# THE COASTAL EDUCATION & RESEARCH FOUNDATION [CERF]

A Nonprofit Society Dedicated to the Coastal Sciences

### MEMBERSHIP AND SUBSCRIPTION INFORMATION

#### BACKGROUND

The Coastal Education & Research Foundation [CERF] is a nonprofit Virginia corporation dedicated to the advancement of the coastal (marine) sciences. The Foundation is devoted to the multi-disciplinary study of complex problems in coastal areas. The purpose of CERF is to help translate and interpret coastal (marine & freshwater) environmental 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 professional publications and public media CERF brings accurate information to the public and environmental specialists 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, loss or pollution of wetlands, flooding, and susceptability 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 environmental management, and encourage their adoption and use.

Associations with colleges, universities, and other research establishments provide a basis for cooperative investigation of biophysical resources found in open and protected coastal regions – estuaries, large inland bodies of water bounded by shorelines, wetlands, and other coastal environments. It is anticipated that these combined attempts to better understand the nature of coastal processes will help forestall what may become contentious issues of tomorrow.

### **GOALS AND OBJECTIVES**

- To promote research into all areas (scientific, technical, social, political, economic, and philosophical) related to investigation of coastal features and processes (physical and biological) and their subsequent management.
- To facilitate communication and the exchange of information between researchers in diverse fields of coastal research in an effort to refine study and use of coastal areas.
- To promote wider awareness of the value of coastal research and applicability of different management/engineering options.
- To solicit and promote funding for research in coastal regions.
- To recognize individuals and organizations who have made notable contributions to better understanding of coasts and shorelines.
- To contribute to the discussion of public policy in matters relating to technical issues and the use (or abuse) of coastal environments.

#### MEMBERSHIP

Members of the Coastal Education & Research Foundation are individuals, institutions, and corporations that support the aims of the Foundation through personal or group efforts or by donations. Memberships are available in different categories with privileges. An Annual Member contributes \$25 (\$30 outside the US); an Annual Fellow, \$45; an

Annual Associate, \$250; a Sponsor, \$1,000; a Patron \$5,000; and a Benefactor, \$10,000. Corporate memberships are available at the annual rate of \$500. Donors above the category of "Fellow" are recognized in the Journal of Coastal Research. Donations made to the Foundation are tax deductible to the extent provided by law.

#### FOUNDATION MEMBERSHIP BENEFITS

- Our scientific journal
- Participation and sharing with a distinguished international group of scholars and scientists
- Foundation newsletter
- Notices of meetings

- Topical reviews
- Reports of meetings
- Book reviews
- News from affiliated societies
- Coastal calendar of events

#### PUBLICATIONS

Official publications of the Foundation include two international serials, the *Journal of Coastal Research* (JCR) and the *Bulletin of Paleomalacology* (BPM). These two journals deal with multidisciplinary topics that contribute important documentation of coastal phenomena, including theoretical, methodological, techniques, field, and applied studies. JCR, dedicated to all aspects of integrated coastal research, disseminates knowledge and understanding of coastal areas by promoting communication between specialists in biology, climate, engineering, geology, and oceanography. BPM deals with time-senstive taxonomic works that consider the systematics, biogeography, and ecology of molluscan paleofaunas.

The Foundation also publishes special numbers of the Journal of Coastal Research as well as books and a newsletter.

#### **CERF** Journals

#### Journal of Coastal Research (JCR)

#### **Bulletin of Paleomalacology (BPM)**

### MEMBERSHIP AND SUBSCRIPTIONS

Please enroll me as a member of The Coastal Education & Research Foundation [CERF] in the category indicated. As a member of CERF, I am entitled to disounts on journals and books. I understand that my annual membership dues and other contributions help support the goals and objectives of the Foundation.

#### **Annual Member**

Dues \$25 Free Journal Selection (Circle one) JCR or BPM

#### **Annual Fellow**

Dues \$45 \_\_\_\_

Includes Both Journals JCR & BPM

† Enclosed please finds my tax-deductible contribution to help support the objectives of The Coastal Education & Research Foundation.

