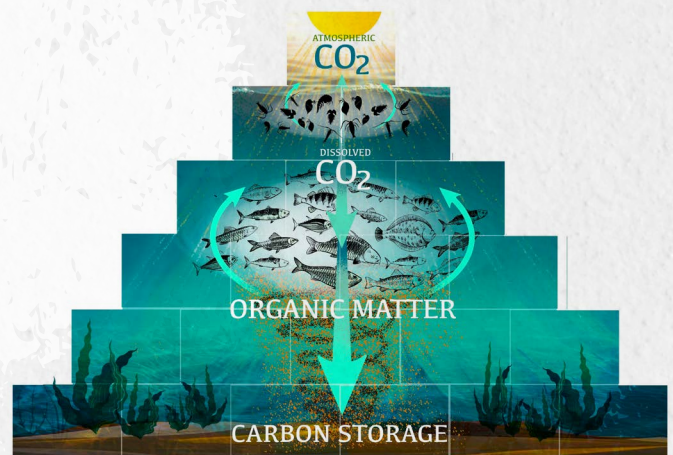


The ocean is the largest store of carbon on the planet,<sup>1</sup> and without it, the Earth would be 35 degrees hotter.<sup>2</sup> Fish are keystones of the ocean's biological pump, the system constantly at work capturing and storing excess carbon from the atmosphere<sup>3</sup> and protecting us from the worst impacts of climate change. That's why the protection of fish and their habitats as natural carbon engineers should be mainstreamed within the UNFCCC.

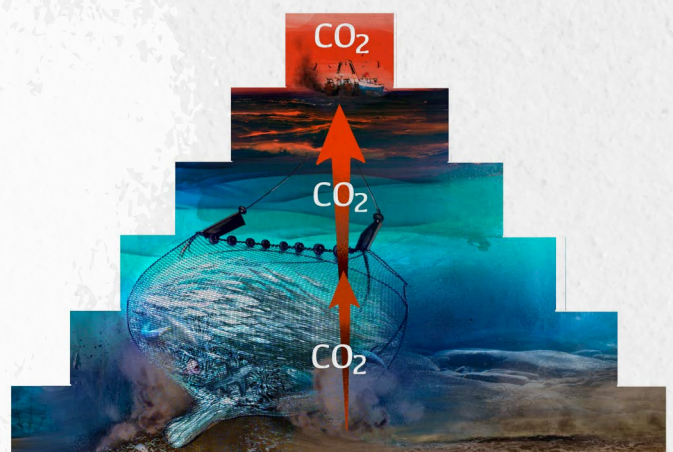
### THE OCEAN BIOLOGICAL PUMP: ITS MORE THAN JUST CHEMISTRY

The ocean's absorption of carbon and heat depends on more than just a physical-chemical process. The biological pump is the engine of the ocean, fuelled by billions of fish and marine animals. Every day, the wildlife of the ocean interacts as part of this complex system, capturing much of the excess carbon in our atmosphere, and enabling the ocean to hold onto and store it. This daily process includes the largest migration on Earth, as plankton dive from the surface of the sea to the deep; it involves the carbon-sinking powers of whale and fish faeces; and includes the biogeochemical cycling of countless fish. Scientists estimate that fish contribute to 16% of total ocean carbon flux.<sup>4</sup>



### BURNING UP AND BREAKING DOWN THE BIOLOGICAL PUMP

The annual extraction of around 80 million tonnes of fish worldwide<sup>5</sup> removes significant amounts of "blue carbon" from the ocean, releasing it into the atmosphere.<sup>6</sup> This has almost halved fish's biogeochemical impact on the ocean in the last century,<sup>7</sup> significantly weakening its capacity for climate mitigation.





The carbon stored by the top layer of marine sediments is nearly double the amount contained in all terrestrial surface soils.<sup>8</sup> However every year indiscriminate trawling of the seabed disturbs and resuspends carbon from the seafloor. More evidence is urgently needed to accurately quantify this impact on seabed carbon and to incorporate it into global seabed management.<sup>9</sup>

In addition, the most ecologically destructive fishing vessels also contribute the most emissions because they burn the most fuel; the EU fishing fleet alone accounts for nearly 7.3 million tons of CO<sub>2</sub> emissions per year - all of the fuel is subsidised.<sup>10</sup>

## GOOD FISHERIES MANAGEMENT IS GOOD CARBON MANAGEMENT

We urgently need to protect the ocean carbon system so that fish and marine animals can continue to capture, sequester and store carbon. Ecosystem-based fisheries management can achieve this by restoring fish populations, conserving food webs, and prohibiting practices which damage seabeds and ecosystems, while recognising that all fish are carbon engineers.

