

## **'PROTECTING THE OCEAN SO THAT IT CONTINUES TO PROTECT US' - EUROPE'S LEADING OCEAN SCIENTISTS LAUNCH ADVICE FOR GOVERNMENTS**

Leading European Ocean scientists have launched *Navigating the Future VI (NFVI)*, a publication which provides governments, policymakers and funders with robust, independent scientific advice, focusing on the critical role the Ocean plays in the wider Earth system. *Navigating the Future VI* proposes the marine (natural and social) science research we need to help us address the challenges facing the planet, and with whom we need to collaborate to find solutions.

This is a flagship publication of the European Marine Board, an independent non-governmental advisory body that represents more than 10,000 marine scientists across Europe.

*"Protecting the Ocean so that it continues to protect us, covering all its extent from the coast to the deep sea, requires a multidisciplinary approach and appropriate governance. Navigating the Future VI, with its four outward-facing chapters linking to topics that any audience can identify with (People, Climate, Fresh Water, and Biodiversity), takes the next step towards these challenges and considers the role of the Ocean and marine science in the wider Earth system",* says Dr Gilles Lericolais, Chair of the publication working group and Chair of the European Marine Board (2019-2024) in the foreword.

### **Research requirements**

At important junctures for the [UN Decade of Ocean Science for Sustainable Development](#) (2021-2030) and the [EU Mission: Restore our Ocean and waters](#) (2021-2027), NFVI outlines key knowledge gaps, and research and policy recommendations to ensure we achieve the objectives of these important initiatives. It discusses how we can work together to manage our Ocean interactions, what is needed to achieve an Ocean that is no longer warming, how we can ensure that clean and safe waters are available to all communities, and how we can have a biodiverse Ocean that continues to provide ecosystem services.

Drawing together messages from the four thematic chapters, the publication concludes that to ensure the Ocean continues to provide the services the Earth and society require, we need:

- Specific research on the impact of multiple stressors on the Ocean and its inhabitants;
- Substantial private Ocean finance for projects that are really sustainable, avoiding greenwashing;
- Sustained and long-term research funding;
- Sustained Ocean observations, open, accessible and digitised data, and their integration into Digital Twins of the Ocean;
- Increased technical and financial resources to meet the growing monitoring requirements;

- Harmonised governance, standards, policies and monitoring across the land-coastal-Ocean interface; and
- Scientists and policymakers who are trained to work in cross-, inter-, and trans-disciplinary ways, as well as trained specialists in critical fields.

NFVI also takes an introspective look and recommends that the marine science community should operate in a more sustainable and equitable manner to lead by example.

### **Collaborative effort**

The publication has been a collaborative effort over two years starting in October 2022. The Working Group comprises 33 experts from 16 European countries, covering a wide range of marine natural and social science backgrounds and career levels.

### **Launch of the publication**

The in-person and livestreamed launch of the publication takes place in Brussels today at [Talk C.E.C.](#), an independent space dedicated to cultural and artistic experience. The event is open to all interested parties and will include a presentation of the document and its main messages and recommendations, as well as responses and reflections on the document from key stakeholders. More information and registration for online participation is possible using this link: [https://www.marineboard.eu/NFVI\\_launch](https://www.marineboard.eu/NFVI_launch)

The document can be access at: <https://www.marineboard.eu/publications/nfvi>

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### **Notes to editors**

For more information please contact:

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The European Marine Board (EMB) is a leading European think tank in marine science policy. EMB is a network with a membership comprising over 10,000 marine scientists from the major national marine/oceanographic institutes, research funding agencies and national networks of universities from countries across Europe. The Board provides a platform for its member organizations to develop common priorities, to advance marine research, and to bridge the gap between science and policy to meet future marine science challenges and opportunities.