## LIBRARIES, SCHOOLS, and OTHER RESEARCH ORGANIZATIONS

(Subscriptions when not for personal use)

Journal of Coastal Research (JCR) Subscription (USA-Library) \$92.50; overseas, \$97.50

**Bulletin of Paleomalacology (BPM)** Subscription (USA-Library) \$35; overseas, \$40

Please make check payable to: CERF

NAME OF APPLICANT
(Print in Ink or Type)
ADDRESS FOR MAIL

DEGREE (If Applicable)

POSITION OR TITLE

PHONE\_

Telephone: (804) 973-1863; Telex 4944447

COASTAL EDUCATION & RESEARCH FOUNDATION P.O. Box 8068 Charlottesville, VA 22906 USA

## ATLAS of the LIVING OLIVE SHELLS of the WORLD

#### E. J. PETUCH & D. M. SARGENT

The ATLAS of the LIVING OLIVE SHELLS of the WORLD, by Edward J. Petuch & Dennis M. Sargent, encompasses the taxonomy, ecology, and evolutionary history of the popular genus Oliva. In this work the authors conduct a systematic survey of the phylogenetic relationships within the genus and have produced a valuable identification and library resource. The book, in quarto format, offers the following features:

- Descriptions and illustrations for more than 300 species, subspecies, and color forms
- 28 new species and 18 subspecies
- 39 full-color plates showing all shells described in text
- 32 geographical maps depicting Oliva worldwide distribution patterns
- new taxonomic arrangement
- 19 new subgeneric groups

## NEW CARIBBEAN MOLLUSCAN FAUNAS

### **EDWARD J. PETUCH**

NEW CARIBBEAN FAUNAS, by Edward J. Petuch, is a pictorial atlas (in letter format) comprising 28 black/white plates of rare, seldom-seen Caribbean molluscs of most of the major popular families. Included are:

- Discussion and illustrations of long-lost Caribbean species, such as *Cypraea aubryana, Conus commodus, Conus sphacelatus, Conus sanguineus, Conus hedgesi,* among others.
- Detailed discussions of the molluscan faunas and ecologies of unexplored regions of the Caribbean, such as Roatan Island (Honduras), northern South America, the Gulfs of Venezuela and Triste, deepwater Bahamas, and Brazil.
- Described for the first time, the first-known western Atlantic species of Bolma, Quoyula, Murexsul, Truncaria, Turrancilla, Gracilancilla, Conomitra, and others.
- 107 new species described for the first time, including: 24 new species of *Conus*, 19 new murexes, 8 new olivids, 4 new volutes, 6 new mitres (including 2 new genera), and new species of *Distorsio*, *Cypraca*, *Cancellomorum*, *Busycon*, *Argopecten*, and many others.
- Over 120 rare species illustrated, some for the first time since their original descriptions in the 1800's.
- A must for marine biologists, Caribbean molluscan specialists, and collectors of worldwide Conidae, Cypraeidae, Muricidae, and Olivae.

## COASTAL EDUCATION & RESEARCH FOUNDATION [CERF] P. O. Box 8068 Charlottesville, VA 22906 USA

Please enter the following order: ATLAS of the LIVING OLIVE SHELLS of the WORLD No. of copies \_\_\_\_\_ X \$68.50 ea = \_\_\_\_\_

NEW CARIBBRAN MOLLUSCAN FAUNAS

No. of copies \_\_\_\_\_ X \$38.50 ea = \_\_\_\_ \_\_\_\_Subtotal

- \_\_\_\_\_Shipping & handling (\$2.50 ea)
- \_\_\_\_\_Virginia residents add 4.5% sales tax

TOTAL

X Check enclosed (make checks payable to CERF)
¤ Credit card:
American Express, Visa, MasterCard (Circle choice)
Account Number
Expiration date
Signature
(Signature required for credit card orders)
<sup>†</sup> Dealer discounts available on all books

Address		
City	State	Zip

### VIRGINIA COAST RESERVE LONG-TERM ECOLOGICAL RESEARCH PROGRAM

#### **OPPORTUNITIES FOR GRADUATE STUDENT RESEARCH SUPPORT**

The Department of Environmental Sciences at the University of Virginia has initiated a longterm interdisciplinary coastal research program on the Eastern Shore of the Delmarva Peninsula. Opportunities exist for graduate and post-doctoral research into the local and regional implications of geological, hydrological, ecological, marine and atmosphere interactions.

The Site: The Virginia Coast Reserve is owned by The Nature Conservancy and extends 100 km from Wallops Island and Chincoteague Inlet southward to Fisherman Island at the mouth of the Chesapeake Bay. This 1000-square kilometer barrier island system has developed in association with sea-level rise over the past 5,000 to 7,000 years.

**The Program:** The Virginia Coast Reserve Long-Term Ecological Research Program is one of 15 LTER programs nationwide designated by the National Science Foundation to receive federal support for at least five years to conduct basic research over time periods of long-term ecological and physical processes.

The Research Objectives: The general research objectives for the VCR-LTER are: (1) to reconstruct the Holocene geological history of the Virginia Coast Reserve; (2) to identify and measure the rates of response of the barrier/lagoon system to climatic events, sediment deposition, and erosion; (3) to identify and measure the rates of ecosystem processes such as primary production and groundwater movement.

