

COVER PHOTOGRAPH AND FRONT MATTER: ST. MARKS WILDLIFE REFUGE AND LIGHTHOUSE, FLORIDA, U.S.A.

Source: Journal of Coastal Research, 68(sp1)

Published By: Coastal Education and Research Foundation

URL: https://doi.org/10.2112/1551-5036-68.sp1.fmii

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.

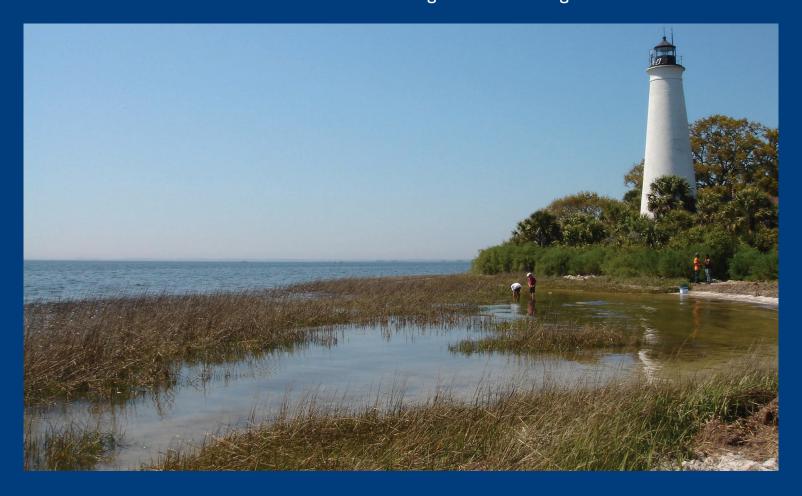
Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

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.

Climate Change Impacts on Surface Water Systems

Guest Editors: Wenrui Huang and Scott C. Hagen



Journal of Coastal Research Special Issue #68

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

25 Jake Ridge Trail

BOOK REVIEW EDITOR

School of Environmental Sciences

Fletcher, NC

28732, U.S.A.

J. Andrew G. Cooper

University of Ulster Coleraine, N. Ireland

jag.cooper@ulster.ac.uk

EDITOR-IN-CHIEF Charles W. Finkl

RÉDACTEUR-EN-CHEF

Coastal Education and Research Foundation, Inc. [CERF]

Editorial Offices:

5130 NW 54th Street 33073, U.S.A.

ASSOCIATE EDITORS

(Editorial Office, Coconut Creek) Coconut Creek, FL CERF/JCR Website: http://www.CERF-JCR.org

e-mail: 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

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

WEB DESIGN & DEVELOPMENT

Jon Finkl Media Mine 11W Washington, Suite 1100 Chicago, IL 60602, U.S.A. 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. Carrió

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, FloridaMichael G. Hughes Coastal Morphodynamics

Canberra, ACT, Australia Federico I. Isla Sea-Level Change

Mar Del Plata, Argentina Nancy L. Jackson Coastal Geomorphology

Newark, New Jersev 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 Lemckert

Environmental Fluid Dynamics Queensland, Australia

Ioannis Liritzis 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-Garcia 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

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

Anja Scheffers Coastal Evolution Lismore, NSW, Australia COMITÉ DE REDACTION

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 Shangai, China





THE JOURNAL OF COASTAL RESEARCH (JCR) (ISSN 0749-0208) IS PUBLISHED BIMONTHLY FOR \$1100 FOR INDIVIDUAL US CERF MEMBERS, \$1200 FOR INDIVIDUAL INTERNATIONAL CERF MEMBERS, \$5100 FOR US INSTITUTIONS, AND \$5400 FOR INTERNATIONAL INSTITUTIONS BY THE COASTAL EDUCATION AND RESEARCH FOUNDATION, INC. (CERF), 5130 NW 54TH STREET, COCONUT CREEK, FL 33073–37PERIODICALS 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 66044-301

© 2015 The Coastal Education & Research Foundation [CERF].

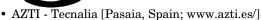
This paper meets the requirements of ANSI/NISO Z348-199(Permanence of Paper).



JOURNAL OF COASTAL RESEARCH

An International Forum for the Littoral Sciences

Supporting Scientific Information



- 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/]
- 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/]
- Royal Belgian Institute of Natural Sciences: Management Unit of the North Sea Mathematical Models (MUMM).
 [Brussels, Belgium; 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

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. 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



St. Marks Wildlife Refuge and Lighthouse, Florida, U.S.A. The wildlife refuge was established in 1931 to provide wintering habitat for migratory birds. It covers 70,000 acres along the Gulf Coast of northwest Florida, which provides home to a diverse community of plant and animal life. The refuge includes wetlands, coastal marshes, islands, tidal creeks and estuaries of seven north Florida rivers, which serves as a good field study site for coastal ecosystem and environmental research. The St. Marks Lighthouse was built in 1842 (current tower) and is still in use today. (Photo was taken by Wenrui Huang in 2011.)

