



TIMOTHY W KANA, PHD PG

SENIOR COASTAL SCIENTIST

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PROFILE

Founder and president of Coastal Science & Engineering (CSE) (1984–present) and Adjunct Professor of Geology at the University of South Carolina (1981–2009). Prior to 1984, he was a founder and principal in the firm Research Planning Institute Inc. Kana is an internationally recognized expert in coastal and estuarine processes, and has written over 300 publications and technical reports. Contributions to coastal engineering literature include reports on estuarine sedimentation and harbor shoaling, sediment partitioning among marshes, beaches and tidal channels, potential impacts of sea level rise on beaches and coastal wetlands, preparation of sediment budgets, and beach nourishment design.

BEACH NOURISHMENT EXPERIENCE

Kana has served as project director or technical advisor on more than 35 beach restoration projects totaling nearly 30 million cubic yards. His work emphasizes soft engineering solutions to erosion along the oceanfront. Among the innovative projects Kana has directed was an inlet relocation at Seabrook Island (SC) which resulted in long-term restoration of two miles of eroded beach. Major nourishment projects Kana directed in North and South Carolina and New York include:

- Myrtle Beach (1.3 million cubic yards)
- Hunting Island (0.75 million cubic yards)
- Bogue Banks (4.5 million cubic yards)
- Seabrook Island (0.6 million cubic yards)
- Bridgehampton–Sagaponack (2.5 million cubic yards)
- Nags Head (4.6 million cubic yards)

INTERNATIONAL EXPERIENCE

Dr. Kana has served on design and environmental impact assessment teams for numerous projects in the Caribbean, West Africa, Kuwait and other Middle East countries. From 1977 to 1989, he served as coastal processes and environmental monitoring consultant on the 20-km Kuwait Waterfront (KWF) project. Work included establishing a beach erosion monitoring program, periodic field measurements over many years, and assistance to the project engineers on Phases I–V. Kana was senior scientist for a Kuwait Foundation for the Advancement of Science (KFAS) study of environmental and water quality impacts of the KWF (1984–1986).

SEA LEVEL RISE STUDIES

Pioneering work by Dr. Kana includes two of the earliest case studies of potential impacts of sea-level rise on coastal wetlands for the U.S. Environmental Protection Agency (1984–1988), which quantified the controlling physical conditions and processes for tidal wetlands evolution.

EDUCATION & ACADEMIC TRAINING

PhD. Geology (Coastal Processes), University of South Carolina (USC)
MS. Geology (Coastal Geology), USC
BA. Natural Sciences (Geological Oceanography), The Johns Hopkins University

PROFESSIONAL AFFILIATIONS & AWARDS

Board of Directors – American Shore & Beach Preservation Association
Associate Editor – Journal of Coastal Research
Affiliate Member – American Society of Civil Engineers
Registered Professional Geologist (NC and SC)
ASBPA Morrrough P. O'Brien Award (2015)

EXPERT TESTIMONY

Qualified and admitted in the following areas:

- Marine geology
- Coastal Processes
- Estuarine processes
- Beach erosion

COASTAL EROSION STUDIES

Technical work by Kana includes development of a methodology for objective delineation of present shorelines and setback lines along the South Carolina coast. Prototype application of the methodology was implemented by Myrtle Beach (1984) and incorporated in local zoning ordinances. In 1988, the methodology was incorporated into the state's Beach Management Act and used to establish development setback lines throughout the coast. The methodology is the first in the U.S. to provide for quantitative placement of setback lines based on the volumetric condition of the beach.

Kana has been principal investigator for contracts from the US Army Corps of Engineers for a number of coastal engineering studies, including Buffalo District (inventory and analysis of 200 shore protection structures, Lake Ontario), New York District (sediment budget, Fire Island Inlet to Montauk Point), Charleston District (sand search, Horry County, SC; and ICWW erosion), and CERC (sediment transport at Duck, NC; and performance evaluation of three SC beach nourishment projects).