

SEAFOOD & NATURE

THE BIGGEST THREAT TO MARINE BIODIVERSITY IS OVERFISHING, BUT RESPONSIBLE SEAFOOD PRODUCTION CAN WORK WITH OCEAN ECOSYSTEMS AND HAVE MINIMAL ENVIRONMENTAL IMPACTS. READ ON TO DISCOVER MORE!

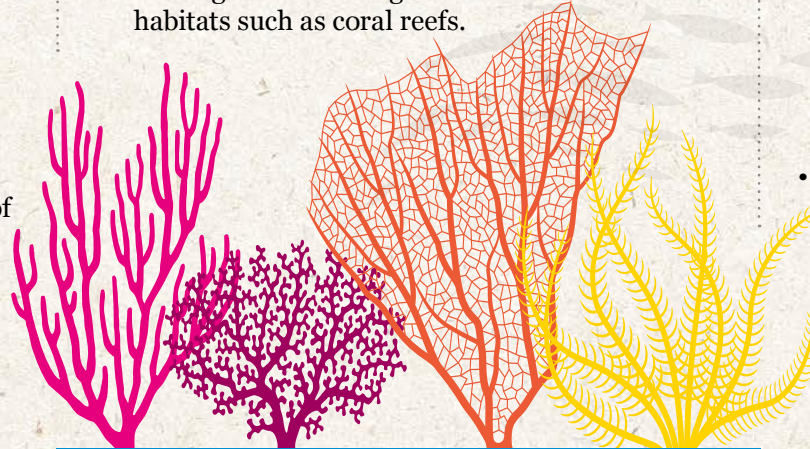
WILD CAPTURE FISHERIES

SPECIES IMPACTS

- Overfishing impacts marine ecosystems and reduces fish production.
 - Between 1974 and 2017, the percentage of stocks being fished at biologically unsustainable levels rose from 10% to 34%.
 - Tuna are important in maintaining healthy marine ecosystems, but among the most popular tuna species 33% of total stocks are overfished.
- A healthy fish population should have a range of ages, including plenty of breeding individuals.
- Annually, 20 million animals of endangered marine species become bycatch and discards.
 - Sharks, rays, marine turtles, whales, dolphins and sea birds can all be bycatch in fisheries.
- Abandoned, lost and discarded fishing gear is known as 'ghost gear'.
 - 46% of threatened species have been impacted by swallowing plastic parts of ghost gear or being entangled.

HABITAT IMPACTS

- Boat anchors and bottom contact fishing methods (e.g. trawling) physically disturb and damage seafloor habitats.
- Ghost gear can damage sensitive marine habitats such as coral reefs.



MARINE PROTECTED AREAS

Marine protected areas (MPAs) are specially designated to protect marine species and habitats.

- MPAs, when managed effectively, can reduce fishing pressure and allow fish stocks to recover.
 - Healthier stocks can benefit fishers, as the increased populations of fish 'spillover' from MPAs.
- MPAs can have varying levels of protection depending on the habitat or species they're intended to protect.
 - Fisheries operating in some European Union MPAs can decrease abundance of vulnerable sharks and rays by 69%.

DID YOU KNOW?

Food (including seafood) production contributes to almost 60% of global biodiversity loss.



THIS PROJECT
IS CO-FUNDED
BY THE
EUROPEAN UNION

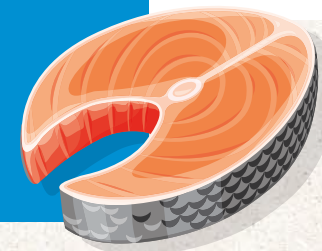


AQUACULTURE



DID YOU KNOW?

Aquaculture's contribution to seafood production increased from 9% in 1980 to over 50% in 2018.



FEED ON SEAFOOD FARMS

When fish and crustaceans are farmed there is a need to provide them with nutritionally suitable feed, including protein and oil.

- In the past a large proportion of feed was sourced from wild capture fisheries, which put pressure on marine ecosystems.
- Feed can also be made from plants like soy and rapeseed, but these ingredients can have their own issues including deforestation and freshwater use.
- Seaweed and insects have potential to be used as feed ingredients - seaweed absorbs carbon as it grows and insects can repurpose waste from food production.

INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA)

IMTA is the farming of species across different levels of the food chain (e.g. salmon, mussels, seaweed), with multiple benefits:

- Lower level species (e.g. mussels) filter excess salmon feed, reducing pollution risk.
- Seaweed can remove 12% of salmon farm nitrogen nutrients, increasing its growth rates by 61%.

POLLUTION & ESCAPES

Aquaculture can impact species and habitats surrounding the farm.

- Excess nutrients can build up around ocean farms, leading to algal blooms and low oxygen levels.
 - Reducing the number/density of farms in one area can help to avoid excess nutrient build up.
 - Closed circulation systems reuse water, ensuring waste is treated and so reducing pollution.
- Use of antibiotics and chemicals can impact wild fish and ecosystems surrounding the farm.
 - Safe vaccinations for farmed fish have virtually eliminated the need for antibiotics.
 - Cleaner fish can help to control pests like sea lice, eating and removing the lice from farmed fish and avoiding chemical use but capture of cleaner fish must be monitored to avoid threatening populations.
- Non-native fish can escape and become invasive species, competing with native fish for food and space.
 - Underwater cameras can be used to monitor cages for damage and reduce the risk of fish escaping.

LAND CONVERSION

- Mangrove deforestation has occurred to make way for e.g. shrimp farms, negatively impacting biodiversity and releasing stored carbon.
 - Conversion-free farms can make use of mangrove forests, rather than clearing them, and don't require inputs like feed.
 - This enhances biodiversity by maintaining habitats for migratory seabirds and other species.