Introduction and Tribute

Authors: Kana, Timothy, Michel, Jacqueline, and Voulgaris, George

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COASTAL PHOTOGRAPH BY TIMOTHY KANA

Miles Hayes lecturing on the beach near Lomé, Togo during a United Nations-sponsored mission on coastal erosion in West Africa. Photograph taken in late January or early February 1979.

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INTRODUCTION AND TRIBUTE

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Over 6–9 October 2011, 80 students, colleagues, and friends of Miles O. Hayes convened in Columbia, South Carolina, at the University of South Carolina to honor his life and career. The Hayes Symposium on Applied Coastal Geomorphology included 20 presentations, a roast, and a field trip to the South Carolina coast. The present volume of papers is the culmination of this celebration.

Miles Hayes' career began at Berea College, Berea, Kentucky, where his two passions were geology and baseball, not necessarily in that order. After graduation, he went to Washington University in St. Louis, Missouri, for a Master's degree in geology, and then he moved to Austin, Texas, and attended the University of Texas to study with Professor Robert Folk. Halfway through his dissertation fieldwork on Padre Island in 1961, disaster struck. Hurricane Carla resculpted the Texas coast and wiped out most of Miles' field stations. Although this storm seemed to be a disaster at first, with encouragement from Folk, Miles changed the focus of his research. "Hurricanes as geologic agents" (Hayes, 1967), out of Hayes' dissertation, became one of the seminal papers in coastal geomorphology and established Miles as a pioneer in the field.

After studying the wave-dominated coast of Texas, Hayes joined the faculty at University of Massachusetts-Amherst and immediately secured funds to study mixed-energy coasts of New England. Between 1965 and 1972, dozens of graduate students from Hayes' Coastal Research Center (CRC) fanned out well beyond the beaches of Massachusetts, collecting data on processes and geomorphology at hundreds of sites. Observations and empirical measurements were systematized with Hayes' zonal method (Hayes *et al.*, 1973). In something of a lost art, CRC researchers combined oblique aerial photography, subaerial beach profiles, systematic sediment sampling, and visual observations of waves, currents, and bedforms using staffs and floats to distinguish fundamental differences among beaches and inlets. All the while, Hayes guided these studies with the admonition to employ a geologist's greatest tool—the eyes. Miles' gift of visualization is on display in thousands of his field sketches (Figures 1 and 2) where each of them in its own way captures the essence of the setting.

