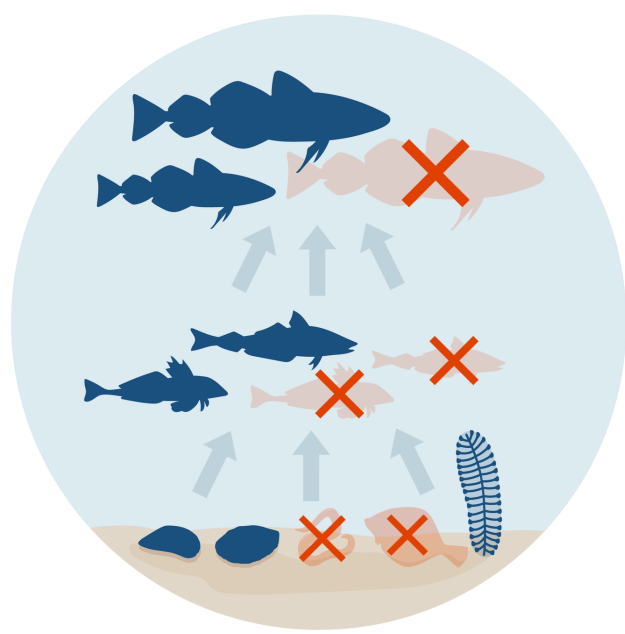


SUMMARY AND RECOMMENDATIONS FROM REPORT

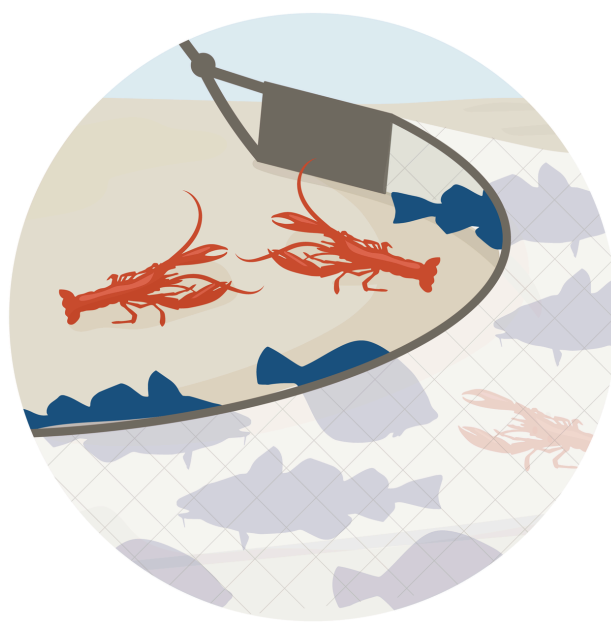
Vision for a fishery with less environmental impact

Fishing with bottom-towed fishing gear puts significant pressure on Denmark's marine environment and has harmful effects on the seabed and marine ecosystems. Therefore, a shift towards a more environmentally sustainable and future-oriented fishery is needed. To achieve this, **politicians must set ambitious goals** for the transition of the fishing industry, while also establishing framework conditions conducive to supporting environmentally and economically sustainable commercial fisheries.

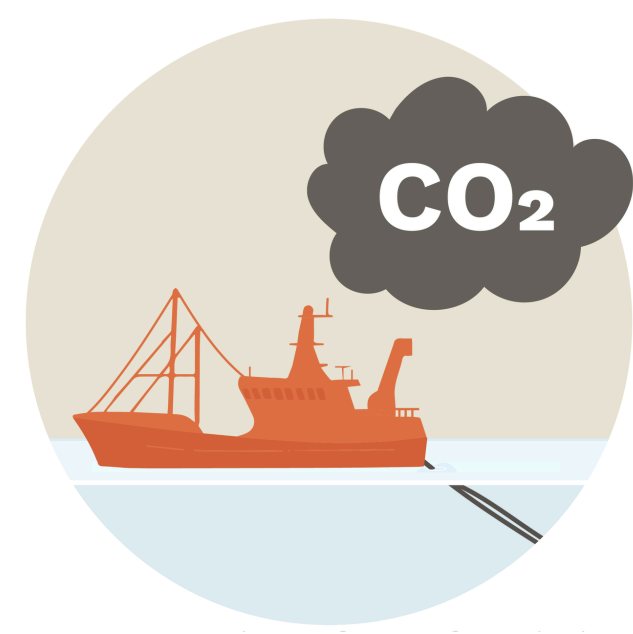
→ Read the full report (in Danish) at taenketanken.dk/publikationer



BENTHIC ANIMALS are one of the first links in the marine food web. Each time bottom-towed gear passes, 3-20% of the seabed fauna disappear. This leads to a reduced food base for fish and other organisms in the food chain.



