

BIODIVERSITY IN ITALY

CONTRIBUTION TO THE NATIONAL BIODIVERSITY STRATEGY

edited by

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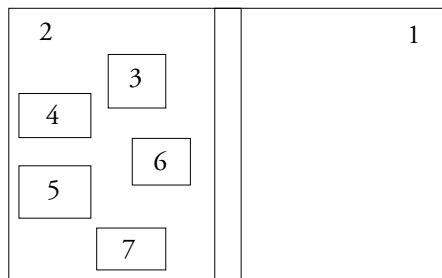
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Biodiversity in Italy describes the extraordinary richness in species, communities and landscapes of Italy and the significance and state of conservation of this biological diversity. It is written for the professionals as well as for the increasing amateur audience.

The book is the result of a long-lasting programme which involved about 100 University researchers, together with experts from the Nature Protection Directorate of the Italian Ministry for the Environment Land and Sea Protection, which helped relate the basic scientific knowledge to the objectives and protocols of several Directives and International Conventions.

Biodiversity in Italy reconciles the ecological, biological, naturalistic, agronomic and forestry perspectives and is addressed to all the actors involved in management and biodiversity conservation. This is indeed the only way to realise sustainable development according to the “Ecosystem approach” promoted by the Convention on Biological Diversity.

Biodiversity in Italy supports and disseminate knowledge on biological diversity, but also provides useful guidelines for assessing the state of conservation of terrestrial and marine ecosystems, for the management of coastal areas and the design of ecological networks.

Data and information gathered by the Research Institutes in the last years, partly available on the web site of the Ministry for the Environment Land and Sea Protection (GIS Natura and CHM on biodiversity), will represent the reference basis for preparing the Action Plans and achieving the objectives defined by the Countdown 2010 Initiative.

At present the Ministry for the Environment Land and Sea Protection is undertaking a new stage characterised by monitoring plans and actions aimed at the assessment of the environmental damage. The Nature Protection Directorate, for instance, has recently undertaken the following projects: the “Assessment of the state of conservation of National Parks and landscapes of Italy”; the “Survey of exotic flora and its level of invasivity (in particular for urban systems, coastal areas and little islets); the preliminary design of a network of “Old growth forests”, consistent with the potential vegetation occurring in National Parks; and the “Mapping of Important Plant Areas (IPAs) of Italy”, which will produce maps of habitats and of vascular species, fungi, lichens and algae.

The awareness that biodiversity conservation can promote the development and significance of the cultural, environmental and landscape heritage provides the basis for improving the collaboration between research institutes and local populations, which guarantee the knowledge and the functional and ecosystemic conservation of land heterogeneity.

Alfonso PECORARO SCANIO
Minister for the Environment Land and Sea Protection

The contents of the present volume bring a fundamental contribution to the creation and implementation of the National Biodiversity Strategy Plan, also in consideration of the global 2010 Biodiversity Target which aims to achieve a significant reduction of the current rate of biodiversity loss by the year 2010.

This 2010 deadline commits all the Contracting Parties to the Convention on Biodiversity to assess the actions they have undertaken.

The term *biodiversity* is heard much more frequently since the Rio de Janeiro Convention. Today it is no longer used exclusively in scientific and academic seats; but also in institutional, state, governmental and civil society ones as well, thus establishing the intrinsic value of the elements that make up biodiversity at a world-wide level, with the awareness that biodiversity conservation is indispensable, at all levels, for maintaining life on Earth.

It is also thanks to the considerable effort made on behalf of public administration bodies and civil society over the past decade that the various sections of this volume allow us to better define and disseminate the current state of knowledge attained on biodiversity, as well as undertake further activities with the various actors involved, and consequently adjust regulations at various national levels.

The indications provided, particularly in the sections regarding the reasons for biodiversity and those outlining the major causes for the loss of biodiversity, form the basis for a new starting point at a national level for short-term, mid-term and long-term planning.

The knowledge at our disposal provided by national researchers in this book, which is the result of the widest possible collaboration among all the actors involved, is essential in addressing strategies through the elaboration of national and local plans and programmes.

The Nature Protection Directorate of the Italian Ministry for the Environment Land and Sea Protection - the National Authority for Biodiversity - has already started the assessment and consultation process with other competent administrative bodies and various stakeholders. As this volume is the first result of this collaboration, I would like to thank the academic and scientific world for the effort made.

Last but not least, my thoughts go to the general public; to all those citizens, students, enthusiasts and even to those who are simply curious to learn about aspects of our nation's invaluable patrimony, which until recently had been unknown. In fact, through the information contained in this volume we also hope to reach a further objective which is that of increasing the general public's sense of responsibility towards this common richness which can be handed down to future generations.

Aldo COSENTINO

General Director of the Nature Protection Directorate

The Italian Ministry for the Environment Land and Sea Protection has always worked in close collaboration with Scientific Societies, University Departments and Research Centres to support the implementation of commitments undertaken in the context of International Directives and Conventions, such as the Bern Convention, the Habitats Directive (Natura 2000 Network), the Convention on Biological Diversity, the Kyoto Protocol and the European Landscape Convention.

Hence, programmes of scientific and cultural interest have been set up, for instance the expansion of scientific knowledge, the implementation of the Natura 2000 Network, the provision of management guidelines for Sites of Community Importance (SCIs), activities for forest-fire prevention and recovery of burnt areas, and for forest management and protection, and, finally, the assessment of biodiversity in Italy, which is the focal point of this volume.

