

Coastal Ecosystem Responses to Human and Climatic Changes throughout Asia

Source: Journal of Coastal Research, 82(sp1)

Published By: Coastal Education and Research Foundation

URL: https://doi.org/10.2112/1551-5036-82.sp1.ii

BioOne Complete (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.

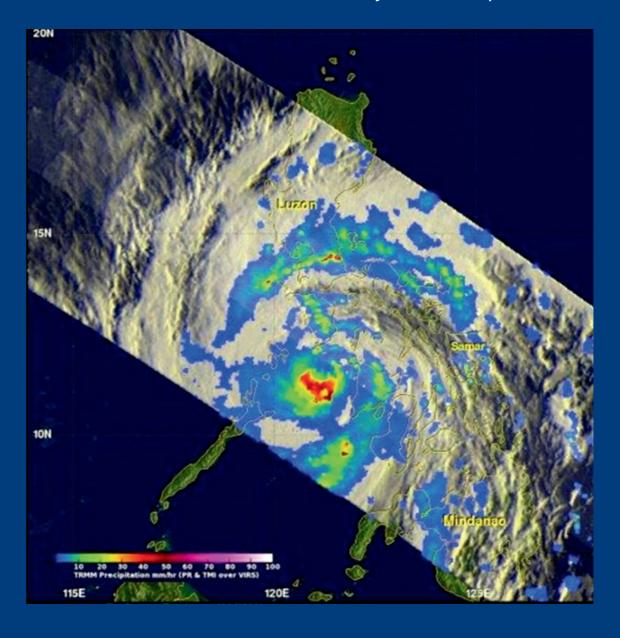
Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

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.

Coastal Ecosystem Responses to Human and Climatic Changes throughout Asia

Guest Editors: M.A. Ashraf and A.J.K. Chowdhury



Journal of Coastal Research Special Issue #82

An International Forum for the Littoral Sciences
Charles W. Finkl

Editor-in-Chief



Published by



JOURNAL OF COASTAL RESEARCH

An International Forum for the Littoral Sciences

CHEF-HERAUSGEBER

EDITOR-IN-CHIEF Charles W. Finkl

RÉDACTEUR-EN-CHEF

Coastal Education and Research Foundation, Inc. [CERF]

Editorial Offices:

7570 NW 47th Avenue (Editorial Office, Coconut Creek) Coconut Creek, FL CERF/JCR Website: http://www.CERF-JCR.org 33073, U.S.A. e-mail: cfinkl@cerf-jcr.com

313 S. Braeside Court Asheville, NC 28803, U.S.A.

BOOK REVIEW EDITOR

Luciana S. Esteves Faculty of Science and Technology Bournemouth University Dorset, England, U.K. lesteves@bournemouth.ac.uk

DEPUTY EDITOR-IN-CHIEF

Christopher Makowski Coastal Education and Research Foundation, Inc. / CERF / 7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A. cmakowski@cerf-jcr.com

EDITORIAL ASSISTANT

Barbara Russell Coastal Education and Research Foundation, Inc. [CERF] 7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A. barbara@cerf-jcr.com

WEB DESIGN & DEVELOPMENT

Jon Finkl Media Mine 17600 River Ford Drive Davidson, NC 28036, U.S.A. jon@mediamine.net

MITHERAUSGEBER

Edward J. Anthony Coastal Geomorphology Dunkerque, France

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. Carrió Sediment Processes Valencia, Spain

