



STEVEN B TRAYNUM

COASTAL PHYSICAL SCIENTIST

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PROFILE

Mr. Traynum specializes in coastal hydrodynamics and estuarine processes (2007–present). He also serves as project manager for several beach monitoring programs and nourishment projects. Mr. Traynum is experienced in critical area permitting including analysis of environmental impacts and preparing biological assessments and EIS documents. Liaises between resource agencies and clients, and assists in developing appropriate monitoring plans to determine project impacts to endangered and threatened species. His coastal engineering project experience includes design of coastal erosion mitigation projects, monitoring and analysis of erosion and morphological changes of natural and nourished beaches and coastal inlets, measurement and analysis of tidal inlet currents, and on-site land and hydrographic surveys.

TECHNICAL EXPERIENCE

Extensive experience in estuarine and coastal settings including deployment and recovery of hydrographic equipment, such as acoustic Doppler current profilers (SonTek, RDI, Nortek), acoustic Doppler velocimeters, CTDs, and pressure sensors.

Mr. Traynum has collected hundreds of beach profiles using the latest surveying techniques (RTKGPS). He is a certified (SSI), open-water diver.

COASTAL EROSION/RENOURISHMENT EXPERIENCE

Managed restoration projects at Nags Head (NC) involving placement of 4.6 million cubic yards (cy) of sand, Isle of Palms (SC) involving placement of 2.5 million cy, Folly Beach (SC) involving placement of 415,000 cy and 745-ft-long terminal groin construction, and Edisto Beach (SC) including placement of one million cy and administration of the groin extensions.

Project manager for beach monitoring programs involving collection and analysis of land-based and hydrographic profile data to determine short- and long-term erosion rates and project performance and impacts. Monitoring sites include: Isle of Palms, SC Hunting Island, SC Edisto Beach, SC Kiawah Island, SC

Critical area permitting for projects in SC and NC, including Biological Assessments, Essential Fish Habitat reports, EIS documents, and monitoring programs coordinated with USFWS, USACE, NMFS, and state agencies.

MatLab® scripts for automatic generation of sediment grain-size distributions, beach profile analysis, and nourishment profile design.

EDUCATION

MS. Marine Science, University of South Carolina
BS. Marine Science, USC Honors College
Coastal Engineering Certificate, Old Dominion University

SPECIALTIES

- Beach nourishment design and monitoring
- Design of coastal structures
- Environmental impact assessments
- Coastal and estuarine processes
- Collection and analysis of beach profile data
- Hydrographic instrument deployment
- Collection and analysis of coastal sediments

SOFTWARE PROGRAM CAPABILITIES

- ArcGIS
- Global Mapper
- MatLab
- Microsoft Office

SELECT PUBLICATIONS

Traynum, SB, TW Kana, and DR Simms. 2010. Construction and performance of six template groins at Hunting Island, South Carolina. *Shore & Beach*, Vol 78(3), pp 21–32.

Kana, TW, HL Kaczowski, and SB Traynum. 2015. (BC) An empirical approach to beach nourishment formulation. Chapter 4 in YC Kim (ed), *Design of Coastal Structures and Sea Defenses*, Vol 2, Series on Coastal and Engineering Practice, World Scientific, pp 105–144.

Kaczowski, HL, SB Traynum, TW Kana, and M Rentz. (2015) Terminal groin and beach restoration at Folly Beach County Park (South Carolina). In D Cox and L Wallendorf (eds), *Proc. Coastal Structures and Solutions to Coastal Disasters*, ASCE– COPRI (Boston MA, 9–11 September 2015), 12 pp.

Kana, TW, SB Traynum, and HL Kaczowski. 2014. Scales and signatures of episodic bypassing at a tide-dominated inlet—Fripp Inlet, South Carolina. In JM Smith (ed), *Proc 34th International Conference on Coastal Engineering (ICCE)*, June 2014, Seoul, Korea, 10 pp).

Kana, TW, SB Traynum, D Gaudiano, HL Kaczowski, and T Hair. 2013. The physical condition of South Carolina beaches 1980–2010. *Jour Coastal Research*, Special Issue 69, pp 61–82.