

Oceanographic Surveys of Little Egg Inlet

Aims and Objectives

Much of New Jersey's coastline consists of shallow bays separated from the ocean by sandy barrier islands. Narrow inlets connect these shallow bays to the ocean. The h(n)(c)4 (S)-t3 (i)-2 9-(t)-2 (e)-6 (r)3 c
o water quality and fisheries, there is interest locally in patterns o,
d to post-Hurricane Sandy beach replenishment. Our nearest inlet,
ter flow through each branch of the inlet during two

ater between the ocean and the coastal bays

ort use of a boat for the surveys, partial summer salary for
inary data analysis, and a stipend for an undergraduate
sis.

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required for this study from my graduate and postdoctoral

Methodology

Project timeline:

July 15-31, 2018	Set up ADCP on boat and test software configuration
August 11-13, 2018	First 14-hour survey (depending on weather and staff availability)
August 19-21, 2018	Second 14-hour survey
August 22-31, 2018	Process survey data
Fall 2018	Student research assistant analyzes data
Spring 2019	Finalize analysis and present results

Importance

This study will contribute to the field of research on physics of exchange of water through inlets to shallow water estuaries. This topic was highlighted as one in need of additional attention at the Coastal and Estuarine Research Federation conference that I attended in November 2017. Little Egg Inlet is an excellent example of an inlet with minimal modification by erosion control measures, allowing comparisons with other areas with greater anthropogenic interference. Issues of sedimentation and water quality are not only locally important, but also relevant to similar coastlines globally. Furthermore, this study will help me achieve scholarship objectives in my faculty plan of establishing a locally-accessible research program and involving students in use of ocean technology and data analysis.

Further Research

This study will augment two ongoing collaborative efforts. First, I am a co-PI on a proposal in preparation with the Stockton Coastal Research Center involving sediment transport along the coast near this study site. Second, I am working with scientists at the U.S. Geological Survey on a pilot study of the seabed just outside of Little Egg Inlet in June 2018 that we plan to expand to a larger scale investigation of the morphological changes of the inlet over time by applying for additional external funding. Having spatially-detailed surveys of the flow of water through the inlet will assist with interpretation of results from these other studies and demonstration of the methodology for grant proposals. In the longer term, the study results will add to my catalog of physical circulation of the Mullica River-Great Bay Estuary that I plan to develop into a publication.

Outcomes

Results of this study will be presented to the Stockton community and at a national conference. I will encourage the student research assistant to present a poster at the NAMS Undergraduate Research Symposium in April 2019 and give a talk at our Marine Science program research seminar series. I plan to present at the Gordon Research Conference for Coastal Ocean Dynamics in June 2019, a high-profile meeting in my subdiscipline. I will further use outcomes of this study to develop proposals for external funding with colleagues at the USGS and Coastal Research Center. Such proposals will likely be submitted to the National Science Foundation, National Oceanic and Atmospheric Association, U.S. Army Corps of Engineers, and/or state sources such as the New Jersey Sea10 (s)-5 (e(A)2 (t)-2 (m)-2 (o4 (nd)/6 (u)-4 (d)-3S)-8 (0 (w)-2 ()-10 (J)-8 (f (e