Good Food Institute

FACT SHEET
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Protecting biodiversity by diversifying seafood

The rising global demand for seafood is stretching the production capacity of our ocean and coasts beyond sustainable limits and threatening biodiversity. Plant-based and cultivated seafood can help fill the growing gap with a significantly smaller environmental footprint.

The growing pressure on our ocean

The growing global population is fueling an ever-increasing demand for seafood. This demand is overwhelming our ocean and coasts, compromising the biodiversity upon which a functional and stable food system depends.

The scale of the biodiversity crisis

Biodiversity is declining across the globe: More than one million species are in danger of extinction,[1] and one-third of all plant and animal life alive today may be extinct by 2070.[2]

Anthropogenic pressures like habitat transformation and unsustainable fishing practices are driving an unprecedented decline in global marine biodiversity.[3]

While there have been improvements to the sustainability of wild-capture fisheries and aquaculture, we need new, diversified forms of seafood production to sustainably meet current and future demand.

Addressing the biodiversity crisis at scale

Plant-based and cultivated seafood (collectively "alternative seafood") can help fill the growing gap between supply and demand with a smaller environmental footprint.

Producing meat or seafood directly from plants or animal cells enables more efficient conversion of feed crops into final products.

This efficiency often translates to more food with fewer resources and lower environmental impact.[4]

Wildtype's cultivated salmon maki

With lower resource requirements, alternative proteins offer a unique opportunity to mitigate aquatic biodiversity loss at numerous levels:

The protection and recovery of marine species: Shifting demand to alternatives can help governments conserve and rebuild overfished stocks while also reducing bycatch and discards.[4]

Decreased habitat loss, pollutants, and land use: Alternative proteins' lower land requirements and elimination of ocean floor disruptions can steeply mitigate habitat transformation.[4]

Reduced greenhouse gas emissions and ocean acidification: Climate change exacerbates biodiversity loss. Plant-based seafood and cultivated seafood produced with renewable energy have lower emissions than most farmed and wild-capture seafood.[5]

Lower use of antibiotics: Alternative proteins eliminate or sharply reduce antibiotic use in food production, helping safeguard microbial biodiversity and slowing the development of antibiotic resistant disease.[4]

Policymakers can protect ocean biodiversity with alternative proteins

Currently, the United States has more companies and higher levels of private investment in alternative proteins than any other country in the world. However, the United States lags behind countries like Singapore and Israel in terms of public sector support for plant-based and cultivated products. Policymakers can leverage alternative proteins to help meet Sustainable Development Goals while protecting fragile ocean ecosystems and biodiversity.

Key interventions include:

1) Increasing public investment in open-access science for alternative seafood as a biodiversity and climate solution.

2) Ensuring a clear and efficient regulatory process: Alternative seafood should not be subject to regulatory requirements that exceed the norms for conventional proteins.

3) Leveling the playing field for alternative seafood producers via a fair, competitive marketplace with equitable labeling laws for all types of protein, including alternative meat and seafood.

Support from governments will be necessary to realize the potential of cultivated and plant-based seafood as accessible, affordable, and sustainable alternatives that can help stem and reverse biodiversity loss.

References

1. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. “Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services.” Zenodo (November 25, 2019): https://doi.org/10.5281/ZENODO.3553579.
2. Román-Palacios, Cristian, and John J. Wiens. “Recent Responses to Climate Change Reveal the Drivers of Species Extinction and Survival.” Proceedings of the National Academy of Sciences 117, no. 8 (February 25, 2020): 4211–17. https://doi.org/10.1073/pnas.1913007117.
3. Worm, Boris, Edward B. Barbier, Nicola Beaumont, J. Emmett Duffy, Carl Folke, Benjamin S. Halpern, Jeremy B. C. Jackson, et al. “Impacts of Biodiversity Loss on Ocean Ecosystem Services.” Science 314, no. 5800 (November 3, 2006): 787–90. https://doi.org/10.1126/science.1132294.
4. Jeans, Meghan and Sian Morgan. “New Blue Foods For Biodiversity.” The Good Food Institute (October 2023): https://gfi.org/biodiversity-whitepaper-PDF.
5. Morgan, Sian and Meghan Jeans. “Building Climate Policy Momentum for Alternative Seafood.” The Good Food Institute (October 2023): https://gfi.org/climate-whitepaper-PDF.

About GFI

The Good Food Institute is a nonprofit think tank working to make the global food system better for the planet, people, and animals. Alongside scientists, businesses, and policymakers, GFI’s teams focus on making plant-based and cultivated meat delicious, affordable, and accessible. Powered by philanthropy, GFI is an international network of organizations advancing alternative proteins as an essential solution needed to meet the world’s climate, global health, food security, and biodiversity goals. To learn more, please visit www.gfi.org.