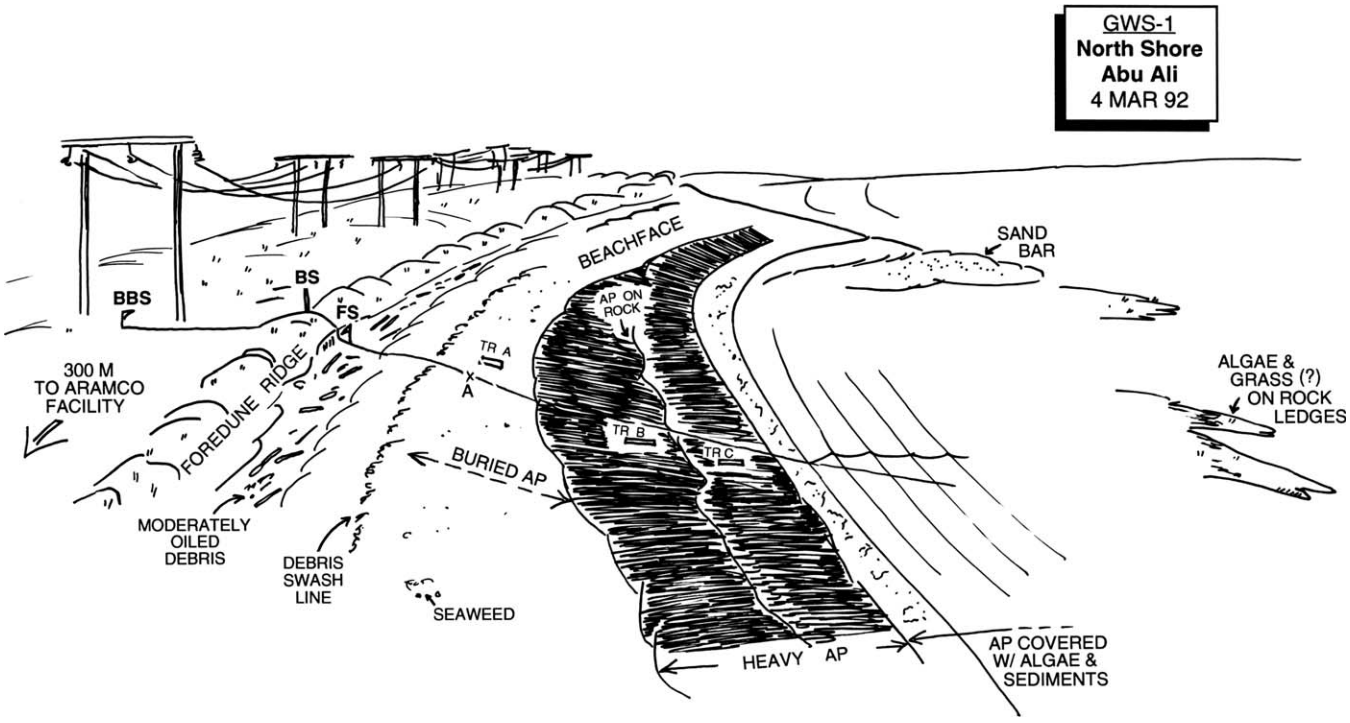

Figure 1. Field sketch of station 1 on Abu Ali Island, Saudi Arabia, drawn on 4 March 1992, which illustrates the presence of extensive asphalt pavement resulting from the *Nowruz* oil spill (1983).

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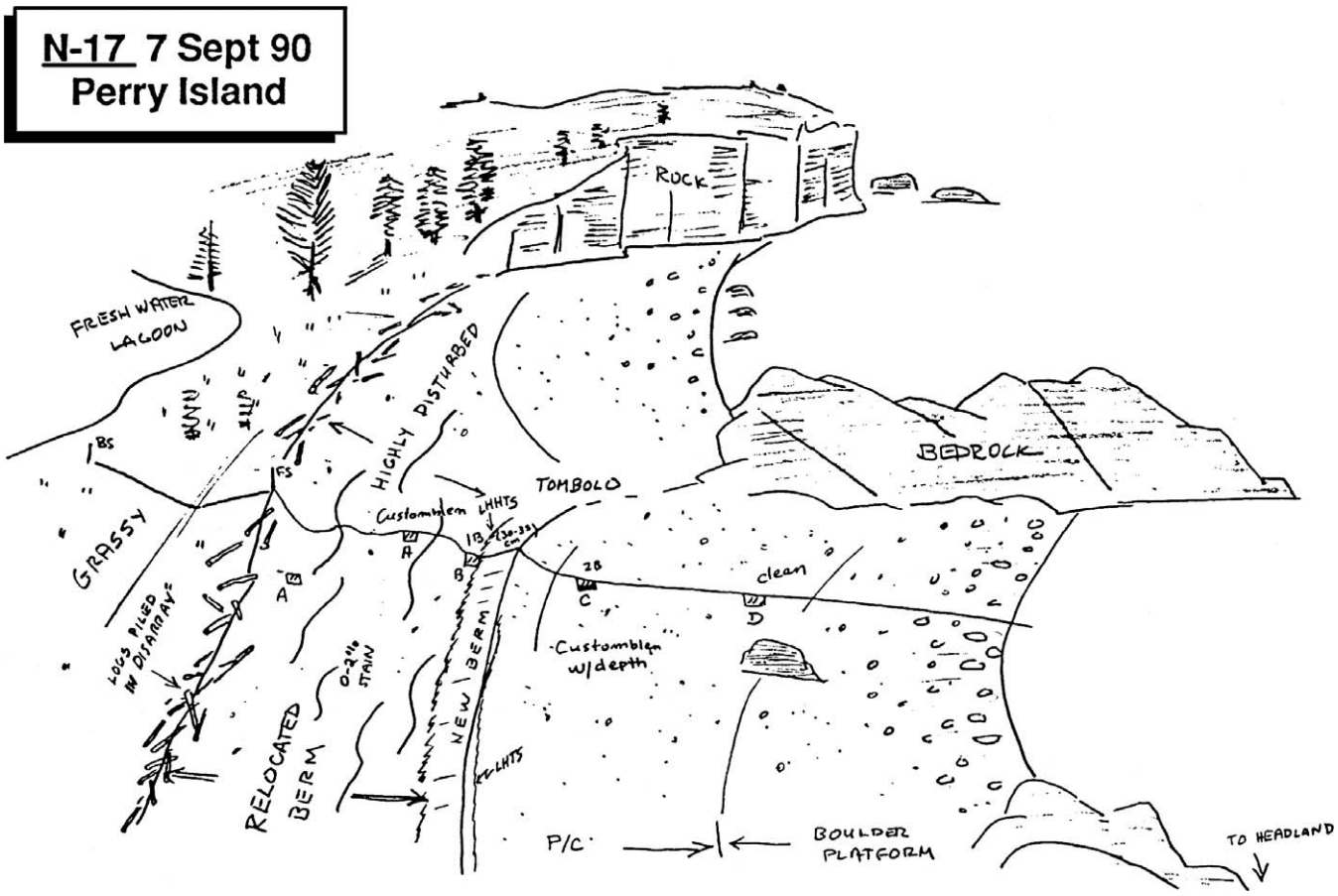

