Announcement M13AS00014: Hurricane Sandy Coastal Recovery and Resiliency - Resource Identification, Delineation and Management Practices

Agreement: M14AC00004 Florida Department of Environmental Protection/Florida Geological Survey

Lead Agency:
Florida Department of Environmental Protection/Florida Geological Survey

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Annual Report

Cooperative Agreement Outputs including Project Deliverables:

Regional Offshore Sand Source Inventory (ROSSI) http://rossi.urs-tally.com/

The objectives of this project were to complete various improvements, updates, and enhancements to the ROSSI database (formerly ROSS/OSSI), in addition to populating ROSSI with data from Florida's coastal counties. The goal of the was twofold; encompassing modernization involving system updates and enhancements to the ROSSI database, and populating ROSSI with more comprehensive data of existing and potential borrow areas. The modernization of the ROSSI webpage and application programming interface (API) mapping utility will provide coastal scientists and managers with a more user-friendly, reliable database to describe existing borrow areas and geotechnical and geophysical data.

Multiple enhancements were included in the website modernization and upgrade: all internal and external links were verified and updated, the reports page was updated and linked to available reports, search and query capabilities have been expanded to allow multiple selections and data export, a secure file upload and delivery system for JCP deliverables was created, and the site received an overall cosmetic redesign – including a rotating photo gallery of FDEP permitted coastal restoration and dredging activities. Population of ROSSI for southeastern Atlantic counties with data collected from the Southeast Florida Sediment Assessment and Needs Determination (SAND) Study was completed in 2014. However, the enhancements include the population of ROSSI with data for all coastal counties and borrow areas.

By utilizing ROSSI, it has been possible to identify regions within both State and Federal waters offshore Florida where geotechnical data does not exist on a reconnaissance level. As such, regional data collection will continue to be a part of maintaining and modernizing the ROSSI database. Maintenance of the ROSSI project includes the incorporation of new data from delineated borrow areas being utilized for beach nourishment, which will be used to build on previous studies between Florida Geological Survey (FGS), BOEM Marine Minerals Program (MMP) – formerly Marine Minerals Service (MMS), the U.S. Army Corps of Engineers (USACE), and FDEP.

Data within ROSSI may be used to quantify and qualify the extent to which beach compatible sand resources may exist throughout previously investigated state and federal waters. The existing geophysical and geological data may be correlated with existing and future vibracores using an interactive seismic workstation to create top of rock and sediment thickness maps and potentially identify future sand sources. These sand deposits may be used to maintain the beaches along the Florida Atlantic coast and help coastal communities recover from future storm impacts by protecting the infrastructure.

Geological and Geophysical Mapping

All available and process-able sub-bottom profiler data south of Cape Canaveral offshore of Brevard, Indian River, St. Lucie and Martin counties, Florida have been processed using Chesapeake Technology SonarWiz5 ® software. Digitization of the seafloor and the interpreted “top of rock” horizon has been completed for the area as well. Identification of “top of rock” was accomplished by: 1) correlating seismic data to individual vibracores, 2) analyzing variations in seismic reflection intensity, and 3) seismic stratigraphic analysis. From the digitized surfaces of the seabed and “top of rock,” the thickness of unconsolidated sediments in the area has been tabulated line by line. Maps of seabed, “top of rock” and unconsolidated sediment thickness for the region are in preparation.

All available sub-bottom profiler data north of Cape Canaveral offshore of Nassau, Duval, St. Johns, Flagler Volusia and Brevard counties, Florida, have been uploaded to processing software. Processing of those data is ongoing.

Conference and Meeting Presentations

Dr. Jennifer Coor (former project PI) gave a presentation of ROSSI modernization at Coastal Sediments 2015, May 11 through May 15, 2015, at San Diego, CA.

Dr. Jennifer Coor gave a presentation regarding ROSSI and sediment management at the meeting of the Southeastern Geological Society on June 12 and 13, 2015 at Honeymoon Island, FL.

Dr. Jennifer Coor hosted an online relaunch webinar meeting and presentation of the ROSSI modernization, July 22, 2015, Florida Department of Environmental Protection.

Dr. Jennifer Coor attended the 2015 Gulf of Mexico Offshore Sand Management Working Group (BOEM/GOMA SMWG) Meeting on October 13, 2015 and gave a talk regarding ROSSI, a single master data repository of data regarding sand resources offshore of Florida. Additionally, Dr. Coor sat on a panel which discussed sand management and permitting issues experienced in the Gulf States. Dan Phelps, current project PI, attended the meeting via webinar.

Professional Papers

Coordinating manuscript written on ROSSI modernization for Coastal Sediments, 2015. Coor, J.L., Beauvais, C., Ousley, J.D., 2015, ROSS/OSSI (ROSSI): A coastal management tool for offshore sand sources: Proceedings, Coastal Sediments 2015, Eighth International Conference on Coastal Engineering and Science of Coastal Sediment Processes, San Diego, CA. p. 17-21.

Training

In December, 2014, Dr. Jennifer Coor and Dan Phelps attended the SonarWiz5 software training in St. Petersburg, Florida.

Meetings

Both Dr. Jennifer Coor, the PI at the time, and the co-PI, Dan Phelps attended the Florida /BOEM post-award meeting, held in St. Petersburg, FL in December of 2014. Both also met with BOEM staff at FSBPA in February 2015 in Clearwater, FL to discuss the BAA and co-operative agreement.