

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

4,800

Open access books available

122,000

International authors and editors

135M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.

For more information visit www.intechopen.com



Introductory Chapter: Habitats of the World

*Carmelo Maria Musarella, Ana Cano-Ortiz
and Ricardo Quinto Canas*

1. Introduction

Why a book on the habitats of the world? To answer this question, we must immediately clarify what “habitat” means. This word has a clear derivation from the Latin and is a verb: more precisely, it is the third person singular of the simple present of the verb “habito, -as, -avi, -atum, -are” which means “to live.” Therefore, we could literally translate the word “habitat” with “he lives.” So the habitat of an organism (or of an entire community) is the place where it lives or the place where it can be found [1].

Nowadays, we use the term “habitat” in many fields of knowledge and can take on different shades of meaning (architecture, ecology, etc.).

In this book, we want to show some type of habitats of the world. The principal aim of this book is to highlight the importance of the habitats and, especially, of their inhabitants: living beings that occupy a specific space (habitat) and play a specific role in daily life in it (ecological niche). Thanks to a diversified pool of scientists belonging to several world institutions and working on several aspects of the habitats, this book will allow understanding all of it very easily.

The most important aspect that must be understood is that, respecting the habitats, the living beings present in them are respected and that the lives of others depend on them.

2. Habitat is like a home!

Often, when I want to make someone understands the meaning of “habitat,” I take the example of a house with very specific characteristics, where people live. People interact with each other and with the house. All these actions occur, maintaining an equilibrium. If in a house some alterations of the normal conditions occur, this equilibrium will vary. However, when disturbing end, the equilibrium slowly comes back as before. Therefore, we can consider our house a habitat, like others in nature.

3. Habitats of the world

How many habitats are there in the world? Many! They are not easily quantifiable. Each habitat is characterized by an ecological and biological structure and different species of living beings that give it a uniqueness compared to the others.



Figure 1. Habitat 7140 “Transition mires and quaking bogs” in the SAC IT9350134 “Canolo Nuovo Zomaro, Zillastro” (Reggio Calabria, Italy)—(Ph. C.M. Musarella).

The European Union has launched two important Community Directives for the protection of nature. With the “Habitats” Directive 92/43/CEE, the objective of safeguarding biodiversity through the conservation of natural habitats was proposed, as well as of wild flora and fauna in European territory of the member states to which the treaty applies [2]. The “Birds” Directive 79/409/EEC (the first EU directive on nature conservation) aims at the conservation of wild birds, aiming to protect the habitats of the species listed in Annex I and the migratory ones not listed that return regularly [3].

For the recognition of habitats and for the correct application of the directive, the “Interpretation Manual of the European Union Habitats” was produced, thanks to which it is possible to analyze and describe the extraordinary European naturalistic heritage [4]. All the member states applied these directives to preserve habitats in their territories. To guarantee the long-term maintenance of natural habitats and of species of flora and fauna threatened or rare at community level, the EU has established the Natura 2000 Network [5]. It consists of the Sites of Community Interest (SIC), which each member state has been identified in accordance with the Habitat Directive. Currently, the SCIs have been designated as Special Areas of Conservation (SACs) (**Figure 1**). Natura 2000 Network also include the Special Protection Areas (SPAs) established pursuant to Directive 2009/147/EC “Birds” concerning the conservation of wild birds.

There have been several scientific contributions by various scholars who have studied this important aspect of nature conservation [6–19]. The habitats are studied under several points of view, covering all their aspects [20–29]. We will also see some examples in the chapters of this book.

4. Conclusions

Based on the current world situation in which many habitats are at risk of extinction (not only, therefore, individual species), the knowledge of “places,” in which every living being occupies an important part in the global balance, is more urgent than ever. Only an appropriate and adequate study of all the habitats of the world (including the discovery of new ones), from natural to anthropized ones, will allow us to preserve the biodiversity of our planet as long as possible. The study, however, must necessarily be accompanied by the will of man, the most destructive and invasive species in the world, to limit as much as possible the alterations

it produces and to plan the future while simultaneously providing for adequate compensation measures. Only in this way will the “habitats of the world” have a future.

Acknowledgements

The content of this chapter is found on the activities carried out within the Research Project “Coordination of monitoring activities of natural and semi-natural habitats of the flora and fauna species of the Natura 2000 Network present in Calabria” by the Academic Editor of this book, Carmelo Maria Musarella.