Figure 2. Field sketch of a site in Prince William Sound, Alaska, that was impacted by the *Exxon Valdez* oil spill of March 1989.

In 1970, Hayes and Paul Hague (a student and friend of his) created "Suzanne's Lament," a tone poem based on the Alaska coast (see cover photograph) that resonated throughout the earth science community. Besides its message of "Let it Be", which is told through the contemporary song by The Beatles, it also proved to be an inspirational recruiting tool for the profession of geology.

After UMass, in 1972, Hayes had an opportunity to join the Department of Geology (now Department of Earth and Ocean Sciences) at the University of South Carolina (USC) in Columbia and be closer to his hometown of Oakley in the mountains of North Carolina near Asheville. By then, geologists around the country knew Hayes for his brilliant slides, descriptive terminology, and folksy humor. With a coterie of a dozen graduate students and post docs at any given time, the reconstituted Coastal Research Division at USC explored new areas and built on the CRC legacy. Much of Hayes' work in the 1970s focused on barrier-island morphology as a function of wave and tide regime (Hayes, 1979) and tidal inlet variability (Hayes, 1980). Papers by Davis, Green *et al.*, Alexandrakis *et al.*, and Hayes and FitzGerald in the present volume continue these themes. Terms like "drumstick barrier island," "ebb tidal delta," "marginal flood channel," and "tide-dominated embayment" are just a few of the phrases coined by Hayes or certainly brought into common usage by the more than 70 Master's theses and PhD dissertations, as well as numerous professional papers, prepared under his direction.

Not content to simply study the coast with his many students, Hayes recognized linkages where he could apply principles of coastal geomorphology. This became fertile ground for new research and ultimately led to his second career as a consulting scientist. In unstabilized migrating inlets that were causing downcoast erosion, he saw opportunities to relocate channels and let nature mitigate the problem (Hayes, Kana, and Barwis, 1980). In oil spills despoiling a pristine coast, he saw the need for an environmental sensitivity index to help responders clean up the damage (Hayes, Gundlach, and D'Ozouville, 1979). In oil exploration and interpretation of borings and seismic records, he showed how modern coastal sand bodies are a perfect analog to many producing reservoirs (Hayes and Sexton, 1989). Papers by Weathers and Voulgaris, Kana *et al.*, Nixon *et al.*, Scott *et al.*, Tye, and Pirkle *et al.* in the present volume offer new insights on these topics. Thousands of petroleum geologists from around the world have spent a week with Hayes exploring the South Carolina coast and seeing first-hand the morphology and three-

