

**Minutes**  
**Herring River Restoration Committee (HRRC)**  
**Workshop Session on Sea Level Affecting Marshes Model**  
**Cape Cod National Seashore Headquarters**  
**Wellfleet, MA**  
**October 19, 2017**

**Members Present:** Tim Smith, Steve Spear, Eric Derleth, Hillary Greenberg, Peter Herridge

**Others Present:** Margo Fenn, Martha Craig, Christine Odiaga, Carole Ridley, Helen Miranda Wilson, John Portnoy, Kirk Bosma, Elise Leduc, Mark Adams, Kelly Medeiros, Katey Lavallee

Kirk Bosma and Elise Leduc of the Woods Hole Group (WHG) provided an overview of the Sea Level Affecting Marshes Model (SLAMM). SLAMM was designed to simulate the dominant processes involved with wetland conversions due to sea-level rise. It has the ability to incorporate a number of different input parameters, including LiDAR elevations, existing wetland classifications, sea-level rise, tide range, and accretion and erosion rates for various habitat types. For the Herring River Project, WHG used SLAMM in combination with the hydrodynamic model of the Herring River to estimate the effects of different tide gate openings at the new Chequessett Neck Road bridge and predict resulting vegetation changes in different sub-basins of the estuary.

Leduc and Bosma described the model inputs, which include 2011 LIDAR data in combination with site-specific surveys, and bathymetric data on the river channel and harbor to establish existing topography (elevations) throughout the estuary. WHG evaluated several different sources for existing wetland classifications including the National Wetlands Inventory (NWI), MA DEP Wetlands data and site-specific wetland survey data compiled by the National Park Service (NPS). WHG used a combination of NPS and NWI data combined with tide range data for each sub-basin of the river and ran simulations for 16 different tide gate opening scenarios. Elise Leduc presented examples from some of those model simulations. These simulations can be used to evaluate the effects of different platform policies for tide gate management over time.

The Committee discussed how to classify and describe the different wetland types found in the system and how to incorporate salinity data into the model. Kirk Bosma noted that as restoration proceeds, conditions in the system will change and the model will need to be recalibrated and rerun to take into account those changes. For example, existing vegetation now impairs drainage in many parts of the estuary; drainage will improve with tidal flushing and removal of woody vegetation.

The group discussed next steps and agreed that it would make sense to incorporate the salinity data from the FEIS/EIR into the model to improve the predictions about vegetation change. This work will continue as part of advancing the adaptive management plan.