BYCATCH: Bottom-towed fishing has a high proportion of unwanted bycatch of fish and shellfish in relation to the total catch. Unwanted bycatch has negative consequences for the marine environment and holds no value to the fishery.



CLIMATE IMPACT in the majority of the fisheries with bottom-towed gear is high in relation to the total catch, as it requires high engine power and significant fuel consumption to drag the heavy gear across the seabed.

ENVIRONMENTAL IMPACTS

Greatest impact from bottom trawling for Norway lobster and deep-water prawns

Bottom trawling for Norway lobster and deep-water prawns are the two types of Danish fisheries, using bottom-towed gear, with the most severe impact on the marine environment. This is due to the extensive area covered by the fisheries; the gear's direct contact with the seabed; their impact on benthic animals; as well as high fuel consumption and CO₂ emissions. Both types of fisheries are also characterised by a high level of unwanted bycatch of fish and shellfish.

Significant impact of bottom trawling for cod, plaice and brown shrimp

Bottom trawling for cod and plaice as well as beam trawling for plaice and brown shrimp also have a severe impact on the marine environment due to their impact on seabed fauna, high bycatch levels and significant fuel consumption.

Dredging for mussels and oysters has a significant impact, but only in specific areas

Dredging for mussels and oysters causes a severe disturbance on the seabed. The areal extent of this fishery is small on a national scale, but its intensity is concentrated locally, primarily in the Limfjord and in some of the East Jutland fjords. Due to the short sailing distances and high concentration of fishing density, the energy efficiency is high compared to other fisheries with bottom-towed fishing gear.

Danish and Scottish seine fisheries have low impact but covers large areas

Danish and Scottish seine fisheries cover large areas, but their impact on the seabed and benthic animals is relatively small, fuel consumption is low, and bycatch is limited compared to other fisheries that use bottom-towed fishing gear.

RECOMMENDATIONS

The Ocean Institute has developed 11 recommendations for a **forward-thinking and environmentally sustainable** fishery targeting demersal fish and shellfish.

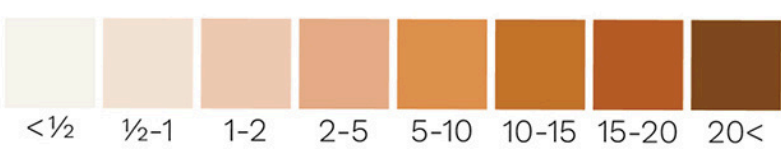
The recommendations aim to guide fisheries towards a path that is both environmentally and economically sustainable, **reducing their impact on the seabed**, its **bycatch of fish and shellfish** and its **fuel consumption**. This will help ensure a richer and healthier marine environment and a fishery with a lower climate impact than today.

1. Establishment of large **trawl-free areas** by 2025 in the Belt Sea, the Danish Wadden Sea and the Central Kattegat that are free from bottom-towed fishing gear (including semi-pelagic trawling).
2. By 2030, at least 30% of the Danish sea area must be designated as **effectively protected areas**, including a ban on bottom-towed fishing and other relevant human induced marine pressures.
3. Stepwise development and application of environmentally sustainable solutions with the aim of achieving a complete phase out of **bottom trawling** as soon as possible and no later than 2040.
4. Stepwise development and application of environmentally sustainable solutions with the aim of achieving a complete phase-out of **dredging** by 2035 at the latest.
5. Ban on **beam trawling** for demersal fish in the EU no later than 2035. Stepwise development and application of new solutions to minimise unwanted bycatch of coastal fish in the brown shrimp fishery.
6. Funding through a new **Green Development Scheme** from 2025 for development and investment in more environmentally sustainable fishing solutions.
7. Implementation of **fully monitored fisheries** using the best available technology as soon as possible and no later than January 2028 for large vessels and by 2030 for all vessels fishing with bottom-towed gear.
8. 80% reduction of **CO₂ emissions** from the fishing sector by 2035, compared to 1990.
9. Easier access to **development and use fishing gear** with lower environmental impact.
10. Ensuring environmentally sustainable fisheries in connection with the expansion of **offshore wind farms**.
11. Public funding for **research** to address relevant knowledge gaps.

