

## **COVER PHOTOGRAPH AND FRONT MATTER: COASTAL SEGMENT NEAR KLEIN SLANGKOP, CAPE TOWN, SOUTH AFRICA**

Source: Journal of Coastal Research, 30(6)

Published By: Coastal Education and Research Foundation

URL: <https://doi.org/10.2112/1551-5036-30.6.ii>

---

BioOne Complete ([complete.BioOne.org](https://complete.BioOne.org)) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/terms-of-use](https://www.bioone.org/terms-of-use).

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Journal of

# Coastal Research

VOL. 30, NO. 6 • CERF • November 2014



Published by



An International Forum for the Littoral Sciences

Charles W. Finkl  
Editor-in-Chief



Year of Service

# JOURNAL OF COASTAL RESEARCH

An International Forum for the Littoral Sciences

CHEF-HERAUSGEBER

25 Jake Ridge Trail  
Fletcher, NC  
28732, U.S.A.

BOOK REVIEW EDITOR

J. Andrew G. Cooper  
School of Environmental Sciences  
University of Ulster  
Coleraine, N. Ireland  
jag.cooper@ulster.ac.uk

EDITOR-IN-CHIEF

**Charles W. Finkl**

Coastal Education and Research Foundation, Inc. [CERF]

Editorial Offices:

5130 NW 54th Street

Coconut Creek, FL

33073, U.S.A.

RÉDACTEUR-EN-CHEF

(Editorial Office, Coconut Creek)

CERF/JCR Website: <http://www.CERF-JCR.org>

e-mail: [cfinkl@cerf-jcr.com](mailto:cfinkl@cerf-jcr.com)

PUBLISHING MANAGER

Christopher Makowski  
Coastal Education and Research  
Foundation, Inc. [CERF]  
5130 NW 54th Street  
Coconut Creek, FL 33073, U.S.A.  
[cmakowski@cerf-jcr.com](mailto:cmakowski@cerf-jcr.com)

EDITORIAL ASSISTANT

Barbara Russell  
Coastal Education and Research  
Foundation, Inc. [CERF]  
5130 NW 54th Street  
Coconut Creek, FL 33073, U.S.A.  
[barbara@cerf-jcr.com](mailto:barbara@cerf-jcr.com)

WEB DESIGN & DEVELOPMENT

Jon Finkl  
Media Mine  
111 W Washington, Suite 1100  
Chicago, IL 60602, U.S.A.  
[jon@mediamine.net](mailto:jon@mediamine.net)

