

FY15 RSM-EWN IPR

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BLUF: Long term goal: isolate where coastal erosion problems exist, determine the likely causes of those problems and to establish relationships with the stakeholders and local experts to determine appropriate solutions.

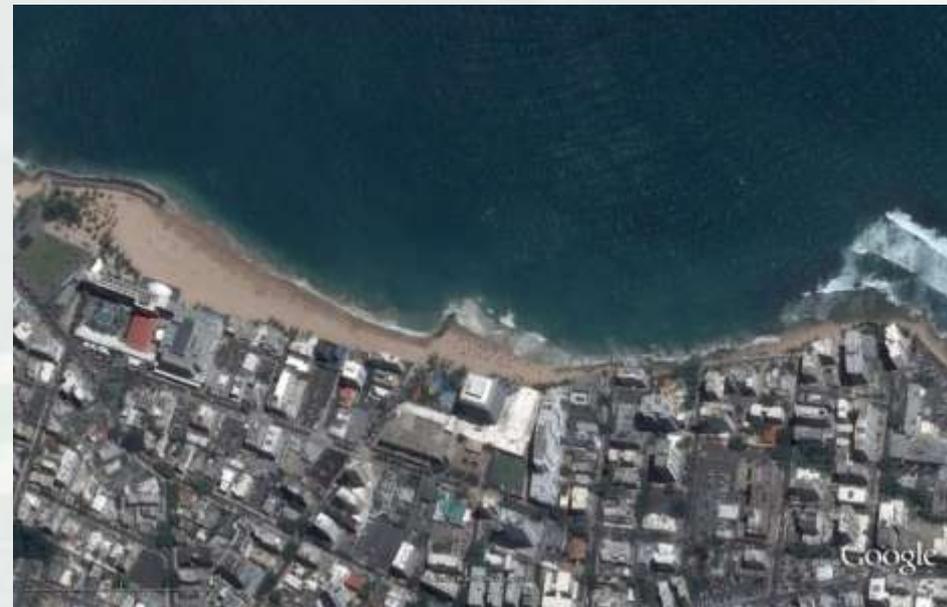
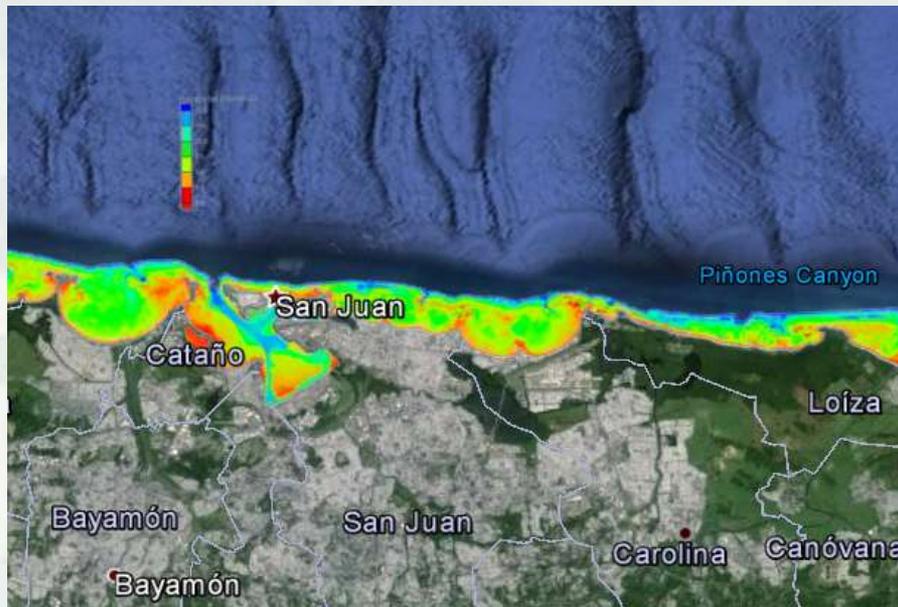
Short term goal: locate promising locations for beach placement of O&M material from San Juan Harbor Fed Nav Project