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. (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 Sved Khalil Victor V. Klemas Orrin H. Pilkey, Jr.

Carlos Pereira da Silva Marcel J.F. Stive Eastern Europe Kazimierz K. Furmanczyk

Western Europe

South America Omar Defeo Southeast Asia Nobuo Mimura

Oceania Charles Lemckert Andrew D. Short

Board of Directors (Trustees)

Robert Dean Charles W. Finkl Gary B. Griggs James R. Houston Robert Huff Joseph T. Kelley

J. Andrew G. Cooper Victor V. Klemas Charles Lemckert Chris Makowski Michael Phillips Orrin H. Pilkey, Jr. Norbert P. Psuty Elijah W. Ramsey, III

Andrew D. Short Carlos Pereira da Silva Daniel J. Stanley Marcel J.F. Stive Allan Williams

Lifetime Members

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

Patron Members

Luis Antonio Buenfil-Lopez Carl H. Hobbs, III Timothy W. Kana Norbert P. Psuty Giovanni Randazzo

Yung Tseng 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 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.



\square CERF MEMBERSHIP \square

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 & 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 profes-

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 199 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 of 2016 in Sydney, New South Wales, Australia. For more information, please visit www.cerf-jcr.org.

Journal of Coastal Research

SPECIAL ISSUE NO. 68 (pages 1-175) ISSN 0749-0208

FALL 2014

CONTENTS

Climate-linked Mechanisms Driving Spatial and Temporal Variation in Eelgrass (<i>Zostera marina L.</i>) Growth and Assemblage Structure in Pacific Northwest Estuaries, USA]
Predicting Impacts of Tropical Cyclones and Sea-Level Rise on Beach Mouse Habitat	
	12
Comparison of Shoreline Change Rates along the South Atlantic Bight and Northern Gulf of Mexico Coasts for Better Evaluation of Future Shoreline Positions under Sea Level Rise	
	20
Impact of Sea Level Rise on Storm Surges around the Changjiang Estuary	
	27
Climate Change Impact on Runoff and Sediment Loads to the Apalachicola River at Seasonal and Event Scales	38
Dynamic Considerations of Sea-level Rise with Respect to Water Levels and Flooding in Apalachicola Bay	U
Peter Bacopoulos and Scott C. Hagen	48
Sea-Level Rise Effects on Hurricane-Induced Salinity Transport in Apalachicola Bay	10
	49
Effects of Sea Level Rise on the Interidal Oyster Crassostrea Virginica by Field Experiments	1,
Joshua A. Solomon, Melinda J. Donnelly, and Linda J Walters	57
Linkage between Freshwater Inflow and Primary Productivity in Texas Estuaries: Downscaling Effects of Climate Variability	
	6
Effects of Sea Level Rise on Coastal Reclamation Projects in Jiaojiang Estuary, China	•
	74
Numerical Study of Flow and Sediment Variation Affected by Sea-Level Rise in the North Passage of the Yangtze Estuary	
Qi Shen, Fengfeng Gu, Dingman Qi, and Wenrui Huang	80
Effects of Sea Level Rise on Salinity Intrusion in St. Mark River Estuary, Florida, USA	0.
Hong Xiao, Wenrui Huang, Sha Lou, and Elijah Johnson	89
Climate Change Impacts on Wave Characteristics along the Coast of Japan from 1986 to 2012	
	97
Frequency Analysis of Extreme Water Levels Affected by Sea-Level Rise in East and Southeast Coasts of China	108
Effects of El-Niño and La-Niña Sea Surface Temperature Anomalies on Annual Precipitations and Streamflow Discharges	118
Effects of Changing Climate on Glacier Shrinkage and River Flow in the Upper Heihe River Basin, China	11,
	12]
Development of a River Hydrodynamic Model for Studying Surface-Ground Water Interactions Affected by Climate	
	129
Analysis of Water Balance in Poyang Lake Basin and Its Response to Climate Change	
	136
Frequency Analysis for Predicting Extreme Precipitation in Changxing Station of Taihu Basin, China	
Zhengzheng Zhou, Shuguang Liu, Hong Hua, Chang-Shian Chen,	
	144
Frequency Analysis of Minimum Ecological Flow and Gage Height in Suwannee River, Florida	
	152
Climate Change Scenarios Analysis in Coastal Region of Thailand	
	160
Urban Flood Maping for Jiaxing City Based on Hydrodynamic Modeling and GIS Analysis	
	168