Insik Chun Coastal Engineering Seoul, Republic of Korea

Vanda Claudino-Sales Coastal Dynamics, Dunes Ceará, Brazil

Mark Crowell Coastal Zone Management McLean, Virginia

Omar Defeo Sandy Beach Ecology Montevideo, Uruguay

J. Javier Diez Coastal Geomorphology Madrid, Spain

Joseph F. Donoghue Coastal Morphology & Hazards Orlando, Florida

Jean Ellis Aeolian Sediment Transport Columbia, South Carolina

Luciana Esteves Coastal Flooding & Erosion Bournemouth, England, UK

Niki Evelpidou

Sea-Level Change. Palaeogeography Athens, Greece

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 Allen Gontz

Geophysics, Stratigraphy San Diego, California Gary B. Griggs

Coastal Engineering & Hazards Santa Cruz, California

Pramod Hanamgond Coastal Geomorphology Belgaum, India

Hans Hanson Coastal Protection Lund, Sweden

Simon Haslett Paleoceanography Swansea, Wales, UK

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

ASSOCIATE EDITORS

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

Vic Klemas Remote Sensing Newark, Delaware Nobuhisa Kobayashi

Coastal Engineering Newark, Delaware

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

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

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

Charles Lemckert Environmental Fluid Dynamics Bruce, ACT, Australia

Hak Soo Lim Hydrodynamics, Coastal Engineering Busan, Republic of Korea

Ioannis Liritzis Geophysical Proxy Data Rhodes, Greece J. Paul Liu

Sea-Level Change, Deltas Raleigh, North Carolina Michel M. de Mahiques

Sediment Processes São Paulo, Brazil Gonzalo C. Malvárez Beach Morphodynamics

Seville, Spain Ashish J. Mehta Coastal Engineering

Gainesville, Florida Nobuo Mimura

Environmental Engineering Ibaraki, Japan Fatima Navas Coastal Morphodynamics

Seville, Spain Robert Nicholls Global Climate Change Southampton, England, UK 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

Nobert 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 Daniele Scarponi

Marine Paleoecology Bologna, Italy

Anja Scheffers Coastal Hazards, Palaeoclimatology Lismore, NSW, Australia

Vic Semeniuk Mangroves Perth, WA, Australia

Douglas J. Sherman Coastal & Aeolian Geomorphology

Tuscaloosa, Alabama Andrew D. Short Coastal Geomorphology Sydney, NSW, Australia COMITÉ DE REDACTION

Pravi Shrestha Coastal Engineering Irvine, California

Tom Spencer Biogeomorphology

Cambridge, England, UK Marcel Stive

Coastal Hydrodynamics Delft, The Netherlands

Vallam Sundar Coastal Engineering Chennai, India

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

Ana Vila Concejo Coastal Morphodynamics Sydney, NSW, Australia

Ian J. Walker Coastal Dunes & Sediments

Tempe, Arizona Ping Wang Beach Morphodynamics Tampa, Florida

Phil Watson Sea-Level Change Gosford, NSW, Australia

Allan Williams Coastal Geology Swansea, Wales, UK

Harry F. Williams Paleotempestology Denton, Texas

Colin D. Woodroffe Coastal Geomorphology Wollongong, NSW, Australia

Zhaoqing Yang Hydrodynamic Modeling Seattle, Washington Robert S. Young Coastal Processes Cullowhee, North Carolina

Guoliang Yu Sediment Transport Shangai, China





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), 7570 NW 47TH AVENUE, COCONUT CREEK, FL 33073–2723. 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.

© 2018 Coastal Education and Research Foundation, Inc. [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 Institutions

- Consorzio Nazionale Interuniversitario per le Scienze del Mare (Co.N.I.S.Ma.) [Rome, Italy; www.conisma.it/]
- Delft University of Technology [Department of Hydraulic Engineering, Delft, The Netherlands; http://www.citg.tudelft.nl/over-faculteit/afdelingen/hydraulic-engineering/]
- Duke University [Earth and Ocean Sciences Division, Durham, North Carolina, U.S.A.; https://nicholas.duke.edu/marinelab]
- Griffith University [Center for Infrastructure Engineering and Management, Southport, Queensland, Australia; https://www.griffith.edu.au/]
- Ibaraki University [Center for Water Environmental Studies, Mito, Japan; http://www.cwes.ibaraki.ac.jp/]
- International Geographical Union (IGU) [Commission on Coastal System (CCS); http://www.igu-ccs.org/]
- Royal Belgian Institute of Natural Sciences [Management Unit of the North Sea Mathematical Models (MUMM), Brussels, Belgium; http://www.mumm.ac.be/EN/index.php]
- Rutgers University [Institute of Marine and Coastal Sciences (IMCS), New Brunswick, New Jersey, U.S.A.; http://marine.rutgers.edu/main/]
- Universidad de la República [Marine Science Unit, Montevideo, Uruguay; http://www.imber.info/Science/National-Network/URUGUAY]
- Universidade Nova de Lisboa [e-Geo Center for Geographical and Regional Planning Studies, Lisbon, Portugal; http://e-geo.fcsh.unl.pt/]
- University of California, Santa Cruz [Institute of Marine Sciences, Santa Cruz, California, U.S.A.; http://ims.ucsc.edu/]
- University of Delaware [School of Marine Science and Policy, Newark, Delaware, U.S.A.; http://www.ocean.udel.edu]
- University of Maine [Climate Change Institute, Orono, Maine, U.S.A.; http://climatechange.umaine.edu/]
- University of Sydney [Coastal Studies Unit, Sydney, New South Wales, Australia; http://sydney.edu.au/]
- University of Szczecin [Institute of Marine and Coastal Science, Szczecin, Poland; http://www.wnoz.ztikm.szczecin.pl/en/1/inom/structure/]
- University of Ulster [Environmental Sciences Research Institute, Coleraine, Northern Ireland; http://www.ulster.ac.uk/es/research/l
- University of Wales, Trinity Saint David [Swansea Metropolitan University, Mount Pleasant, Swansea, South Wales, U.K.; http://www.uwtsd.ac.uk/]
- U.S. Army Corps of Engineers [Coastal and Hydraulics Laboratory (CHL), Vicksburg, Mississippi, U.S.A.; http://chl.erdc.usace.army.mil/]
- U.S. Geological Survey [National Wetlands Research Center, Lafayette, Louisiana, U.S.A.; http://www.nwrc.usgs.gov/]

