



Saving the ocean and climate through innovative marine protected area finance mechanisms



ACIDIFICATION

Ocean acidification is caused by progressive lowering of pH in the water due to human input of CO₂.



DEOXYGENATION

The ocean has lost 2% of its oxygen globally and some regions have lost up to 30%.



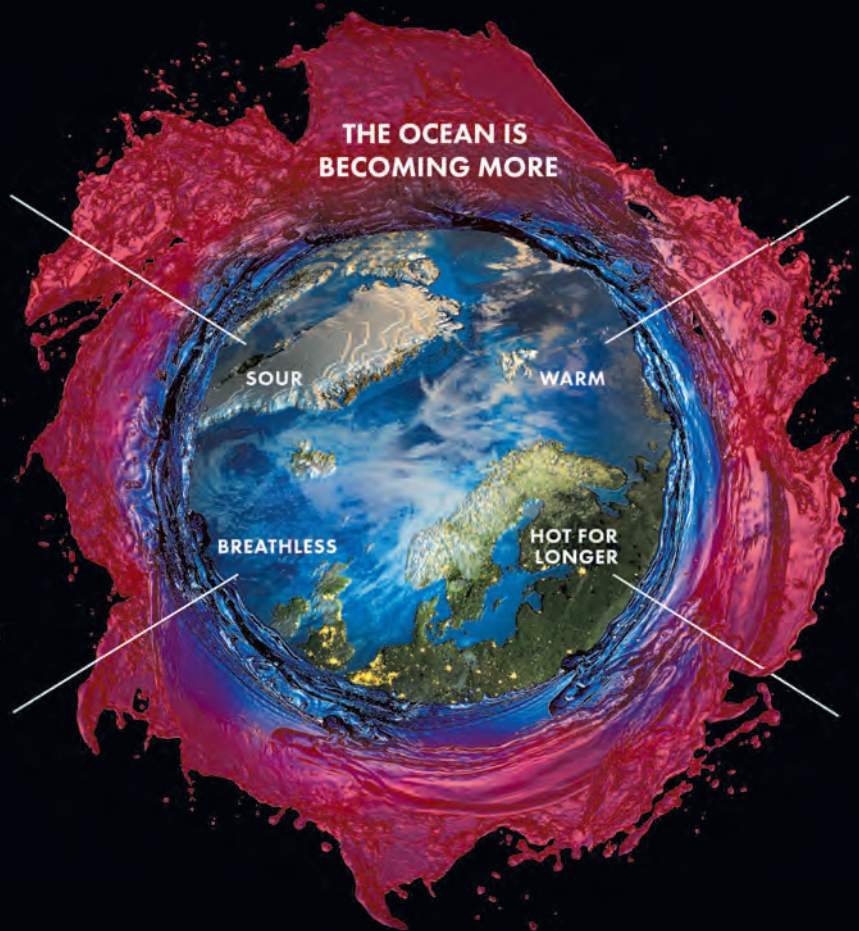
WARMING

Ocean warming causes severe long-term effects to marine ecosystems and human society.



MARINE HEATWAVES

are a major shock to marine ecosystems that can cause massive species mortality.



Marine Protection is Climate Action

Marine Protected Areas (MPAs), or networks thereof, if designated, monitored, and managed effectively, can protect coastal and marine ecosystems including blue carbon habitats¹, enhance biodiversity, and deliver socio-economic benefits including food security for coastal and global communities alike.

They can provide Nature-based Solutions (NbS) to help adapt, mitigate and build resilience to the impacts of climate change. Networks of connected MPAs can protect blue carbon habitats, which include a wide range of habitats such as mangroves, salt marshes and seagrass beds. MPAs can also prevent loss and degradation of those habitats and their associated blue carbon reserves. They may also enable new carbon sequestration through the restoration of degraded coastal habitats¹⁰ or carbon storage primarily within sediments.

The IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)² provided policy makers and other parties with a holistic perspective on the current state of the ocean in the face of increasing negative impacts of climate change. However, the anthropogenic threats to the integrity of carbon sequestered and transported in the wide, deep and open ocean were not fully addressed. We need to focus on the importance of conserving existing ocean pathways of carbon fixation, transport, burial and sequestration³ and on the role effective marine protection can play in these areas⁴. The UNFCCC SBSTA Ocean and Climate Change Dialogue, mandated at COP25, was informed by 47 prior open submissions which uniformly acknowledge that the ocean and climate systems are inextricably linked, and that consideration of ocean-based action will strengthen climate action and vice versa.⁵ The chairs summary⁶ shows the discussions to date, yet more is required to deliver ocean solutions for climate at scale.⁷

The identification, establishment and management of ecologically representative, well-connected, well-managed networks of effective MPAs need to take into account their function as climate refugia, as well as other benefits which are critical to achieving the Paris agreement goals. Meeting the global target of protecting at least 30% of the ocean⁸ as part of a healthy interconnected seascape that mitigates the impacts, climate change will be a contributing factor to the delivery of climate targets⁹.

There is also increasing evidence of the potential value of restoration as called for by the UN Decade on Ecosystem Restoration (2021–2030), and more generally in global nutrient neutrality and blue carbon policy strategies.¹⁰

Key messages

MPAs can be Nature-based Solutions to achieve the climate mitigation and adaptation goals, while addressing biodiversity loss and food security

Effectively managed MPAs address biodiversity and climate change as a contribution to national and international commitments (i.e. post 2020 Global Biodiversity Framework and National Determined Contributions under the Paris Agreement)

Equitable and flexible mechanisms, including new institutions can assist implementation of effective financial support from multiple sources

The Standing Committee on Finance of the UNFCCC should discuss, exchange information, develop documentation and help to identify and track new sources of funding for ocean climate finance solutions.

- 1 including sediments, mangroves, salt marshes, seagrass beds, and kelp forests
- 2 IPCC. (2019). IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (H.-O. Pörtner, D. C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, & N. M. Weyer, Eds.). In Press.
- 3 Hilmi N. et al (2021) The Role of Blue Carbon in Climate Change Mitigation and Carbon Stock Conservation. *Front. Clim.* 3:710546. doi: 10.3389/fclim.2021.710546
- 4 Jacquemont, J, Blasiak, R, Le Cam, C et al (2022) Ocean conservation boosts climate change mitigation and adaptation, *One Earth* 5. <https://doi.org/10.1016/j.oneear.2022.09.002>
- 5 Dobush, B.J. et al(2021): A new way forward for ocean-climate policy as reflected in the UNFCCC Ocean and Climate Change Dialogue submissions, *Climate Policy*, DOI: 10.1080/14693062.2021.1990004
- 6 Subsidiary Body for Scientific and Technological Advice. (2021). Ocean and climate change dialogue to consider how to strengthen adaptation and mitigation action. Informal summary report by the chair. https://www.unfccc.int/sites/default/files/resource/SBSTA_Ocean_Dialogue_SummaryReport.pdf
- 7 Turley, C., Racault, M.-F., Roberts, J. M., Scott, B. E., Sharples, J., Thiele, T., Williams, R. G., & Williamson, P. (2021). Why the ocean matters in climate negotiations. COP26 Universities Network Briefing.
- 8 Pew Charitable Trusts (2021). The Drive to Protect 30% of the Ocean by 2030. Article. <https://www.pewtrusts.org/en/research-and-analysis/articles/2021/01/27/the-drive-to-protect-30-percent-of-the-ocean-by-2030>
- 9 Konar, M., and Ding, H. (2020). A Sustainable Ocean Economy for (2050). Secretariat of the High Level Panel for a Sustainable Ocean Economy. World Resources Institute. Available online at: https://oceanpanel.org/sites/default/files/202007/Ocean%20Panel_Economic%20Analysis_FINAL.pdf
- 10 Watson, S.C.L.; Watson, G.J. Beaumont, N.J. & Preston, J.(2022) Inclusion of condition in natural capital assessments is critical to the implementation of marine nature-based solutions. *Science of the Total Environment* 838 (2022) 156026

Ocean finance needs to be integrated into the climate finance architecture

Marine protection needs to be underpinned by effective financial support and a robust, equitable, and flexible mechanism for financing implementation. The cost of inaction far exceed the costs of establishing effective ocean management^{11,12}.