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## **'MOVING BEYOND THE ECONOMIC VALUE OF THE OCEAN - EUROPE'S LEADING OCEAN SCIENTISTS LAUNCH ADVICE FOR GOVERNMENTS**

**A new publication launched by leading European Ocean experts, titled Navigating the Future VI (NFVI), challenges the way we currently govern the Ocean, which is focused on economic resources. Today national governments come together in Windhoek, Namibia, at the Plenary of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES), to discuss the interlinkages between biodiversity, water, food and human health. Given that we all depend on the Ocean for our survival, it is timely to raise the question of whether the status quo is really equitable and just. Does it take into account the perspectives and needs of everyone or just a privileged few?**

*"To date, most research has focused only on the economic side of the Ocean as a provider of commercialised resources. This means we don't have a good understanding of other perspectives or how to integrate them into Ocean management. To truly manage the Ocean with and for everyone, it is critical that we do",* says Francesco Marcello Falcieri, Chapter co-lead.

The Ocean and People Chapter of NFVI advocates for inclusive, interdisciplinary approaches that incorporate cultural, economic, and social dimensions into marine policy, moving beyond traditional economic frameworks. This shift is essential to secure truly sustainable management of marine resources, safeguard livelihoods, and ensure the Ocean is for everyone.

### **Collaboration**

NFVI provides governments, policymakers and funders with robust, independent scientific advice on future seas and Ocean research. The Ocean and People chapter presents a vision where Ocean stakeholders are better able to work together towards its management. To enable this, it recommends that the following unanswered research questions are addressed:

- How will our use of the Ocean evolve as we continue to expand our Ocean industry but also become more mindful of reducing environmental harm?
- How will changes in Ocean use affect coastal communities?
- We all have our own ways of seeing, engaging with and using the Ocean, so whose perspective of the Ocean is being considered for its management?
- Which Ocean stakeholders are actually getting a say in how the Ocean is managed?
- How can Ocean stakeholders better work together across disciplines so that all relevant perspectives are taken into account?
- How can we, as citizens, help to collect Ocean-relevant data and engage more actively with understanding and protecting our Ocean?

### **About NFVI**

NFVI was written by experts from the European Marine Board, an independent non-governmental advisory body that represents more than 10,000 marine scientists across Europe. The publication focuses on the critical role the Ocean plays in the wider Earth system. The working group (operating from October 2022 – October 2024) comprises 33 experts from 16 European countries, covering a wide range of marine natural and social science backgrounds and career levels.

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## **‘WILL WE BE ABLE TO CONTINUE LIVING BY THE SEA?’ - EUROPE’S LEADING OCEAN EXPERTS LAUNCH ADVICE FOR GOVERNMENTS**

**A new publication launched by leading European Ocean scientists, titled Navigating the Future VI (NFVI), calls attention to the fact that we do not yet sufficiently consider how climate-induced changes in the Ocean will impact how we live alongside it. The result is that development and management plans are not able to deal with these changes. As COP29 on climate change opens in Baku, Azerbaijan, it is timely to re-consider the interactive role of the Ocean and climate in our everyday lives.**

*“The Ocean and coastal areas are changing much faster than previously due to climate change, and our approach to coastal planning is struggling to keep up. We need to both have insights into how climate change will affect the habitability of our coasts and have management plans that are adaptive to these ongoing changes. These plans should ensure that adaptations to climate change are appropriate and take a holistic approach to managing housing, food, fresh water and nature. Otherwise, we risk making our coastal towns unliveable”,* says Katrin Schroeder, lead author of the NFVI chapter on Ocean and Climate.

### **Critical questions**

Written by a team of European marine science and climate experts, Navigating the Future VI discusses the Ocean as part of the climate system, its critical role as a climate change mitigator, and the impacts that climate change is having on the Ocean and coasts. This document provides governments, policymakers and funders with robust, independent scientific advice on future seas and Ocean research. The NFVI Ocean and Climate chapter highlights the need for better understanding of the links between the Ocean and climate. The chapter raises the following critical questions:

- How much and when will sea levels rise as ice sheets melt due to climate change?
- How is Ocean circulation being affected by climate change and how does this affect weather?
- Where are naturally-occurring CO<sub>2</sub> and methane found in the Ocean and when could the Ocean start releasing them?
- What Ocean and climate research and measurements do we need to prioritise to know more about the links between the Ocean and climate?
- How will people be affected by these and other Ocean changes, and how will it impact our daily lives?
- Can we future-proof the way we live with and by a changing Ocean so that we can continue to live by the sea?