MITHERAUSGEBER

**Edward J. Anthony**

*Coastal Geomorphology  
Dunkerque, France*

**Cecile Baeteman**  
*Holocene Coastal Dynamics  
Brussels, Belgium*

**Kenneth Banks**  
*Coral Reef Geomorphology  
Plantation, Florida*

**Patrick Barnard**  
*Coastal Geomorphology  
Santa Cruz, California*

**Lindino Benedet**  
*Oceanography, Modeling  
Florianopolis, SC, Brazil*

**David M. Bush**  
*Coastal Geology & Hazards  
Carrollton, Georgia*

**Ilya V. Buynevich**  
*Coastal Geology  
Philadelphia, Pennsylvania*

**Javier A. Carrío**  
*Sediment Processes  
Valencia, Spain*

**Mark Crowell**  
*Coastal Zone Management  
McLean, Virginia*

**Robert Dean**  
*Coastal Engineering & Processes  
Gainesville, Florida*

**Omar Defeo**  
*Sandy Beach Ecology  
Montevideo, Uruguay*

**J. Javier Diez**  
*Coastal Geomorphology  
Madrid, Spain*

**Joseph F. Donoghue**  
*Coastal Morphology & Hazards  
Tallahassee, Florida*

**Jean Ellis**  
*Aeolian Sediment Transport  
Columbia, South Carolina*

**Luciana Esteves**  
*Coastal Flooding & Erosion  
Bournemouth, United Kingdom*

**Oscar Manuel Ferreira**  
*Storm Impacts  
Faro, Portugal*

**Duncan M. FitzGerald**  
*Sediment Transport  
Boston, Massachusetts*

**Chip Fletcher**

*Coastal Geology  
Honolulu, Hawaii*

**Kazimierz K. Furmańczyk**  
*Marine Cartography  
Szczecin, Poland*

**Gary B. Griggs**  
*Coastal Engineering & Hazards  
Santa Cruz, California*

**Pramod Hanamgond**  
*Coastal Geomorphology  
Belgaum, India*

**Hans Hanson**  
*Coastal Protection  
Lund, Sweden*

**Simon Haslett**  
*Paleoceanography  
Wales, United Kingdom*

**David Hill**  
*Nearshore Hydrodynamics  
Corvallis, Oregon*

**Michael Hilton**  
*Dune Geomorphology & Ecology  
Dunedin, New Zealand*

**Carl H. Hobbs, III**  
*Coastal Geology, Sand Mining  
Gloucester Point, Virginia*

**James R. Houston**  
*Sea-Level Change  
Vicksburg, Mississippi*

**Wenrui Huang**  
*Coastal Hydrodynamics  
Tallahassee, Florida*

**Michael G. Hughes**  
*Coastal Morphodynamics  
Canberra, ACT, Australia*

**Federico I. Isla**  
*Sea-Level Change  
Mar Del Plata, Argentina*

**Nancy L. Jackson**  
*Coastal Geomorphology  
Newark, New Jersey*

**Markes E. Johnson**  
*Paleoshores, Coastal Sand Dunes  
Williamstown, Massachusetts*

**Timothy R. Keen**

*Waves & Circulation  
Stennis Space Center,  
Mississippi*

**Dieter H. Kelletat**  
*Coastal Geomorphology  
Essen / Cologne, Germany*

**Joseph T. Kelley**  
*Sea-Level Change  
Orono, Maine*

**Syed Khalil**  
*Coastal Geology & Geophysics  
Baton Rouge, Louisiana*

**Jack Kindinger**  
*Oceanography  
St. Petersburg, Florida*

**Vic Klemas**  
*Remote Sensing  
Newark, Delaware*

**Nobuhisa Kobayashi**  
*Coastal Engineering  
Newark, Delaware*

**Vladimir N. Kosmynin**  
*Coral Reefs, Coastal Ecology  
Tallahassee, Florida*

**Joseph L. Kowalski**  
*Estuarine Plant Ecology  
Edinburg, Texas*

**Michael J. Lace**  
*Coastal Landforms & Processes  
West Branch, Iowa*

**Stephen P. Leatherman**  
*Barrier Islands, Beach Erosion  
Miami, Florida*

**Charles Lemkert**  
*Environmental Fluid Dynamics  
Queensland, Australia*

**Ioannis Liriztis**  
*Geophysical Proxy Data  
Rhodes, Greece*

**Jeffrey H. List**  
*Shoreline Change Processes  
Woods Hole, Massachusetts*

**Michel M. de Mahiques**  
*Sediment Processes  
São Paulo, Brazil*

**Gonzalo C. Malvárez-García**  
*Beach Morphodynamics  
Seville, Spain*

**Ashish J. Mehta**

*Coastal Engineering  
Gainesville, Florida*

**Nobuo Mimura**  
*Environmental Engineering  
Ibaraki, Japan*

**Robert Nicholls**  
*Global Climate Change  
Southampton, United Kingdom*

**Karl F. Nordstrom**  
*Coastal Geomorphology  
New Brunswick, New Jersey*

**Julian Orford**  
*Gravel Beaches, Storm Events  
Belfast, Northern Ireland, UK*

**Phil D. Osborne**  
*Sediment Dynamics  
Shoreline, Washington*

**Hugh Parker**  
*Airborne Lidar Bathymetry  
Adelaide, SA, Australia*

**Charitha B. Pattiaratchi**  
*Physical Oceanography  
Crawley, WA, Australia*

**Carlos Pereira da Silva**  
*Coastal Zone Management  
Lisbon, Portugal*

**Michael Phillips**  
*Coastal Geomorphology  
Swansea, Wales, UK*