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, 7570 NW 47th Avenue, Coconut Creek, FL 33073, U.S.A. PHONE: 954-899-8416. E-MAIL: cfinkl@cerf-jcr.com

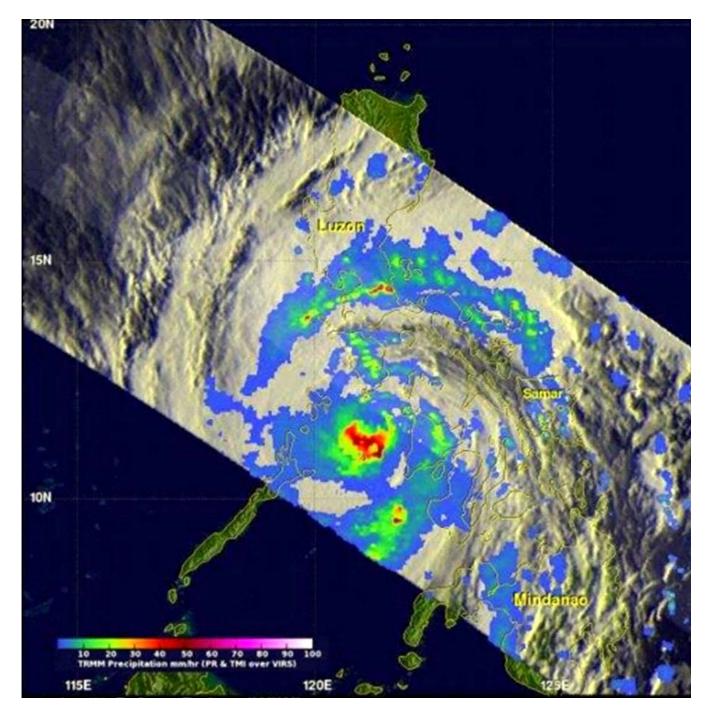
Subscription Information: The Journal of Coastal Research is a bimonthly publication. Calendar-year (2018) print and online subscription prices for the JCR are: \$115.00 for US CERF members / \$125.00 for International CERF members (\$95.00 for online only), and \$519.00 for US institutions / \$541.00 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. 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.

The Journal of Coastal Research is currently surveyed in Applied Science & Technology Abstracts; Applied Science & Technology Index (H.W. Wilson); Aquatic Sciences & Fisheries Abstracts; BIOBASE; 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 & Geoastrophysical 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).



COVER PHOTOGRAPH





Example of a binarized image product after wavelet denoising of remote sensing imagery has occurred. By using typhoon warning methods based on improved support vector machines (SVMs), shortcomings caused by human warnings can be avoided and the effectiveness of typhoon disaster early detection is improved. Eventually, the typhoon remote sensing image is transformed with algorithms into the data signal expression form, and the stability of the signal detection method is compared with the traditional method. Providing an intelligent platform for typhoon prevention can effectively carry out pre-warning of typhoon disasters (Shi, Yu, and Wang, 2018).

LITERATURE CITED

Shi, H.; Yu, Y., and Wang, Y., 2018. Early warning method for sea typhoons using remote sensing imagery based on improved support vector machines (SVMs). In: Ashraf, M.A. and Chowdhury, A.J.K. (eds.), Coastal Ecosystem Responses to Human and Climatic Changes throughout Asia. Journal of Coastal Research, Special Issue No. 82, pp. 180–185.