#### FACULTY:

All of the principal investigators of the VCR-LTER Program have conducted research on the Virginia barrier islands and have published hundreds of papers and books pertaining to barrier island/lagoon/marsh systems. Individuals or groups interested in the VCR-LTER Program may contact one of the following faculty members for additional information.

- <u>COASTAL</u> <u>GEOLOGY</u>. Robert Dolan, George F Ortel (Old Dominion University)
- <u>ECOLOGY</u>: Raymond D. Dueser, William E. Odum, Herman H. Shugart, Joseph C. Zieman
- <u>HYDROLOGY:</u> George M. Hornberger, William K. Nuttle
- <u>MICROBIAL</u> <u>ECOLOGY</u>: Aaron L. Mills, Linda K. Blum
- CLIMATOLOGY: Bruce P. Hayden
- <u>ECOSYSTEM</u> <u>MODELLING:</u> Herman H. Shugart
- <u>BIOLOGY</u>: Joseph J. Murray, Jr. (Dept. of Biology, U.Va)

Department of Environmental Sciences Clark Hall, University of Virginia Charlottesville, VA 22903 (804) 924-7761

#### FACILITIES:

Equipped computer, lab and field research facilities are maintained at Oyster, Virginia and in Charlottesville at the University of Virginia. A newly constructed laboratory at the University of Virginia and a recently renovated laboratory and field station at Oyster provide prime working conditions. Two vehicles and a variety of boats are available.

#### FINANCIAL AID:

Scholarships, research and teaching assistantships, part-time employment, loans, and competitive awards are available for graduate students working on the VCR-LTER Program. For details about financial aid, contact one of the faculty members listed at left.



# **CERF JOURNALS**

## JOURNAL OF COASTAL RESEARCH

1988 Volume Number 4

Number of Issues per Year: 4 (Quarterly) ISSN No. 0749-0208 Months of Publication: January, March, June, September

The Journal of Coastal Research provides an international forum for the littoral sciences. This professional journal is dedicated to all aspects of integrated coastal research. The journal disseminates knowledge and understanding of coastal areas by promoting communication between specialists in biology, climate, engineering, geology, hydrography, oceanography, and remote sensing. The journal contains scholarly papers, review articles, technical communications, book reviews, news and announcements, and provides additional special issues that deal with topical problems, collections of papers presented at symposia, bibliographies, and state-of-the-art reviews. The journal favors multidisciplinary topics that contribute important documentation of coastal phenomena, including theoretical, methodological, techniques, field, and applied studies.

## BULLETIN OF PALEOMALACOLOGY

1988 Volume Number 1

Number of Issues per Year: 4 (Quarterly) ISSN No. 0897-2451 Months of Publication: February, April, July, October

The bulletin is a vehicle for the dissemination of short papers and notes that deal with all aspects of paleomalacology on a worldwide basis. Time-sensitive taxonomic works are published on a rapid basis along with other papers that consider the systematics, biogeography, and ecology of molluscan paleofaunas. Papers that emphasize new discoveries involving new species and other taxa from around the world are of particular interest to the bulletin. Larger systematic works and faunal surveys are occasionally considered for publication.

Annual Member (Dues \$25)	Journal Selection (Circle One) JCR or BPM	
Annual Fellow (Dues \$45)	Journal Selection (Includes Both Journals) JCR & BPM	
<sup>¤</sup> Payment is Enclosed (Please make of	checks payable to CERF)	
¤ Please bill the address below	American Express /Visa/ MasterCard (Circle Credit Card Choice)	
Account No	Expires	
	Signature	
Name		
Department		
Institution		
CitySta	teCountry	
Mail To: Coastal Education & Research Foundation [CERF]		
	P.O. Box 8068	

Charlottesville, 22906 USA

**JCR** 

**BPM** 

# MARINE RESEARCH SPECIALIST V

The University of Rhode Island's satellite data processing center is seeking an individual to assume responsibility for remote sensing as it applies to their coastal program. The center now operates 4 Vaxes with 4 display systems (one at sea) using the University of Miami satellite data processing software for oceanographic applications and ELAS for coastal and terrestrial applications. The successful applicant will be responsible for the development of new applications in the coastal area; for the analysis of satellite/aircraft data as they apply to coastal problems; and, for the preparation and presentation of remotely sensed data. This individual will also be expected to assist in course instruction related to remote sensing. Thorough knowledge of scientific computer system analysis, design, documentation, programming, FOR-TRAN and a remote sensing analysis language are required. Applicants should have at least a Master's degree involving the use of remote sensing or three years of experience with remote sensing applications. Applications will be accepted until the position is filled. Review of applications will begin May 15, 1988. Submit a letter of application and resume to: Robert Sand, Search Coordinator, Marine Research Specialist V Position, THE UNIVER-SITY OF RHODE ISLAND, P.O. Box G, Kingston, RI 02881. An Affirmative Action/Equal Opportunity Employer.