Distribution of Danish bottom-towed fishing activities across the Danish seabed area

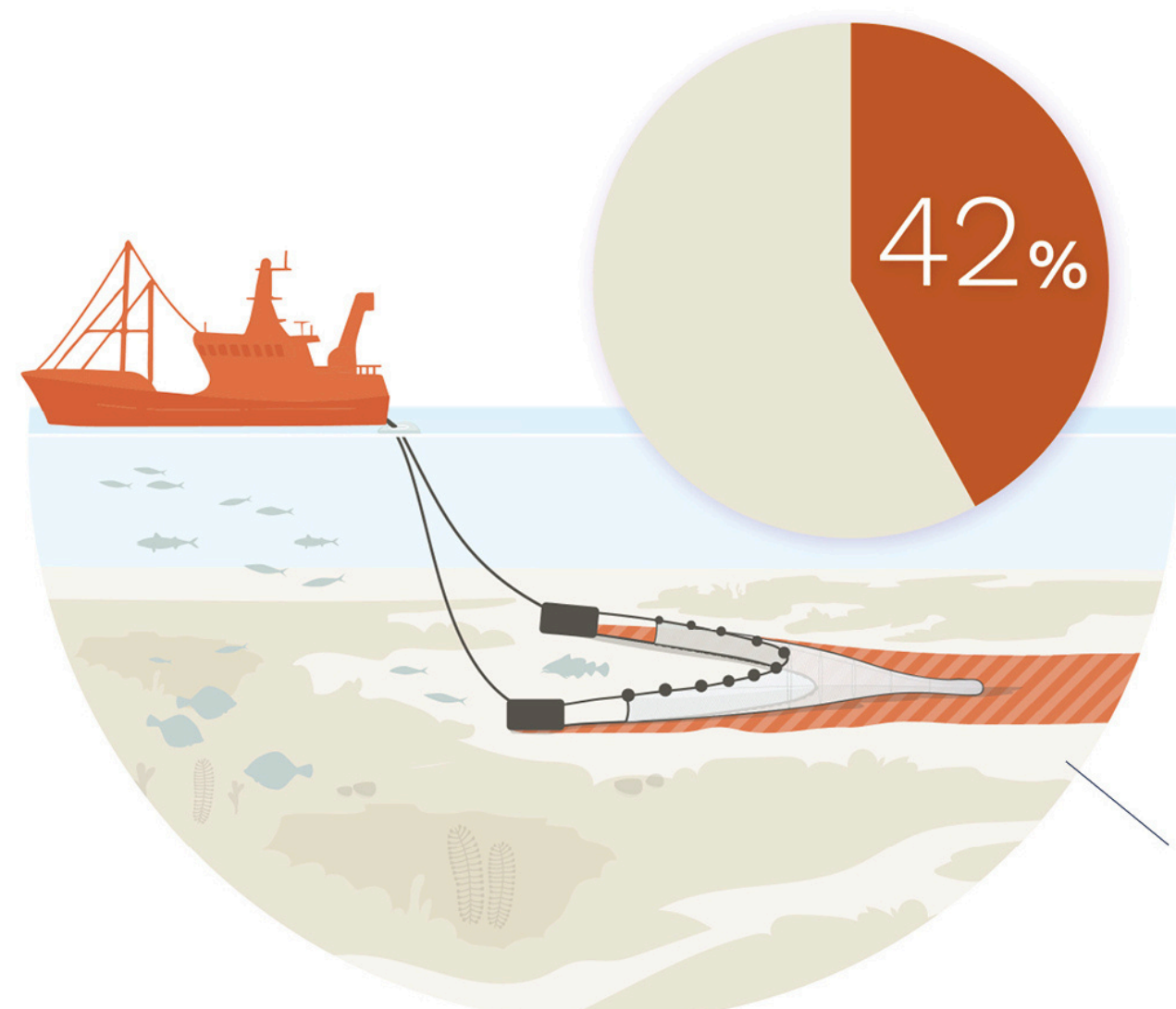
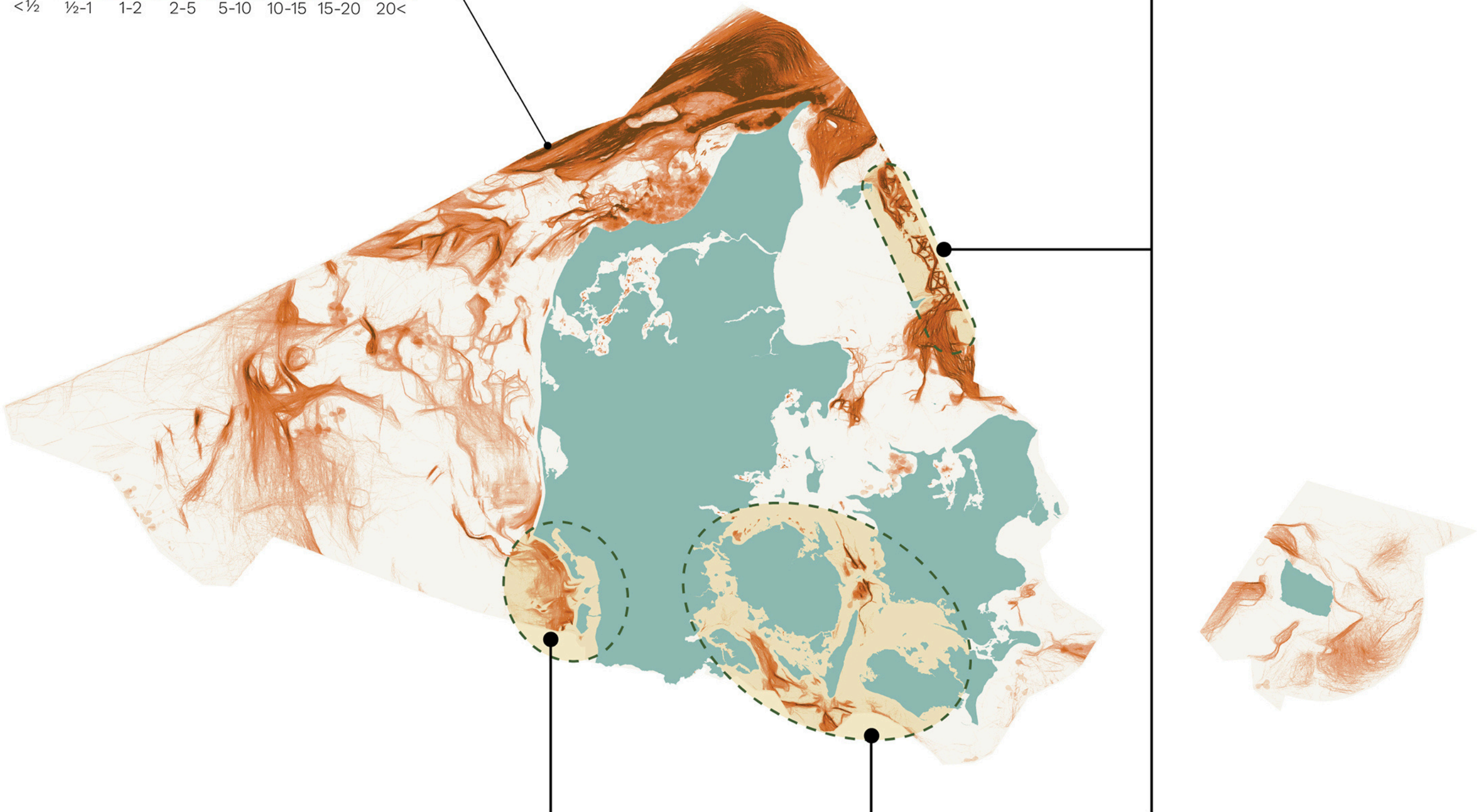
Fishing intensity

