



# C PATRICK BARRINEAU, PHD PG

COASTAL SCIENTIST

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## PROFILE

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Dr. Barrineau serves as a coastal scientist and project manager for CSE, performing work in the field, laboratory, and office. He served as project manager at Arcadian Shores and Singleton Swash (2018), Myrtle Beach (2017-present), Pawleys Island (2020), Sea Island (2018-present), and regularly curates coastal data from collection to publication in concert with CSE staff.

While at CSE, Dr. Barrineau has prepared reports and/or permit documents for projects at Nags Head (NC), Buxton (NC), Myrtle Beach (SC), Pawleys Island (SC), Debidue Island (SC), Edisto Beach (SC), and Sea Island (GA). Prior to joining CSE, Dr. Barrineau studied coastal processes and landforms through field-based research on sediment transport and barrier-lagoon evolution. He has organized and led field studies in South Carolina, Texas, New Mexico, California, Brazil, and Israel. In addition to his work at CSE, Dr. Barrineau teaches a graduate-level course in Coastal Zone Management at the University of South Carolina.

## REGISTRATION

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Professional Geologist (SC #2773, NC #2761)

## RESEARCH EXPERIENCE

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Conceptual modeling of landscape evolution in coastal systems; modeling fluid dynamics and sediment transport; identifying controls on sediment transport patterns; and monitoring beach and dune response and recovery following storm impact. Field research at Isle of Palms (SC); Padre Island (TX); White Sands (NM); Pismo Beach (CA); Jericoacoara, Brazil; Ashkelon, Israel.

## TECHNICAL EXPERIENCE

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Dr. Barrineau has extensive experience working in coastal and desert settings, collecting elevation and geophysical data using RTK-GPS, Total Station, ground-penetrating RADAR, and Electromagnetic Induction Profilers.

He has also collected vibracores and analyzed hundreds of sediment samples for grain size, sorting, and X-ray fluorescence analysis.

## EDUCATION

PhD. Geography, Texas A&M University  
MS. Geography, University of South Carolina  
BS. Geography, Auburn University

## SPECIALTIES

- Collection and analysis of elevation and geophysical data
- Collection and analysis of coastal sediments
- Beach and Dune processes
- Conceptual models of landscape evolution

## SOFTWARE PROGRAM CAPABILITIES

- ArcGIS
- ERDAS Imagine
- QGIS
- ENVI

## SELECT PUBLICATIONS

Barrineau, P., Janmaat, R., Kana, T., 2021. Empirical depths of closure along the US East Coast. *Coastal Engineering*, Vol. 170, DOI 10.1016/j.coastaleng.2021.104009.

Barrineau, P., Tchakerian, V., 2021. Geomorphology and dynamics of a coastal transgressive dune system, central California. *Physical Geography*, 43:1, 122-144, DOI: 10.1080/02723646.2021.1944462.

Harris, M., Ellis, J., Barrineau, P., 2020. Evaluating the geomorphic response from sand fences on dunes impacted by hurricanes. *Ocean and Coastal Management* 193 DOI 10.1016/j.ocecoaman.2020.105247.

Barrineau, P., Kana, T., 2019. Unpacking Storm Damages on a Developed Shoreline: Relating Dune Erosion and Urban Runoff. *Shore and Beach* 87(3), 35-45.

Houser, C., Barrineau, P., Hammond, B., Saari, B., Rentschler, E., Trimble, S., Wernette, P., Young, S., 2017. Role of the foredune in controlling barrier island response to sea level rise. In: *Barrier Islands*, ed. Moore and Murray.

Barrineau, P., Wernette, P., Weymer, B., Trimble, S., Hammond, B., Houser, C., 2015. Coastal Landscapes in the Critical Zone. In: *Principles and Dynamics of the Critical Zone*, Vol. 19, pp. 495-420