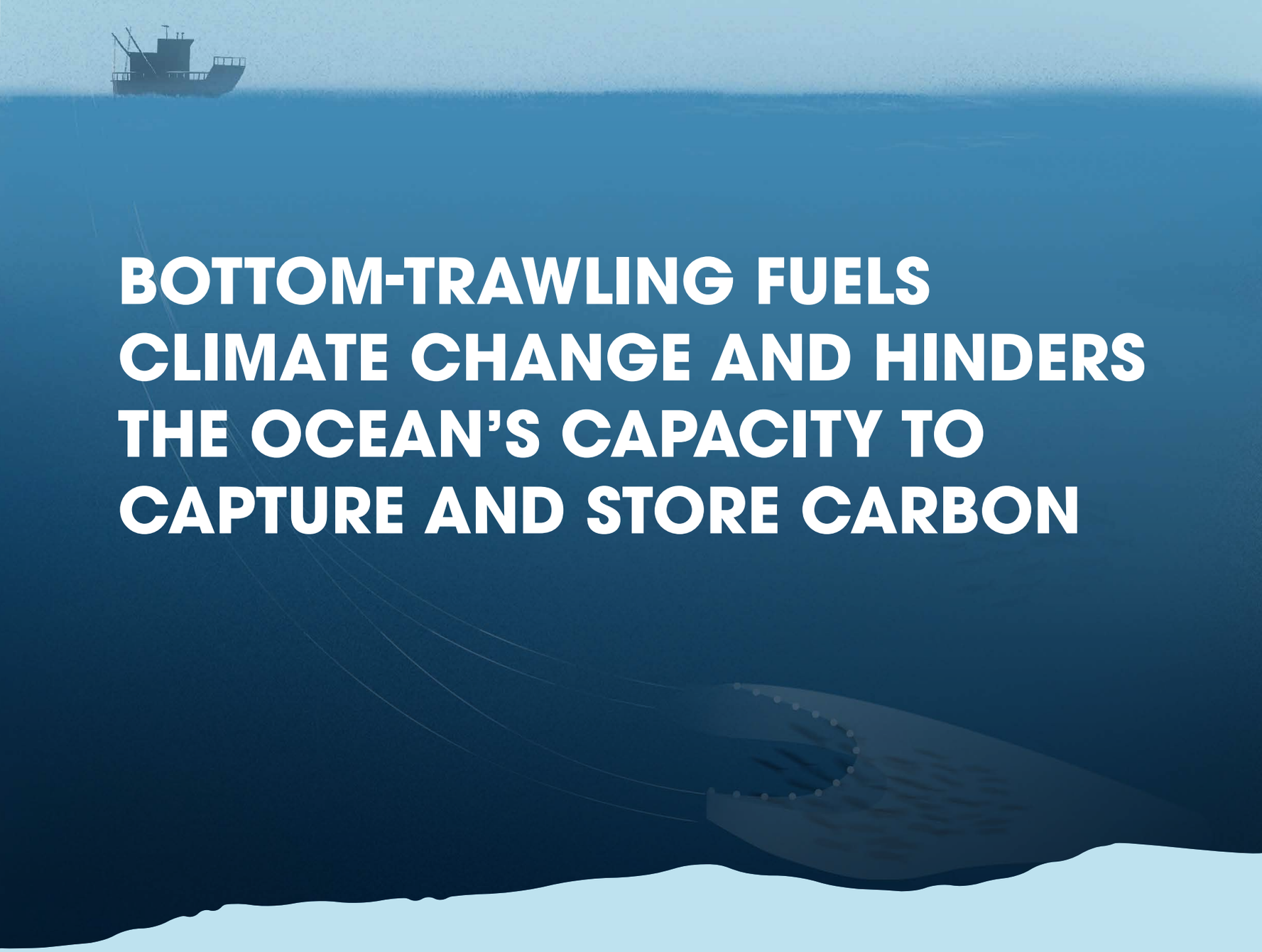
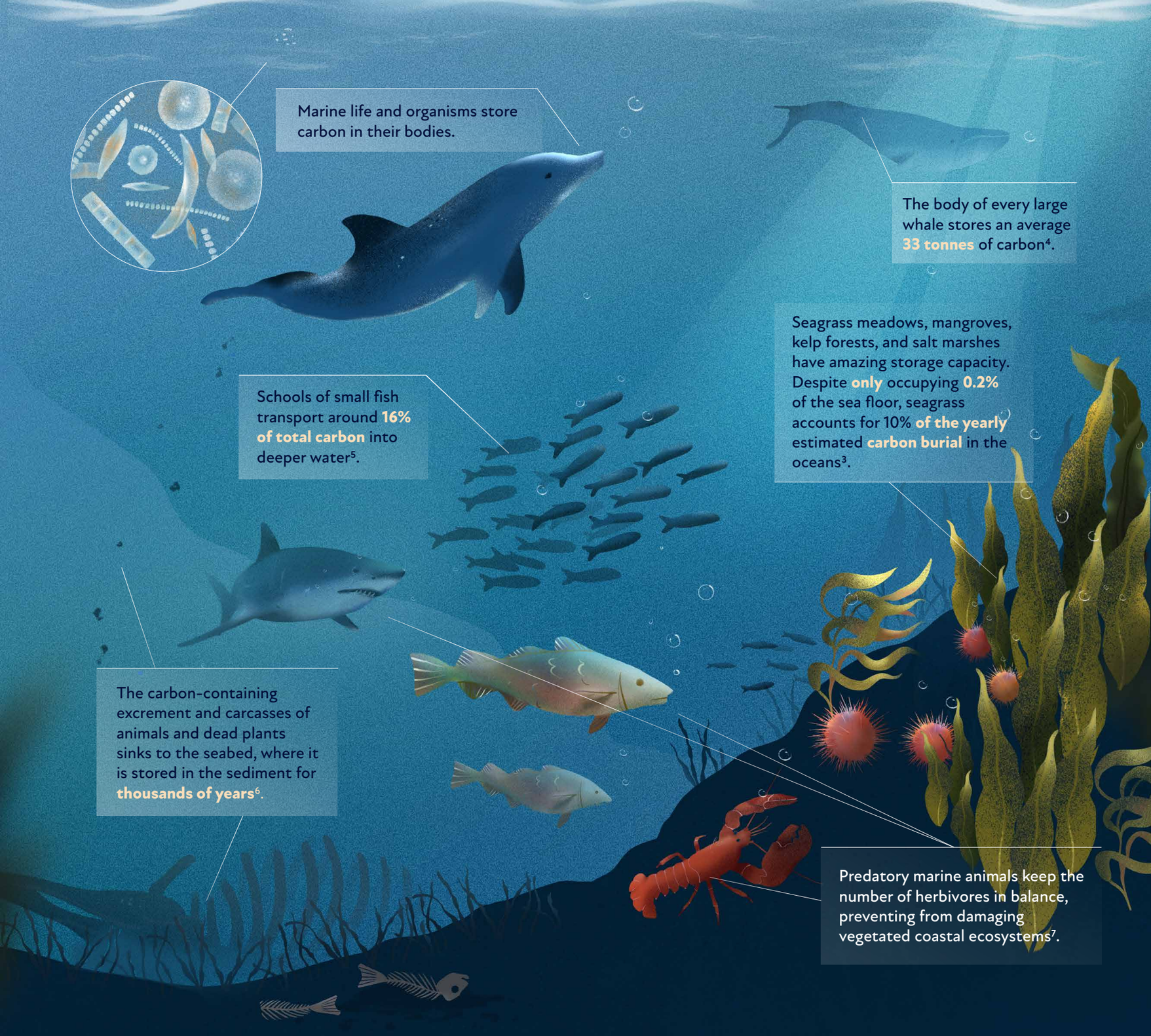


