

Restoration and recovery of the ocean and its biodiversity

Naomi Harada (The Univ. of Tokyo)

Kentaro Nishimoto (Tohoku Univ.)

Waka Sato-Okoshi (Tohoku Univ.)

Nina Yasuda (The Univ. of Tokyo)



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Science Council of Japan

Background 1 The ocean and its biodiversity: a frontier and full of the unknown

The ocean - cradle of evolution, the largest life space on Earth having unparalleled biodiversity

Marine biodiversity-the vast diversity of life on Earth, evolved and maintained in a complex web of interactions between organisms and with the environment.

More than 90% of marine species yet to be described. Urgent need to deepen “scientific knowledge”.

Knowledge we should uncover includes:

- The ocean and the diverse marine life that inhabits it themselves;
- How the ocean and marine life are changing in the context of rapid global environmental change;
- The important role of marine ecosystems that play in restoring and maintaining a healthy global environment;
- How the ocean and its ecosystem are complex systems that interact on a number of scales in time and space;
- Their long-term mechanisms including the evolution

Background 2 The ocean and its biodiversity: provide essential benefits and services



- Weather and climate mitigation by absorbing heat and atmospheric carbon dioxide
- Supplying food and energy
- Providing cultural and recreational opportunities
- Support for human health and well-being

Most important: maintaining the vital role and rich biodiversity of the ocean into the future

Essential action: managing the impacts of human activities on the ocean; protecting the ocean

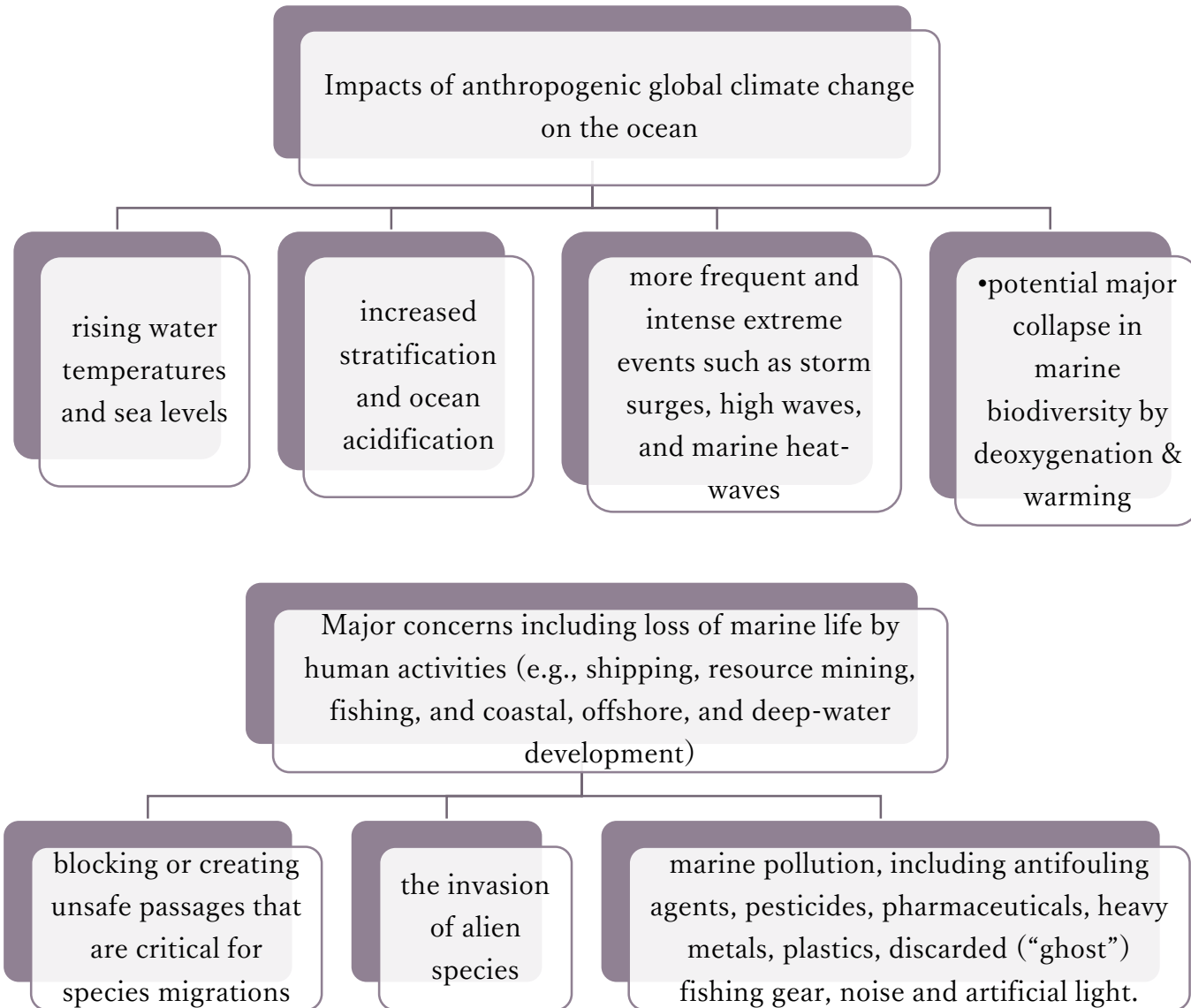


Pteropods, canary in ocean acidification



Clione

Background 3 The ocean and its biodiversity: facing crisis



Full of plastic bags on the seafloor, Sagami Bay in Japan (2405m water depth) after Dr. Nakajima (JAMSTEC)

