

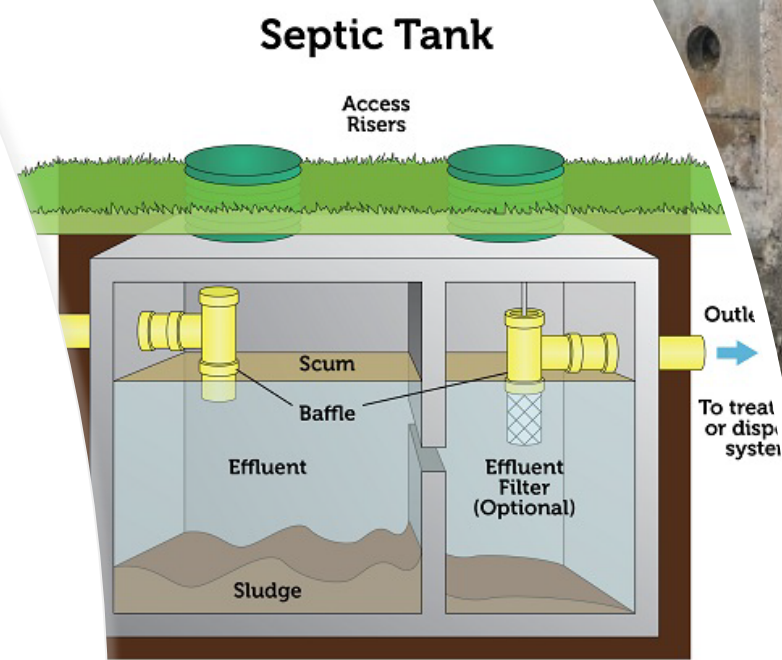
Use of Autonomous Surface Vessels (ASVs) to Assess Recreational Water Quality in the Nearshore Environment



Tom Clerkin
Noble Lab

Innovative tools to assess Water Quality

- Anthropogenic stressors impairing water quality
- Land based federally-recommended monitoring frameworks
 - Complex estuarine systems
 - Need for actual use water quality characterization
- ASVs potential for improved response to acute and chronic water contamination events



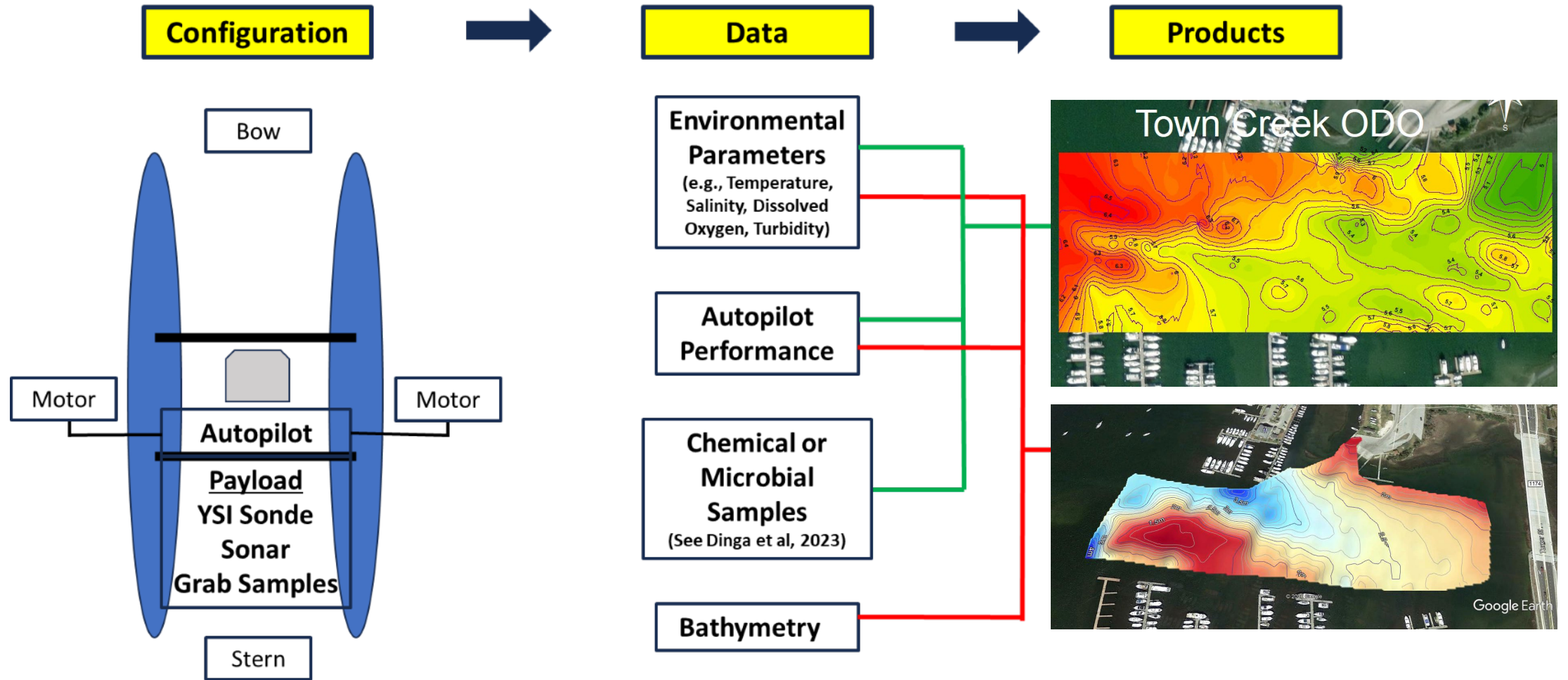
base note: The number of compartments in a septic tank vary by state and region.



