significant threats to these coastal ecosystems. Based on their input, improving the available science and opportunities for collaboration among resource managers will be key to improving and protecting estuarine habitats. Additionally, engaging people from all sectors (government, residents, businesses, visitors, etc.) will be vital to reducing human induced impacts and improving the health of these coastal environments as together we respond to the increasing pressures of global change.

PRESENTER BIO: : Ms. Kyzar is a Ph.D. student in Urban and Regional Planning. Her research focuses on impacts to coastal waters by land use and climate change. Projects include spatial analysis and machine learning applications to land cover, water quality, and census data to correlate patterns of human activities to estuary health.