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OCEAN ENVIRONMENTAL MANAGEMENT

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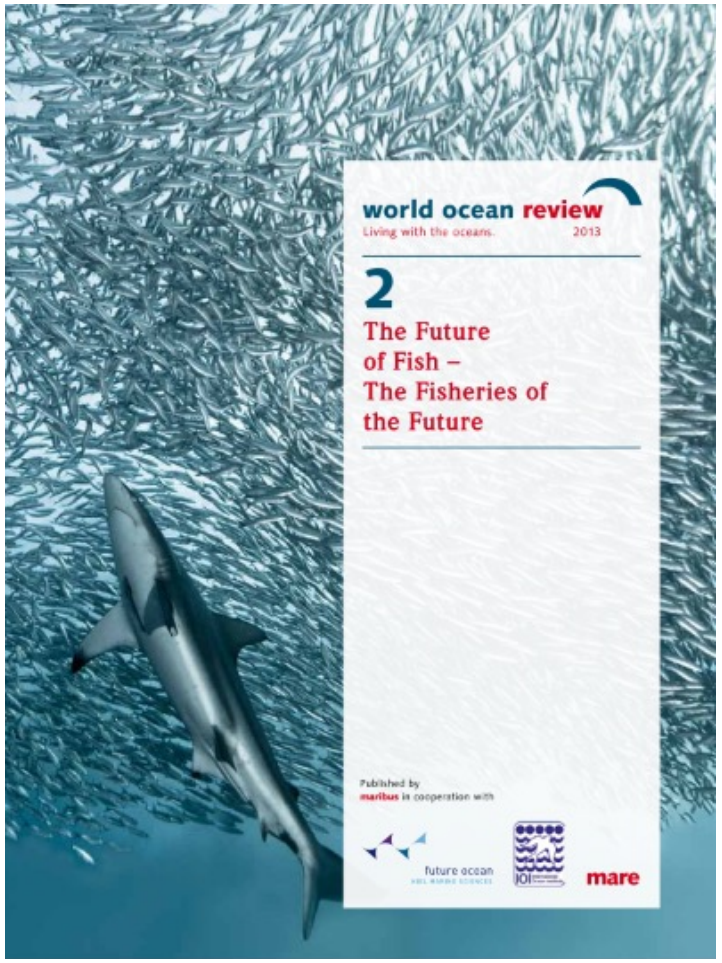
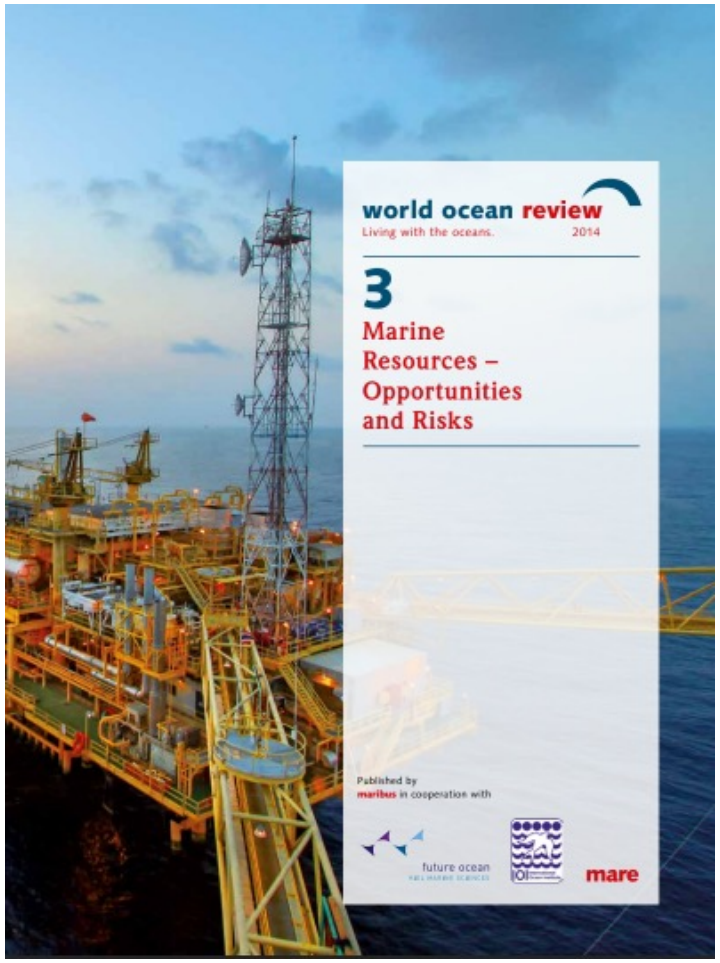
TEXTBOOKS

The course Ocean Environmental Management is designed as a combination of the three textbooks as below:





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PREFACE

The growth of world population combined with economic development and modernization have placed extreme stress on all-natural resources, especially ocean resources. In the course of Ocean Environmental Management, students are equipped with knowledge of environmental issues such as maritime pollution; ocean oil, gas, and natural resource exploration; coastal dynamics and shoreline protections. Major international environmental concerns including offshore energy, waste management, sustainable development, coastal dynamics and shoreline protections are also addressed through out the course. There are 11 topics to be introduced in this course that are extracted from the three textbooks.

