

RISING WATERS

Rising Waters: Improving Predictions of Estuarine Flooding and Circulation During Storms

3- Part Education Program

Includes field trips to Coastal Studies Institute.

NC Essential Standards: 6.E.2, 7.E.1, 8.E.1, EEn.2.1, EEn.2.5, EEn.2.6, NC.8.EE.4

Storms greatly impact our coastal landscapes and communities through flooding and surge from the four primary rivers that drain into the estuary system. North Carolina is home to the second-largest estuary system in the United States. Numerical models are used to predict flooding of coastal communities. This is a 3-part education program that will highlight new research that focuses on the impact of these storms on the estuary surge and circulation. The education program includes pre visit activities, a visit to CSI and post visit activities. The lessons are aimed at middle and high school classes, specifically 8th grade science and Earth and Environmental Science.

1. Student activities prior to visit. Attached are activities that are to be completed before the visit to CSI. There are videos to introduce the concepts that are also explained in the text. Constructing a model home (Activity 4) **MUST** be done prior to the CSI visit so home adaptations can be tested in the wave tank. Activities include:
 - a. Activity 1 - *Storm Surge* page 2.
 - b. Activity 2 - *Computer Models* page 6.
 - c. Activity 3 - *Mathematical Model for Storm Surge* page 11.
 - d. Activity 4 – *Model Homes Adaptations* page 14. (testing will not be possible until field trips are available again).
2. Virtual or CSI experience. Students will complete a few “virtual” activities in place of a visit CSI until field trips are possible again. Once students can visit CSI, there are multiple hands-on experiences that relate to storm surge, including testing model homes in a “storm”, exploring barrier islands through augmented reality, and mathematical modeling.
3. Post Activities include problem solving issues facing coastal communities from rising waters and storms.

All busing and program fees are covered for the visit to CSI. Please contact Parker Kellam at kellama19@ecu.edu or 252-475-5452 for more information.

