

# INTERNATIONAL COASTAL SYMPOSIUM - 2000

**Rotorua, New Zealand**  
**April 24 - 28, 2000**

Conference Theme

*"Challenges for the 21<sup>st</sup> Century  
in Coastal Science, Engineering  
and Environment"*

**First Announcement and Call for Abstracts**

*<http://www.earth.waikato.ac.nz/ics2000/ics2000.htm>*

# Symposium Overview

ICS 2000 commencing on Easter Monday of the year 2000 is the 6<sup>th</sup> in a series of International Coastal Symposia initiated by Per Bruun. It is a multi-disciplinary international symposium convened for scientists, engineers, planners and managers to discuss the latest advance in the science, engineering and environmental issues of coastal processes. The symposium will provide a high-level technical forum for exchange of information among the fields of coastal science, engineering and environment.

The Conference provides a forum for the final meeting of SCOR Working Group 106 on Muddy Coasts, and for a special meeting of the Commission on Coastal Systems of the International Geographical Union.

The theme of the symposium, "*Challenges for the 21<sup>st</sup> Century in Coastal Sciences, Engineering and Environment*" is chosen to promote research and understanding of coastal sedimentary processes and associated issues to meet the challenges for the 21<sup>st</sup> century.

## Objectives

The objectives of ICS 2000 are to:

- Promote greater awareness of scientific, engineering, and technical issues related to coastal processes and sedimentation.
- Highlight diversity of multidisciplinary approaches to studies of coastal environments and their management.
- Promote ways of using engineering and scientific knowledge to improve coastal environmental management and the decision-making process.
- Encourage the study of coastal processes to support application of best management practices in both developed and remote coastal zones.

# Key Topics

## A. *Coastal Sediment-Transport Processes*

- theory and measurement
- parabolic and diabathic transport
- sediment transport at inlets
- estuarine sediment transport
- impacts of inlets on the coast
- field data collection, and laboratory measurements

## B. *Coastal Engineering Applications*

- sediment budget assessments
- numerical modelling
- beach replenishment
- effects of large scale dredging
- performance of erosion-control structures
- GIS and remote sensing for coastal analysis

## C. *Coastal Geomorphology [sponsored by Commission on Coastal Systems, IGU]*

- large-scale coastal evolution
- time scale of beach profile and shoreface change
- shoaling, and migration of channels
- storm impacts on shoreline change

## D. *Muddy Coasts [sponsored by SCOR Working Group 106]*

- cohesive sediment transport
- fundamental mud deposition processes
- mud transport
- beaches on muddy and sheltered coasts
- stabilisation of muddy coasts
- dredging and disposal of muddy sediments
- tidal influences on muddy coasts

## E. *Environmental Aspects of Coastal Development*

- coastal hazard and setback assessment
- water quality and pollution from coastal development
- detection of environmental degradation
- monitoring ecological impacts
- maintaining coastal landscape

## Conference Structure

Conference registration, the official opening and the keynote addresses will be held on the evening of Day 1. Days 2 and 3 will involve morning presentations and afternoon field trips. Day 4 is an all day field trip. Day 5 will comprise a full day of paper presentations.

Special events include an opening "ice-breaker" evening with "Powhiri" (cultural welcome) preceding the plenary session keynote address. A conference dinner will be held in the evening after the full day field trip.

## Conference Venue: Rotorua, Bay of Plenty, New Zealand

Rotorua is a major tourist town centred in the scenic lakes district of an active volcanic and geothermal zone about an hour's traveling time from the scenic lee coast of the Bay of Plenty. Attractions are numerous including: active geothermal areas and geysers; nearby Mt Tarawera (which devastatingly erupted in 1886); trout fishing; white water rafting; scenic flights; White Island active volcano; surfing on the coast; and many more.

## Field Excursions and Site Visits

- ½ day: Ohiwa Harbour, Ohope barrier spit erosion, Rangitaiki coast littoral drift
- ½ day: Tauranga Harbour - barrier island and tombolo enclosed estuarine lagoon. Port of Tauranga dredging and disposal. Beach renourishment, artificial surfing reef.
- Full day: Miranda shelly chenier ridges and muddy coast, Firth of Thames; storm surge; Tairua Harbour Cam-era site; beach erosion, coastal management and setback at Waihi Beach.

