THE COASTAL EDUCATION AND RESEARCH FOUNDATION

Post Office Box 210187 Royal Palm Beach, FL 33421, USA

Officers of the Foundation

Founded in 1983 by: Charles W. Finkl, Sr., Charles W. Finkl, Jnr., Rhodes W. Fairbridge, and Maurice L. Schwartz

President & Executive Director:

Charles W. Finkl, Jnr.

Vice President:

Rhodes W. Fairbridge

Secretary-Treasurer

Charles J. Miller

Board of Directors

P. Bruun	R. P. Paskoff
JC. Dionne	M. L. Schwartz
R. Dolan	I. Shennan
T. Healy	A. D. Short
D. Hopley	D. J. Stanley
R Huff	· ·

The Coastal Education and Research Foundation / CERF / is a nonprofit corporation dedicated to the advancement of the coastal sciences. The Foundation is devoted to the multi-disciplinary study of the complex problems of the coastal zone. The purpose of CERF is to help translate and interpret coastal issues for the public and to assist professional research and public information programs. The Foundation specifically supports and ecourages field and laboratory studies on a local, national, and international basis. Through the medium of scientific publications, television, and radio CERF brings accurate information to the public and coastal specialists on all aspects of coastal issues in an effort to maintain or improve the quality of shoreline resources.

1656 Cypress Row Drive West Palm Beach, FL 33411, USA

Because CERF is concerned with broad environmental issues, our efforts concentrate on significant problems such as maintenance of good quality (potable) water with adequate supply, and hazards associated with potential beach erosion, flooding, and susceptibility of developed shorelines to storm surge and wave attack. By focusing attention on these potential man-made and natural hazards, it is hoped that our research efforts will help others improve the quality of life in diverse coastal areas. CERF thus aims to stimulate awareness of coastal (marine and freshwater shorelines) land and water problems; initiate and foster research and innovation to promote long-term coastal productivity; establish an educational forum for the debate of contentious coastal issues; and develop new principles and approaches for enlightened coastal management, and encourage their adoption and use.

CERF members provide a basis for cooperative investigation of biophysical resources found in open and naturally protected coastal regions, estuaries, large inland bodies of water bounded by shorelines, wetlands, and other coastal environments. Joint investigative efforts by faculty, students, and staff at various institutions span a wide and diversified range of interrelated topics that are relevant to solutions of today's dynamic problems. It is hoped that these combined attempts to better understand the nature of coastal processes will help forestall what may become contentious issues of tomorrow.

\square CERF MEMBERSHIP \square

Members are individuals, institutions, and corporations that support the aims of the foundation through personal and group efforts or by donations. Memberships are available in different categories with privileges.

Publications of the Foundation:

CERF Quarterly Journal:

Journal of Coastal Research (JCR) (ISSN 0749-0208).

JCR Special Issues and Reports:

No. 1 (1986): Late Quaternary Sea-Level Changes and Coastal Evolution (out of print)

No. 2 (1986): Annotated Bibliography of Quaternary Shorelines, Fourth Supplement 1978-1983 (out of print)

No. 3 (1988): Dune/Beach Interaction, Norbert P. Psuty (ed.). [\$US 45.00]
No. 4 (1988): The Effects of Seawalls on the Beach, N. C. Kraus and O. H. Pilkey (eds.). [\$US 45.00]
No. 5 (1989): High Concentration Cohesive Sediment Transport, A. J. Mehta and E. J. Hayter [\$US 45.00]

No. 6 (1990): Artificial Beaches, M. L. Schwartz and E. C. F. Bird (eds.). [out of print]
No. 7 (1990): Rational Design of Mound Structures, N. Kobayashi and M.A. Losada (eds.). [\$US 45.00]

No. 8 (1991): Impacts of Hurricane Hugo: September 10-22, 1989, C. W. Finkl and O. H. Pilkey (eds.). [\$US 45.00]

No. 9 (1990): Proceedings of the Skagen Symposium (September 1990) [out of print]

No. 10 (1992): Simplified Technical Summary of the Complete Delta Works [out of print]
No. 11 (1991): Geology of Long Island Sound, P. T. Gayes, R. S. Lewis, and H. J. Bokuniewicz (eds.). [\$US 45.00]
No. 12 (1994): Coastal Hazards, C. W. Finkl (ed.). [\$US 60.00]

No. 13 (1995): Atlas of Coastal Geomorphology and Zonality, D. Kelletat [\$US 45.00]
No. 14 (1995): Impacts of Sea-Level Rise on Developing Countries, R. Nicholls and S. P. Leatherman [\$US 45.00]
No. 15 (1993): Beach and Surf Zone Morphodynamics, A. D. Short (ed.). [\$US 45.00]