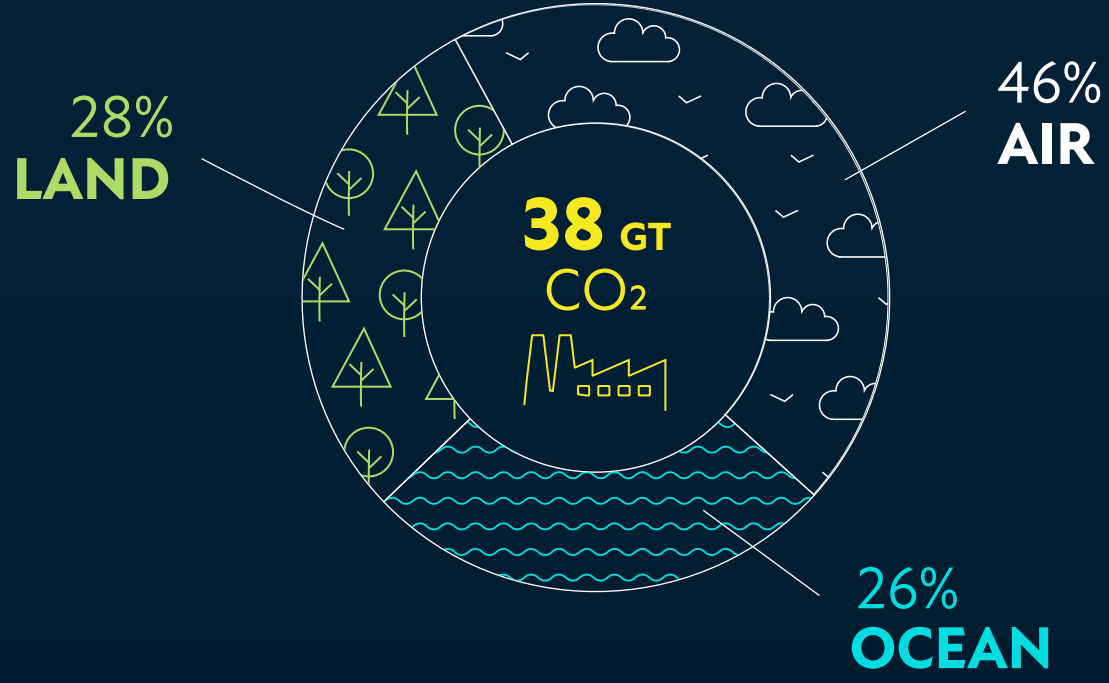
BOTTOM-TRAWLING FUELS CLIMATE CHANGE AND HINDERS THE OCEAN'S CAPACITY TO CAPTURE AND STORE CARBON