## Symposium Proceedings

To be published in a special issue of JCR. Only those papers presented at the conference will be eligible for inclusion in the JCR Special Issue.

## Initial Sponsors

- Coastal Education and Research Foundation
- Commission on Coastal Systems, of IGU
- NIWA
- Port of Gisborne Limited
- SCOR
- University of Waikato

## Call for Papers

Please send an expression of interest to [ics2000@waikato.ac.nz](mailto:ics2000@waikato.ac.nz) or mail/fax the attached form to:

ICS 2000  
C/- Prof. Terry Healy  
Coastal Marine Group  
Department of Earth Sciences  
University of Waikato, Hamilton,  
New Zealand

Fax: +64 -7-8384061

## Organising Committee and Technical Secretariat

Prof. Terry Healy (University of Waikato)  
Prof. Kerry Black (NIWA/University of Waikato)  
Dr Willem de Lange (University of Waikato)  
Dr Terry Hume (NIWA)  
Dr Conrad Pilditch (University of Waikato)  
Dr Mal Green (NIWA)  
Dr Rob Bell (NIWA)  
Dr Richard Gorman (NIWA)  
Dr Karin Bryan (NIWA/University of Waikato)  
Dr Fengming Tian (University of Waikato)

## Key Dates

**1 November 1999:**  
for submission of abstract

**15 December 1999:**  
notification of acceptance

**1 February 2000:**  
submission of full paper in correct *JCR* format

# ICS 2000

for submission of technical papers

Abstract submission deadline: 1 November 1999

## STATEMENT OF INTEREST

Principal author.....  
Presenter (if different from author).....  
Affiliation.....  
Postal address.....  
.....  
.....  
Telephone.....Fax.....Email.....  
Co-authors.....  
Preferred presentation: oral:.....poster:.....

Paper title.....  
.....  
.....  
Please limit your abstract to 1 A4 page.

Please fax this form to: Professor Terry Healy +64-7-8384061

or mail to: ICS 2000  
C/- Professor Terry Healy  
Coastal Marine Group  
Department of Earth Sciences  
University of Waikato  
Private Bag 3105  
Hamilton  
New Zealand

or email to: ics2000@waikato.ac.nz

For further information, please visit the Conference web site:

*<http://www.earth.waikato.ac.nz/ics2000/ics2000.htm>*

---

# THE COASTAL EDUCATION AND RESEARCH FOUNDATION

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

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

---

## 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, Jr.  
**Vice President:** Rhodes W. Fairbridge

**Secretary-Treasurer**  
Charles J. Miller

## Board of Directors

P. Bruun	R. P. Paskoff
J.-C. 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 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 fresh-water 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.

CERF MEMBERSHIP

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 Europe, M. T. Delafontaine *et al.* (eds.) [In Production]

# Journal of Coastal Research

VOL. 15, NO. 1 (pages 1-302)

