

4TH INTERNATIONAL SEAGRASS BIOLOGY WORKSHOP
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PREFACE

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Over the last 40 yrs, the increase in human activities, often antagonistic (e.g.: urbanization, fisheries, aquaculture, boating, tourism), has caused disturbances on coastal ecosystems. These disturbances can have negative impacts on seagrass beds and mortgage their future. A growing number of scientists have focused their studies on these major ecosystems and, as a result of the recognition of the importance of seagrasses at the Rio conference, have decided to organize regular workshops. The aim of these workshops is to allow an evaluation of research progress in the field of seagrass biology throughout the world, and to allow scientists from developing countries to meet with their fellow colleagues, to compare their analytical techniques and results and to define together the most efficient means of protecting the exceptional diversity present within seagrass beds.

This special issue is a selection made from the 93 oral communications and posters that were presented during the 4th International Seagrass Biology Workshop, held in Corsica, in September 2000. This workshop was co-organized by the University of Corsica (Coastal Ecosystem Team) and the Stazione Zoologica Anton Dohrn (Ischia Laboratory) and was dedicated to the memory of Lucia Mazzella (1947–1999) —head of the Ischia Laboratory since 1986— for her contribution to the knowledge of seagrass biology and ecology. Throughout her life, she contributed in the promotion of innovative multidisciplinary approaches to understand and monitor these coastal systems (e.g., molecular biology techniques), in improving education and training of many undergraduate and Ph.D. students (e.g., organization of the first international course on the “Biology of seagrasses: from the molecule to the ecosystem”), in the promotion of marine conservation (e.g., the setting up of marine reserves both in the Gulf of Naples and in the Antarctica) and in the dissemination of scientific results (e.g., chief-editor of PSZNI: Marine Ecology).

The topics broached during the 4th International Seagrass Biology Workshop included many aspects of seagrass biology and in this special issue of *Bulletin of Marine Science* the papers are categorized into three topical areas: 1. Plant Biology, Ecology and Genetics, 2. Faunal Biology and Ecology, and 3. Management and Restoration. The papers span a range of topics in each of the topical areas from physiological investigations that allow seagrass adaptations to depth, mechanisms of reproduction, to genetic structure and evolutionary trends. Genetic research is important to improve our understanding of the evolutionary processes within seagrass species or the effect on survival and expansion of highly impacted seagrasses. Many studies focused on the identification and quantification of interactions between seagrasses and their environment (plant and animal communities, biodiversity, competition, matter and energy fluxes). A number of papers were dedicated to human impacts and their consequences and the management of these human impacts. Regression of seagrass beds, which has been observed over the last years, is most probably due to the combined and simultaneous pressures exerted by a wide variety of anthropogenic activities. These pressures can cause a modification in both the sediment status and bathymetric profiles, a qualitative and quantitative decrease in the

abundance of plant and animal species, including economically important species, and can result in an overall deterioration in water quality that can be detrimental to the marine ecosystems as a whole. In addition to the ecological problems associated with these modifications, in particular their effects on biodiversity, the disappearance of several species can also have economic repercussions (primary production, food web...). Disturbances are not solely anthropogenic, and can be indirect or direct, localised or widespread. They can also be chronic, acute point sources, extreme events or a combination of the above. Regardless of their origin, these disturbances always appear to influence seagrass community/habitat distribution, composition and physical structure. Seagrasses, due to their location in the littoral zone, represent the one of the most threatened benthic ecosystems. Their preservation represents one of the major challenges of the third millennium.

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