The book *Biodiversity in Italy* illustrates the biodiversity occurring in Italy from a scientific perspective and provides indications concerning vegetation, habitats of Community interest, agrarian and forest landscapes. It describes in detail the vascular flora, bryophytes, fungi, lichens, freshwater and marine algae, and also the fauna of terrestrial and aquatic habitats (freshwater, marine and brackish). This work considers all the elements that determine both the biological richness (climate, biogeography, genetics, human activities, etc.) as well as the reduction, and in some cases, the disappearance of biodiversity (changes in land use, fragmentation, global changes, exotic species, etc).

Much of the knowledge contained in the volume derives from a Convention entitled *Completamento delle Conoscenze Naturalistiche in Italia* (Completion of Naturalistic Knowledge in Italy), stipulated by the Nature Protection Directorate with several University Departments (University of Calabria, Florence, Genoa, Parma and Rome) and the *Istituto di Ecologia ed Idrologia Forestale del CNR* - National Research Centre for Forest Ecology and Hydrology in Cosenza. The convention, coordinated by the Department of Plant Biology of the University of Rome La Sapienza, is undoubtedly the most complex and integrated naturalistic research project recently carried out at national level. The main topics of this project were the flora and vegetation series of particular national interest, the land use map of Italy, a broadening of zoological knowledge, the phytoclimatic map of Italy, and marine, coastal and wetland biocenoses.

This work is also the result of a widely tested form of collaboration with government heads and officials from the Nature Protection Directorate, who also sponsored essential publications for biodiversity knowledge, such as the *Checklist of Italian Fauna Species*, *An Annotated Checklist of Italian Vascular Flora* and the *State of Floristic Knowledge of Italy*.

Biodiversity in Italy contains information to assess biodiversity risk. Therefore, it provides the basis for defining action plans in close collaboration with regional and local bodies, which can employ qualitative and quantitative biodiversity data regarding species, communities and landscape.

To support the preparation of Action Plans, which will help defining the National Biodiversity Strategy, the Nature Protection Directorate and the Interuniversity Research Centre "*Biodiversity, Plant sociology and Landscape Ecology*" of the University of Rome *La Sapienza* (which involves numerous University Departments and Scientific Societies) have set up several new initiatives, which aim to extend taxonomical and syntaxonomical

knowledge as well as to assess and monitor changes. These new programmes deal with the assessment of the conservation status of national parks and landscapes in Italy, the knowledge concerning old growth forests (initially limited to national parks, though shortly extended to all the national territory), the census of exotic species (with particular reference to the coastal belts and marine parks) and the network of IPAs (*Important Plant Areas*). These projects will optimise the knowledge acquired towards the monitoring, identification and mapping of areas of particular conservation and biogeographic interest, as requested by the CBD (2010 Biodiversity Target), Planta Europa and the IUCN. Therefore, they will help a detailed characterisation of ecoregions, which are presently defined only in a very general way on a world-wide scale.

Finally, with regard to secondary and tertiary education, it will now be possible to integrate international texts with new information on the flora, vegetation, fauna and landscape of Italy provided by this volume and the above mentioned publications. The environmental cartography realised over the past ten years will enable interesting systemic correlations with territorial and landscape units obtained through a hierarchical land classification process.

Biodiversity in Italy has been carried out according to an ecosystemic vision promoted by the CBD, an essential approach in the training of the naturalistic, biologist, ecologist, environmentalist, agronomist and forest ranger, but also in the training of all professionals, who employ the principles of conservation biology and landscape ecology and deal with the assessment of the state of the environment and with environmental planning and programming at a territorial and landscape level.

During the drafting stage of this volume and in collecting the many contributions, there have been times when I thought that we would never succeed, times in which I found myself saying “Never again will I be involved in such a complex and articulated editorial project.” The publication of this volume and forthcoming version in English has cancelled all memories of these difficult moments and since then new editorial projects have come to mind.

Eighty-nine authors from different scientific backgrounds have contributed to *Biodiversity in Italy*. Special thanks go to them for having worked with such passion, enthusiasm and awareness of the cultural and scientific importance of this work. I wish to thank the General Director of the Nature Protection Directorate, Aldo Cosentino, and his directors and officials for their support and suggestions; my friends Luigi Boitani, Sandro La Posta, Fausto Manes and Marco Marchetti for sharing the realisation of this volume; and all the Editorial Coordination staff, particularly Piera Di Marzio.

Carlo BLASI
President of the Italian Society of Vegetation Science

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¹ *UNEP tasks and strategies* and *The European Union Environmental programme*, with regard to the first four Action Programmes, edited by M. Marta; M. Marta and F. Blasi cooperated to the paragraph *The development of the Convention through the Conferences of Parties, Adoption of the conventions on biodiversity in Italy* and *The 2010 Biodiversity Target: "To halt the biodiversity loss by 2010"* edited by N. Tartaglini.

² With the contribution of G. Gandolfi (freshwater fishes), M. Oliverio (marine molluscs), S. Bussotti, P. G. and M. Vacchi (seawater fishes).

³ *Vulnerable, endemic and rare species of the Italian vascular flora* edited by A. Scoppola and C. Caporali.

⁴ *Protecting biodiversity through the promotion of quality products* edited by D. Marino and G. Cannata.

⁵ *Protected areas and Natura2000 Network* edited by P. Di Marzio and E. Dupré.

⁶ *Monitoring networks under the National Forest Service* edited by B. Petriccione; *The convention "Completion of basic Naturalistic Knowledge"* edited by C. Blasi, I. Anzellotti and P. Di Marzio; *The Map of the Nature project* edited by M. Amadei.