Indian River Inlet – Questions and Answers about the 2014 inlet hydro survey

(Q1) What is the vessel's mission at Indian River Inlet?

(A1) The Shuman and another Philadelphia District survey vessel are performing a complete hydrographic survey of Indian River Inlet and vicinity.

Note - a hydrographic survey is used to determine depths within the area being surveyed. In essence it creates a detailed, quantitative map of the bottom, with depths referenced to the standard US surveying vertical datum named "NAVD88" [North American Vertical Datum of 1988], which is approximately equal to mean sea level along coastal Delaware.

The 2014 survey operation will update the last complete survey of Indian River Inlet vicinity performed in 2011 prior to the impacts of Hurricane Sandy in October 2012. We have surveyed the very large Hurricane Sandy impacts on sediment distribution on the ocean shoreline through conventional surveying methods. However, a complete, new hydrographic survey is needed to document changes in depth and sediment distribution on the submerged portions of the project area.

See air photo of the Indian River Inlet vicinity below. The three colored polygons illustrate the approximate limits of the survey. The red box is one mile wide in the east-west direction, and extends one mile north and south of the inlet. This "offshore" zone is very dynamic, with large shoals and adjacent deeper areas that respond to ocean and inlet tidal currents and ocean waves. The configuration of the offshore bottom affects the direction and height of ocean waves that approach the shoreline and transport beach sediment (sand). The yellow box defines the limits of the inlet in which significant scour has occurred since the construction of the jetties was completed in 1939. There are three scour holes within this zone that exceed depths of 80 feet, and these scour holes have the potential to jeopardize stability of the jetties, and were in part responsible for the DelDOT decision to replace the Route 1 highway bridge completed in 2013. The green box defines the "inlet interior" through which the Indian River Inlet navigation channel passes, connecting to other navigable channels in the Inland Bays. All three areas are subject to relatively large sediment transport rates in response to waves and currents.

The Philadelphia District is collaborating with the Delaware Department of Environmental Control (DNREC) and the University of Delaware (UD) Center for Applied Coastal Research in a program to improve understanding of sediment transport pathways and rates, both of which affect the stability of the inlet channel and the adjacent ocean shorelines. See the second attachment for a brief discussion of this collaborative effort.

Indian River Inlet and Vicinity – 2014 Hydrographic Survey Areas