The carbon cycle and the ocean's role in mitigating climate change

- The ocean absorbs an average of one million tonnes of CO_2 per hour[1]
- The ocean removes one-quarter of the CO_2 emitted by anthropogenic activity[2]

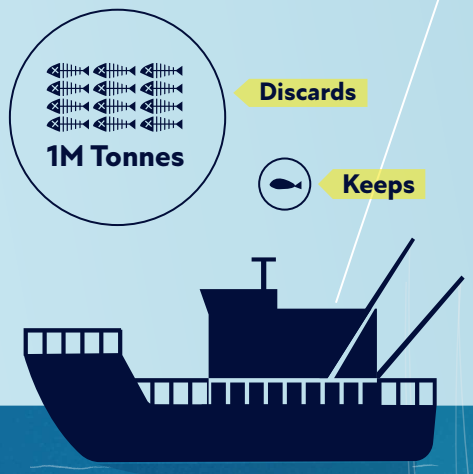


The marine carbon cycle and its interconnections make the ocean one of our largest natural carbon sinks. Humans emit 38 GT of CO_2 each year, of which 46% remains in the air, 26% is sequestered by the ocean, and 28% is captured by the land[8]



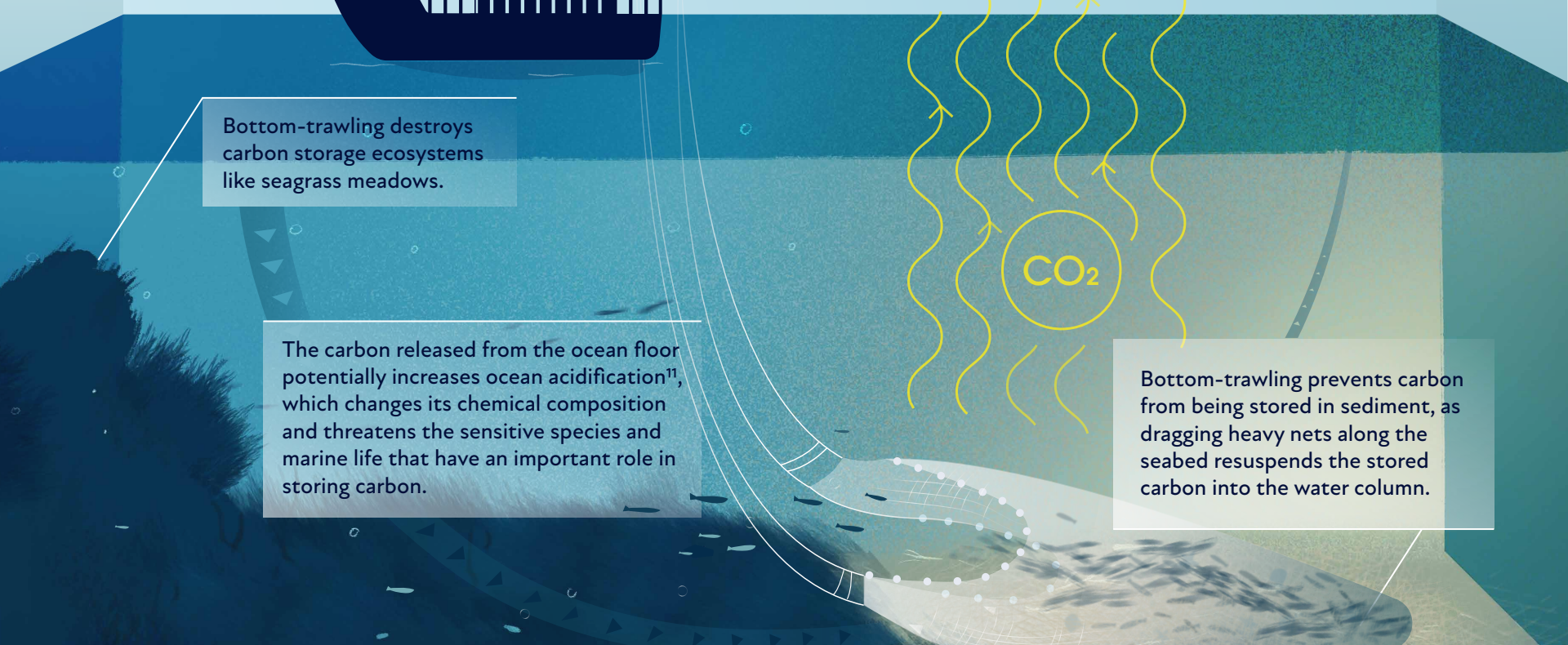
Bottom-trawling impacts the climate

Bottom trawling is the most unselective fishing gear and is responsible for **93.2% of EU discards**[9]. 1 million tonnes of marine life was discarded by bottom trawlers in the EU between 2015-19. Removing this important biomass compromises the ocean's role in storing carbon.



The carbon released from the seabed in the water column as a result of bottom-trawling may return into the atmosphere[10], directly exacerbating climate change.

Bottom-trawling destroys carbon storage ecosystems like seagrass meadows.

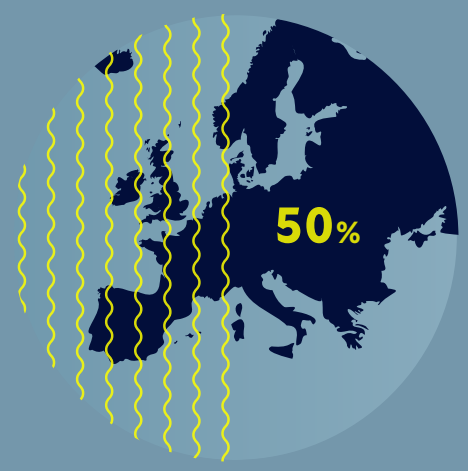


The carbon released from the ocean floor potentially increases ocean acidification[11], which changes its chemical composition and threatens the sensitive species and marine life that have an important role in storing carbon.

Bottom-trawling prevents carbon from being stored in sediment, as dragging heavy nets along the seabed resuspends the stored carbon into the water column.

Bottom-trawling vessels emit three times more CO_2 than non-trawlers[12], directly worsening climate change.

European waters are the most trawled in the world, with 50% regularly impacted compared to a global average of 14% [13].