To date, publicly announced international biodiversity finance commitments only total about USD6.4 billion annually¹³ and do not specifically address either marine biodiversity or the linkages to climate finance. Only an estimated 3% of current climate finance is allocated to Nature-based Solutions¹⁴ Ocean finance can be a crucial focus.¹⁵ Achieving climate-resilient economies and societies will not only require increasing the billions of financial flows for adaptation, but also shifting broader -- public and private -- financial flows and investment away from potentially mal-adapted activities towards those that contribute to climate-resilient economies and societies, such as misplaced subsidies.¹⁶

The UNFCCC COP27 offers a unique opportunity to commit to ocean finance at the scale and structure that is appropriate to support the emerging climate finance architecture, paving the way for COP28. Just as in 2018 the UNFCCC's COP expanded the mandate of the Standing Committee on Finance to also include Forests allowing the SCF to include the sector into its work plan we now need to engage this body for ocean progress¹⁷ with specific focus to addressing the need of states most vulnerable to climate change. COP 27 could adopt a specific mandate for this body of designated experts to discuss, exchange information, develop documentation and help to identify new sources of funding for ocean climate finance solutions.

Delivering a New Blue Deal

Delivering a New Blue Deal for the Sustainable Development Goal (SDG) 14¹⁸, which also addresses climate action, requires an early upfront capital investment with a partnership approach to allow for effective implementation.

IUCN has already proposed specific financial commitments to kick-start ocean solutions that protect the biodiversity of almost half of the planet, the High Seas¹⁹, such obligations owed to the international community as a whole²⁰. This paper

argues that investment in coastal and exclusive economic zones, both in their conservation and in sustainable use, in particular for large ocean states such as those of SIDS, offers key climate progress.

Early successes in the coastal zone

Leveraging public funding for increased private finance in coastal NbS is already well underway. Efforts such as the [Blue Natural Capital Financing Facility \(BNCFF\)](#), launched in 2018 and managed by the IUCN, is helping to build the business case for investing in coastal NbS for climate change mitigation and adaptation, by developing a pipeline of bankable projects, and connecting people on the ground with private investors in boardrooms. The BNCFF has been designed to help strengthen specific projects that combine bankability and positive environmental and social impacts. The BNCFF bridges the gap between the conservation and finance world, between theoretical concepts and actual impacts by collecting and sharing lessons-learned, and producing credible and usable knowledge products, including investment Blue Prints. [The Blue Carbon Accelerator Fund \(BCAF\)](#) is following a similar approach with a focus on carbon credit generation as a key financing vehicle for coastal and marine conservation and protection efforts.

11 https://portals.iucn.org/library/sites/library/files/resrecfiles/WCC_2020_RES_128_EN.pdf

12 <https://www.iucn.org/news/marine-and-polar/202203/iucn-closing-statement-un-igc4-biodiversity-beyond-national-jurisdiction-agreement>

13 Prepared by Campaign for Nature, Conservation International, The Nature Conservancy, Wildlife Conservation Society and WWF (September 26, 2022) Summary of International Biodiversity Finance Commitments Announced to Date

14 Raghav, S., Siman, K., Gross, A., Wu, A., Zeng, Y., Comstock, M., et al. (2020). Report: The Business Case for Natural Climate Solutions: Insights and Opportunities for Southeast Asia, Singapore, 1-109.

15 Sumaila, U. R., et al (2020). Ocean finance: Financing the transition to a sustainable ocean economy. World Resources Institute. <https://www.oceanpanel.org/blue-papers/ocean-finance-financing-transition-sustainable-ocean-economy>

16 Mullan, M & Ranger, N. (2022) Climate-resilient finance and investment: framing paper Nr 196. OECD <https://dx.doi.org/10.1787/223ad3b9-en>

17 see for instance the suggestion to "Request the SCF prepare an Information Note exploring coastal and marine NbS climate finance flows, gaps and opportunities". In: Options for strengthening action on the ocean and coasts under the UNFCCC October 2022

18 Armstrong, C (2022) A Blue New Deal- Why We Need a New Politics for the Ocean, YaleBooks <https://yalebooks.co.uk/page/detail/?k=9780300259742>

19 Thiele, T. (Editor). 2022. Innovative High Seas Finance Mechanisms for the future instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ), Gland, Switzerland, IUCN Headquarters: IUCN. 8 pages.