Conflict of interest

The authors declare no conflict of interest.

Notes/thanks/other declarations

None.

Author details

Carmelo Maria Musarella^{1,2*}, Ana Cano-Ortiz² and Ricardo Quinto Canas^{3,4}

1 Department of Agraria, “Mediterranea” University of Reggio Calabria, Reggio Calabria, Italy

2 Department of Animal Biology, Plant Biology and Ecology, Jaen University, Jaén, Spain

3 Faculty of Sciences and Technology, University of Algarve, Faro, Portugal

4 Centre of Marine Sciences (CCMAR), University of Algarve, Faro, Portugal

*Address all correspondence to: carmelo.musarella@unirc.it

IntechOpen

© 2019 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

References

- [1] Odum EP. Basic Ecology. Japan: Holt-Saunders; 1983. p. 325
- [2] European Commission. The Habitats Directive [Internet]. 2016. Available from: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm
- [3] European Commission. The Birds Directive [Internet]. 2016. Available from: http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm
- [4] European Commission DG Environment Nature and Biodiversity. Interpretation Manual of European Habitats—EUR 27; 2007
- [5] European Commission. Natura 2000 [Internet]. 2019. Available from: http://ec.europa.eu/environment/nature/natura2000/index_en.htm
- [6] Rodwell JS, Morgan V, Jefferson RG, Moss D. The habitats directive in the UK: Some wider questions raised by the definition, notification and monitoring of grassland habitats. *Plant Sociology*. 2007;**44**(2 suppl. 1):37-47
- [7] La Posta A, Duprè E, Maggiore AM, Tartaglini N. La Rete Natura 2000 in Italia: Un patrimonio di biodiversità da gestire/conservare e monitorare. *Plant Sociology*. 2007;**44**(2 suppl. 1):49-55
- [8] Blasi C, Marignani M, Copiz R. Important plant areas e rete Natura 2000. *Plant Sociology*. 2007;**44**(2 suppl. 1): 57-60
- [9] Blasi C, Marignani M, Copiz R, Fipaldini M. Thematic Contribution to the National Strategy for the Biodiversity: Cartography of the Important Plant Areas in Italy (IPAs). Rome: Palombi & Partners s.r.l.; 2009. p. 31
- [10] Cano E, Musarella CM, Cano-Ortiz A, Piñar JC, Pinto CJ. Vegetation series as a basis for habitats and species conservation: Methodological aspects. *Botanique*. 2016;**1**:21-26
- [11] Spampinato G, Musarella CM. Conservation status assessment of habitats for a red list definition: The case study of Calabria. *Botanique*. 2016;**1**:181-182
- [12] Musarella CM, Spampinato G, Cannavò S, Forestieri F, Cano E. Marsh environments management aimed at preserving endangered habitats: The case of the Aquila's Lake. *Botanique*. 2016;**1**:91-102
- [13] Piñar JC, Cano-Ortiz A, Musarella CM, Pinto Gomes CJ, Spampinato G, Cano E. Rupicolous habitats of interest for conservation in the Central-Southern Iberian Peninsula. *Plant Sociology*. 2017;**54** (2 suppl. 1):29-42. DOI: 10.7338/pls2017542S1/03
- [14] Musarella CM, Spampinato G, Cannavò S, Forestieri F, Cano E. Humid environments of the Messina Strait: Essential habitat for the biodiversity conservation. The case of Lake Aquila (Calabria-Italy). In: AA.VV. Action Plan—Study about Policy Measures for a Good Governance of the Messina Strait at EU Level. Provincia di Reggio Calabria. Interreg IVC Programme. 2014. ISBN 978-88-96187-04-3
- [15] Spampinato G, Musarella CM, Cano-Ortiz A, Signorino G. Habitat, occurrence and conservation status of the Saharo-Macaronesian and southern-Mediterranean element *Fagonia cretica* L. (Zygophyllaceae) in Italy. *Journal of Arid Land*. 2018;**10**(1):140-151. DOI: 10.1007/s40333-017-0076-5

