Response Summary:

NOAA and LSU Center for Coastal Resilience (CCR) has developed the Hydro-MEM model to forecast marsh productivity under varying sea level rise (SLR) conditions. ERDC has been working on marsh responses to SLR for Dauphin Island in Mobile Bay with SAM and USGS Wetland and Aquatic Research Center in Lafayette, LA. On June 13, 2019, participants from LSU CCR (Dr. Scott Hagen), NOAA (Dr. Trevor Meckley), SAM (Elizabeth Godsey, Justin McDonald, Brian Zettle), ERDC (Sung-Chan Kim, Earl, Hayter, Barry Bunch, Candice Piercy) met to discuss common interests. Agreements among participants include acknowledging important components—water levels, hydrodynamics, sediment transport, water quality, marsh ecology—and future collaboration.

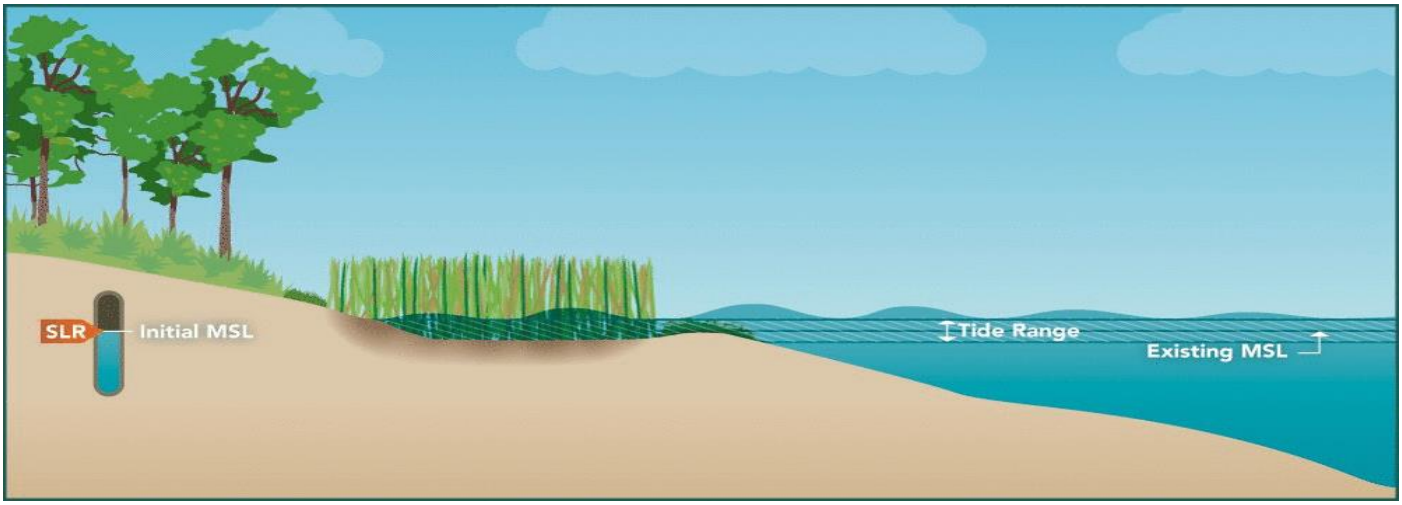

Figure 1. Conceptual depiction of marsh migration (Courtesy of LSU CCR)

Period of Performance:

The meeting was on June 13, 2019. Each ERDC personnel (Kim, Hayter, Bunch, Piercy) dedicated time for preparation and presentation of expert subject areas.

Benefits of the Response to the USACE Dredging/Navigation Program:

Ship waves associated with ship traffic affect marsh/wetland boundary. Dredging activity would alter hydrodynamic conditions as well as wave conditions that would affect the growth and loss of marsh. Beneficial use of dredged material for marsh growth needs to be further studied through collaborative modeling of hydrodynamics, sediment transport, water quality, and marsh ecology.

Deliverable:

The collaboration meeting was held at SAM on June 13, 2019. Each party presented information on their area of expertise and offered potential benefits for collaborating and developing a more comprehensive system. Discussions included data requirements, data availability, resource availability, and hypothetical timeline for system development. Plans were made to remain in contact and pursue other interested parties.

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