20 Payne, C.R. (2022) Responsibility to the international community for marine biodiversity beyond national jurisdiction, Cambridge International Law Journal, Vol. 11 No. 1, pp. 24–50

An Ocean Sustainability Bank

Building on these early success, an Ocean Sustainability Bank²¹ targeting the whole ocean could offer integrative financing tools to effectively address the ocean and climate finance gap, helping to deliver resilience and adaptation, SDG14 and a sustainable and just blue economy transition based on principles of equity, informed decision-making, shared responsibility and accountability.²²

In addition to the bank, financial regulators and governments also need to systematically integrate long-term climate and biodiversity considerations in macroeconomic, fiscal, and institutional assessments that inform country strategies.²³

Investing into marine protected area implementation

Effective coastal and marine conservation measures need to be underpinned by best available science, including scientific assessment and baseline research.

Comprehensive stakeholder engagement, including from existing sectoral and regional bodies are key. Other effective area-based conservation measures” (OECMs)²⁴, if done per appropriate international guidelines²⁵, can also serve conservation purposes if properly managed²⁶. Areas need to be monitored for infractions and to deliver dynamic ecosystem management. A robust system will use both physical (sensors, satellites etc) and institutional (staff, data, reporting etc) infrastructure, with capacity building throughout developing countries²⁷ to allow for full participation including through business and civil society, using innovative monitoring, reporting and verification (MRV) solutions²⁸.

Whilst the total cost of establishment and operations of such measures will be significant²⁹, it should be viewed as an investment. To date, most of the cost associated with the establishment and management of MPAs are covered by government budgets.

This policy brief focusses on marine protection measures that link to climate solutions. Regions experiencing rapid climate change which also host ecosystems showing signs of stress need to be priorities for climate adaptation through adequate coastal and marine management.³⁰

Effective and rapid protection of coastal and marine biodiversity delivers significant economic value in the form of ecosystem services benefits that far in excess of cost. This blue natural capital value, from fish nurseries to blue carbon³¹ to ecosystem resilience, is increasingly being captured in ocean accounts³² and is particularly significant in the context of climate adaptation and mitigation.

The emerging ocean accounting formats can play a supporting role in driving ocean investment and only if these incentives are set appropriately can the significant ocean carbon stocks and sinks be adequately addressed. In contrast the economic value at risk from exploitation of the ocean is vast³³.

21 Thiele, T. (2022) Global Ocean Trust Policy Brief: BBNJ Economics and Finance https://www.globaloceantrust.de/_files/ugd/06cc3d_c40bc4181a2e4279a378eda7ac858377.pdf

22 Muller S and Robins N (2022) Just Nature: How finance can support a just transition at the interface of action on climate and biodiversity. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science.

23 Neunuebel, C., et al. (2022). "Aligning Policy-Based Finance with the Paris Agreement." Working Paper. Washington, DC: World Resources Institute. Available online at <https://doi.org/10.46830/wriwp.21.00066>

24 "Other effective area-based conservation measure" means "a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ* conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values";

25 IUCN Guidelines: <https://www.iucn.org/news/protected-areas/201911/iucn-publishes-new-guidance-recognising-reporting-and-supporting-other-effective-area-based-conservation-measures>

26 Kalinina, M., Briggs, J & O'Connor Villagomez, A. (2021). To Achieve 30% Ocean Protection Governments Can Look Beyond Conventional Tools. PEW. Available online at: <https://www.pewtrusts-org.cdn.ampproject.org/c/s/www.pewtrusts.org/en/research-and-analysis/articles/2021/05/07/to-achieve-30-ocean-protection-governments-can-look-beyond-conventional-tools?amp=1>

27 Gill, D. A., M. B. Mascia, G. N. Ahmadi, et al (2017), 'Capacity Shortfalls Hinder the Performance of Marine Protected Areas Globally', Nature, 543(7647), 665–669.

28 Example: <https://www.skylight.global>

29 See for example study prepared for the Blue Nature Alliance

30 see eg the forthcoming publication: "How to give ocean ecosystems a health check: An 'Atlantic Science Blueprint"

31 Bertram, C., Quaas, M., Reusch, B.H. et al., (2020) The blue carbon wealth of nations. Nature Climate Change

32 <https://www.oceanaccounts.org/tag/ocean-accounts/>

33 https://www.fint.awsassets.panda.org/downloads/embargoed_navigating_ocean_risk_value_at_risk_in_the_global_blue_economy_oct21.pdf

What types of investments are needed?