dimensional geometries of barrier islands and inlets. Hayes' seminars in modern depositional systems, sponsored by the American Association of Petroleum Geologists, were among the most popular and longest running (30 years) short courses ever offered to geologists and engineers.

Hayes left USC in 1984 to focus on building his company, Research Planning Institute (now Research Planning, Inc. [RPI]). He continues to produce beautifully illustrated guidebooks to the coast with his founding partner, Jacqui Michel (Hayes and Michel, 2008, 2010). He has probably logged more miles in small planes mapping coastal morphology around the world than anyone in history (see cover photo and the photos between papers). If a person thinks they have seen a unique coastal feature, it would behoove them to check Dr. Hayes' slides and publications before announcing the find. Chances are he has a photograph of the feature in his extraordinary slide collection.

For those of us who were students and for the many colleagues Miles touched with his lectures, we offer this volume in honor of our mentor and friend, Miles O. Hayes, the father of coastal geomorphology.

ACKNOWLEDGMENTS

The Miles O. Hayes Symposium on Applied Coastal Geomorphology was sponsored by the USC Department of Earth and Ocean Sciences and the College of Arts and Sciences, RPI, and Coastal Science & Engineering, Inc. (CSE). Major funding for the present volume was provided by Schlumberger Ltd. The organizing committee included Dan Domeracki, Madilyn Fletcher, Al Hine, John Hodge, Tim Kana, Venkat Lakshmi, Jacqui Michel, George Voulgaris, and Mike Waddell. We thank Dean Mary Ann Fitzpatrick, School of Arts and Sciences, and Professor Tom Owen, chair of the Department of Earth and Ocean Sciences, for opening the Symposium at USC. Appendix 1 lists the attendees and presenters.

The papers in the present volume were solicited after the Symposium and represent the spectrum of Dr. Hayes' professional interests. The editors thank the numerous outside reviewers (Appendix 2) who generously provided independent reviews of the manuscripts and contributed to the quality of this volume. We deeply appreciate the time and effort of all authors who contributed manuscripts and thank them for their time and patience in bringing this volume to print.

We also thank our editorial assistants, Diana Sangster (CSE) and Wendy Early (RPI), for their professional assistance in preparing the final manuscripts. Finally, we thank Dr. Charlie Finkl and Chris Makowski (Coastal Education and Research Foundation) for their enthusiastic support of this special issue of the *Journal of Coastal Research*.

Timothy Kana
Coastal Science and Engineering, Inc.
PO Box 8056
Columbia, SC 29202, U.S.A.

Jacqueline Michel
Research Planning, Inc.
1121 Park Street
Columbia, SC 29201, U.S.A.

George Voulgaris
Department of Earth and Ocean Sciences
University of South Carolina
Columbia, SC 29208, U.S.A.

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Hayes, M.O.; Owens, E.H.; Hubbard, D.K., and Abele, R.W., 1973. The investigation of form and processes in the coastal zone. *In*: Coates, D.R. (ed.), Coastal Geomorphology, *Proceedings of the Third Annual Geomorphology Symposia Series*, Binghamton, NY, pp 11–41.

APPENDIX 1

Attendees and presenters at the 6–9 October 2011 Symposium on Applied Coastal Geomorphology in honor of Professor Miles O. Hayes. *Hayes graduate student; †Symposium presenter.

