

NOAA IDIQ Regional Services Contract Task XI - Penobscot River and Bay Tidal Current Measurement Project

Project Characteristics:

- *Tidal Current Survey*
- *Deployment Planning and Execution*
- *Bottom Mounted and Taut-Line Moorings*
- *600 kHz Acoustic Doppler Current Profiler (ADCP)*

This project continued a 2005 tidal current survey conducted at the request of Senator Snowe (ME), the United States Coast Guard (D-1), and the Penobscot Bay and River Pilots Association. Bucksport Harbor, on the Penobscot River, is the site of a significant current shear. The Penobscot River to Bangor, particularly during spring freshets, is an area of concern for shipping interests. Data collected by NOAA CO-OPS in 2005 were highly biased by the river flow and necessitated a follow-up survey. Once recovered and analyzed, the 2005 river stations and 2006 reoccupations were compared and residual currents computed. The residual currents were compared with USGS river stage data to determine if there is a correlation the pilots can use as an additional tool to support safe navigation in the river.

The goal of the project was to reoccupy historic tidal current prediction stations and additional stations in the Bay and River identified as important for the nation's commercial and recreational transportation systems. Sites also were selected for resource protection, incident prevention and response, or for general oceanographic significance. WHG led two cruises on the Penobscot River and measured currents over two consecutive 35-day deployments using bottom mounted ADCPs at 3 locations, and sub-surface, taut-line moorings at 6 locations. Bottom-mounted current meters were housed in trawl-resistant bottom mounts (TRBM) with Benthos 875 pop-up recovery buoys and Benthos UAT-376 underwater relocation transponders. The subsurface taut-line moorings were deployed with upward looking ADCPs in Open Seas Inc. SUBS, with chain, ORE CART tandem releases, and an ARGOS relocation beacon. 100% data was achieved on time and on schedule, and the project was completed within the established budget.