**Orrin H. Pilkey, Jr.**  
*Coastal Geology  
Durham, North Carolina*

**Paolo A. Pirazzoli**  
*Sea-Level Changes  
Paris, France*

**Robert P. Psuty**  
*Coastal Geomorphology  
New Brunswick, New Jersey*

**Ulrich Radtke**  
*Coastal Geomorphology  
Duisburg-Essen, Germany*

**Elijah W. Ramsey, III**  
*Coastal Image Processing  
Lafayette, Louisiana*

**Kirt Rusenko**  
*Sea Turtles, Dune Restoration  
Boca Raton, Florida*

**Anja Scheffers**  
*Coastal Evolution  
Lismore, NSW, Australia*

**Andrew D. Short**

*Coastal Geomorphology  
Sydney, NSW, Australia*

**Pravi Shrestha**  
*Coastal Engineering  
Irvine, California*

**Alejandro J. Souza**  
*Coastal & Sediment Processes  
Liverpool, United Kingdom*

**Tom Spencer**  
*Biogeomorphology  
Cambridge, United Kingdom*

**Marcel Stive**  
*Coastal Hydrodynamics  
Delft, The Netherlands*

**Vallam Sundar**  
*Coastal Engineering  
Chennai, India*

**Adam D. Switzer**  
*Coastal Hazards, Sea-Level Change  
NTU, Singapore*

**E. Robert Thieler**  
*Marine Geology  
Woods Hole, Massachusetts*

**Arthur C. Trembanis**  
*Coastal Morphodynamics  
Newark, Delaware*

**Frank Van Der Meulen**  
*Coastal Zone Management  
Delft, The Netherlands*

**Ian J. Walker**  
*Coastal Dunes & Sediments  
Victoria, BC, Canada*

**Ping Wang**  
*Beach Morphodynamics  
Tampa, Florida*

**Allan Williams**  
*Coastal Geology  
Swansea, Wales, UK*

**Harry F. Williams**  
*Paleotempestology  
Denton, Texas*

**Colin D. Woodroffe**  
*Coastal Geomorphology  
Wollongong, Australia*

**Robert S. Young**  
*Coastal Processes  
Cullowhee, North Carolina*

**Guoliang Yu**  
*Sediment Transport  
Shanghai, China*

ASSOCIATE EDITORS

COMITÉ DE REDACTION



THE JOURNAL OF COASTAL RESEARCH (JCR) (ISSN 0749-0208) IS PUBLISHED BIMONTHLY FOR \$115.00 FOR INDIVIDUAL US CERF MEMBERS, \$125.00 FOR INDIVIDUAL INTERNATIONAL CERF MEMBERS, \$519.00 FOR US INSTITUTIONS, AND \$541.00 FOR INTERNATIONAL INSTITUTIONS BY THE COASTAL EDUCATION AND RESEARCH FOUNDATION, INC. (CERF), 5130 NW 54TH STREET, COCONUT CREEK, FL 33073-3713. PERIODICALS POSTAGE PAID AT FORT LAUDERDALE, FL AND ADDITIONAL MAILING OFFICES. **POSTMASTER:** SEND ADDRESS CHANGES TO JOURNAL OF COASTAL RESEARCH, ALLEN PRESS ASSOCIATION MANAGEMENT, P.O. BOX 1897, LAWRENCE, KS 66044-3018.

© 2014 The Coastal Education & Research Foundation [CERF].

Ⓢ This paper meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).



# JOURNAL OF COASTAL RESEARCH

An International Forum for the Littoral Sciences

Supporting Scientific Information



- AZTI - Tecnalia [Pasaia, Spain; [www.azti.es/](http://www.azti.es/)]
- Coastal and Hydraulics Laboratory (CHL), US Army Corps of Engineers [Vicksburg, Mississippi, U.S.A.; <http://chl.erdc.usace.army.mil/>]
- Coastal and Marine Geology Program (CMGP), U.S. Geologic Survey (USGS) [Reston, Virginia, U.S.A.; <http://marine.usgs.gov/>]
- Coastal Research Laboratory (CRL), University of South Florida [Tampa, Florida, U.S.A.; <http://crl.usf.edu/>]
- Commission on Coastal System (CCS), International Geographical Union (IGU) [<http://www.igu-ccs.org/>]
- Consorzio Nazionale Interuniversitario per le Scienze del Mare (Co.N.I.S.Ma.) [Rome, Italy; [www.conisma.it/](http://www.conisma.it/)]
- Deltares Institute [Delft, The Netherlands; <http://www.deltares.nl/en/coast-sea>]
- Departamento de Geografia e Planeamento Regional, Universidade Nova de Lisboa [Lisbon, Portugal; <http://www.fcsh.unl.pt/>]
- e-Geo Center for Geographical and Regional Planning Studies [Lisbon, Portugal; <http://e-geo.fcsh.unl.pt/>]
- Institute of Marine and Coastal Sciences (IMCS), Rutgers University [New Brunswick, New Jersey, U.S.A.; <http://marine.rutgers.edu/main/>]
- Louisiana Coastal Protection & Restoration Authority (CPRA) [Baton Rouge, Louisiana, U.S.A.; [www.coastal.louisiana.gov/](http://www.coastal.louisiana.gov/)]
- Royal Belgian Institute of Natural Sciences: Management Unit of the North Sea Mathematical Models (MUMM). [Brussels, Belgium; [www.mumm.ac.be/](http://www.mumm.ac.be/)]
- University of Wales Trinity Saint David (Swansea Metropolitan University) [Mount Pleasant, Swansea, South Wales, U.K.; <http://www.uwtsd.ac.uk/>]

