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Formation and Evolution of Coastal Cliffs (Or the All-Time Shortest Coastal Cliffs Short Course)

The term "coastal cliff" refers to a steeply sloping surface where elevated land meets the shoreline. Coastal cliffs are a geomorphic feature of first-order significance, occurring along about 80 percent of the world's shorelines, as well as around lakes and estuaries. Like virtually all landforms, modern coastal cliffs are a "work in progress", continually acted upon by a broad assortment of offshore (marine or lacustrine) and terrestrial processes that cause them to change form and location through time. An important consequence is that coastal cliffs retreat (that is, move landward), and the adjacent coastal land is permanently removed as they do so. Retreat can be slow and persistent, but on many occasions it is rapid and episodic. Houses, commercial buildings, roads, and other infrastructure located along a coastal cliff, either on the elevated crest or at the base, have been damaged or destroyed when cliffs collapse. Therefore, coastal-cliff retreat is an important national issue.

Biography: ***Dr. Monty Hampton*** has had a long interest in the sea. He received a B.S. in Geology in 1966 from Los Angeles State College, and a Ph.D. in Geology in 1970 from Stanford University. His thesis was *Subaqueous Debris Flow and Generation of Turbidity Currents.* From 1970 to 1975 he was an Assistant Professor at the University of Rhode Island; from 1975 to 2003 he was a Geologist working in Coastal and Marine Geology, at the U.S. Geological Survey. Since 2003, he has been an Emeritus Geologist, at the USGS. His research interests include debris flows as a sediment transport process in the oceans, sea-floor utilization (environmental geology, geologic hazards, and sediment geotechnical properties). Examples in these areas of interest include studies of geologic hazards and environmental geology in Alaskan Outer continental shelf petroleum lease areas, and acoustic mapping and analysis of contaminated sediment deposits and dredge spoils. Additional interests include nearshore and coastal geology including tonight's topic on coastal cliff retreat, as well as offshore sand resources.