Topic 1. The world oceans
Topic 2. How climate change alters the ocean chemistry
Topic 3. Climate change impacts on marine ecosystems
Topic 4. Living resource and medical knowledge from the sea
Topic 5. Marine minerals and energy, and maritime highways
Topic 6. Polluting the seas
Topic 7. Oil spill
Topic 8. Pollution cleanup
Topic 9. Coastal processes and classification
Topic 10. Coastal erosion and flooding
Topic 11. Coastal protection and shoreline management

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WORLD OCEAN REVIEW 2010

This report presents as realistic a picture as possible of the current state of the oceans, by identifying the major issues of relevance to the state of the oceans, addressing the current situation and topical issues from a variety of perspectives.

Many of the topics covered in the various chapters focus on humankind's use and overexploitation of the marine environment. This apparently infinite resource has become finite. As the *World Ocean Review* makes clear, the state of the oceans, as depicted here, gives frequent cause for concern. The outlook on possible developments and consequences of further overexploitation and pollution of the marine environment sadly only reinforces our concern and highlights the important role that preventive research in the field of marine sciences has to play for the future of humankind.

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WORLD OCEAN REVIEW 2010

WOR1 is composed of 10 chapters as below:

Chapter 1. The world oceans, global climate drivers

Chapter 2. How climate change alters ocean chemistry

Chapter 3. The uncertain future of the coasts

Chapter 4. Last stop: The ocean – polluting the seas

Chapter 5. Climate change impacts on marine ecosystems

Chapter 6. Exploiting a living resource: Fisheries

Chapter 7. Marine minerals and energy

Chapter 8. Maritime highways of global trade

Chapter 9. Medical knowledge from the sea

Chapter 10. The law of the sea: A powerful instrument

Among these, knowledge of the world oceans, global climate drivers, impacts of climate change as indicated in chapter 1, 2, 3, 4 and 5 will be selected to introduce in the course of Ocean Environmental Management.

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WORLD OCEAN REVIEW 2013

The second volume of the World Ocean Review is dedicated to fishery and throws light on the many different aspects of the topic. It provides facts about the development of fish stocks and fisheries. It shows that fishing is deeply rooted in the fabric of many cultures. It documents the ecological and economic value of fish and points out ways of making fisheries sustainable. This is a global concern. It is not limited to those few areas of the world where rapid changes to fishing practices enjoy wide acceptance in society. It also aims to preserve the livelihoods of fishermen in the newly-industrializing and developing nations.

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WORLD OCEAN REVIEW 2013

WOR2 is composed of 5 chapters, bringing insights of living resources in the sea to readers.

- Chapter 1. The importance of marine fish
- Chapter 2. Of fish and folk
- Chapter 3. Plenty more fish in the sea?
- Chapter 4. A bright future for fish farming
- Chapter 5. Getting stock management right

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WORLD OCEAN REVIEW 2014

The *World Ocean Review* (WOR 3) focuses on marine resources and the opportunities and risks associated with their potential exploitation. Two salient facts merit particular attention. Firstly, very little is known at present about the resources found in the world's oceans, and their exploration and especially their production pose immense technical challenges. And secondly, there is insufficient public awareness and debate about these resources and their utilization.

In this volume, information will be revealed about the formation, exploration and production of marine resources: not only oil and gas but also ores, in the form of manganese nodules, cobalt crusts and massive sulphides. A separate chapter is devoted to methane hydrates. The extraction of all these resources poses major technical challenges and is a highly contentious issue due to the environmental risks involved. It could also become the basis for a powerful economic sector with the prospect of extremely high returns and significant political ramifications.

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WORLD OCEAN REVIEW 2014

There are only 4 chapters in WOR3 as below:

Chapter 1. Oil and gas from the sea

Chapter 2. Sea-floor mining

Chapter 3. Energy from burning ice

Chapter 4. Clean production and equitable distribution

The third report contributes significantly to the course content by providing knowledge of marine resources at the sea and their exploitation. Thus, readers can gain deep understandings of current status of the oceans and awareness of potential damages to the marine environment through human beings activities.

Thank you

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MARE -Marine Coastal and Delta Sustainability for Southeast Asia