## Aims and Scope of the Journal

*Journal of Coastal Research*, an International Forum for the Littoral Sciences, is dedicated to all aspects of coastal research. These include geology, biology, geomorphology (physical geography), climate, littoral oceanography, hydrography, coastal hydraulics, environmental (resource) management, engineering, and remote sensing. Although each field functions effectively within its own purview, the cross-disciplinary nature of coastal studies requires familiarity with other fields as well. Hence, the scope of topics is necessarily broad in order to address the complexity of coastal biophysical and socio-economic interactions. Because of the wide range of interrelated topics, the journal invites original contributions and manuscripts dealing with theory, methodology, techniques, and field or applied topic studies on interdisciplinary coastal issues.

The journal encourages the dissemination of knowledge and understanding of the coastal zone by promoting cooperation and communication between specialists in different disciplines. Natural scientists, for example, are encouraged to collaborate with professionals in other fields to prepare contributions relating to the coastal zone that foster increased appreciation of coastal environments and processes. By means of this journal, with its scholarly and professional papers, systematic review articles, book and symposia reviews, communications and news, and special topical issues, an international forum for the development of integrated coastal research is provided.

## Advertising, Editorial, and Subscription Information

**Advertising and Editorial Office:** All advertising and editorial correspondence should be sent to Dr. Charles W. Finkl, Editor-in-Chief, Journal of Coastal Research, 5130 NW 54th Street, Coconut Creek, FL 33073, U.S.A. PHONE: 828-333-2300. E-MAIL: [cfinkl@cerf-jcr.com](mailto:cfinkl@cerf-jcr.com)

**Subscription Information:** The *Journal of Coastal Research* is a bimonthly publication. Calendar-year (2014) print and online subscription prices for the JCR are: \$115.00 for US CERF members / \$125.00 for International CERF members (\$95.00 for online only), and \$519.00 for US institutions / \$541.00 for International institutions (\$437.00 for online only). Additional surface charges may apply to subscribers located outside of the USA. For additional membership and subscription forms and information, please go to [www.CERF-JCR.org](http://www.CERF-JCR.org). To obtain a membership or subscription form by mail, please send request to Journal of Coastal Research, P.O. Box 7065, Lawrence, KS 66044. Back Issues and Special Issues of the JCR, when available, can be directly purchased at [www.CERF-JCR.org](http://www.CERF-JCR.org).

The *Journal of Coastal Research* is currently surveyed in *Applied Science & Technology Abstracts*; *Applied Science & Technology Index (H.W. Wilson)*; *Aquatic Sciences & Fisheries Abstracts*; *BIODISE*; *Biological Abstracts*; *BIOSIS Previews (Thomson)*; *CAB International Abstracts (CABI)*; *CSA Civil Engineering Abstracts (ProQuest)*; *Current Awareness in Biological Sciences (Elsevier)*; *Current Contents / Agriculture, Biology, & Environmental Sciences (Thomson)*; *Ecology Abstracts (ProQuest)*; *Environmental Sciences & Pollution Management*; *GeoAbstracts [Geographical Abstracts: Physical Geography; Ecological Abstracts; Geological Abstracts; GEOBASE] (Elsevier)*; *GeoRef*; *Meteorological & Geostrophysical Abstracts (ProQuest)*; *Oceanic Abstracts (ProQuest)*; *Oceanographic Literature Review (Elsevier)*; *Physical Sciences Digest (CSA, Ebsco)*; *Pollution Abstracts (ProQuest)*; *Referativnyi Zhurnal*; *Science Citation Index; SciSearch (Thomson)*; *SCOPUS*; *Water Resources Abstracts (Bethesda)*; *Zoological Record (Thomson)*.



