

Editorial

Establishing, planning and managing protected areas in small islands

“Coastal zone” means the coastal waters (including the land therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands and beaches (US Congress, 1972).

Small islands are defined as a land area with less than 10.000 km² with a population under 500.000 inhabitants (Beller et al., 2004) and they are *ipso facto* largely coastal entities (Saffache & Angelelli, 2010). These insular environments are known to be particularly sensitive to external pressures and climate change impacts (IPCC, 2001). Their remoteness, isolation, smallness, and closed systems, make terrestrial and coastal planning and management on small islands more challenging in scientific and technical terms (Calado et al., 2007, 2013). Therefore, island systems represent one of the challenges of our time: how to balance ecological integrity with economic development and collective quality of life (Baldacchino and Niles, 2011). In order to make effective and innovative scientific contributions for fostering a more sustainable development in small islands, the integrative approach of this thematic edition is in the interface of Ecosystem-Based Management (EBM), Land Planning (LP), Integrated Coastal Zone Management (ICZM) and Marine Spatial Planning (MSP).

Given the complexity of the issues involved, the aim of this volume is to provide a set of scientific contributions highlighting different methodological approaches and decision-support systems and thereby providing insight in different small islands geographical contexts. This thematic issue hopes to contribute to the improvement of the collective construction of theory and practice related to the integration of EBM, LP, ICZM and MSP approaches for fostering a more sustainable Development in these insular territories. A total of 12 peer-reviewed papers from Brazil (1), Portugal (7), Italy (1), United Kingdom (2) and United States of America (1), cover different subjects related to the above themes.

In the first paper “Small Islands Conservation and Protected Areas”, the authors Helena Calado, Catarina Fonseca, Marta Vergílio, Ana C. Costa, Fabiana Moniz, Artur Gil and João Alveirinho Dias present a framework and overview on the management of protected areas in small islands.

The second paper entitled “Adaptation of macroalgal indexes to evaluate the ecological quality of coastal waters in oceanic islands with subtropical influence: the Azores” was written by Daniela Gabriel, Joana Micael, Manuela I. Parente and Ana C. Costa. In this study, four of the main indexes based on macroalgal abundance and composition were used to classify the coastal waters of the Azorean islands: the Greek EEI (Ecological Evaluation Index), the British RSL (Reduced Species List Rocky Shore Tool), the Spanish CFR (Quality of Rocky Bottoms Index) and the Portuguese MarMAT (Marine Macroalgae Assessment Tool). The metrics established in those tools were adapted to allow their application in this archipelago of subtropical influence. They concluded that all the applied indexes resulted in at least a “good” ecological status for the majority of the sampled sites.

The third article, “Assessing small island prioritization using species rarity: the tenebrionid beetles of Italy”, was authored by Simone Fattorini and Leonardo Dapporto. The aim of this paper was to investigate conservation priorities of Italian small islands on the basis of tenebrionid species (*Coleoptera Tenebrionidae*) which are insects typically associated with coastal environments. They found that most of the studied islands have been recovered as having some conservation value, but the Tuscan Islands, Ustica, Pantelleria and the Pelagie Islands were found to have highest priority.

José Benedicto is the author of the fourth paper entitled “Identity and decision-making for sustainability in the context of small islands”. This article focused on the analysis of how identity and sense of place identified on small islands can be an opportunity to inform local population about transition to sustainability. It constituted the opportunity to analyze how Flores Island (Azores, Portugal) community

perceives local sustainability issues; what is the role that identity can play in the transition to sustainability; and what is the point of view from regional decision-makers, civil servant and key informants interviewed in the project.

In the fifth paper entitled “Concession in tourism services and partnerships in the Marine National Park of Fernando de Noronha, Brazil”, the authors Deborah C. Estima, Maria A.M. Ventura, Andrea Rabinovici and Filomena M.C.P.F. Martins analyze the importance of partnerships and concessions in public use support services at the Marine National Park of Fernando de Noronha (Brazil), in order to demonstrate the viability of sustainable management of tourism and funding in National Parks. This study is especially innovative because it deals with the first concession granted by the Brazilian government in an insular territory and shows initial results about the efficiency of that concession.

The sixth article written by Rose Queiroz, Maria Anunciação Ventura, José Ângelo Guerreiro and Regina Tristão da Cunha is entitled “Carrying capacity of hiking trails in Natura 2000 sites: a case study from North Atlantic Islands (Azores, Portugal)”. This work aimed to determine the Tourism Carrying Capacity (TCC) of hiking trails crossing Special Areas of Conservations (SAC) of Natura 2000, in two of the nine Azorean islands: S. Miguel and Flores. It also aimed to evaluate the potential of TCC as a management tool for developing and planning a more sustainable tourism in these areas.

João Paulo Fernandes, Nuno Guiomar, Marco Freire and Artur Gil are the authors of the seventh research paper: “Applying an integrated landscape characterization and evaluation tool to small islands (Pico, Azores, Portugal)”. This article illustrates the basic concepts in which Integrated Landscape Assessment (ILA) methodological approach is based, as well as its application to ecological and systematic conservation planning in small islands as the Pico Island (Azores Archipelago).