The transition to a low-carbon economy requires long-term, large investments (e.g., in infrastructure and technology), i.e., “patient finance” which may not be available if the local credit market is not properly capitalized.³⁴

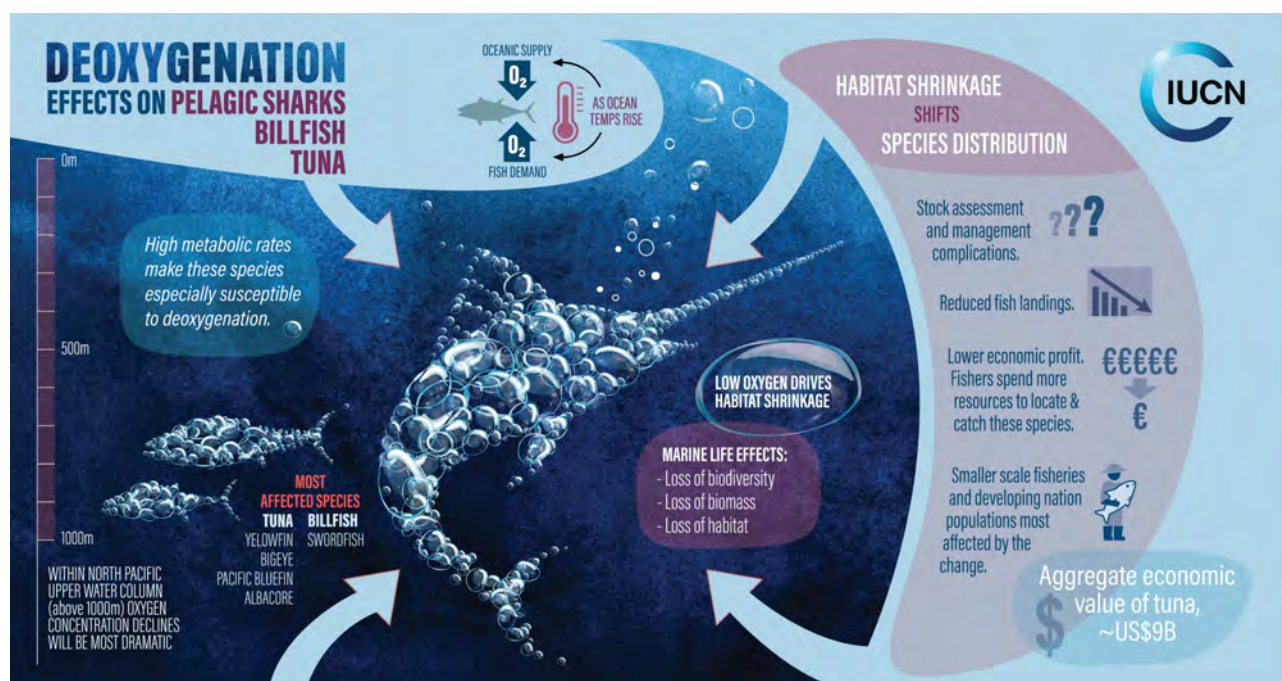
Over 80% of investments still come from the public sector, but public financial flows alone cannot meet the current investment need for financing necessary conservation efforts at scale and over the long term.³⁵ This requires private and blended finance approaches³⁶.

Whilst public budget allocations, tourism fees, and donor-supported conservation trust funds have commonly been deployed as financial mechanisms for funding marine protection we now need to rethink fundamentally our relationship with the marine realm in the context of wide-ranging commitments to net zero and nature-positive. Leading ocean states such as the Seychelles have already designated 30% of its waters as MPAs. Yet they need more solid funding structures to achieve wider NDC ambitions such as protection of 100% of seagrass beds as both climate and biodiversity solution, based on financing models that engage

both international carbon investors and local stakeholders in ocean conservation³⁷.

Any ocean-climate finance approach needs to be embedded in good governance, appropriate regulation, based on connectivity science³⁸, abolition of destructive subsidies and adequate pricing. Only then can they deliver better ocean-climate outcomes. This would help accelerate the channeling of additional private sector financial contributions for ocean conservation³⁹. Success will require addressing two main barriers to securing commercial investments for NbS, namely i) high risks and ii) low, unsteady or long-term revenues⁴⁰.

Protecting at least 30% of the global ocean through MPAs could help to create 1 million jobs, sustain fish catch worth USD70–80 billion/year and provide ecosystem services with a gross value of roughly USD4.5–6.7 trillion/year⁴¹.