COASTAL EDUCATION AND RESEARCH FOUNDATION

7570 NW 47th Avenue Coconut Creek, FL 33073, U.S.A.

Officers of the Foundation

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

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 Victor V. Klemas Orrin H. Pilkey, Jr.

South America Vanda Claudino-Sales Omar Defeo

Oceania

Charles Lemckert Anja Scheffers Vic Semeniuk Andrew D. Short

Western Europe

Luciana Esteves Carlos Pereira da Silva Michael Phillips Marcel J.F. Stive

Eastern Europe Niki Evelpidou

Kazimierz K. Furmanczyk

Southeast Asia Hak Soo Lim Nobuo Mimura

Board of Directors (Trustees)

J. Andrew G. Cooper Charles W. Finkl Duncan M. FitzGerald Gary B. Griggs James R. Houston Robert Huff Joseph T. Kellev Victor V. Klemas

Charles Lemckert Gonzalo C. Malvárez Christopher Makowski Carlos Pereira da Silva Michael Phillips Orrin H. Pilkey, Jr. Norbert P. Psuty

Stephen P. Leatherman Elijah W. Ramsey, III Vic Semeniuk Douglas J. Sherman Andrew D. Short Daniel J. Stanley Marcel J.F. Stive Allan Williams

Philip D. Osborne

Charles Thibault

Erik van Wellen

Ya Ping Wang

Wei Zhang

Yoshiki Saito

Lifetime Members

Frédéric Bouchette Yong-Sik Cho Nicholas K. Coch Hany Elwany Kazimierz K. Furmanczyk Paul S. Kench Björn Kjerfve

Tetsuya Kusuda Stephen P. Leatherman Charles Lemckert J. Paul Liu Gonzalo C. Malvárez Norberto C. Nadal-Caraballo Fatima Navas

Lindino Benedet Georges Chapalain John B. Gallagher

Patron Members

Carl H. Hobbs, III Norbert P. Psuty Timothy W. Kana Robert S. Young

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 printed scientific publications, online content, and international symposiums, 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.



$\hfill\Box$ CERF MEMBERSHIP $\hfill\Box$

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. 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 and 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 34 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.

International Coastal Symposium (ICS) Official Meeting of CERF

The International Coastal Symposium (ICS) was originally set up by Per Bruun (deceased) and Charlie Finkl as the official meeting of the Coastal Education and 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, Portugal, and South Korea. 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 April of 2020 in Seville, Spain. For more information, please visit www.cerf-jcr.org.