In the eighth research paper entitled “The Albufera Initiative for Biodiversity: a cost effective model for integrating science and volunteer participation in coastal protected area management”, the authors Nick J. Riddiford, Jeroen A. Veraart, Inmaculada Férriz, Nick W. Owens, Laura Royo and Martin R. Honey put forward a multi-disciplinary field project, set up in 1989 at the Parc Natural de s’Albufera in Mallorca, Balearic Islands, Spain, as an example of a cost effective model for integrating science and volunteer participation in a coastal protected area. This paper also illustrates the added value of a long-term ecological knowledge base for decision making and capacity building in protected areas, in order to reduce environmental impacts from socio-economic development in surrounding coastal zones.

The article “Participative management of tourism in protected areas: Case-study from Lands of Priolo, São Miguel, Azores” is the ninth work of this thematic issue. It was written by Azucena de la Cruz, Rita Melo, Catarina Mourato, Raquel Ferreira, Joaquim Teodósio, Rui Botelho, Filipe Figueiredo, Ana Mendonça and Luis T. Costa. This

paper presents the case-study of the application of the European Charter for Sustainable Tourism (ECST) in the “Lands of Priolo” (Eastern councils of S. Miguel Island, Azores, Portugal). The participatory planning process took place in 2011 and included a diagnosis, a strategy and an action plan (2012-2016) which are analyzed in this paper.

The tenth research paper, entitled “Basis for the geological heritage management in the Azores Archipelago (Portugal)” was authored by Eva Almeida Lima, João Carlos Nunes, Manuel Paulino Costa and Marisa Machado. This article describes how the geodiversity and geological heritage of the Azores archipelago is being inventoried, characterized, quantified, protected and promoted. Nowadays there have been identified and characterized 121 geosites distributed throughout the nine Azores islands and the surrounding seafloor. These geosites network ensure the representativeness of the Azorean geodiversity and reflects its geological and eruptive history with about 10 million years. Among the geosites, 57 were selected as priorities for the development of geoconservation strategies and implementation of promotion actions.

Paulo Antunes and Francisco Cota Rodrigues are the authors of the eleventh article of this thematic issue. Their work is entitled “Hydrogeochemistry assessment of volcanic lakes in the Flores Island Protected Areas (Azores, Portugal)”. They identified three major processes that control the hydrogeochemical evolution of the lakes water in Flores Island (Azores, Portugal): (1) a marine sea salt input due to atmospheric transportation and deposition; (2) the hydrolysis of volcanic rock and; (3) a contribution of mineral water flowing through the rim of the crater. They concluded that aquatic systems have no direct interaction with seepage of magmatic fluids, a common process in Azores lakes. Therefore, according to their study, the highest decline in lake water quality is related to anthropogenic activities.

In the twelfth research paper entitled “Developing a Planning and Management System for Protected Areas on Small Islands (The Azores Archipelago, Portugal): the SMARTPARKS Project”, Helena Calado, Marta Vergílio, Catarina Fonseca, Artur Gil, Fabiana Moniz, Susana Ferreira Silva, Miguel Moreira, Chiara Bragagnolo, Carlos Pereira da Silva and Margarida Pereira presented the SMARTPARKS Project, its rationale and main outcomes. Taking Pico Island Natural Park (Azores, Portugal) as its case study, the SMARTPARKS Project has adopted the ecosystem-based approach and the conciliation of conservation objectives with human needs and activities. Throughout its five tasks, several studies were developed and contributed to the functional analysis of each protected area constituting the Island Natural Park, in terms of their conservation and development values. This innovative application allows not only an integrated assessment of the protected areas but also a sustained monitoring.

This thematic issue represents a contribution towards a more sound knowledge on small islands’ planning, management and sustainable development issues. It will be useful as a tool for local communities, researchers, technical officers, as well as for decision makers, stakeholders and environmental Non-Governmental Organizations, by

supporting them for developing more effective and efficient science-based policies, in order to foster a more sustainable development in these insular territories.

In 2010, JICZM - Journal of Integrated Coastal Zone Management published a thematic issue on "Islands" (Volume 10, Number 3, 2010). Nevertheless, four years later, this new thematic edition on insular systems is completely focused on small islands conservation planning and management issues, therefore it doesn't pretend to cover all ranges of research subjects enclosed on "Island studies". As this will remain an open challenge, contributions on these broader subjects are most welcome, hoping that in a near future a new thematic issue gathering some of this collected expertise will be able to be published. Beyond this thematic issue, JICZM continues to welcome manuscripts approaching this theme. Its importance all around the world is undoubted and we believe that scientists need to claim their role as strategic stakeholders in socio-economic and environmental issues towards sustainability in small islands. Characterizing, assessing, monitoring and reporting are our crucial contribution in the protection of small islands communities and their natural resources.

Finally, we would like to take the opportunity of acknowledging all those who have contributed towards this thematic edition of JICZM - Journal of Integrated Coastal Zone Management. We warmly thank all authors who submitted their manuscripts for consideration of inclusion in this thematic volume. These 12 published research papers represent 70.6% of total submissions. The reviewing was a triple-blind process. We also thank the 46 reviewers (from Australia, Belgium, Brazil, Canada, Costa Rica, Finland, Greece, Iran, Israel, Italy, Japan, Portugal, Romania, Spain, Thailand, UK and USA) who have provided timely feedback to the authors, thereby helping the authors to improve their manuscripts.

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