



**Alex J. Shaw, M.S., B.S**  
**Coastal Engineer**

**Expertise**

Hydrodynamic modeling using numerical and analytical models on coastal and estuarine systems. Validation of models based on observed data and analytical methods. The use of SMS, ArcGIS, MATLAB and other programs to visualize and process model inputs and outputs.

**Qualification Summary**

- Coastal numerical modeling experience with ADCIRC, WHAFIS, SLOSH, STWAVE, and SWAN.
- Programming experience with MATLAB
- Laboratory and numerical model assessment of storm surge flooding and the effects of dredging
- Strong written and verbal communication skills
- Strong data processing and analysis skills

**Education**

- M.S. Ocean Engineering, 2016 - University of Rhode Island
- B.S. Ocean Engineering, 2014 - University of Rhode Island

**Licenses and Registrations**

- Advanced SCUBA certification

**Professional Affiliations**

- Member; Coasts, Oceans, Ports and Rivers Institute (COPRI)
- Member; Order of the Engineer
- Tau Beta Pi Engineering Honor Society
- Omega Epsilon Ocean Engineering Honor Society

**Publications and Presentations:**

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**Work Experience**

- 2016-Present Coastal Engineer, Woods Hole Group
- 2014-2016 Teaching/Research Assistant, University of Rhode Island
- 2013 Intern, Applied Science Associates (RPSASA)
- 2012 Intern Office of Marine Programs

## Key Projects

### **Narrow River Dredging Project for the CRMC and Fish and Wildlife Service – Engineer/Modeler**

Created a hydrodynamic model using ADCIRC to assess the impact of multiple dredging scenarios on the Narrow River flushing times and tide ranges. The dredging scenarios considered included dredging to 1, 1.4, 2, and 3 meters in the narrows of the river to increase flow and decrease flushing time. Both tidal and surge cases were evaluated. The work was completed ahead of schedule and is being considered by the CRMC and other agencies.

### **Effect of Erosion on Storm Surge Flooding: Case Study of Coastal Ponds in Rhode Island – Engineer/Modeler**

Developed and validated high resolution model of the south coast of Rhode Island. Erosion was estimated for 25 years and after a storm event where the dunes have been eroded. Two storms, Hurricane Bob and a synthetic 100-year recurrence event, were simulated both with and without erosion. The erosion of the shoreline was shown to have negligible effects on flooding extents, while dune erosion produced a dramatic increase in flooding along the coastline.

## Publications and Presentations

Hashemi, M. Reza, et al. "An efficient artificial intelligence model for prediction of tropical storm surge." *Natural Hazards* 82.1 (2016): 471-491.