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## **‘SEA-LEVEL RISE COULD AFFECT FRESH WATER AVAILABILITY’ - EUROPE’S LEADING OCEAN EXPERTS LAUNCH ADVICE FOR GOVERNMENTS**

A new publication launched by leading European Ocean scientists, titled *Navigating the Future VI (NFVI)*, highlights our lack of understanding of saltwater intrusion into coastal freshwater systems under current and future climate scenarios, and its impacts for coastal communities. How much salt water is reaching those systems? Are climate change impacts such as higher sea levels, and warmer weather leading to increased use of underground freshwater reserves, making that intrusion more likely? Written by a team of experts from the marine sciences, the *Navigating the Future VI* makes it clear that we can no longer consider and manage the Ocean and fresh water separately. Water resilience has already been identified as a key focus for the new European Commission college of Commissioners, and as they start their official hearings, we highlight the important role of the Ocean in ensuring it.

*“We humans are heavily reliant on clean freshwater, but we still exert severe pressure on this crucial commodity. Global warming causes rising sea levels, which are pushing seawater further inland into rivers, wetlands and underground freshwater reserves, with negative effects on water quality. Moreover, human activities generate waste streams with cocktails of hazardous chemicals that enter the global water cycle, making their way from freshwater reservoirs to the Ocean. Freshwater and the Ocean are intimately connected and affect each other; we need to understand how in order to sustainably use both components of the global water cycle”,* says Peter Kraal, co-lead of the chapter on fresh water and the Ocean.

### **Critical questions**

This publication provides governments, policymakers and funders with robust, independent scientific advice on future seas and Ocean research. The NFVI Ocean and Fresh Water chapter presents the many linkages and pathways between the Ocean and freshwater systems, and highlights the key unanswered questions:

- To what extent is salt water from the Ocean intruding into our terrestrial freshwater reserves?
- What dangerous microorganisms could climate change release into our water as we see more rainfall, and melting of ice and permafrost?
- What pathways are there for waterborne pollutants to reach the Ocean and us?
- Can some pollutants extracted from wastewater be re-used?
- How do we design policies that can deal with new emerging pollutants and new knowledge about them?

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## **‘WILL THE OCEAN SUFFER AN EPIDEMIC?’ - EUROPE’S LEADING OCEAN EXPERTS LAUNCH ADVICE FOR GOVERNMENTS**

**Written by a team of European experts from the marine sciences, *Navigating the Future VI* discusses how the biodiversity crisis is being played out in the Ocean. It notes that Ocean species large and small are far less well described than their terrestrial counterparts, making it harder to measure declines and their impacts. This publication provides governments, policymakers and funders with robust, independent scientific advice on future seas and Ocean research. With the COP16 on biodiversity already in full swing in Cali, Colombia, it is timely to reflect further on the need to better understand our Ocean biodiversity.**

*“Climate change is causing the Ocean to warm up. This forces species to move to find conditions to which they are adapted. But we do not fully understand the implications of these movements. When species move to new habitats, they might spread microorganisms that could cause an epidemic amongst the native species, or conversely, the new arrivals could be susceptible to suffering an epidemic themselves. To avoid such epidemic events, which could lead to local extinctions, we need to understand far more about pathogenic microorganisms and where they live”,* says Carlos Pereira Dopazo, lead author of the chapter on Ocean and Biodiversity.

### **Critical research questions**

The NFVI Ocean and Biodiversity chapter presents the ongoing research questions surrounding Ocean biodiversity and its evolution as the Earth changes. It recommends that we focus on addressing the questions of:

- What combinations of traditional taxonomic and new genomic methods can we use to speed up species’ identification and make monitoring of biodiversity more comprehensive?
- Where do pathogenic marine microorganisms occur, and could they pose a future epidemic risk for marine species?
- Where will marine species, such as commercially important fish, move to as the climate changes and the Ocean warms, and how can we avoid human conflicts when species move to new areas?
- What emerging human activities will affect marine biodiversity in the future, and how can we mitigate these risks?
- How will invasive species affect native marine ecosystems?
- Ocean species’ and ecosystem conservation and restoration are costly, but what is the ultimate economic and societal cost of inaction?

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