Scientists recommend prioritising conservation measures in the EU, particularly in the North-East Atlantic, due to its high carbon-sinking capacity[14].

Policy solutions to achieve the ocean's climate mitigation potential

Phase out bottom-trawling, starting with an immediate ban in EU coastal areas and Marine Protected Areas.

Eliminate bycatch of sensitive species.

Develop an Ecosystem and Climate Impact Assessment process for all EU fisheries and fleets, to ensure that annual setting of fishing opportunities incorporates climate and ecosystem considerations.

Evaluate the impact of fishing activity on the carbon sequestration potential of fish populations and seabed/habitats, and identify low and high greenhouse gas-emitting parts of the fleet.

Allocate quota to fleet segments that have no impact on the seabed, avoid bycatch of sensitive species, are low carbon emitters and provide most social benefits: the small-scale low-impact fleet.

Where the use of gears cannot be low impact, eliminate overcapacity using environmental and social criteria, ensuring that only the most sustainable vessels remain in the fleet.

Phase-out fuel tax exemptions and other harmful subsidies.

Redirect subsidies to training/education programmes promoting low-impact fisheries or diversification schemes.

2022 | Illustration: Marina Astudillo

[1] Feely et al., 2008
[2] Friedlingstein et al., 2021
[3] Fourqurean et al., 2012
[4] Chami et al., 2019
[5] Saba et al., 2021
[6] Atwood et al., 2020
[7] Atwood et al., 2020
[8] Friedlingstein et al., 2021, Atwood et al., 2015
[9] 2015–2019 catch-composition dataset (STECF 2020)
[10] Cavan & Hill, 2021, Hilmi et al. 2021, Sala et al. 2021
[11] Epstein et al., 2022
[12] Clark & Tilman ,2017
[13] Amoroso et al. 2018
[14] Cavan & Hill, 2021

Full sources at:

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