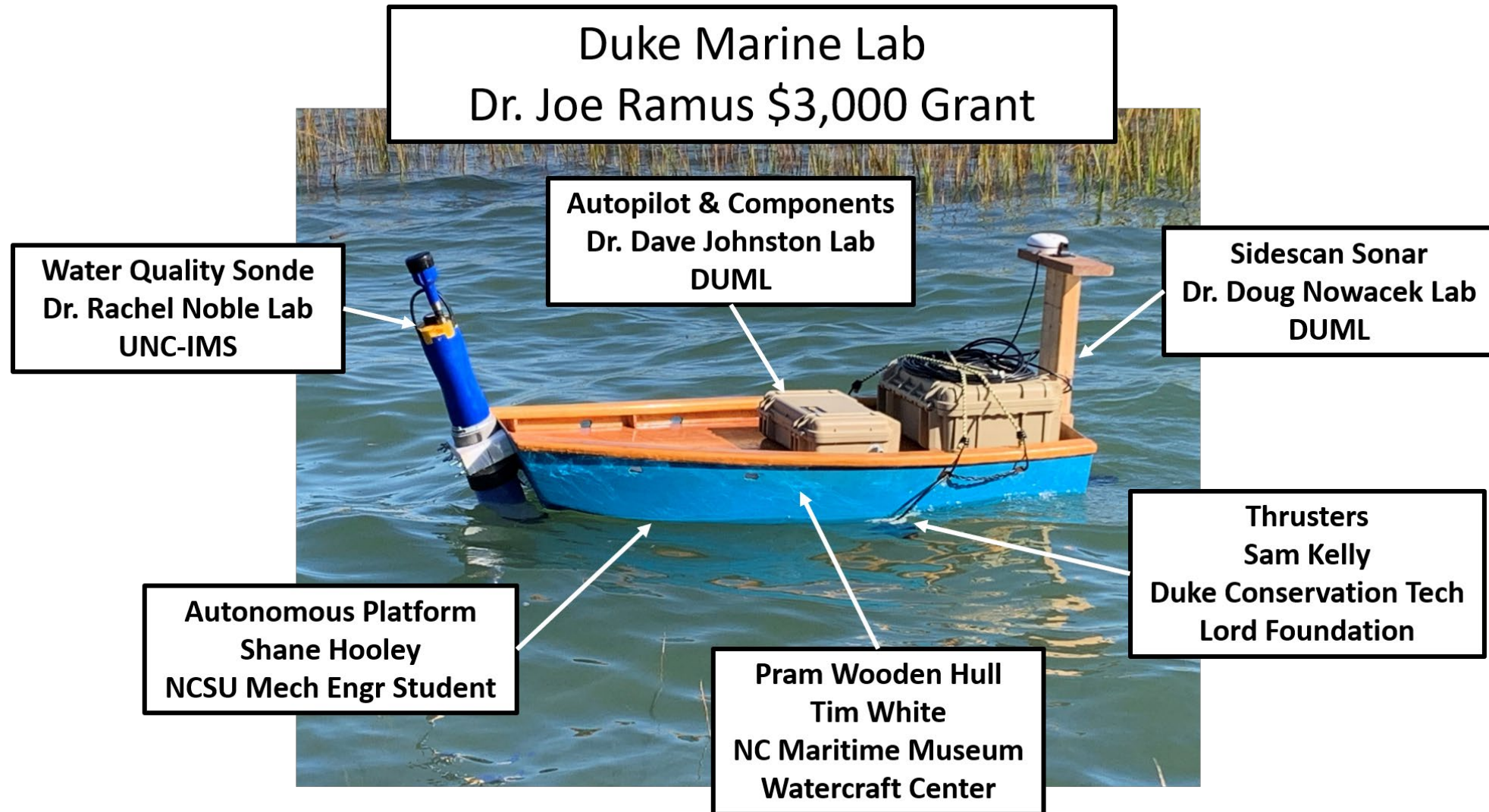


Proof of Concept Platform 1

Proof of Concept Platform 1



Proof of Concept Platform 2



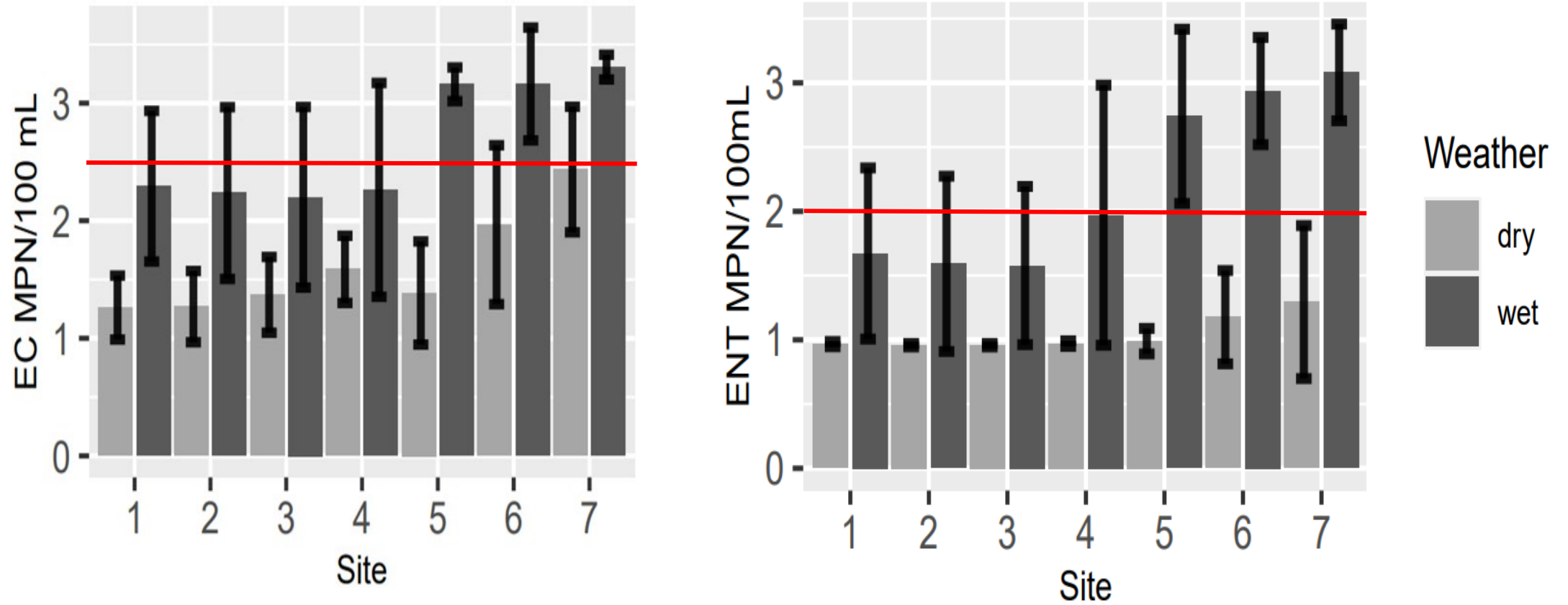