34 Monasterolo, I, Mandel, A, Battiston, S et al (2022) The Role of Green Financial Sector Initiatives in the Low-Carbon Transition :A Theory of Change . World Bank Policy Research Working Paper 10181

35 United Nations Environment Programme, the World Economic Forum, the Economics of Land Degradation & Vivid Economics. (2021). State of Finance for Nature. Retrieved from <https://www.unep.org/resources/state-finance-nature>

36 Earth Security. (2021). The Blended Finance Playbook for Nature Based Solutions. Retrieved from <https://earthsecurity.org/report/the-blended-finance-playbook-for-nature-based-solutions/>

37 [https://seycat.org/seycat-secures-US\\$4.7-million-from-international-donors-for-sustainable-management-of-new-mpas/](https://seycat.org/seycat-secures-US$4.7-million-from-international-donors-for-sustainable-management-of-new-mpas/)

38 Dunn, D., et al. 2019. The importance of migratory connectivity for global ocean policy. Proc. of the R. Soc. Biological Sciences. <https://doi.org/10.1098/rspb.2019.1472>.

39 Baralon, J., Marks, D., Dieterich, U., Hinojosa, G., Mallin, C., Stadelmann, M., . . . Tobin de la Puente, J. (2021). Conservation Finance 2021. An Unfolding Opportunity. . Coalition for Private Investment in Conservation.

40 WWF/ South Pole Report (2022) Common success factors for bankable nature-based solutions

41 UNEP-WCMC and IUCN. (2016). Protected planet report 2016. UNEP-WCMC and IUCN: Cambridge UK and Gland, Switzerland.

Climate clubs and partnerships for marine protection

Multi-stakeholder partnerships⁴², gathering finance, tech, conservation, philanthropies and governments actors, could contribute funding, ideas and skills and use formats such as advanced market commitments (AMC), matching funds⁴³, and blue bonds⁴⁴, delivering effective funding to multiple projects.

Investing in data and AI

Tools and Technologies (such as remote sensing via satellites, subsea floating devices and SMART sub-

sea cables⁴⁵ and eDNA analysis represent multiple means to monitor the ocean, collect important big data, enforce protected areas and deliver sea basin approaches to integrated observing systems) can be used to help analyse future climate change impacts⁴⁶.

Applying those can improve the effectiveness of area-based measures⁴⁷ in the ocean. This requires a “coalition of the willing” such as the climate clubs proposed by the German G7⁴⁸. Different organisations can play a role in facilitating such partnerships. MDBs are already committed to increase funding for a joint approach through the “Finance in Common” initiative.⁴⁹

MARINE HEATWAVES

MHW are extended periods of regional ocean warming. They have major impacts on marine life and human society.

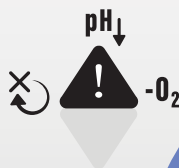
EXTREME WEATHER

Warm waters increase tropical storms and hurricanes



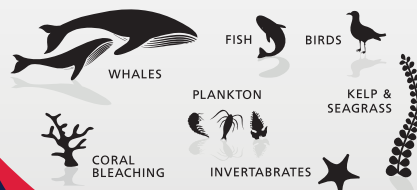
INCREASED OCEAN STRESSORS

- Stratification
- Acidification
- Deoxygenation



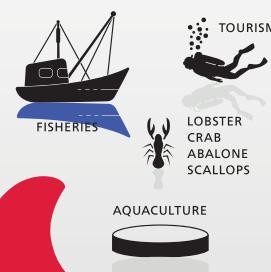
BIODIVERSITY & HABITAT LOSS

- Habitat compression
- Food web disruption
- Species migration
- Mass mortalities



ECONOMIC LOSS

Increased mortality of economically important species



10x intensity compared to pre-industrial times

50% increase in MHWs in the past 10 years

20-50 more MHWs by 2100

42 Thiele T. & Gerber L.R. (2017) Innovative financing for the High Seas. Aquatic Conserv: Mar Freshw Ecosyst.; 27(S1):89–99. <https://doi.org/10.1002/aqc.2794>

43 For the use of AMC in other sectors see eg <https://www.gavi.org/investing-gavi/innovative-financing>

44 Roth, N, Thiele, T & von Unger, M (2019) Blue Bonds: Financing Resilience of Coastal Ecosystems: A technical guideline prepared for IUCN GMPP

