

ACOPS' comment on the Report of the FoP Group on Draft Regulation 44ter “Environmental Goal and Objectives”

*Explanation of its position on the
use of ‘ecosystem integrity’ as sole environmental goal*

KEY POINTS

- By choosing ‘ecosystem integrity’ as the sole strategic environmental objective of the Exploitation Regulations, as a matter of law the current draft of DR 44 ter creates confusion in the interpretation of UNCLOS, because it risks limiting the scope of protection of the marine environment provided in UNCLOS, and in particular in Article 145.
- We agree with the relevance of ‘ecosystem integrity’ to the implementation of Article 145, but it cannot, as a matter of law, replace Article 145, nor can it serve as a substitute for any part of that Article, nor can it satisfy, let alone exhaust, the broader duty of effective protection of the marine environment mandated by Article 145.
- Implementation of Article 145 cannot, as a matter of law, be subordinated to or interpreted only through the lens of ‘ecosystem integrity.’ However, ‘ecosystem integrity’ could serve as one of the lenses for its implementation.
- Unlike the UNCLOS provisions on the protection of the marine environment, the application of the legal concept of ‘ecosystem integrity’ is still shaping, has no precedent in the case law of international courts and tribunals, and elements of its proof are therefore yet to be developed.

WE SET OUT BELOW THE RATIONALE FOR THIS LEGAL ASSESSMENT

1. ‘Ecosystem integrity’ is much narrower in legal scope than the marine environment protected under UNCLOS

The ‘ecosystem’ concept is defined in the Convention on Biological Diversity (Art.2) as ‘a *dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit*’. This definition of ‘ecosystem’ only considers living and non-living parts of the environment in relation to one another.

The introduction of a broad definition of ‘ecosystem integrity’ in the schedule of the regulations would not be sufficient to escape this definition of ‘ecosystem’.

By contrast, the ‘marine environment’ protected under UNCLOS includes all of its components in their own right and for their own sake, including different ecosystems. The ISA’s own regulations on prospecting and exploration for all three minerals define the ‘marine environment’ as including “*the physical, chemical, geological and biological components, conditions and factors which interact and determine the productivity, state, condition and quality of the marine ecosystem, the*

waters of the seas and oceans and the airspace above those waters, as well as the seabed and ocean floor and subsoil thereof".¹

This definition is in line with the '*boundary-free nature*'² of the marine environment embraced by UNCLOS and applied by international courts and tribunals that encompasses all marine waters, "including the coastline"³, the seabed, ocean floor and subsoil, and physical, chemical, geological and biological components, conditions and factors that determine the productivity, state, condition and qualities of marine ecosystems.

Of the most fitting applications in international case law to the point made here is ITLOS Advisory Opinion of 21 May 2024 which specifically examines the definition of the marine environment in UNCLOS, relies on uses of the term in UNCLOS and past case law, including the definition of 'environment' by the ICJ as representing "*the living space, the quality of life and the very health of human beings, including generations unborn*" and combining "*both spatial and material components*".⁴

Establishing the risk of or actual harmful effects on one or more particular components or change(s) in specific properties of the marine environment (whether biotic or abiotic) provides a number of legal avenues and types of possible evidence. These would include the characterisation of 'ecosystem integrity' without being limited to it.

2. The legal concept of 'ecosystem integrity' is untried in international case law which adds further uncertainty

Unlike UNCLOS provisions on the protection of the marine environment, the application of the legal concept of 'ecosystem integrity' is still shaping, has no precedent in the case law of international courts and tribunals and elements of its proof are therefore yet to be developed.

The ocean comprises a diversity of ecosystems and the determination of their respective boundaries is not straightforward⁵, not only scientifically but also in the context of the administration of evidence that would be considered necessary by an international court or tribunal.⁶

¹ E.g. Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, Regulation 1(1)(c) (ISBA/19/17).

² For an explanation of this approach and a discussion on the nature and scope of the concept of 'marine environment' in UNCLOS, despite the absence of a definition, see also P. Verlaan (2021), "The Interface of Science and Law: A Challenge to the Privileging of 'Marine Biodiversity' over 'Marine Environment'" (invited chapter), in Richard A. Barnes and Ronán Long (eds), *Frontiers in International Environmental Law: Oceans and Climate Challenges: Essays in Honour of David Freestone*, pp. 409-429, Brill, Leiden, 2021 (<https://brill.com/view/title/38675?language=en>).

³ UNCLOS article 145. Note that the Exploration Regulations do not expressly include 'the coastline' in the above-quoted definition of the marine environment, which is unfortunate. Given the breadth of this definition, we view the coastline as included in '*the waters of the seas and oceans*'.

⁴ Request for Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law, Advisory Opinion, 21 May 2024, ITLOS Reports 2024, p. 4 [para.166].

⁵ E.g. K. Jax (2007), "Can We Define Ecosystems? On the Confusion Between Definition and Description of Ecological Concepts" *Acta Biotheoretica* 55(4): 341–355 and G. Reygondeau et al. (2013) "Dynamic Biogeochemical Provinces in the Global Ocean", *Global Biogeochemical Cycles* 27(4): 1046–1058; AP. Rollan et al. (2025) "Managing the Fuzzy Boundaries and Partitions of Marine Ecological Systems Using Network Theory", *Scientific Reports* 15: 25803.

