



## Being Nice to the Deep Ocean: Key Considerations for UNOC 2025

The United Nations' Sustainable Development Goal 14 –to conserve and sustainably use the ocean, seas and marine resources for sustainable development– cannot be achieved without policies that account for the deep ocean. Bigger, less understood and harder to access than shallow waters, deep-ocean environments and their biodiversity nonetheless have [powerful connections](#) to Earth's climate, the sustainable blue economy, human safety, wellbeing and culture, and life in the shallows as well as on land. This is true not only of life on the seafloor, but also the rich biodiversity present in the rest of the water column below the sunlit surface. For the 2025 UN Ocean Conference to succeed, parties must have access to important deep-ocean science-based knowledge, as well as options for using that knowledge in policy making. Additionally, it is time to recognise the critical role of fostering a holistic understanding of and reverence for the deep ocean, encompassing diverse knowledge and value systems, to achieve a sustainable future. Three especially important topics to consider that may be connected to the loss of deep-ocean ecosystems and the services they provide are outlined below with links to more detailed explanations.

### Deep-Seabed Mining

#### Important Information:

- While no industrial-scale deep seabed mining has taken place yet, the International Seabed Authority (ISA) is working to complete a mining code that will regulate mining of the seabed in areas beyond national jurisdiction and has granted more than 30 exploration licenses.
- Many benefits, or '[ecosystem services](#)' to life, including humans, are obtained from the three ecosystems currently considered for deep-seabed mining: [abyssal plains](#), [seamounts](#) and [hydrothermal vents](#). Deep-seabed mining may disrupt these services. Because [deep-ocean ecosystems recover extremely slowly from damage](#), environmental impacts caused by mining may be long-lasting and have wide-ranging consequences.
- Vital challenges remain if deep-seabed mining is to be managed in alignment with SDG 14. Scientific information, including environmental baselines and understanding of mining's environmental impact, [is currently insufficient to allow policymakers to make evidence-based decisions](#). Additionally, [over 30 major issues in the draft mining code have yet to be decided](#) due to lack of international agreement, missing information, including the scale of impacts, and insufficient time for discussion. Likewise, key equity considerations need to be addressed to ensure that any mining also serves the wider interests of all humankind, including present and future generations.

## Policy priorities:

A strategic and coordinated international research agenda led by independent scientists in collaboration with other sectors of society –including the general public– is required to ensure that decisions on deep-seabed mining are based on strong evidence, as well as wide awareness from and communication with society. Such efforts are necessary to answer [critical questions about deep-ocean environmental baselines, monitoring, and potential impacts of mining](#), including on socio-economic security, health and well-being of humanity while ensuring the sustainability of the planet.

## Climate Change, Biodiversity and Marine Carbon Dioxide Removal

### Important Information:

- Marine biodiversity underpins the carbon cycle, with major roles in stabilising climate.
- Conservation of deep-ocean biodiversity will act to preserve the carbon cycle services provided by deep-ocean ecosystems.
- Ideas for regulating and limiting climate change by disposing of carbon in the deep ocean have been proposed by businesses, researchers and governments.
- If applied at large enough spatial and time scales to significantly affect Earth's climate, these techniques for marine carbon dioxide removal (mCDR) would [transform the chemistry and biology of the global ocean](#). These decisions must be grounded in robust science and be holistic as these actions may have unwanted or unforeseen consequences for the deep-ocean functions that provide valuable ecosystem services.

### Policy Priorities:

Climate and biodiversity are often disconnected in international policy arenas, but they are fully integrated in the deep ocean, where it is impossible to harm one without affecting the other. There is a critical need to make biodiversity conservation actions *climate positive* and to make climate mitigation actions *biodiversity positive*. Opportunities abound within the Global Biodiversity Framework and within the BBNJ Agreement to seek marine actions that confer climate resilience but also conserve climate and carbon cycle services. Similarly, the value of marine biodiversity to Earth's climate requires greater recognition in UNFCCC negotiations as well as in consideration of mitigation measures, such as those associated with mCDR.

[There are numerous opportunities to address the risks and potential benefits of mCDR in international policy](#). Collaborative, independent scientific intervention would be necessary to conduct baseline surveys of deep-ocean ecosystems, their biodiversity, functions and services that mCDR activities may impact. Bodies like the Global Ocean Observing System (GOOS) and the Deep Ocean Observing Strategy (DOOS) can help expand ocean monitoring to improve scientific understanding of mCDR's likely effects. Extending capacity exchange for ocean observation in the Global South is also fundamental to ensuring global monitoring efforts. Environmental impact assessments will need to be informed by improved scientific knowledge, including on cumulative effects. Rules and an assessment framework adopted by Parties to the London Convention and London Protocol already provide global standards regulating and monitoring legitimate scientific research and a call to defer deployment, but these rules are not yet in force.

To minimise potential negative consequences, the scientific and technical portions of relevant regulatory bodies could convene a joint commission focused on mCDR. This commission could be an opportunity to engage experts advising the London Convention and Protocol as well as from the World Ocean Assessment, IPCC, IPBES, GESAMP, and the International Panel for Ocean Sustainability (IPOS). Such deliberations could inform the preparation of further global rules, standards and guidelines, as well as recommended practices and procedures, and corresponding national legislation. This could help ensure a comprehensive, transparent and inclusive regime for mCDR and other types of climate interventions based on precaution and integrated, ecosystem-based approaches.

## Bottom Trawling

### Important Information:

- Deep-ocean bottom trawling can harm ecosystems by scraping long-lived, slow-growing sea life off the bottom of the ocean. This damage can cause further changes throughout the ocean. Additionally, the sediment disturbed by trawling can release carbon stored in the seabed into the water and also smother animals when it settles back.
- In an attempt to prevent harm to vulnerable marine ecosystems (VMEs), nations that fish on the high seas have agreed to cease fishing activities where VMEs are found unless they can ensure that a VME will not be seriously impacted.
- Despite this, impact assessments relied upon by states and Regional Fisheries Management Organisations (RFMOs) are often not effective or complete enough to ensure that fishing activities avoid significant harm to VMEs.

### Policy Priorities:

To ensure that current international rules for protecting VMEs are followed and support healthy ocean ecosystems, states and other actors can support a standardisation of environmental impact assessments across different regions using a shared template. Data used in standardised impact assessments could also be shared with independent parties for scientific evaluation, and managers could collaborate with deep-ocean experts to improve stakeholders' understanding of VMEs. In areas lacking sufficient data to understand the likely impacts of trawling, states and organisations that manage fishing and trawling could apply a precautionary approach. Cooperating to ensure that fishing activities are sustainable will be important for protecting both ocean life and human livelihoods.

*This submission was prepared for the 2024 Immersed in Change Conference by the Steering Committee of the Deep-Ocean Stewardship Initiative (DOSI). Members of the Steering Committee include: Maria Baker, Lisa Levin, Elva Escobar, Kristina Gjerde, Harriet Harden-Davies, Diva Amon and Maila Guilhon.*

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*For more information on key deep-ocean science and policy connections, please visit our website at [www.dosi-project.org](http://www.dosi-project.org).*