45 Howe, BM et al (2022) SMART Subsea Cables for Observing the Earth and Ocean, Mitigating Environmental Hazards, and Supporting the Blue Economy. Review, Front. Earth Sci. <https://doi.org/10.3389/feart.2021.775544>

46 Visalli, M.E. et al. (2020) Data-driven approach for highlighting priority areas for protection in marine areas beyond national jurisdiction Marine Policy Volume 122, 103927

47 Johnson, D, Ferreira, MA and Kenchington, E (2018) Climate change is likely to severely limit the effectiveness of deep-sea ABMTs in the North Atlantic, Mar Pol 87: 111-122

48 <https://www.g7germany.de/resource/blob/974430/2057926/2a7cd9f10213a481924492942dd660a1/2022-06-28-g7-climate-club-data.pdf>

49 UNDP (2022). Joint Report: The Role of Public Development Banks in Scaling Sustainable Financing. New York: UNDP

The Role of the Ocean Sustainability Bank

A dedicated multilateral ocean finance institution, an Ocean Sustainability Bank would complement the existing Green Climate Fund⁵⁰ as a pro-active provider of sustainable ocean-climate finance.

The 27th Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) needs to secure significant new global commitments to large-scale climate finance. The G7 Ocean Deal⁵¹, drawing on the range of ocean-climate processes already initiated⁵², points towards addressing the financing gaps⁵³ identified in the UNFCCC USD100 billion Delivery Plan⁵⁴ through a targeted ocean finance effort.

By addressing the financing challenges of marine protection, as well as delivering ocean project finance to support coastal resilience solutions and blue infrastructure⁵⁵, such an institution offers the most dynamic pathway to support rapid deployment of ocean-climate solutions. In line with

the ambitions of both the Paris Agreement and the upcoming Post-2020 Biodiversity Framework, we urgently need to address the conservation and restoration of coastal and marine ecosystems globally⁵⁶. Developing capacity to finance effectively the actions required to address the multiple drivers of climate change in the marine area⁵⁷ requires both funding and robust governance policies that account for future ocean conditions⁵⁸. **The Ocean Sustainability Bank will form a key part of the new finance architecture.**

An early commitment to significant ocean finance investment will play an important role in helping to deliver on the ambition of the Paris Agreement and is a key component of just finance for nature and people⁵⁹.



50 The Green Climate Fund: <https://www.greenclimate.fund>

51 De Sanctis, C., Lamy, P., Letta, E., Pons, G., Pons, J-F, Mueller, M., Sack, K., Teleki, K., Thiele, T., Waite, AM (2022) Delivering a Sea - Change: A G7 Ocean Finance Deal. ORRAA/ Europe Jacques Delors G7 Policy Brief <https://www.europejacquesdelors.eu/publications/europe-jacques-delors-institute--orraa-launch-report>

52 Options for strengthening action on the ocean and coasts under the UNFCCC October 2022

53 <https://www.oecd.org/climate-change/finance-usd-100-billion-goal/aggregate-trends-of-climate-finance-provided-and-mobilised-by-developed-countries-in-2013-2020.pdf>

54 Delivery Plan on the US\$100 billion goal presented by Canada and Germany to UNFCCC COP26 <https://ukcop26.org/wp-content/uploads/2021/10/Climate-Finance-Delivery-Plan-1.pdf>

55 Thiele, T et al. (2021). "MDB Engagement: Mainstreaming Blue Nature-based Solutions into Infrastructure Finance". Report by Silvestrum Climate Associates

56 Duarte, C. M., S. Agusti, E. Barbier, G. L. et al. (2020), 'Rebuilding Marine Life', Nature, 580(7801), 39–51.

57 Sumaila, U.R. et al (2021) Financing a sustainable ocean economy. Nature Comms <https://www.nature.com/articles/s41467-021-23168-y.pdf>

58 Nicol S et al (2022) Ocean Futures for the World's Largest Yellowfin Tuna Population Under the Combined Effects of Ocean Warming and Acidification. Front. Mar. Sci. 9:816772. doi: 10.3389/fmars.2022.816772

59 Muller S and Robins N (2022) Just Nature: How finance can support a just transition at the interface of action on climate and biodiversity. London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science.



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