The colour gradient shows how many times per year an area has been affected by fisheries with bottom-towed gear from Danish fishing vessels (annual average for the period 2017-2022).



The Ocean Institute recommends, among other measures, the implementation of **large trawl-free areas in the Belt Sea, the Wadden Sea and the Central Kattegat.**

These areas should be closed to all bottom-towed fishing gear including bottom trawling (also semi-pelagic trawling), beam trawling, dredging and seines.



42% of the area in Danish Waters has been fished with bottom-towed fishing gear by Danish vessels at some point in the period 2017-2022.

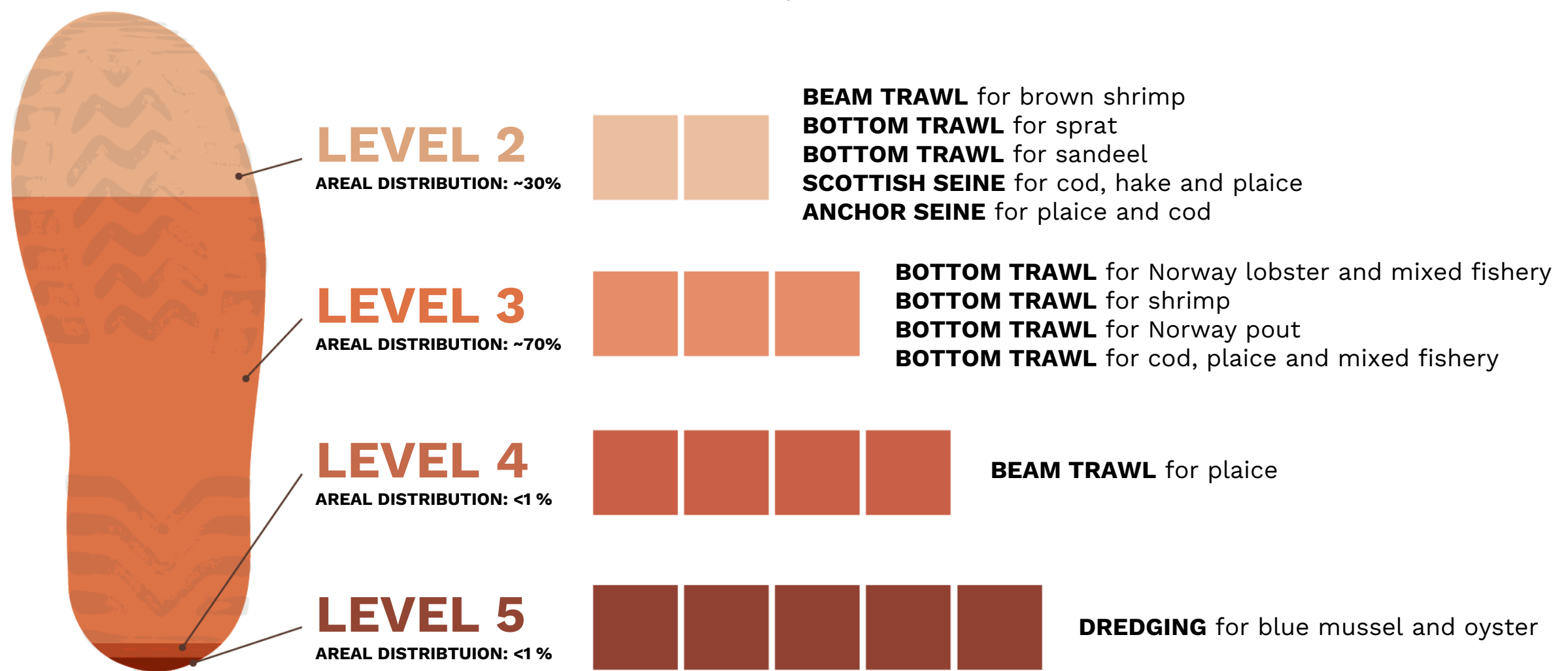
In addition to that is the areal extent of international vessels, as well as some of the small Danish vessels below 12 metres.

The drawing shows bottom trawling as the most prevalent method (areawise) among fisheries with bottom-towed fishing gear.

Areal distribution and harmful impacts on the seabed from bottom-towed activities

Areal distribution (share of footprint) of Danish fisheries using different types of bottom-towed gear, and the level of direct seabed impact (damage) caused by each gear-type in the areas where fishing is taking place.