www.JCRonline.org

## COVER PHOTOGRAPH



www.cerf-jcr.org



**Coastal Segment near Klein Slangkop, Cape Town, South Africa.** This section of coast on the Cape Peninsula shows the complexity of coastal classification where multiple geomorphological features occur in geographic association. Shown in the foreground is the seaward slope of a vegetated dune (of the general type Cape Flats Dune Strandveld) decorated with cobbles thrown up by storm waves. A boulder rampart that sits on top of a marine abrasion platform marks the base of the dune. The coast in the center of the photograph is characterized by a large wave-cut rock platform that is surmounted by a perched beach, backed by an eroding dune system. Another boulder rampart is seen in the background as well as a rocky shore along the wave-cut base of the mountain. With several palimpsest features, the coastal classifier is left with a conundrum of whether the coast is classified as a rocky shore (certainly at low tide) or a rocky and sandy shore (at high tide). Whatever the variable perceptions, this predominantly rocky shore offers a wide range of scenic views and touristic opportunities. A word of caution for visitors and surf fishermen is that chacma baboons (*Papio ursinus*) frequent the shore searching for food and can be quite aggressive if disturbed. The dozen troops on the Peninsula, varying in size from 7 to over 100 individuals, are scattered on the mountains from the Constantiaberg to Cape Point. During low tide they often roam the beaches and rocky flats to feed on sand hoppers and shellfish, a very unique behavior for primates. (Photograph taken 21 April 2014 by Charlie Finkl, Coastal Education & Research Foundation [CERF], Fletcher, North Carolina, USA).

# THE COASTAL EDUCATION AND RESEARCH FOUNDATION

5130 NW 54th Street  
Coconut Creek, FL 33073, U.S.A.

## Officers of the Foundation

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



**President &  
Executive Director:**  
Charles W. Finkl

**Senior Vice President &  
Assistant Director:**  
Christopher Makowski

**Secretary:**  
Heather M. Vollmer

**Executive Assistant:**  
Barbara Russell

## Regional Vice Presidents

North America  
James R. Houston  
Syed Khalil  
Victor V. Klemas  
Orrin H. Pilkey, Jr.

Western Europe  
Carlos Pereira da Silva  
Marcel J.F. Stive

Eastern Europe  
Kazimierz K. Furmanczyk

South America  
Omar Defeo

Oceania  
Charles Lemckert  
Andrew D. Short

Southeast Asia  
Nobuo Mimura

## Board of Directors (Trustees)

J. Andrew G. Cooper	Victor V. Klemas	Andrew D. Short
Robert Dean	Charles Lemckert	Carlos Pereira da Silva
Charles W. Finkl	Chris Makowski	Daniel J. Stanley
Gary B. Griggs	Michael Phillips	Marcel J.F. Stive
James R. Houston	Orrin H. Pilkey, Jr.	Allan Williams
Robert Huff	Norbert P. Psuty	
Joseph T. Kelley	Elijah W. Ramsey, III	

## Lifetime Members

Yong-Sik Cho	Hany Elwany	Charles Lemckert
Nicholas K. Coch	Björn Kjerfve	Ya Ping Wang

## Patron Members

Luis Antonio	Timothy W. Kana	Yung Tseng
Buenfil-Lopez	Norbert P. Psuty	Robert S. Young
Carl H. Hobbs, III	Giovanni Randazzo	

## CERF Society Information

The Coastal Education and Research Foundation [CERF] is a nonprofit society 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 encourages 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.

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 MEMBERSHIP □

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

Subscription information is available online at [www.cerf-jcr.org](http://www.cerf-jcr.org). Subscriptions office: Allen Press, Inc., P.O. Box 1897, Lawrence, KS 66044, U.S.A. CERF@allenpress.com

