



## ROB HOLLIS

### *Research Scientist*

Rob Hollis, Research Scientist, brings over eight years of experience in coastal geology and oceanography to The Institute. Building upon previous technical roles working for various consulting and state agencies, Rob uses his understanding of natural processes to help inform coastal management and restoration decisions. At The Institute, he specializes in the creation of geologic frameworks to develop sediment resource inventories for coastal and marsh restoration projects.

#### COMPANY ROLE

Research Scientist

#### PROJECT ROLE / FOCUS AREAS

Coastal and Marine  
Geology

Regional Sediment  
Management

Large Scale Coastal  
and Deltaic Evolution

Marine Geophysics

#### EDUCATION

MS Marine Science,  
University of Southern  
Mississippi, 2018

BS Geology and  
Geological  
Oceanography,  
University of Rhode  
Island, 2014

Prior to joining The Institute, Rob worked as a coastal geologist at Applied Coastal Research & Engineering where he examined coastal subsidence rates along southern Louisiana for the Louisiana Coastal Master Plan, in addition to studying coastal and wetland change related to various climatic and engineering factors. Furthermore, he worked on various nearshore sediment budgets, coastal restoration monitoring, shoreline change, and flood risk vulnerability studies while at the Rhode Island Geological Survey.

Rob received a bachelor's degree in geology and geological oceanography from the University of Rhode Island and earned a master's degree in marine science with a concentration in coastal geology from the University of Southern Mississippi, where his work focused on barrier island and coastal system evolution in the northern Gulf of Mexico.

#### PROFESSIONAL EXPERIENCE

2022 to Present: Research Scientist, The Water Institute

2019 to 2022: Coastal Geologist, Applied Coastal Research & Engineering

2016 to 2018: Research Assistant, University of Southern Mississippi

2014 to 2016: Research Associate II, Rhode Island Geological Survey

2013 to 2014: Research Assistant I, Rhode Island Geological Survey



## SELECTED PROJECTS

### **Louisiana Sediment Management Plan Implementation.** *LACPRA. (2022 to present).*

*Technical Lead.* This project aims to develop and explore unconventional sediment resource prospects for various restoration projects and characterize sand sources and sinks within the active barrier system to help refine operational sediment budgets.

### **Texas Offshore Sediment Management Plan Surveys: Geophysical survey support, data interpretation, and development of geologic models.** *Texas GLO (2022 to present). Technical Lead.*

This project aims to develop and explore unconventional sediment resource prospects for various restoration projects and characterize sand sources and sinks along the entire TX coast in State and Federal waters.

**Synthesis of Sediment Budget Assessments along the Northern Gulf of Mexico from the Pearl River to Apalachicola Bay.** *USACE (2022). Technical Lead and Facilitator.* This project gathered previous sediment budgets and datasets to create a future regional sediment budget. Created web-based tool and data repository shaped by stakeholder input.

### **Barrier Island Data Synthesis.** *LACPRA. (2022).*

*Technical Support.* This project synthesized monitoring data of physical parameters and volumetric change prior-to and post-construction along restored portions the Louisiana barriers.

**Recent Subsidence Trends in Southern Louisiana.** *LACPRA. (2018 to 2022). Technical Lead.* This Applied Coastal Research & Engineering project was developed to measure short-term subsidence rates using high resolution geodetic GPS elevation measurements and water level records across southern Louisiana to inform restoration planning. Results are being included in the 2023 Coastal Master Plan.

**Caminada Headland Beach and Dune Restoration Load Induced Subsidence Assessment.** *LACPRA. (2019 to 2020). Technical Lead.* This Applied Coastal Research & Engineering project was developed to monitor the loading induced subsidence due beach

replenishment fill placement compared to natural subsidence at Caminada Headland, Louisiana to improve restoration design standards and tolerances.

### **Mississippi Sound and Offshore Sediment Resources Inventory: Late Quaternary**

**Stratigraphic Evolution of the Inner Shelf** *BOEM. (2016 to 2018). Technical Lead.* This project built upon prior subsurface investigations, developing a regional source to sink geological model to identify potential resource areas more efficiently in Mississippi/Alabama waters. The new stratigraphic framework helped refine the timing and response of portions of the Mississippi/Alabama barrier island chain to changes in sea-level rise rates, sediment supply, and antecedent topography.

**Beach Special Area Management Plan.** *RI CRMC. (2014 to 2016). Technical Support.* This RI Geological Survey collaborative project integrated shoreline erosion studies, flood risk vulnerability and hazard exposure to various sea-level projections and storm surge scenarios into a series of web-based tools and permitting design strategies. These were used to inform policy decisions and raise awareness to state and town managers and planners in Rhode Island.

## SELECTED PUBLICATIONS

- Gal, N.S., Wallace, D.J., Miner M.D., **Hollis, R.J.**, Dike, C.H., Flocks, J.G., 2020, Holocene Formation of Horn Island, Mississippi, USA. *Marine Geology* 431, 106375 doi.org/10.1015/j.margeo.2020.106375
- Oakley, B. A., Murphy, C., Lee, K.K., **Hollis, R.J.**, Caccioppoli, B., King, J.W., 2020, Sediment deposition following construction of a breakwater harbor: Point Judith Harbor of Refuge, Rhode Island, USA. *Journal of Marine Science and Engineering* 8, 863 doi.org/10.3390/jmse8110863
- Hollis, R.J.**, Wallace, D.J., Miner M.D., Gal, N.S., Dike, C.H., Flocks, J.G., 2019, Late Quaternary Evolution and Stratigraphic Framework Influence on Coastal Systems along the North-Central Gulf of Mexico, USA. *Quaternary Science Reviews* 223 1-24. doi.org/10.1016/j.quascirev.2019.105910
- Oakley, B. A., Murphy, C., Varney, M., **Hollis, R.J.**, 2019, Spatial Extent and Volume of the Shoreface Depositional Platform on the Upper Shoreface of the Glaciated Rhode Island South Shore. *Estuaries and Coasts* doi.org/10.1007/s12237-019-00594-2