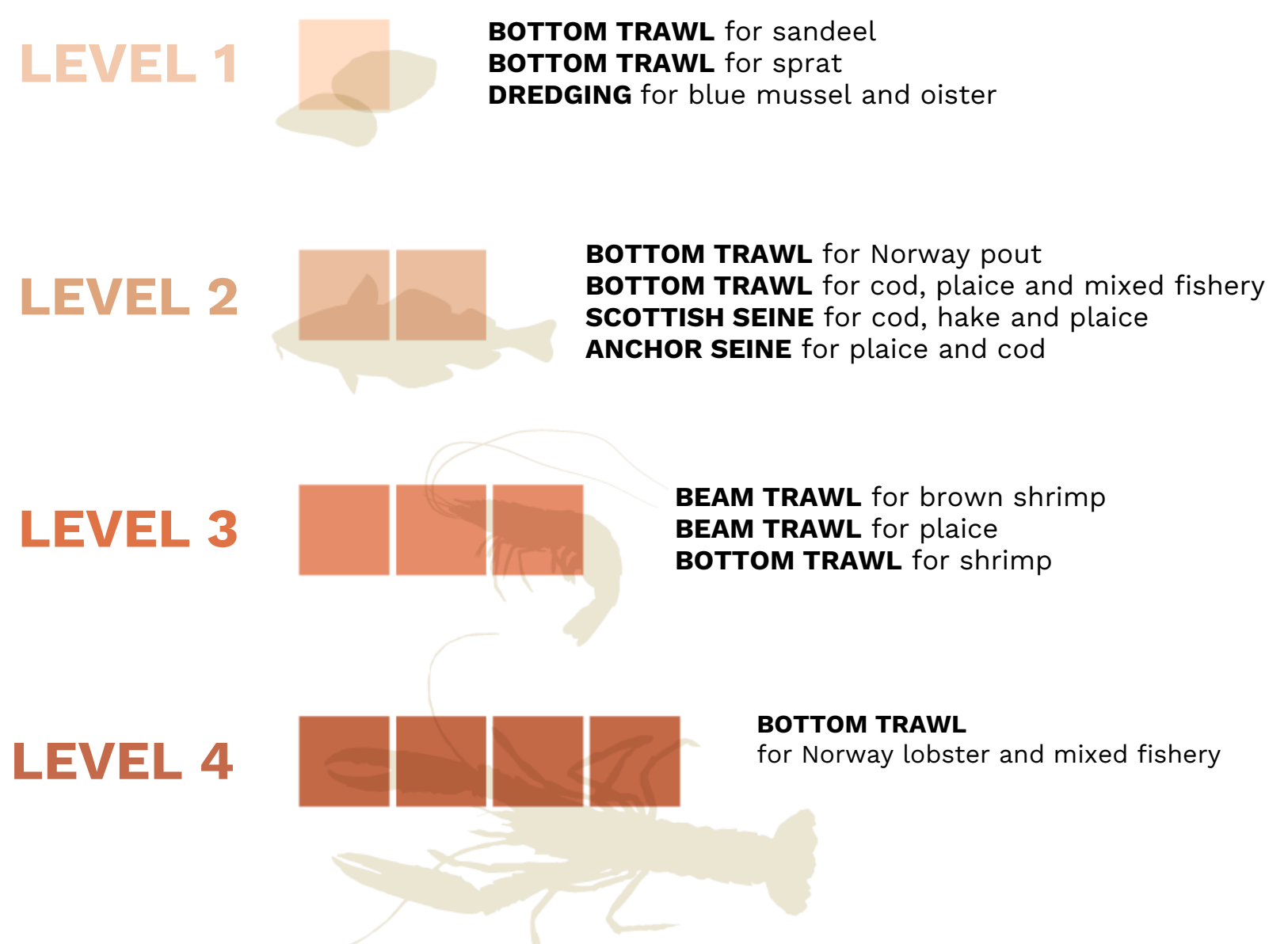
Level 5 (dark red) represents the strongest impact, while level 2 is the lightest impact (light colour). The comparison covers different types of bottom-towed gear used by Danish vessels. None of the bottom-towed gear-types correspond to level 1 impact, which applies only to passive stationary bottom gear. Pelagic fishing (e.g. for sprat) is not included.



Bycatch of fish and shellfish

Bycatch of fish and shellfish distributed by fisheries with bottom-towed gear targeting specific species.

Fisheries are ranked according to the proportion of unwanted bycatch in relation to the total catch. Targeted (desired) bycatch is not included by default. Pelagic fishing (e.g. for sprat) is not included.



The figures are developed by Ocean Institute based on data from DTU Aqua 2021 and 2023

ACTION PLAN