Journal of Coastal Research

SPECIAL ISSUE NO. 82 (Pages 1–308) ISSN 0749-0208

FALL 2018

CONTENTS

Landslide Damage from Extreme Rainstorm Geological Accumulation Layers within Plain River Basins Jun Yang	1
Design and Realization of Water Resources Carrying Capacity Evaluation Model for Marine Climate Cities	12
Correlation Analysis Method for Ocean Monitoring Big Data in a Cloud Environment	12
Junhui Song, Hua Xie, and Yan Feng	24
Numerical Simulation Solutions for Wind-Induced Vibration of Ship Rearview Mirrors Caused by Airflow Noise in Shallow Seas	29
Simulation on Variability of Marine Geotechnical Parameters Based on Data Reconstruction	
Yu Zhao, Deying Zhang, Xueling Du, and Baolin Xiong	35
Determination of Optimal Freshwater Prawn Farming Site Locations using GIS and Multicriteria Evaluation	
Firuza-Begham Mustafa and Benjamin Ezekiel Bwadi	41
Salt Movement during Soil Freezing Events in Inner Mongolia, China	
	55
Modeling Analysis of Interactive Development between China's Marine Equipment Manufacturing and Coastal Producer Services	64
Hybrid Filtering Optimization Method for Denoising Contaminated Spot Images at Near-Sea-Surface Intervals	
	70
Rapid Determination of Mercury Speciation in Marine Products by Molecular Spectrometry	
Juan Zhao, Zhilei Tan, Qiang Gao, Yangcang Xu, Shengping Jiang, and Muhammad Aqeel Ashraf	77
A Relative Tolerance Relation of Rough Set (RTRS) for Potential Fish Yields in Indonesia	
Iwan Tri Riyadi Yanto, Rohayanti Hassan, and Mohd Arfian Ismail	84
Modeling for the Evaluation of Marine Economic Development Trends in Nansha Free Trade Areas under the Background	
of The Belt and Road Policy	93
Method of Access Control Model Establishment for Marine Information Cloud Platforms Based on Docker Virtualization	00
Technology	99
An Internet of Things-based Simulation Study on Lijiang River Water Environment Monitoring	106
Research on Intelligent Measurement Methods of Land Area Inundated by Seawater in Coastal Cities under Rainy Season Conditions	114
Fish Scales as a Bioindicator of Potential Marine Pollutants and Carcinogens in Asian Sea Bass and Red Tilapia within	114
the Coastal Waters of Pahang, Malaysia	120
Analysis of the Flow Field in the Process of Rotorcraft Taking off and Landing on the Platforms of Ships	120
He Zheng, Sun Xiao-yu, Gu Xuan, Liu Ju, and Yang Chun-Ying	126
Security Performance Evaluation of Minehunting Equipment in the Cloud Computing Environment	120
Sen Zhang, Lifan Sun, Yuanyuan Liu, Qingtao Wu, and Keqi Xu	131
Allelopathic Effects of Various Aquatic Plants in Eutrophic Water Areas.	101
Zhihao Zhang, Wei Li, and Muhammad Aqeel Ashraf	137
Evaluation Method of Underwater Unmanned Vehicle Sailing Efficiency under Wave Action	143
Diversity and Community Composition of Fishes in the Pusu River (Gombak, Malaysia)	110
KCA. Jalal, FK. Alifah, HNN. Faizul, AA. Mamun, MA. Kader, and MA. Ashraf	150
Designing Wireless Transmission Systems for the Dynamic Information Communication of Marine Vessels	100
Li Tao and Zhenhui Sun	156
Multilevel Layout Planning of Port Space Designs in Marine Transportation Systems Jing Zeng and Rongying Wan	163
Sensitive Data Leakage Prevention for Ship Communications under Cloud Computing Platforms	
Fang Liu, Xing Gao, and Yonghao Wu	168
Diversity, Antimicrobial Capabilities, and Biosynthetic Potential of Mangrove Actinomycetes from Coastal Waters in Pa-	
hang, MalaysiaZaima Azira Zainal Abidin, Ahmed Jalal Khan Chowdhury,	
Nurfathiah Abdul Malek, and Zarina Zainuddin	174

Continued on page 310

Early Warning Method for Sea Typhoons using Remote-Sensing Imagery Based on Improved Support Vector Machines (SVMs)	180
Evaluation Method for Effective Coastal Repair in Moon Bay, Yingkou, China	
Minghui Zhang, Zhaochen Sun, Jiawen Sun, Anning Suo, and Muhammad Aqeel Ashraf	186
Investigating the Durability and Seismic Performance of Reinforced Concrete Piers within Marine Environments	100
Zhu Jichao and Gong Jinxin	193
An Early Warning Method for Sea Typhoon Detection Based on Remote Sensing Imagery	200
	200
Macrobenthic Diversity and Community Composition in the Pahang Estuary, Malaysia	
	206
The Dynamic Response of an Experimental Floating Tunnel with Different Cross Sections under Explosive Impact	
Luo Gang, Zhou Xiao-jun, and Chen Jian-xun	212
Phytoplankton Community Response to Coastal Engineering Construction in the Caofeidian Sea, China	218
A Control Method of Demand Response Resources for Economic Dispatch Based on Temporal and Spatial Characters	
	224
Competitiveness Evaluation of Shanghai Ports Based on Niche Theory	
	232
Remediation of Marine Pollution by Microorganisms in the Comprehensive Management of Coastal Zones	
Feng Yan and Yongqiang Wang	239
An Adaptive Sliding-Window Strategy for Outlier Detection in Wireless Sensor Networks for Smart Port Construction	
	245
Cruise Route Simulation Designs for South Asia Ling Sun, Wei Liu, Hanwen Zhang, Mengting Wu, and Hao Xu	254
Flow Curve Optimization Design for Offshore Backfilling Plough FendersLiquan Wang and Jianguo Qin	263
Research and Application of a Big Data-Driven Intelligent Reservoir Management System	
Qiang Yue, Fusheng Liu, Yanfang Diao, and Yanmin Liu	27 0
Regional Green Innovation Efficiency in High-End ManufacturingLuochen Li, Liang Lei, and Dongri Han	280
Path Optimization Method of Autonomous Intelligent Obstacle Avoidance for Multi-joint Submarine Robot Peng An	288
Model and Algorithm for the Large Material Distribution Problem in Maritime Transportation Zhongjun Hu	294