Al-Sarawi, Mohammad*,†
Al Sarawi, Mishari
Alkon, Lisa
Barone, Daniel†
Barwis, John*,†

Boothroyd, Jon*,†
Byrnes, Jack
Clemens, Rob*
Cooper, Andrew†
Cotsapas, Linos
Davis, Richard A. Jr.†
Domeracki, Dan*
Domeracki, Denise
Duc, Aileen*
Duc, Chaz
Early, Wendy
Farrell, Stewart*,†
Finklestein, Ken*,†
FitzGerald, Duncan*
Fitzpatrick, Mary Ann
Fletcher, Madilyn
Flynn, Michael†
Galvin, Cyril Jr.†
Gibeaut, Jim
Goldsmith, Victor*
Gruver, Marcus
Gundlach, Erich*
Harper, John
Heathcote, Leisha
Hine, Al*,†
Hobbs, Carl*
Hodge, John*
Hodge, Sharon
Holmes, Joe
Horne, John
Howard, B. Steven†
Hubbard, Dennis*,†
Imperato, Douglas*,†
Jordana, Mark
Kaczkowski, Haiqing
Kaczorowski, Ray*,†
Kana, Tim*
Levey, Ray*
Lumpkin, Julie
Matz, David*
McCants, C.Y.*
McClaren, Patrick*,†
McKenna, Kim†
Mearns, Al†
Michel, Jacqui†
Moore, Jack
Moslow, Donna
Moslow, Tom*
Nairn, Rob
Nummedal, Dag†
Owen, Tom†
Pilkey, Orrin†
Pirkle, Fred†
Pirkle, William
Reel, Chris*
Reel, Patricia
Rich, Fred
Ruby, Allana
Ruby, Chris*
Sangster, Diana
Sautter, Leslie
Scott, Geoff†
Sexton, Walter J.*
Shinn, Gene†
Shinn, Patricia
Shipp, Craig*
Stephen, Mike*
Traynum, Steven
Tye, Robert "Bo"*
Vogel, Michael*
Voulgaris, George
Waddell, Mike
Waddell, Betty
Ward, Larry*

APPENDIX 2

MOH Symposium Proceedings Papers—Reviewers

The editors thank the following reviewers for contributing their time and expertise in the publication of this volume.

Reviewer	Affiliation
Bejarano, A.C.	Research Planning, Inc., USA
Bluck, B.J.	University of Glasgow, UK
Bridge, J.S.	Binghampton University, UK
Collier, J.S.	Imperial College, UK
Creed, C.G.	Olsen Associates, USA
Davidson-Arnott, R.	University of Guelph, Canada
Douglass, S.L.	University of South Alabama, USA
Ellis, J.T.	University of South Carolina, USA
Fenster, M.S.	Randolph Macon College, USA
Ferreira, O.	University of Algarve, Portugal
FitzGerald, D.M.	Boston University, USA
Gibeaut, J.C.	Texas A&M University Corpus Christi, USA
Gutierrez, B.T.	US Geological Survey, USA
Hanson, H.	Lund University, Sweden
Hein, C.	Woods Hole Oceanographic Institution, USA
Kelley, J.T.	University of Maine, USA
Larson, M.	Lund University, Sweden
Leeder, M.R.	University of East Anglia, UK
List, J.H.	US Geological Survey, USA
Little, D.I.	Little Associates, USA
McBride, R.A.	George Mason University, USA
Mearns, A.J.	National Oceanic and Atmospheric Administration, USA
Oertel, G.F.	Old Dominion University, USA
Osborne, P. D.	Golder Associates Ltd., Canada
Pilkey, O.H.	Duke University, USA
Rosen, P.S.	Northeastern University, USA
Schwab, W.C.	US Geological Survey, USA
Sherwood, C.R.	US Geological Survey, USA
Shigenaka, G.	National Oceanic and Atmospheric Administration, USA
Stutz, M.L.	Meredith College, USA
Verhagen, H.J.	Delft University of Technology, Netherlands
Vousdoukas, M.	Forschungzentrum Küste, Germany
Wamsley, T.V	US Army Corps of Engineers—ERDC, USA
White, S.M.	University of South Carolina, USA
Williams, S.J.	US Geological Survey, USA