

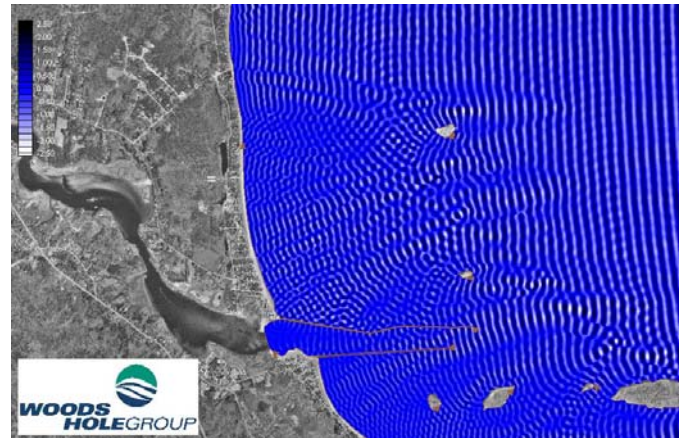
Saco River and Camp Ellis Beach Section 111 Project Saco, Maine

Project Characteristics

- *Wave Data Collection via Wave ADCP's*
- *Bathymetric Survey*
- *Numerical Wave Modeling at Generation Scale*
- *Numerical Wave Modeling at Transformation Scale*
- *Boussinesq Wave Modeling*
- *Alternatives Analysis*

A comprehensive field data collection and numerical modeling scope of work was completed for the Saco River and Saco Bay region. Results were used to assess potential mitigation options for the erosion caused by federal coastal structures. The field data collection effort consisted of a 2.5 month wave, current, and tidal observation deployment using two strategically located RD Instruments wave Acoustic Doppler Current Profiler (ADCP) systems, a high resolution near shore bathymetric survey, and a shipboard ADCP current profile survey of river hydrodynamics. There was 100% data return from all of the systems deployed.

The coastal monitoring data set is being utilized to calibrate and verify a series of state-of-the-art wave models ranging from generation scale (Atlantic Ocean) and transformation scale (regional) models, down to local and near field scale models. The advanced modeling effort included spectrally based wind-generation (WAVAD), wave transformation (STWAVE and CGWAVE), and Boussinesq (MIKE 21BW) wave models. Model output is being used in sediment transport modeling on both a regional and local scale. The calibrated models are being used to assess a wide range of shore protection alternatives aimed at mitigating the erosion caused by federally maintained coastal structures.



A rigorous screening process involving different modeling resolutions is being used to select the final design alternative that best reduces wave energy and minimizes sediment transport changes.

The project involves a high level of coordination between regulatory agencies, the federal government, State of Maine senators, US Army Corps of Engineers, Town of Saco officials, and the local community. The project is highly visible and requires extensive meetings and presentations of results to stakeholders, interest groups, and the local media. Woods Hole Group has worked closely with the regulators and senators throughout the process to ensure a high level of cooperation and consensus building.