Proof of Concept Videos



Mapping and Data Products

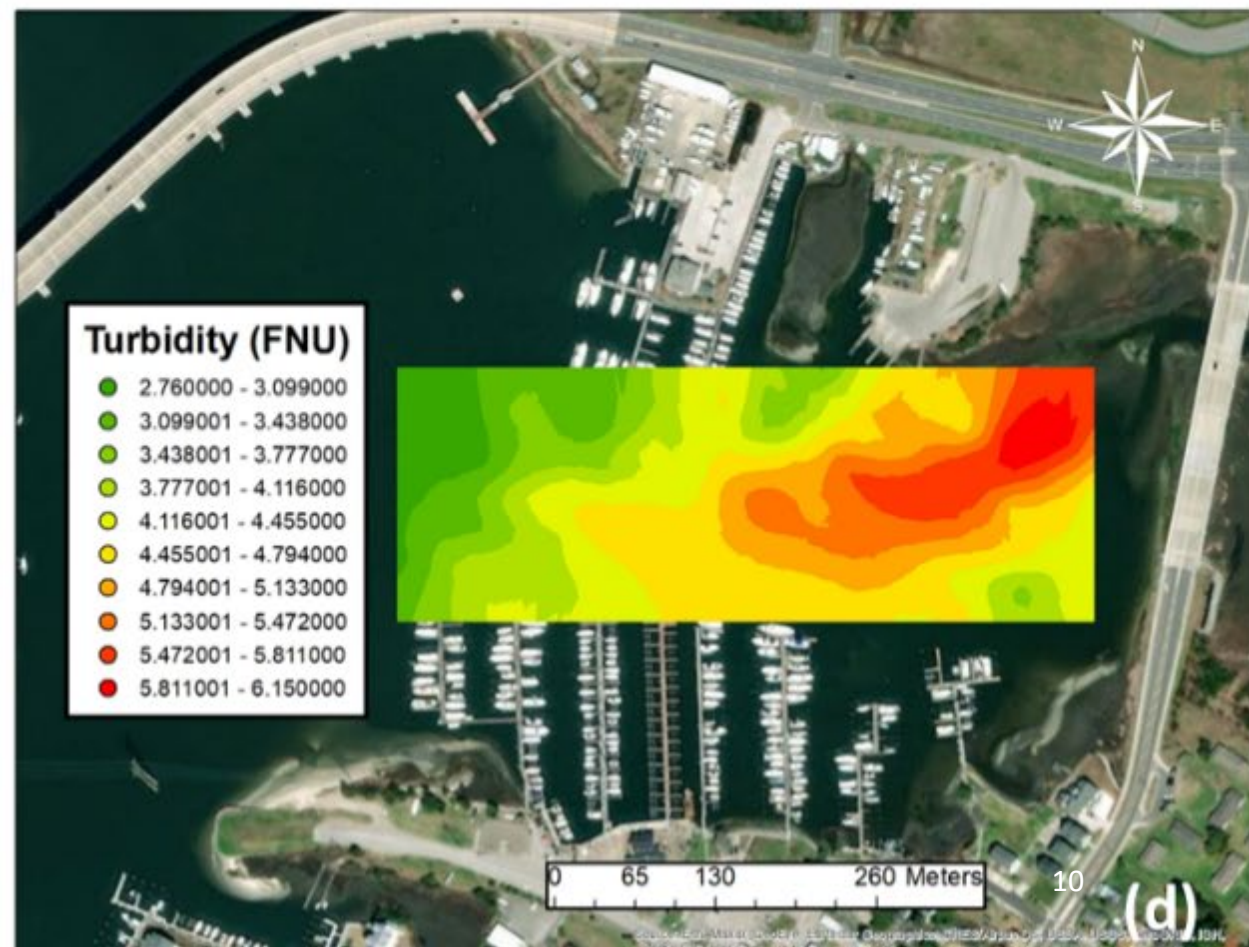
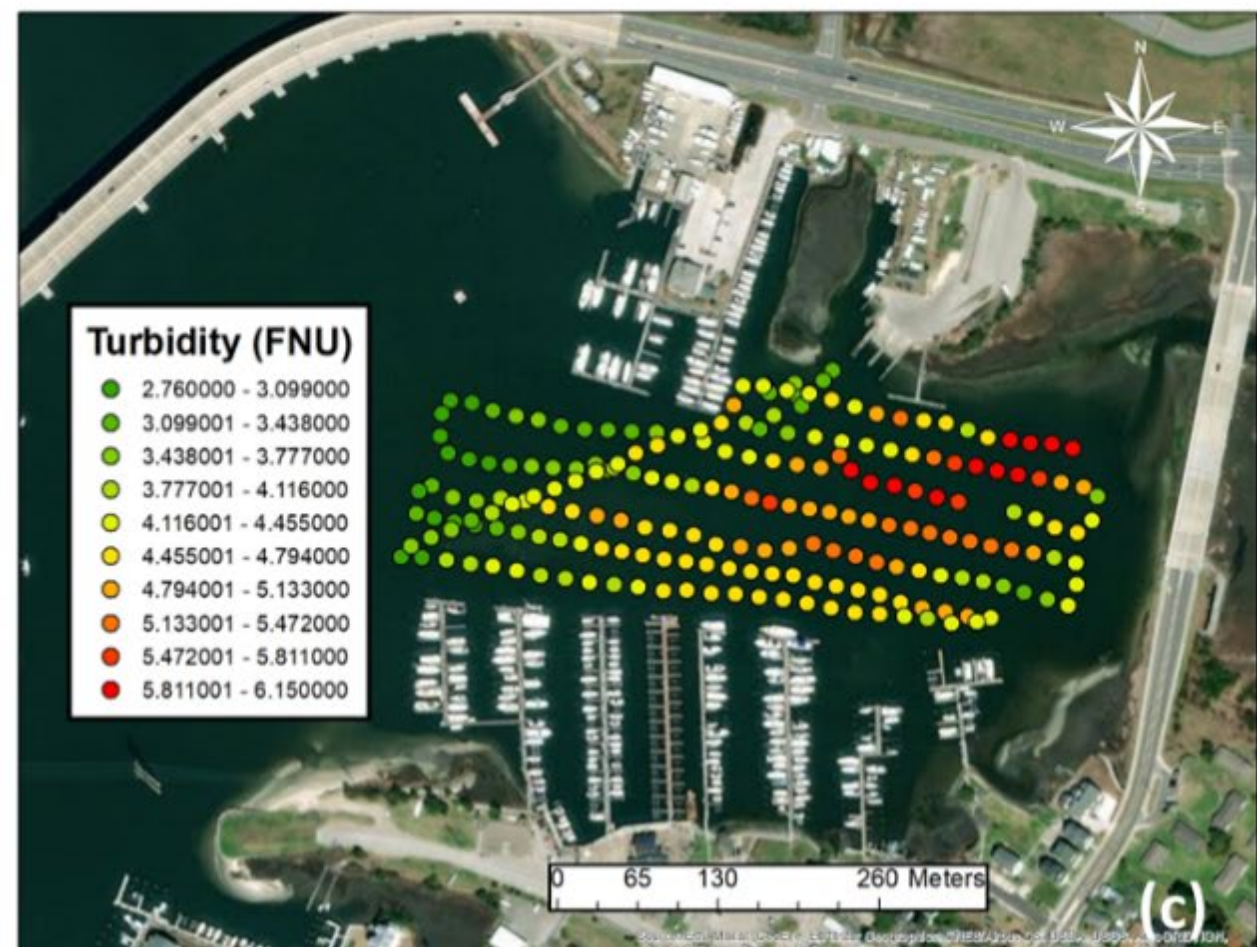
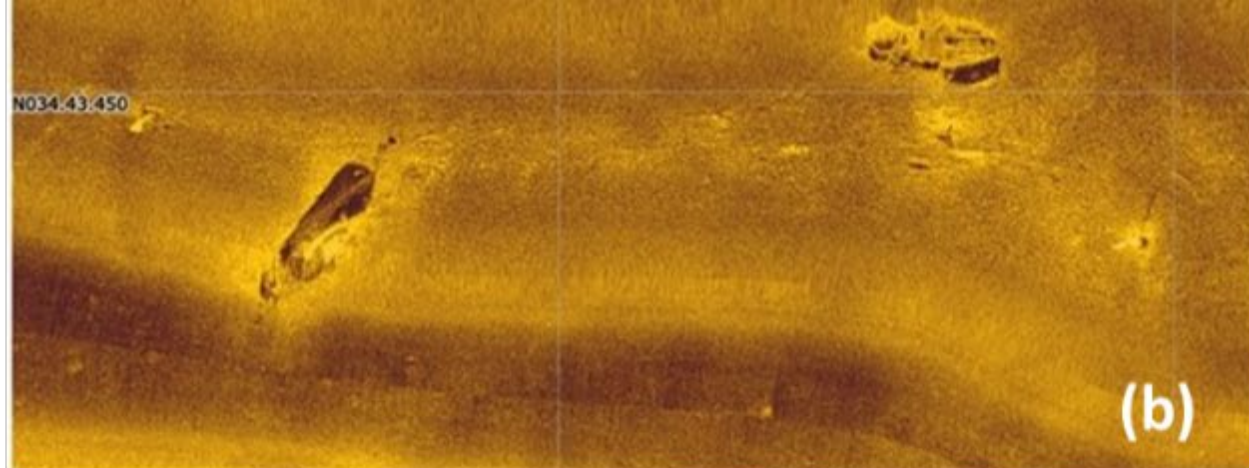
