## JOURNALS

# Environmental Conservation

International Journal of Interdisciplinary Environmental Science

Published for the Foundation for Environmental Conservation

## Editor

Nicholas V. C. Polunin, University of Newcastle, UK

Environmental Conservation is one of the longeststanding, most highly-cited of the interdisciplinary environmental science journals. It includes research papers, reports, comments, subject reviews, and book reviews addressing environmental policy, practice, and natural and social science of environmental concern at the global level, informed by rigorous local level case studies. The journal's scope is very broad, including issues in human institutions, ecosystem change, resource utilisation, terrestrial biomes, aquatic systems, and coastal and land use management. Environmental Conservation is essential reading for all environmentalists, managers, consultants, agency workers and scientists wishing to keep abreast of current developments in environmental science. Selected papers are made freely available online as part of EC Perspectives.

## **Price information**

is available at: http://journals.cambridge.org/enc

## Free email alerts

Keep up-to-date with new material – sign up at http://journals.cambridge.org/enc-alerts

For free online content visit: http://journals.cambridge.org/enc



Environmental Conservation is available online at: http://journals.cambridge.org/enc

#### To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

#### in New York:

Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions\_newyork@cambridge.org



## THE MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM

#### **TERMS OF MEMBERSHIP FOR 2011**

Annual members, receiving the Journal – online only, per annum	£55.00*
Annual members, receiving the Journal – print only, per annum	£95.00*
Annual members, receiving the Journal – print and online, per annum	£115.00*
Annual members, without the Journal, per annum	£35.00*
Corporate members, receiving the Journal – online only, per annum	£360.00
Corporate members, receiving the Journal – print and online, per annum	£425.00
Student members, with the Journal – online only, per annum (non-voting)	£30.00
Student members, with the Journal – print only, per annum (non-voting)	£45.00
Student members, without the Journal, per annum (non-voting)	£20.00

The Association is a registered charity and was founded in 1884 to promote accurate researches leading to the advancement of zoological and botanical science and to increase our knowledge of the food, life, conditions and habits of British fish. The work of the Association is controlled by the Council elected annually by its subscribing members.

The Marine Biological Association, under the direction of its Council, has undertaken research in all branches of marine science and many of the results have been published in this Journal. An account of the history of the first hundred years of the Association and Journal may be found in Volume 67 (pp. 463 and 465). Summaries of the activities and research of the Association are given annually in the Report of the Council, sent to members in April, and to other subscribers with a later issue of the *JMBA*.

Since its foundation the Association has been supported by grants from Research Councils and by subscriptions and donations from private members, universities, learned societies, the Fishmongers' Company and other public bodies.

The Plymouth Laboratory was opened in June 1888 and, since that date, considerable additions have been made to the buildings, including a library, resource centre, extensive laboratory accommodation and seawater facilities.

In 1988 an agreement was reached between the MBA Council and the Natural Environment Research Council (NERC) to merge a large part of the Plymouth Laboratory with the NERC's Institute for Marine Science which had been in Plymouth since 1971. This new institute was called the Plymouth Marine Laboratory (PML) based at both Citadel Hill and West Hoe sites. In 2001 the MBA and PML re-established separate identities funded by Grants-in-aid from NERC. The Association and the research programme are based entirely at the Citadel Hill Laboratory. The building is shared with SAHFOS (Sir Alister Hardy Foundation for Ocean Science). The research organizations are part of the Plymouth Partnership which includes PML, the University of Plymouth and the NMA (National Marine Aquarium). Active collaboration and shared resources mutually enhance the marine research programmes of the participants.

The Marine Biological Association retains the lease of the building on Citadel Hill and continues as a very active scientific learned society with a large international membership. The MBA manages a research programme carried out by research fellows (partly funded by NERC) together with scientific visitors, publishes an International Journal, Annual Report, Newsletters and organizes scientific meetings.

Subscriptions can be paid by cash/cheque, direct debit from a UK bank account or credit card. \*Subscriptions are reduced by  $\pounds 5$  per annum if paying by direct debit.

Members of the Association have the following rights and privileges: they elect the Officers and Council annually; they are entitled to receive the Journal of the Association at the members' rate; they receive the biannual Newsletter, they have the option to apply to the Director for research facilities at the laboratory; and they have access to the resources in the library at Plymouth during working hours. Corporate members have significant additional rights and privileges, details of which can be supplied on request. Student members do not have voting rights. The Commissioners of Inland Revenue have approved the Association for the purposes of Section 16, Finance Act, 1958, and that the whole of the annual subscriptions paid by a member who qualifies for relief under the section will be allowable as a deduction from his emoluments assessable to income tax.