- [16] Loidi J, Ortega M, Orrantia O. Vegetation science and the implementation of the habitat directive in Spain: Up-to-now experiences and further development to provide tools for management. *Plant Sociology*. 2007;**44**(2 suppl. 1):9-16
- [17] Asensi A, Díez-Garretas B. Cartografía de los hábitat naturales y seminaturales en el Parque Natural del Estrecho (Cádiz, España). Estado de conservación. *Plant Sociology*. 2007;**44**(2 suppl. 1):17-22
- [18] Costa JC, Monteiro-Henriques T, Neto C, Arsénio P, Aguiar C. The application of the habitats directive in Portugal. *Plant Sociology*. 2007;**44** (2 suppl. 1):23-28
- [19] Neto C, Costa JC, Honrado J, Capelo J. Phytosociologic associations and Natura 2000 habitats of Portuguese coastal sand dunes. *Plant Sociology*. 2007;**44**(2 suppl. 1):29-35
- [20] Bahar I, Jahan S, Rahman R. Distribution of earthworms at different habitats in Tangail, Bangladesh and significantly impacts on soil pH, organic carbon and nitrogen. *American Journal of Life Sciences*. 2015;**3**(3):238-246. DOI: 10.11648/j.ajls.20150303.26
- [21] Adam BAA, Hassan MM, Abdelnour OM, Awadallah AH. Identification and classification of sand flies species and it's habitats in El-Kadaba Village, White Nile state, Sudan. *International Journal of Infectious Diseases and Therapy*. 2017;**2**(1):15-21. DOI: 10.11648/j.ijidt.20170201.14
- [22] Asaduzzaman RA, Huque KS. Study on the on-farm post-natal nutritional status of red Chittagong cows in selected breeding habitat of Satkania Upazila of Chittagong District of Bangladesh. *Animal and Veterinary Sciences*. 2017;**5**(4):57-62. DOI: 10.11648/j.avs.20170504.12
- [23] Spampinato G, Puglisi M, Privitera M, Minissale P, Sciandrello S, Noto D, et al. Which habitat for sicilian gypsophytes? In: Musarella CM, Spampinato G, editors. *GYPWORLD: A Global Initiative to Understand Gypsum Ecosystem Ecology. II Workshop. Book of Abstracts and Field Trip Guide.* ; 1-4 April 2019; Italy: Reggio Calabria. Italy: Mediterranean University of Reggio Calabria; 2019. ISBN: 978-88-99352-36-3
- [24] Collado MÁ, Sol D, Bartomeus I. Bees use anthropogenic habitats despite strong natural habitat preferences. *Diversity and Distributions*. 2019;**00**:1-12. DOI: 10.1111/ddi.12899
- [25] Cano Carmona E, Cano Ortiz A, Musarella CM. Introductory Chapter: Endemism as a Basic Element for the Conservation of Species and Habitats [Online First]. Rijeka, Croatia: IntechOpen; 2019. DOI: 10.5772/intechopen.84950. Available from: <https://www.intechopen.com/online-first/introductory-chapter-endemism-as-a-basic-element-for-the-conservation-of-species-and-habitats>
- [26] Grigoriadis N, Panagopoulos A, Meliadis I, Spyroglou G, Stathaki S. Habitat and hydrological-hydrochemical characteristics of the Agras wetland (northern Greece). *Plant Biosystems*. 2009;**143**(1):162-172. DOI: 10.1080/11263500802709772
- [27] Mendoza-Fernández AJ, Martínez-Hernández F, Pérez-García FJ, Garrido-Becerra JA, Benito BM, Salmerón-Sánchez E, et al. Extreme habitat loss in a Mediterranean habitat: *Maytenus senegalensis* subsp. *europaea*. *Plant Biosystems*. 2015;**149**(3):503-511. DOI: 10.1080/11263504.2014.995146
- [28] Liendo D, Biurrun I, Campos JA, Herrera M, Loidi J, García-Mijangos I. Invasion patterns in riparian

habitats: The role of anthropogenic pressure in temperate streams. *Plant Biosystems*. 2015;**149**(2):289-297. DOI: 10.1080/11263504.2013.822434

[29] del Río S, Álvarez-Esteban R, Cano E, Pinto-Gomes C, Penas A. Potential impacts of climate change on habitat suitability of *Fagus sylvatica* L. forests in Spain. *Plant Biosystems*. 2018;**152**(6):1205-1213. DOI: 10.1080/11263504.2018.1435572

IntechOpen