Recommendations

Restoration and recovery of the ocean and its biodiversity



The G7 Governments must focus efforts on

- A “healthy and resilient ocean” as one of the goals of the United Nations Decade of Ocean Science for Sustainable Development (the Ocean Decade, 2021-2030)
- The “nature positive” goal in the G7 2030 Nature Compact adopted in 2021,
- The G7 Ocean Deal adopted in 2022
- The target of 30% sustainably protected marine areas by 2030 (30 by 30) as one of the goals and targets of The Kunming-Montreal Global Biodiversity Framework (GBF)

Recommendation 1

To not only “conserve”
but to further “restore
and recover” the ocean
and its biodiversity,



Take measures to end Illegal, Unreported and Unregulated (IUU) fishing, control large-scale commercial trawling and deep-sea trawling, eliminate ghost fishing gear, and prevent overfishing, to shift towards sustainable fishing practices. Ensure that fisheries management measures are adaptive and based on the best available and real-time scientific information and knowledge.

Strengthen regulation to prevent alien species invasions associated with fisheries and shipping (e.g., from importing and exporting aquaculture target organisms, ballast water, and biofouling) and ensure their enforcement.

Provide financial incentives and support to respond to socio-economic challenges related to the loss of marine biodiversity, including in Small Island Developing States (SIDS). Empower low-income states to conserve, restore, and recover ecosystems to support sustainable social systems and to improve ocean literacy and research capacity.

Promote the further establishment of Marine Protected Areas (MPAs) and Other Effective area-based Conservation Measures (OECMs). Based on scientific evidence, ensure that MPAs and OECMs are effective, well-connected, and well-enforced and that all stakeholders participate in their establishment. Implement frameworks for adaptive management based on a scientific analysis of monitoring and observation results.

Recommendation 2

To create a sustainable
marine environment,



Develop a roadmap for decarbonization in line with the Paris Agreement and G7 climate goals, to ensure that actions toward carbon neutrality are implemented. One key action is increasing ocean carbon sinks and introducing mitigation and adaptation measures, particularly with regard to rising sea level. Ensure that comprehensive assessments are conducted before and after the implementation of climate mitigation and adaptation technology to evaluate and mitigate any potential negative effects on the marine environment.

◆ Encourage efforts to spread awareness and improve literacy in society on climate change, biodiversity, and sustainable use of marine resources to societies.

Adopt a comprehensive, ecosystem-based approach to the management of the coastal marine environment, including the effects of agricultural runoffs and other terrestrial pollutants, and establish clear governance structures.

Advance international cooperation in setting international rules and standards to prevent marine pollution, including land-based sources, and significantly reduce regional and transboundary pollution, aligned with the Manifesto for Clean Ocean 2030 in the Ocean Decade.

Eliminate all subsidies and incentives that are harmful to marine ecosystems and biodiversity, including built infrastructure and agriculture subsidies that lead to nutrient, pesticide, and antibiotics pollution in terrestrial ecosystems that is a major contributor to pollution in coastal ecosystems in addition to aquaculture.

Recommendation 3

To achieve long-term success in conserving, restoring, and recovering the ocean and its biodiversity,



Increase support for monitoring observations of ecosystems, species and genetic diversity using standardized methods.

Enhance human resource development for marine survey/research, and foster students and early career scientists, by increasing the funds required for field survey/research and the costs required for field surveys/research security.

Promote open science and data-driven science by strengthening global observation networks (e.g., Argo, the Global Ocean Observing System (GOOS), the Ocean Tracking Network (OTN), the Marine Biodiversity Observing Network (MBON), Global Ocean Ship-based Hydrographic Investigation (GO-SHIP) and the international system of Long Term Ecological Research (LTER) sites. Enhance, maintain, and manage marine biodiversity databases (e.g., Ocean Biodiversity Information System (OBIS), World Register of Marine Species (WoRMS)) with stable financial resources, promote integration, centralization, visualization, and publication.



**THE OCEAN STARTS HERE
DON'T LITTER**

after Dr. Tsuchiya (JAMSTEC)

Panel Discussion

Short summary of the recommendation ” Restoration and recovery of the ocean and its biodiversity:
To not only “conserve” but to further “restore and recover” the ocean and its biodiversity,

- Shift towards sustainable fishing practices, Empower low-income states to conserve, restore, and recover ecosystems, Promote the further establishment of MPAs and OECMs

To create a sustainable marine environment,

- Develop a roadmap for decarbonization increasing ocean carbon sink, international cooperation in setting international rules and standards to prevent marine pollution

To achieve long-term success in conserving, restoring, and recovering the ocean and its biodiversity,

- Increase support for monitoring observations, Enhance capacity building for marine survey/research, Promote open science by strengthening global observation networks

Q.1 Is there anything you would like to highlight in this recommendation?

Q.2 It's easy to say, but hard to take actions. How can we move forward?

Do you have any good concrete suggestions?