Problem Statement/Issue

- Highly developed, urban and suburban shorelines
- Significant existing armor and hard structures
- Chronic beach erosion
- Very limited coastal hydro/topo survey data
- Extensive nearshore reef ecosystems

Approach to Address Problem

- Initiate collaborative relationship with DNER, UPR, NOAA, USGS and Sea Grant
- Initiate discussion of beach nourishment alternatives with resource agencies
- Establish long data collection plan



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Approach to Address Problem (Tools, Models, Technologies)

Data Mining and Literature Review

- Aerial photography
- Historical shoreline data
- Historical studies and reports (DNER, USGS, UPR)
- NOAA Benthic Habitat Maps

Analyses/Tools Applied

- Conceptual Sediment Budget - SBAS
- CMS wave/current modeling

Figure 1. San Juan RSM Conceptual Sediment Budget

Conceptual Cells A—H, Punta Salinas to Loiza



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USACE RSM PDT

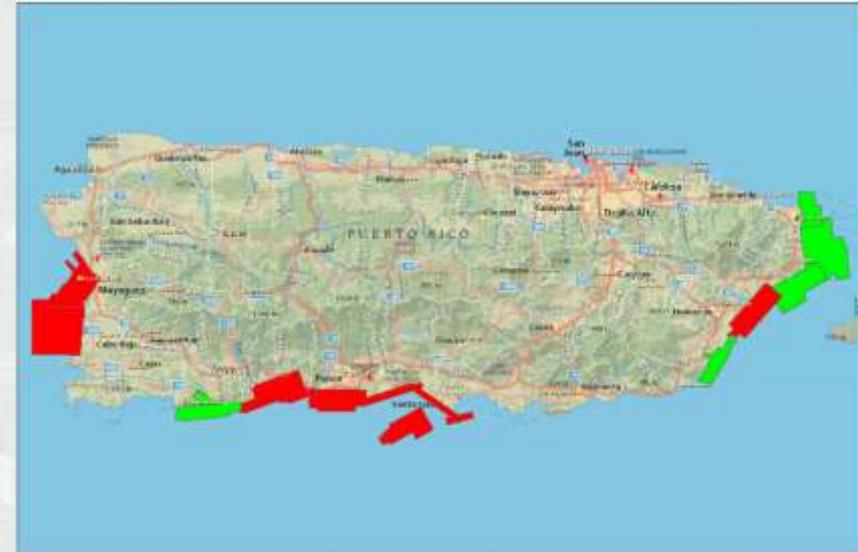
- Matthew Schrader
- Kelly Legault
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Stakeholders/Partners

- PR Department of Natural and Environmental Resources (DNER)
- University of Puerto Rico
- NOAA
- USGS

What key leveraging opportunity(s) did stakeholders/partners provide?

- NOAA LIDAR data collection 2015/16
- Future data collection planning underway



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UPs – 3 Positives from effort

- Sediment budget and CMS setting the stage for future beneficial use placement and feasibility level studies on coastal storm risk management
- Promising start to collaboration with UPR researchers on PR coastal issues and challenges
- DNER and UPR enthusiastic about USACE involvement in their coastal management challenges—has opened up discussion with DNER on many problem areas outside of RSM area



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DOWNs – 3 Negatives from effort

- Very sparse data coverage on beach erosion and riverine sediment transport
- Resource agencies have strong negative position on sand placement on beaches
- Limited funding available for data collection



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Value to the Nation

Beach Placement of O&M sand from San Juan Harbor

- Saving of perhaps \$20-30/cy vs. offshore sources and \$10/cy vs. truck-hauled upland sand
- Enhancement of tourist revenue and PR economy
- Coastal hazard (flood/erosion) risk reduction
- Enhanced long-term resilience of system vs. armored coast
- Enhanced environmental quality vs. armored coast