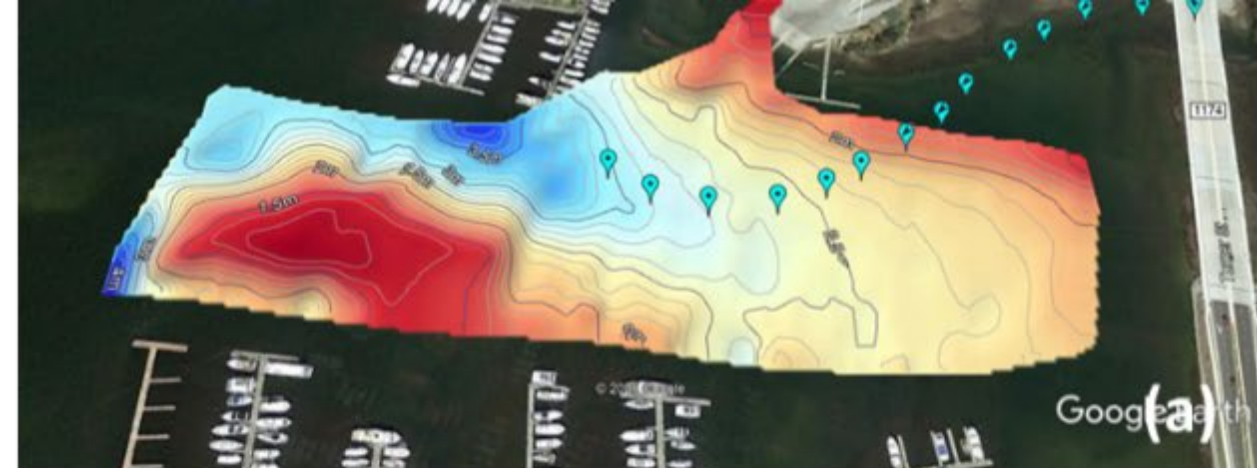


Mapping and Data Products



Mapping and Data Products







Future Applications

- Widely adaptable platform
 - Sewage Discharge
 - Chemical Discharge
 - Oxygen Dead Zones and HABs
 - Aquaculture sites

Acknowledgements

DUML

Rett Newton

Dr. Dave Johnston

Dr. Doug Nowacek

Sam Kelly

NC Maritime

Museum

Watercraft Center

Tim White

Noble Lab

Carly Dinga

Dr. Rachel Noble

Denene Blackwood

Mark Ciesielski

Tami Bennet

NC State

Shane Hooley

