UNIVERSITY OF NORTH CAROLINA AT WILMINGTON

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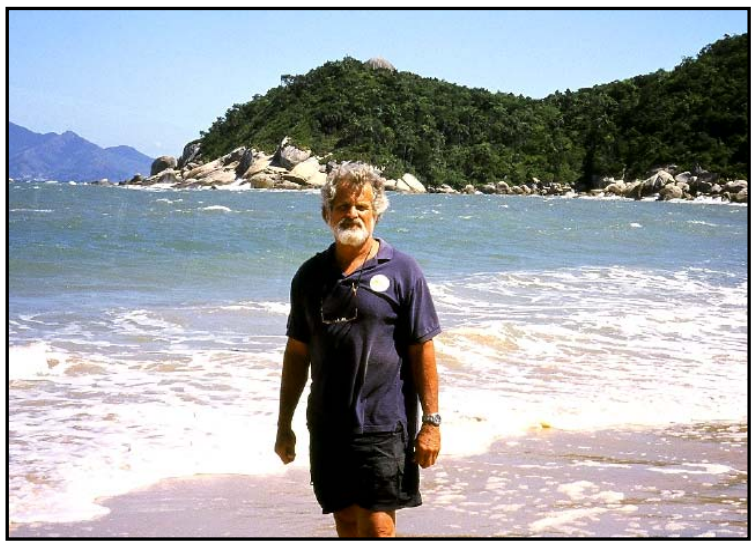
MARINE GEOLOGIST
Dr. William J. Cleary

I am a marine geologist who specializes in studying sandy coastlines and the processes that shape coastal areas. Some of my research deals with beach erosion, while other studies deal with why and how shoreline change occurs during hurricanes and winter storms. I also study the numerous tidal inlets that occur along our coast and how the water flow affects the shape of the inlet, and how the inlet processes affect the adjacent beaches. I use this information to understand the consequences of man altering the complicated balance of these inlets and their impact on the beaches. Other recent research projects have involved scuba-based diving studies of nearshore areas. These studies are concerned with the role the offshore area plays in the erosion of beaches, and if any of these offshore areas are suitable sites that can be used for obtaining sand for nourishing our eroding beaches.



Isla Santa Catarina, SC Brazil

SCUBA diving aboard RV Seahawk

Coastal geology is a very important field of study because over half of the entire U.S. population lives within the coastal zone. With so many people dependent on coastal areas, man-made or natural changes in coastal areas will have a significant impact on the way we live, our property, and the fragile ecosystems found along the coast. All 35 coastal states are experiencing some form of coastal erosion, and, as a result, the federal government will spend about 125 million dollars in 2004 to offset beach erosion and in effort to help protect the development along the coast. The costs for restoring the beaches in North Carolina alone will exceed 50 million dollars.

Oak Island nourishment 2001

Erosion of oceanfront shoreline related to movement of ebb channel at New River Inlet, NC.

Inlet-related accretion along western extremity of Holden Beach, NC

I have chosen the field of coastal geology because the coastline is dynamic, and it provides ever-changing opportunities to learn more about the area where the land meets the sea not only in North Carolina but elsewhere around the world. I can conduct both problem-oriented and curiosity-driven studies that will help us to understand how the beach and adjacent environments evolve with and without the influence of man. Information derived from these studies can be used to help preserve and better utilize coastal areas, and also to help solve many of the problems along our coasts that are related to poor management stemming from a lack of science-based policies.