

# COASTS OF THE WORLD: A PHOTOGRAPHIC TOUR

## MILES O. HAYES

This is a book of color photographs by coastal geologist Miles O. Hayes designed to illustrate the fascinating complexity of the coasts of the world. Hayes has conducted research in 42 countries on all the major continents as well as field sessions near both the North and South Poles. The photographs are grouped into five major geomorphic categories:

- 1) Steep mountainous coasts that usually occur on the leading edges of continental plates (e.g., southeast Alaska, Baja California);
- 2) Coastal plain and deltaic coasts that are most common on the trailing edges of continental plates (e.g., southeastern USA);
- 3) Older shorelines backed by plateaus and pre-Cambrian shields (e.g., West Africa, Oman);
- 4) Large lakes and marginal sea coasts [e.g., Arabian (Persian) Gulf, Great Lakes]; and
- 5) Glaciated coasts, both Holocene and Pleistocene (e.g., Iceland, Strait of Magellan). A large number of oblique aerial photographs taken in all of these areas dominate the set.



Oblique aerial view of the southwest end of Kayak Island, Alaska in the early summer of 1971. This prominent knob is one of the most striking geological features on the south-central Alaska Coast, forming the landmarks of Cape Saint Elias and Pinnacle Rock.

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View looking to the northwest in August 1972 at the northern end of a 4 mile (6.4 km) long spit-form that connects two bedrock headlands along the western shore of Bahia de San Quintin, Baja California, Mexico. The linear aeolian dunes visible on top of the spit-form were formed by northwest winds. Located about 2.5 miles (4 km) southwest of Volcan San Quintin.



View looking north along the western shore of the northeastern corner of the Yucatan Peninsula, Mexico in mid-summer of 1961. At that time, I was a field assistant to Robert L. Folk, the advisor for my Ph.D. work at the University of Texas. We had been sampling the bottom sediments in the channel visible on the right as well as on the adjacent offshore island, Isla Mujeres.



View looking east at Point Barrow on the Alaska North Slope in late July 1976. This is a classic example of a cusped foreland formed by opposing significant wave directions, in this case from the east and the west. Note that ice was still covering much of the surface of the Arctic Ocean in that particular area.



View looking north at a cusped foreland called Punta Catalina, Chile during a low tide in late February 1976. This foreland is located on the south side of the east entrance to the Strait of Magellan. These recurved beach ridges, which indicated longshore sediment transport from north to south, were not formed by open Atlantic Ocean waves, but rather by waves created by strong westerly winds blowing across the “sheltered” interior of the strait during high tides. These beach ridges are composed of gravel (including abundant cobbles).

# ABOUT THE AUTHOR

## Miles O. Hayes

Dr. Miles O. Hayes is a coastal geomorphologist with over 50 years of research experience. He has authored over 250 articles and reports and five books on numerous topics relating to tidal hydraulics, river morphology and processes, beach erosion, barrier island morphology, oil pollution, and petroleum exploration. Hayes' teaching experience includes both undergraduate and graduate courses while a Professor at the Universities of Massachusetts and South Carolina. Seventy-two graduate students received their degrees under his supervision, most of whom are now leaders in their respective academic, government, and industry positions. He is considered to be the "Father of Coastal Geology." A review of his 1999 book – *Black Tides*, said "A skilled raconteur, Hayes tells engrossing stories of responding to most of the recent, headline-grabbing oil spills, including the Gulf War spills, the *Exxon Valdez*, the *Amoco Cadiz* spill in France, and the *Ixtoc I* blowout in Mexico. Interspersed among them are personal events and adventures, such as his survival of a plane crash while mapping a remote part of Alaska." He is Chairman of the Board of Research Planning, Inc. (RPI), a science technology company located in Columbia, SC.



Together with his wife and business partner, Jacqui Michel, Hayes has begun a series of books on the coastal geology and ecology of the coastal states of the U.S. The first three books in the series are:

- 1) Hayes, M.O. and J. Michel. 2008. *A Coast for all Seasons: A Naturalist's Guide to the Coast of South Carolina*. Pandion Books, Columbia, SC. 235 pp.
- 2) Hayes, M.O. and J. Michel. 2010. *A Coast to Explore: Coastal Geology and Ecology of Central California*. Pandion Books, Columbia, SC. 338 pp.
- 3) Hayes, M.O. and J. Michel. 2013. *A Tide-swept Coast of Sand and Marsh; Coastal Geology and Ecology of Georgia*. Pandion Books, Columbia, SC. 299 pp.