⁶ On the administration of scientific facts by courts, see e.g. J. D'Aspremont and MM. Mbengue (2014) "Strategies of Engagement with Scientific Fact-Finding in International Adjudication", *Journal of International*

We can anticipate a number of potential challenges that could be brought against establishing that the integrity of an ecosystem could or would be adversely affected. These challenges include the evidence that would be necessary to establish the 'integrity' that would be lost. First, the identification of an ecosystem, including its contours (in space, time and composition), is a difficult and debated question. Second, the measures of 'integrity' are also challenging and subject to debates due, *inter alia*, to the need to determine the range of natural variation to use as reference. Third, and on this front, it is generally easier and simpler to establish a change in abiotic components of the marine environment (e.g. salinity, temperature, turbulence, etc.) for which more data and fewer uncertainties exist than to do the same for biotic elements, let alone to demonstrate changes in the biological state of an ecosystem. This is particularly true in the context of the administration of evidence in a judicial setting.

3. UNCLOS Article 145 provides many legally binding avenues and criteria to protect the marine environment that are lost as a matter of law if this protection is framed through the sole environmental goal of 'ecosystem integrity'

The measures required for adoption under UNCLOS Article 145 are designed to ensure protection of the marine environment from harmful effects, through:

“ the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from harmful effects of such activities as drilling, dredging, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities;

“ the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.

Note that 1) these are several, legally binding, environmental goals, not just one, and that 2) this provision is open-ended, i.e. it is not exhaustive, because the above list follows the words '*inter alia*' subclause in the treaty.

4. The sophisticated text and structure of UNCLOS are critical to its dynamic interpretation and therefore its continued evolution, as is evident from international case law

The consideration and acceptance of CO₂ emissions as pollution under UNCLOS and the associated findings of ITLOS in their 2024 Advisory Opinion, including in relation to ocean acidification, is an exemplary demonstration. This determination did not rely on the demonstration of adverse effects on the marine ecosystems.

Dispute Settlement 5(2): 240-272 and L. Boisson de Chazournes et al. (2018) "One Size Does Not Fit All—Uses of Experts before International Courts and Tribunals: An Insight into the Practice", *Journal of International Dispute Settlement* 9(3): 477–505. On the legal and scientific pitfalls attendant on attempts to narrow the scope of the marine environment as envisaged for protection under the Law of the Sea Convention, using 'marine biodiversity' as an example, see P. Verlaan (2021), above note 2 and P. Verlaan (2022), "The Interface of Science and Law: Protecting, Preserving and Conserving Biodiversity with the Law of the Sea Convention (invited paper), *The Korean Journal of International and Comparative Law* 10(2):222-239; doi: <https://doi.org/10.1163/22134484-12340170>. These publications point out that these pitfalls apply to the terrestrial environment as well as in the context of the protection of the marine environment more generally.

The inclusion of a single ‘environmental goal’ in the Exploitation Regulations, even if perhaps administratively attractive, creates confusion between legally binding obligations under UNCLOS and under the Exploitation Regulations. It could also raise questions on the extent to which this provision of the Exploitation Regulations may be seen as a conclusive subsequent agreement between the Parties or a subsequent practice by the parties in implementing UNCLOS, or as an interpretative statement, which could therefore also be binding in the context of implementing UNCLOS.

The inclusion of a number of objectives under this goal that bear no reference to ‘ecosystem integrity’ is also confusing, especially as the framing suggests the establishment of a hierarchy. This proposed new language is also at odds with the way UNCLOS approaches States’ obligations with respect to the protection of the marine environment, thereby running the risk of unintended legal and other consequences.⁷

5. The concept of ‘ecological balance’, although broader in scope than ‘ecosystem integrity’, would be insufficient as a sole environmental goal as a matter of law, because it is only one of the legally binding goals set out in Article 145 for protection of the marine environment.

We initially raised the ‘ecological balance’ as a broad environmental concept under UNCLOS to which the concept of ‘ecosystem integrity’ could be connected as a subset of this balance. We emphasised then that the legal concept of ‘ecological balance’ in UNCLOS and in international case law is broader than the concept of ‘ecosystem integrity’ used in the context of international treaties focused on the protection of marine life, including biodiversity, rather than the protection of the marine environment as a whole, a legal goal which is far more comprehensive in its legal and ‘physical’ (defined here as the natural world it is intended to encompass) scope.

During Part 1 of ISA31, we presented the view that the marine environment, as both a legal and a ‘physical’ concept, includes physical, chemical and geological characteristics and processes, as well as biological ones, that underpin ocean systems, including ocean-atmosphere interactions’, for their own sake. These are therefore broader than ‘ecosystem integrity’. However, we want to make clear that in Article 145 (and in Article 234 on ice-covered areas), the ‘ecological balance’ is itself also a subset of the marine environment. Hence, as a matter of law, it cannot be a sufficient sole environmental goal on its own either.

⁷ For a description and analysis of the negotiation history of the environmental aspects of Part XI and the Implementing Agreement, and the associated regulatory challenges for the ISA, see P. Verlaan (2021), “Future of Deep-Seabed Mineral Resources: Environmental Issues” (invited chapter) in A. Ascencio-Herrera and M.H. Nordquist (eds) *The United Nations Convention on the Law of the Sea, Part XI Regime and the International Seabed Authority: A Twenty-Five Year Journey*, pp. 198-216. Brill/Nijhoff, Leiden, 2021; https://doi.org/10.1163/9789004507388_014.