No. 16 (1992): International Bibliography of Coastal Geomorphology, D. Sherman (ed.). [\$US 45.00]
No. 17 (1995): Holocene Cycles: Climate, Sea Level, and Coastal Sedimentation, C. W. Finkl (ed.). [\$US 60.00]
No. 18 (1993): Beach/Inlet Processes and Management, A. J. Mehta (ed.). [\$US 45.00]

No. 19 (1996): International Bibliography of Coastal Geomorphology, 1991–1994, D. Kelletat (ed.). [out of print]

No. 20 (1994): Coastal Wetland Loss in Louisiana, D. F. Boesch (ed.). [\$US 45.00] No. 21 (1995): Impacts of Hurricane Andrew (1992), G. W. Stone and C. W. Finkl (eds.). [\$US 45.00]

No. 22 (1995): The Polish Coast: Past, Present & Future, K. Rotmicki (ed.). [\$US 45.00] No. 23 (1996): Understanding Physical Processes at Inlets, A. J. Mehta (ed.). [\$US 45.00] No. 24 (1998): Island States at Risk, S. P. Leatherman (ed.). [\$US 45.00]

No. 25 (1997): Sediment Transport and Buoyancy in Estuaries, D. G. Aubrey (ed.). [\$US 45.00]
No. 26 (1998): Proceedings of the International Coastal Symposium (ICS '98), C.W. Finkl and P. Bruun (eds.). [\$US 60.00]

No. 27 (1998): Environmental Impacts of Europipe, M. T. Delafontaine et al. (eds.) [In Production]

No. 28 (1999): Coastal Erosion Mapping and Management, S.P. Leatherman and M. Crowell (eds.). [\$US 45.00]

Journal of Coastal Research

VOL. 15, NO. 3 (pages 593-858)

SUMMER 1999

CONTENTS

Regular Papers	
Internal Structure of Shoreface Banks Revealed by High-Resolution Seismic Reflection in a Macrotidal Environment (Dunkerque Area, Northern France)	,
Bernadette Tessier, Corinne Corbau, Hervé Chamley, Jean-Paul Auffret	593
Holocene Sea-Level Change at Port Pirie, South Australia: A Contribution to Global Sea-Level Rise Estimates from Tide Gauges	607
Event Timing and Sequence in Coastal Shoreline Erosion: Hurricanes Bertha and Fran and the Neuse Estuary Jonathan D. Phillips	616
Bedforms in a Laboratory Wave Flume: An Evaluation of Predictive Models for Bedform Wavelengths	624
Late Quaternary Coastal Stratigraphy on a Platform-Fringed Tropical Coast—a Case Study from Zanzibar, Tanzania	635
The Biological Flora of Coastal Dunes and Wetlands. Ipomoea imperati (Vahl) Griseb.	
Robert I. Lonard and Frank W. Judd Preferences and Priorities of Recreational Beach Users in Wales, UK	645
Wetland Vertical Accretion and Soil Elevation Change in the Rhône River Delta, France: The Importance of Riverine Flooding	653 668
Holocene Paleoshoreline Record in Tonga: Geomorphic Features and Archaeological Implications	682
Coastal Area Impact and Vulnerability Assessment: The Point of View of a Morphodynamic Modeller	701
Primary Production and Decomposition of Wetlands of the Rhône Delta, France: Interactive Impacts of Human Modifications and Relative Sea Level Rise	717
Groundwater Dynamics and Salinity in Coastal Barriers	732
Beach Cusps: A Comparison of Data and Theories for Their Formation	
An Inter-Site Comparison of Net Offshore Bar Migration Characteristics and Environmental Conditions	741
Bottom Stress of Wind-Driven Currents Over an Inner Shelf Determined from Depth-Integrated Storm Surge Model Sung-Chan Kim and Jye Chen	750
Impact of Gravel-Mining on Stream Channel and Coastal Sediment Supply Example of the Calvi Bay in Corsica (France)	766
Reflectance Characteristics and Film Image Relations Among Important Plant Species on South Padre Island, Texas	774
J.H. Everitt, M.A. Alaniz, D.E. Escobar, R.I. Lonard, F.W. Judd, and M.R. Davis	789
Reef Framework Preservation in Four Contrasting Modern Reef Environments, Discovery Bay, Jamaica	796
Regional Variations in Rip Density	813
Arcuate Duneline Embayments, Infragravity Signals, Rip Currents and Wave Refraction at Waihi Beach, New Zealand S.A. Stephens, T.R. Healy, K.P. Black, and W.P. de Lange	823
Evaluation of an Inner Shelf Site Off Tauranga Harbour, New Zealand, for Disposal of Muddy-Sandy Dredged Sediments Klaus H. Michels and Terry R. Healy	830
Sediment Transport in Low-Energy Rip Current Systems Robert W. Brander	839
Departments	
Coastal Calendar	854
News and Announcements	857

Published by the Coastal Education and Research Foundation, P.O. Box 210187, Royal Palm Beach, FL 33421-0187, USA.