## OPPORTUNITIES FOR RAPID UNFCCC OCEAN-CLIMATE ACTION

Unless urgent and comprehensive action is taken, we are heading towards societal collapse as a result of breaching multiple planetary boundaries.<sup>11</sup> Restoring fish populations would play a critical role in maintaining the ocean's considerable potential to deliver climate action, while delivering multiple co-benefits. Our Fish urges Parties to:

- **List and implement ecosystem based fisheries management as carbon management** in their NDCS, by minimising carbon and ecosystem impacts of fishing.
- **Remove fuel tax subsidies that fuel overfishing and climate breakdown**
- **Ensure that the annual Ocean & Climate Change Dialogue develops concrete, action-oriented goals that will support countries** to deliver ocean-climate action such as managing fisheries sustainably.
- **Recognise the outcomes of the Ocean & Climate Change Dialogue 2022** in the overarching decision, and support mainstreaming ocean-climate action within the UNFCCC and other UN bodies.
- **Increase knowledge, capacity and funding for ocean-climate action**, including broadening the blue carbon accounting system to include fish.
- **Recognise and incorporate ocean-based climate action** as reflected in the 2022 UN Ocean Conference and Political Declaration.<sup>12</sup>

[www.ourfish.eu](http://www.ourfish.eu)

 [our\\_fish](#)  [ourfish](#)



1 - Sala, E., Mayorga, J., Bradley, D. et al. (2021). Protecting the global ocean for biodiversity, food and climate. *Nature* 592. <https://doi.org/10.1038/s41586-021-03371-z>

2 - Laffoley, D. & Baxter, J. M. (editors). 2016. Explaining ocean warming: Causes, scale, effects and consequences. Full report. Gland, Switzerland: IUCN. 456 pp. [https://portals.iucn.org/library/sites/library/files/documents/2016-046\\_0.pdf](https://portals.iucn.org/library/sites/library/files/documents/2016-046_0.pdf)

3 - SA Saba, G.K., Burd, A.B., Dunne, J.P. et al. (2021). Toward a better understanding of fish-based contribution to ocean carbon flux. *Limnology and Oceanography*, 66. <https://doi.org/10.1002/lno.11709>

4 - Ibid

5 - UN World Ocean Assessment 2021, Vol II, p217.

6 - Mariani, G., Cheung, W.W.L., Lyet, A. et al. (2020). Let more big fish sink: Fisheries prevent blue carbon sequestration—half in unprofitable areas. *Science Advances*, 6. <https://doi.org/10.1126/sciadv.abb4848>

7 - Bianchi, D. et al. (2021). Estimating global biomass and biogeochemical cycling of marine fish with and without fishing. *Sci. Adv.* 2021. 7. <https://www.science.org/doi/epdf/10.1126/sciadv.abd7554>

8 - Atwood, T.B., Witt, A., Mayorga, J. et al. (2020). Global Patterns in Marine Sediment Carbon Stocks. *Frontiers in Marine Science*, 7. <https://doi.org/10.3389/fmars.2020.00165>

9 - Epstein, G. et al. (2021) The impact of mobile demersal fishing on carbon storage in seabed sediments. *Global Change Biology*, Vol 28, Issue 9. <https://doi.org/10.1111/gcb.16105>

10 - Our Fish (2021). The Fishing Industry's Financial Gains Due To Fuel Tax Reductions For The Past 10 Years. A selection of cases within European fishing fleets.

11 - United Nations Office for Disaster Risk Reduction (2022). Global Assessment Report on Disaster Risk Reduction 2022: Our World at Risk: Transforming Governance for a Resilient Future. Geneva. ISBN: 9789212320281

12 - 2022 United Nations Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development Lisbon, 27 June–1 July 2022.