# University of Rhode Island

## THE COASTAL EDUCATION AND RESEARCH FOUNDATION

Post Office Box 8068 Charlottesville, Virginia 22906-8068, USA

#### **Officers of the Foundation**

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

**President & Associate Director:** Charles W. Finkl, Sr.

Vice President & Executive Director: Charles W. Finkl, Jnr.

Secretary-Treasurer:

Barbara J. Girouard

#### **Board of Directors**

Lucius H. Bracey, Jr.	Robert Huff
Per Bruun	Larry Klingler
Donald R. Coates	Roy R. Lemon
Robert Dolan	Robert W. Murdoch
Rhodes W. Fairbridge	Edward J. Petuch
David W. Fischer	Maurice L. Schwartz
Richard A. FitzGerald	Andrew D. Short
	Ian Watson

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 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 is associated with the Department of Geology at Florida Atlantic University in Boca Raton, Florida 33431, and the Department of Environmental Sciences, University of Virginia, Charlottesville, Virginia 22903. Internships for students at the University of Virginia provide "hands-on" experience with journal production and professional publishing in general. These associations 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 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.

#### $\Box$ CERF MEMBERSHIP $\Box$

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 Journals:**

Journal of Coastal Research (JCR): An International Forum for the Littoral Sciences (ISSN 0749-0208). [US\$50.00] (Personal Rate)

Current Titles in Ocean, Coastal, Lake & Waterway Sciences (ISSN 0883-4725). [US\$25.00] (Personal Rate)

#### **Special Issues and Reports:**

Journal of Coastal Research:

Special Issue No. 1 (1986): Late Quaternary Sea-Level Changes and Coastal Evolution, edited by Paolo Pirazzoli and John R. Suter. [US\$22.50]

Special Issue No. 2 (1986): Annotated Bibliography of Quaternary Shorelines, Fourth Supplement 1978-1983, edited by Horace G. Richards, William B. Gallagher, and Donald J. Colquhoun. [US\$22.50]

#### **CERF Books:**

Atlas of the Living Olive Shells of the World, by Edward J. Petuch and Dennis M. Sargent (ISBN 0-938415-00-X). xiii + 253p, 37 color plates (1986). [US\$68.50]

New Caribbean Molluscan Faunas, by Edward J. Petuch (ISBN 0-938415-01-8). 5+156p, 37 black & white plates (1987). [US\$38.50]

# **Journal of Coastal Research**

VOL. 4, NO. 2 (pages 165-332)

SPRING 1988

# CONTENTS

Editorial Charles W. Finkl	ii
Instructions to Authors	iv
Coastal Engineering Research in the Corps of Engineers James R. Houston	165
The Origin of Foredunes on the Coast of Victoria, Australia	
Eric C.F. Bird and Deborah J.B. Jones	181
Jamaica Bay Studies VII: An Overview of Abiotic Factors Affecting Several	
Avian Groups Joanna Burger	193
Wave Measurement in Iceland	
Gisli Viggósson, Sigurdur Sigurdarson and Guojón Sch. Tryggvason	207
Profile Nourishment: Its Background and Economic Advantages Per Bruun	219
Sea-Surface Temperature and High-Tide Beach Change, Stanwell Park, Australia,	
1843-1987 Edward Bryant	229
Coastal Erosion Along the Egyptian Delta Scot E. Smith and Adel Abdel-Kader	245
Salt Leaching in the Newly Exposed Shores of the Dead Sea, Israel	
M. Shatkay, M. Magaritz, and J. R. Gat	257
The Ocean Level and Models Simulating Its Oscillations	
	273
Sedimentary Environments Within Little Sarasota Bay, Florida	
Michael J. Bland and Richard A. Davis, Jr.	279
Progressive Cementation in Pleistocene Carbonate Sediments Along the Coastal Area of	
Alexandria, Egypt Mahmoud Kh. El-Sayed	289
Short-Term Interactions Between Hydraulics and Morphodynamics of a Small Tidal Inlet,	
Long Island, New York George L. Smith and Gary A. Zarillo	301

# **Departments**

News and Announcements	Books Received
Book Reviews	Coastal Calendar

Published by the Coastal Education and Research Foundation, P.O. Box 8068, Charlottesville, Virginia 22706-8068, U.S.A.