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Annali di Studi istriani e mediterraneei
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Series Historia Naturalis, 32, 2022, 2





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Book review:
PLASTIC POLLUTION AND MARINE CONSERVATION.
APPROACHES TO PROTECT BIODIVERSITY
AND MARINE LIFE

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 Lipej, Martina Orlando-Bonaca, Valentina Pitacco, Ana
 Rotter, Giuseppe Suaria, Rachel Tiller
 Publisher: Academic Press,
 346 pp.

In Europe and elsewhere the number of researchers interested in marine plastic pollution is rising. Anyone who is interested in this field, especially from the Mediterranean Sea area, is warmly invited to read this book.

Written and edited by seven Slovenian and five Italian plastic researchers and/or biologists, "Plastic Pollution and Marine Conservation: Approaches to Protect Biodiversity and Marine Life" is a comprehensive review of publications on marine litter issued during the last decade or so, with a focus on local peculiarities.

Published by the Academic Press in 2022, the volume offers us an interesting, comprehensive and the most recent overview of published data on plastic and microplastic litter in the Mediterranean Sea. The origin, sources, fate, and impacts of marine plastic and microplastic litter are presented and complemented by an investigation into how this topic has been treated by social media publications over the last decade.

When the editors of the book asked me to do a review, I was intrigued with its volume (covering 346 pages), but at the same time a little concerned about whether I would be able to squeeze such a huge task in my already full schedule. As it turned out, I need not have worried at all.

In fact, as soon as I started the book, I was completely absorbed in it. It captivated me even though I am quite familiar with the field. And now I know more and understand even better how this field developed in the Mediterranean Sea and what must be done in the future. It is definitely a much-needed survey that scientists, researchers, publicists, activists, policy- and decision-makers, and environmental staff in the industry should read. Hopefully this book will not end up forgotten on library shelves as this topic is now more current than ever.

Dr Giuseppe Suaria, a rising star of microplastic research, sets the tone of the book with his wonderful preface, pointing out the most critical spots in this field of scientific research. Through Chapter 1, the reader becomes familiar with information

about what exactly plastics, or better, polymers are, how they are produced and where they are used. Through a brief historical overview, we are then shown why and who started bringing to attention that these might not only be fantastic materials, but actually a new "tragedy of the commons." Microplastics are now recognised as a major concern and Dr Giuseppe Bonanno introduces us to these materials.

Chapter 2 provides an overview of microplastic pollution in the Mediterranean Sea and subtidal sediment. The authors, three Slovenian pioneers in microplastic research in the Adriatic Sea, give us a comprehensive view of concentrations data, distribution, types by size, shape and material, methodologies, assessments, sources and challenges of microplastic research throughout the Mediterranean Sea. Publications up to the end of June 2021 are analysed, compared and the most interesting facts coming from them are presented. The fate of microplastics is discussed and suggestions on further research are offered. This chapter makes us understand just how much pollution there is, while the following four ones allow us a very interesting



insight into the impact and environmental harm of plastics and microplastics.

The editors demonstrate their commitment to the protection of biodiversity, biomonitoring and their biological background and take us through the effects of plastic pollution on planktonic and benthic organisms, food webs, sharks and rays and marine organisms as bioindicators of plastic pollution. These chapters cover entanglement and ingestion problems and the effect of microplastics on marine biota through retention and food web transfer. The authors of these chapters are Slovenian and Italian biologists, who know these organisms very well and are concerned with the negative effect of plastic pollution on the largest to the smallest organisms in the sea.

The marine environment acts as the main repository for plastic litter worldwide. This pollution does not stop at the borders of any protected area. In fact, many of these areas have turned out to be the most polluted, with different kinds and sizes of plastic litter. Chapter 7 of this book is dedicated to showing just how severe plastic pollution is in marine protected areas worldwide. The prevention of input of plastic into the marine or any other environment is of utmost importance if any progress is to be made in the effort to solve this problem.

The authors of Chapter 8 present us with the so-called 8R Model (Recognize, Reduce, Replace, Re-use, Recycle, Recover/Restore, Remove and Regulate), recently developed by the authors themselves. The key to achieving any changes is the awareness of key people in our society. This point was nicely demonstrated at the 5th International Marine Debris Conference in Hawaii, when an artist of local origin told us the story on how ancient Hawaiian people paid attention to the status of their environment. When tribes living on Hawaiian Islands were faced

with the lack of certain species of the fish they relied on, they were immediately told by their tribe leader to cease all hunting activities until the stocks restored: a simple yet very effective way of ancient commingling with nature that we could learn from and replicate today.

Ceasing to produce and use such quantities of polymer material would bring us closer to what we all aspire to – a safe and healthy future. In Chapter 8, we are also shown the results of the research regarding how public media pushed this topic increasingly in the last decade and how a citizen science approach is turning into a useful tool for convincing people that there is something wrong. There is indeed something wrong.

The Mediterranean Sea has been identified as one of the areas most affected by marine litter in the world. Marine plastic litter researchers and marine biologists are aware of this problem, maybe more than anybody else. Because we/they love the sea. And having such a comprehensive overview of all plastic pollution assessment done in our home, the Mediterranean Sea, is very inspiring and shows us how much has already been achieved. And how each and every one of us counts. We are putting together this enormous marine plastic puzzle where pieces are coming from you and me, through years of work that we have put into this crisis. In order to save this world, for marine biota and for our own sake, I invite you to read this book. It is a valuable new asset that the Mediterranean marine litter community has acquired and will use in the future. Thank you!

Andreja Palatinus

independent aquatic plastic litter researcher
and entrepreneur