## Editor-in-Chief

**Charles W. Finkl** Ph.D., CSci, CMarSci, FIMarEST, CPGS, CPSSc, PWS, M.ASCE

Dr. Charles W. Finkl is President and Executive Director of the Coastal Education & Research Foundation [CERF], publisher of the JCR. Charlie, a founding editor of the *Journal of Coastal Research*, has served as Editor-in-Chief for the past 30 years. He is a Research Professor in the Department of Geosciences at Florida Atlantic University in Boca Raton, Florida. He received his Bachelor and Master of Science degrees from Oregon State University and the Ph.D. from the University of Western Australia. He is a member of more than 20 professional societies and has published more than 200 professional papers, books, and reports. He is a Chartered Marine Scientist (CMarSci) [Institute of Marine Engineering, Science and Technology], Certified Professional Geological Scientist (CPGS) [American Institute of Professional Geologists (AIPG)], Certified Professional Soil Scientist (CPSSc) [American Registry of Certified Professionals in Agronomy, Crops, and Soils], and a Professional Wetland Scientist (PWS) [Society of Wetland Scientists]. Charlie has field experience in parts of the USA, Caribbean area, Brazil, Honduras, Russia, South Africa, Western Europe, Australasia, and South Pacific islands. He is also the Series Editor of the Encyclopedia of Earth Sciences Series that is published by Springer (Germany). There are more than twenty-eight volumes in the Series and about twenty-five are available online. Charlie also serves on the Editorial Board of the *International Journal of Environmental Studies* (Routledge) and is an occasional peer reviewer for many other professional journals.

Charlie has interests and expertise in the general areas of surficial geology, coastal and marine geomorphology (including coastal classification), coastal/marine biophysical environments, exploration geochemistry, soils and weathering (regolith geology), coastal zone management and engineering applications or impacts on natural systems (including erosion control and shore protection), coastal hydrology including submarine freshwater and mineralized seeps, subaerial and marine structural geology, natural hazard mitigation in coastal zones, marine environments and coastal wetland protection and restoration, and remote sensing (e.g. land cover classification in coastal wetlands, advection-diffusion turbidity plumes in coastal waters, delineation of bottom types and sand resources), effluent disposal and pollution of wetlands and estuaries, water resources mapping and conservation, time series studies of wetland hydroperiod and soil moisture.

## Official Meeting of CERF International Coastal Symposium (ICS)

The International Coastal Symposium (ICS) was originally set up by Per Bruun (deceased) and Charlie Finkl as the official meeting of the Coastal Education & Research Foundation (CERF), with one of the first meetings being held in Hilton Head, South Carolina, in 1993. After the repeated success of these meetings, CERF moved the ICS to the international scene holding these conferences in conjunction with local sponsors in Australia, Brazil, Iceland, New Zealand, Northern Ireland, Poland, and Portugal. The ICS brings together delegates from all over the world to collaborate and discuss the most current coastal research studies and projects. During the ICS 2014, which was held in Durban, South Africa, a grand celebration took place to mark the 30th Anniversary of CERF and the JCR. Our next ICS meeting is scheduled for March 2016 in Sydney, New South Wales, Australia. For more information, please visit [www.cerf-jcr.org](http://www.cerf-jcr.org).

# Journal of Coastal Research

VOL. 30, NO. 6 (pages 1107–1338)