All correspondence should be addressed to: The Membership Secretary, Marine Biological Association, The Laboratory, Citadel Hill, Plymouth, PL1 2PB, UK (Tel: +44 (0) 1752 633207; Fax: +44 (0) 1752 633102; e-mail: membership@mba.ac.uk).

### PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE The Pitt Building, Trumpington Street, Cambridge, CB2 1RP, United Kingdom

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.

#### CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge, CB2 2RU, United Kingdom 40 West 20th Street, New York, NY 10011–4211, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia C/ Orense, 4, planta 13, 28020, Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa

## JMBA JOURNAL OF THE MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM VOLUME 91.3 MAY 2011

## CONTENTS

Assemblages, Communities and Ecosystems

GOLLETY, C., THIEBAUT, E. & DAVOULT, D. Characteristics of the Ascophyllum nodosum stands and their associated diversity along the	
coast of Brittany, France	569
LEDUC, D. & PROBERT, P.K. Small-scale effect of intertidal seagrass (Zostera muelleri) on meiofaunal abundance, biomass, and nematode	
community structure	579
AUCOIN, S. & HIMMELMAN, J.H. Factors determining the abundance, distribution and population size-structure of the penshell Pinna carnea	593
TAHERI, M. & YAZDANI FOSHTOMI, M. Community structure and biodiversity of shallow water macrobenthic fauna at Noor coast,	
South Caspian Sea, Iran	607
GINGOLD, R., IBARRA-OBANDO, S.E. & ROCHA-OLIVARES, A. Spatial aggregation patterns of free-living marine nematodes in contrasting sandy	
beach micro-habitats	615
SERRANO, A., RODRÍGUEZ-CABELLO, C., SÁNCHEZ, F., VELASCO, F., OLASO I. & PUNZÓN, A. Effects of anti-trawling artificial reefs on ecological	
indicators of inner shelf fish and invertebrate communities in the Cantabrian Sea (southern Bay of Biscay)	623
VILAR, C.C., SPACH, H.L. & JOYEUX, J.C. Spatial and temporal changes in the fish assemblage of a subtropical estuary in Brazil:	
environmental effects	635
TREMBLAY, P., WEINBAUER, M.G., ROTTIER, C., GUÉRARDEL, Y., NOZAIS C. & FERRIER-PAGÈS, C. Mucus composition and bacterial communities	
associated with the tissue and skeleton of three scleractinian corals maintained under culture conditions	649
CORREIA, M.D. Scleractinian corals (Cnidaria: Anthozoa) from reef ecosystems on the Alagoas coast, Brazil	659
Reproduction, Development and Behaviour	
WALLER, R.G. & TYLER, P.A. Reproductive patterns in two deep-water solitary corals from the north-east Atlantic— <i>Flabellum</i>	
alabastrum and F. angulare (Cnidaria: Anthozoa: Scleractinia)	669
Suzuki, G. & Hayashibara, T. Do epibenthic algae induce species-specific settlement of coral larvae?	677
VINUESA, J.H., VARISCO, M. & ESCRICHE, F. Settlement and recruitment of the crab Halicarcinus planatus (Crustacea: Decapoda:	
Hymenosomatidae) in Golfo San Jorge, Argentina	685
GUERRA-BOBO, M. & BROUGH, T.E. Neighbour density, body size and anti-predator hiding time in the New Zealand mud-crab	
Austrohelice crassa	691
DELLATORRE, F.G. & GONZÁLEZ-PISANI, X. Embryonic development and fecundity of the squat lobster Munida gregaria	
(Decapoda: Galatheidae) in northern Patagonia	695
ORTIZ, N. & Ré, M.E. The eggs and hatchlings of the octopus <i>Robsonella fontaniana</i> (Cephalopoda: Octopodidae)	705
Environmental Effects	
Taş, S., Okuş, E., Ünlü, S. & Altiok, H. A study on phytoplankton following 'Volgoneft-248' oil spill on the north-eastern coast	
of the Sea of Marmara	715
CANCINO, J.M., GALLARDO, J.A. & BRANTE, A. The relationship between temperature, oxygen condition and embryo encapsulation	
in the marine gastropod Chorus giganteus	727
REIS-FILHO, J.A., BARROS, F., NUNES, J.A.C.C., SAMPAIO, C.L.S. & DE SOUZA, G.B.G. Moon and tide effects on fish capture in a tropical tidal flat	735
Ταχονομγ	
SHAHDADI A & SARI A Chthamalid barnacles (Cirrinedia: Thoracica) of the Persian Gulf and Gulf of Oman Iran	745
Similario, n. a Sinis, n. cittianiana barnacios (cittipuna, filoracica) of tile feisian dun and dun of onian, fran	נדו
Book Notices	

Book Notices 2010

Cambridge Journals Online For further information about this journal please go to the journal web site at: journals.cambridge.org/mbi





755