WINTER 1999

## CONTENTS

### Regular Papers

Ripple Migration and Sand Transport Under Quasi-Orthogonal Combined Flows on the Scotian Shelf .....			
.....	<b>C.L. Amos, A.J. Bowen, D.A. Huntley, J.T. Judge, and M.Z. Li</b>		<b>1</b>
The Role of Soil and Vegetation Processes in the Control of Organic and Mineral Fluxes in Some Western European Salt Marshes .....		<b>J. Hazelden and L. A. Boorman</b>	<b>15</b>
A Study of Coastal Morphodynamics on the Muddy Islands in the Changjiang River Estuary .....		<b>Yang Shilun</b>	<b>32</b>
Evidence for Late Holocene Tsunamis at Catala Lake, British Columbia .....			
.....	<b>John J. Clague, I. Hutchinson, R.W. Mathewes, and R.T. Patterson</b>		<b>45</b>
Modelling of Suspended Sediment Fluxes off the Rhône River Mouth .....			
.....	<b>Sandrine Arnoux-Chiavassa, Vincent Rey, and Philippe Fraunié</b>		<b>61</b>
Sand Re-Suspension Events in a High Energy Infragravity Swash Zone .....			
.....	<b>Philip D. Osborne and Geraldine A. Rooker</b>		<b>74</b>
In Situ Deposition Versus Transport by Density Currents of Dredged Sediments Dumped in Coastal Waters .....			
.....	<b>G. Drapeau, D. Gauthier, and D. Lavallée</b>		<b>87</b>
Seasonal Evolution of Shoreface and Beach System Morphology in a Macrotidal Environment, Dunkerque Area, Northern France .....			
.....	<b>Corinne Corbau, Bernadette Tessier, and Hervé Chamley</b>		<b>97</b>
Turtle Nesting on Adjacent Nourished Beaches with Different Construction Styles: Pinellas County, Florida .....			
.....	<b>Richard A. Davis, Jr., Megan V. FitzGerald, and James Terry</b>		<b>111</b>
Detection of Non-Random Zonation Patterns in Sandy Intertidal Communities .....		<b>Alejandro Brazeiro</b>	<b>121</b>
A Unified Model for Periodic Non-Linear Dispersive Waves in Intermediate and Shallow Water .....			
.....	<b>Theofanis V. Karambas</b>		<b>128</b>
Medusan (Cnidaria) Assemblages off the Caribbean Coast of Mexico .....			
.....	<b>E. Suarez-Morales, L. Segura-Puertas, and R. Gasca</b>		<b>140</b>
Quartz Luminescence as a Light-sensitive Indicator of Sediment Transport in Coastal Processes .....		<b>W. Jack Rink</b>	<b>148</b>
Interpreting Temporal Disturbances in an Estuarine Benthic Community under Combined Anthropogenic and Climatic Effects .....			
.....	<b>F. J. Estacio, E. M. García-Adiego, J. L. Carballo, J. E. Sánchez-Moyano, J. J. Izquierdo, and J. C. García-Gómez</b>		<b>155</b>
A Storm Surge Inundation Model for Coastal Planning and Impact Studies .....			
.....	<b>Graeme D. Hubbert and Kathleen L. McInnes</b>		<b>168</b>
An Inverse Relationship Between the A and m Coefficients in the Bruun/Dean Equilibrium Profile Equation .....			
.....	<b>Roger N. Dubois</b>		<b>186</b>
A Cross-Shore Transport "Shape Function" for High Energy Beaches .....		<b>P.E. Russell and D.A. Huntley</b>	<b>198</b>
Summary of Beach Nourishment Activity Along the Great Lakes' Shoreline 1955-1996 .....			
.....	<b>Michael K. O'Brien, Hugo R. Valverde, Arthur C. Trembanis, and Tanya C. Haddad</b>		<b>206</b>
Magnitudes, Spatial Extent, Time Scales and Causes of Shoreline Change Adjacent to an Ebb Tidal Delta, Katikati Inlet, New Zealand .....			
.....	<b>D. Murray Hicks, Terry M. Hume, Andrew Swales, and Malcolm O. Green</b>		<b>220</b>
A One-Dimensional Numerical Model for Storm-Breaching of Barrier Islands ...		<b>David R. Basco and Cheol S. Shin</b>	<b>241</b>
Tracing Beach Sand Movement Using Fluorescent Quartz Along the Nile Delta Promontories, Egypt .....			
.....	<b>A. A. Badr and Morad F. Lotfy</b>		<b>261</b>
Long-Term Relief Deformation and Sediment Characteristics of Alexandria Eastern Harbour, Egypt .....			
.....	<b>Morad F. Lotfy and A. A. Badr</b>		<b>266</b>

### Departments

Discussion .....	272	Subject Index .....	288
Reply .....	277	Geographic Index .....	296
News and Announcements .....	280	Contributing Author Index .....	298
Coastal Calendar .....	284	Outside Reviewers 1998 .....	300
Book Review .....	286		