November 2014

ISSN 0749-0208

## CONTENTS

### RESEARCH PAPERS

High-Resolution Hydroacoustic Seafloor Classification of Sandy Environments in the German Wadden Sea .....	<b>Finn Mielck, H. Christian Hass, and Christian Betzler</b>	1107
Benthic Foraminifera as Evidence of Paleoenvironmental Changes between 9400 and 8300 cal YBP at the Juréia-Itatins Ecological Station Paleolagoon (SP, Brasil) .....	<b>Juliana Braga Silva, Wânia Duleba, Alethea M. Sallun, and Kenitiro Suguio</b>	1118
Feasibility of Benthic Cover-Type Mapping in Turbid Waters near Estuaries Using Hyperspectral Remote Sensing .....	<b>Jyrki Tuominen and Tarmo Lipping</b>	1131
Performance of Submerged Prefabricated Structures to Improve Sand Retention at Beach Nourishment Projects .....	<b>Andrew Morang, Jeffrey P. Waters, and Donald K. Stauble</b>	1140
Micropaleontological Evidence of Prehistoric Hurricane Strikes from Southeastern North Carolina .....	<b>Scott P. Hippensteel and William J. Garcia</b>	1157
Estimating Storm-Induced Dune Erosion and Overtopping along U.S. West Coast Beaches .....	<b>Jeremy Mull and Peter Ruggiero</b>	1173
The Relationship between Primary Production of Microphytobenthos and Tidal Cycle on the Hwaseong Mudflat, West Coast of Korea .....	<b>Bong-Oh Kwon, Chul-Hwan Koh, Jong Seong Khim, Jinsoo Park, Seong-Gil Kang, and Jin Hwan Hwang</b>	1188
Concentrations and Fluxes of Nutrients and Suspended Organic Matter in a Tropical Estuarine System: The Tinharé-Boipeba Islands Archipelago (Baixo Sul Baiano, Brazil) .....	<b>Conceição Denise Nunes Barboza, Eduardo Tavares Paes, Kelly de Andrade Jandre, and Aguinaldo Nepomuceno Marques, Jr.</b>	1197
Dune Vegetation and Insect Communities Vary with Barrier Beach Geomorphic Setting on Sapelo Island, United States .....	<b>Rachel Mallinger</b>	1210
Sedimentation in the Outer Hangzhou Bay, China: The Influence of Changjiang Sediment Load .....	<b>Zhi-jun Dai, James T. Liu, Hua-liang Xie, and Wei-yong Shi</b>	1218
Top-Down Effects of an Exotic Serpulid Polychaete on Natural Plankton Assemblage of Estuarine and Brackish Systems in the SW Atlantic .....	<b>Jerónimo Pan and M. Alejandra Marcoval</b>	1226
Short- and Long-Term Development of the Miankaleh Spit, Southeast Caspian Sea, Iran .....	<b>A.A. Kakroodi, S.B. Kroonenberg, A. Naderi Beni, and A. Noehgar</b>	1236
Shoreline Response to Rapid 20th Century Sea-Level Change along the Iranian Caspian Coast .....	<b>A.A. Kakroodi, S.B. Kroonenberg, A. Goorabi, and M. Yamani</b>	1243
Impact of Sand Extraction on Fish Assemblages in Gyeonggi Bay, Korea .....	<b>Sun Wan Hwang, Hyung Gon Lee, Keun Hyung Choi, Chong Kwan Kim, and Tae Won Lee</b>	1251
Disturbance of Hydrodynamic Regime in the Mediterranean Coastal Zone of Egypt .....	<b>Mona Fouad Kaiser</b>	1260
Storm-Surge Hindcast at Viana do Castelo: An Oceanic and Estuarine Domain Approach .....	<b>Nuno Ricardo Costa Silva Marujo, Maria Amélia Vieira da Costa Araújo, António Trigo-Teixeira, Ana Paula Falcão, and Andrea Mazzolari</b>	1268
Changes in Water Quality After the Construction of an Estuary Dam in the Geum River Estuary Dam System, Korea .....	<b>Yong Hoon Jeong, Jae Sam Yang, and Kyeong Park</b>	1278
Loop Current Impact on the Transport of Mississippi River Waters .....	<b>R.V. Schiller and V.H. Kourafalou</b>	1287
Conflicts in Land Use in Marine Protected Areas: The Case of the Yellow River Delta, China .....	<b>Zhenglei Xie, Zongwen Ma, and Jiyuan Liu</b>	1307
Geospatial Analysis of Long-Term Morphological Changes in Cochin Estuary, SW Coast of India .....	<b>P.K. Dinesh Kumar, Girish Gopinath, R. Mani Murali, and K.R. Muraleedharan</b>	1315
Using Generalized Additive Modelling to Understand the Drivers of Long-Term Nutrient Dynamics in the Broadwater Estuary (a Subtropical Estuary), Gold Coast, Australia .....	<b>Russell Richards, Milani Chaloupka, Darrell Strauss, and Rodger Tomlinson</b>	1321

### DISCUSSION AND REPLY

Discussion of: Olea, R.A. and Coleman, J.L., Jr., 2014. A Synoptic Examination of Causes of Land Loss in Southern Louisiana as Related to the Exploitation of Subsurface Geological Resources. <i>Journal of Coastal Research</i> , 30(5), 1025–1044 .....	<b>R. Eugene Turner</b>	1330
Reply to: Turner, R.E., 2014. Discussion of: Olea, R.A. and Coleman, J.L., Jr., 2014. A Synoptic Examination of Causes of Land Loss in Southern Louisiana as Related to the Exploitation of Subsurface Geologic Resources, <i>Journal of Coastal Research</i> , 30(5), 1025–1044; <i>Journal of Coastal Research</i> , 30(6), 1330–1334 .....	<b>Ricardo A. Olea and James L. Coleman, Jr.</b>	1335

