ID: W2063509633

TITLE: Conservation and management of northeast Atlantic and Mediterranean maerl beds

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ABSTRACT:

Aquatic Conservation: Marine and Freshwater EcosystemsVolume 13, Issue S1 p. S65-S76 Research Article Conservation and management of northeast Atlantic and Mediterranean maerl beds C. Barbera, C. Barbera Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorC. Bordehore, C. Bordehore Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorJ.A. Borg, J.A. Borg Department of Biology, University of Malta, Msida, Malta Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorM. Glémarec, M. Glémarec UMR CNRS 6539 Ecologie benthique, Institut Universitaire Européen de la Mer, Place Copernic, 29280 Plouzane, France Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorJ. Grall, J. Grall UMR CNRS 6539 Ecologie benthique, Institut Universitaire Européen de la Mer, Place Copernic, 29280 Plouzane, France Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorJ. M. Hall-Spencer, J. M. Hall-Spencer School of Biological Sciences, University of Plymouth, Drake Circus, Plymouth, PL4 8AA, UK Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorCh. de la Huz, Ch. de la Huz Departamento de Ecologia y Biologia Animal, Facultad de Ciencias, Universidad de Vigo, Apdo.874, 36200 Vigo, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorE. Lanfranco, E. Lanfranco Department of Biology, University of Malta, Msida, Malta Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorM. Lastra, M. Lastra Departamento de Ecologia y Biologia Animal, Facultad de Ciencias, Universidad de Vigo, Apdo.874, 36200 Vigo, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorP.G. Moore, Corresponding Author P.G. Moore [email protected] University Marine Biological Station, Millport, Isle of Cumbrae, UK, KA28 0EG Authorship alphabetical: cite as BIOMAERL team CoordinatorUniversity Marine Biological Station Millport, Isle of Cumbrae, KA28 0EG, UKSearch for more papers by this authorJ. Mora, J. Mora Departamento de Biología Animal, Facultad de Biología, Universidad de Santiago de Compostela, 15706 Santiago de Compostela, Galicia, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorM.E. Pita, M.E. Pita Departamento de Ecologia y Biologia Animal, Facultad de Ciencias, Universidad de Vigo, Apdo.874, 36200 Vigo, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorA.A. Ramos-Esplá, A.A. Ramos-Esplá UMR CNRS 6539 Ecologie benthique, Institut Universitaire Européen de la Mer, Place Copernic, 29280 Plouzane, France Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorM. Rizzo, M. Rizzo Department of Biology, University of Malta, Msida, Malta Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorA. Sánchez-Mata, A. Sánchez-Mata Departamento de Ecologia y Biologia Animal, Facultad de Ciencias, Universidad de Vigo, Apdo.874, 36200 Vigo, Spain Departamento de Biología Animal, Facultad de Biología, Universidad de Santiago de Compostela, 15706 Santiago de Compostela, Galicia, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorA. Seva, A. Seva Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorP.J. Schembri, P.J. Schembri Department of Biology, University of Malta, Msida, Malta Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorC. Valle, C. Valle Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this author C. Barbera, C. Barbera Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorC. Bordehore, C. Bordehore Ciencias Ambientales (Biologia marina), Universidad de Alicante, 03080 Alicante, Spain Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorJ.A. Borg, J.A. Borg Department of Biology, University of Malta, Msida, Malta Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorM. Glémarec, M. Glémarec UMR CNRS 6539 Ecologie benthique, Institut Universitaire Européen de la Mer, Place Copernic, 29280 Plouzane, France Authorship alphabetical: cite as BIOMAERL teamSearch for more papers by this authorJ. Grall, J. Grall UMR CNRS 6539 Ecologie benthique, Institut Universitaire

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Abstract 1. Maerl beds occur worldwide and are formed by an accumulation of unattached calcareous red algae (Rhodophyta). 2. Maerl-forming algae grow in a superficial living layer on sediments within the photic zone. 3. Maerl beds are spatially complex habitats with a high degree of species and trophic group diversity. 4. The European Commission's 'Habitats Directive' mandates the conservation management of two of the main European maerl-forming species, Phymatolithon calcareum and Lithothamnion corallioides. 5. Mediterranean maerl beds are to be considered for inclusion in national inventories of sites of conservation interest, as required by the SPABIM Protocol of the Barcelona Convention. 6. In spite of their importance, and the requirement for their conservation management, European maerl grounds suffer a variety of anthropogenic perturbations including direct exploitation through extraction, fishing impacts and chemical pollution by organic matter and excess nutrients. 7. The ecology of northeast Atlantic and Mediterranean maerl beds has received little attention, in contrast to other marine communities (e.g. kelp forests, sea-grass meadows). 8. Key conservation and management measures proposed include: the recognition that maerl beds are non-renewable resources and cannot sustain direct exploitation; prohibitions on the use of towed gear on maerl grounds; moratoria on the issue of further permits for the siting of aquaculture units above maerl grounds; monitoring of existing exploited or impacted maerl beds; the designation of 'no-take' reserves; measures to limit the impacts that might affect water quality above maerl beds; a programme of monitoring of the 'health' of European maerl beds; an awareness campaign on the biological importance of maerl beds; a higher conservation status for maerl habitats and maerl-forming species in European legislation; and further research on maerl ecosystems. 
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SOURCE: Aquatic conservation

PDF URL: None

CITED BY COUNT: 182

PUBLICATION YEAR: 2003

TYPE: article

CONCEPTS: ['Ecology', 'Habitat', 'Fishery', 'Environmental science', 'Biology']