OVERFISHING AND IUU FISHING

In 2015, fish accounted for about 17% of animal protein consumed by the global population and provided about 3.2 billion people with almost 20% of their average per capita intake (FAO, 2018). People in developing countries have a larger share of fish protein in their diets, with the highest per capita fish consumption found in small island developing states (SIDS), particularly in Oceania.

In a world heading towards 10 billion people, seafood is critical to global food security, as a source of both dietary protein and micronutrients needed in aquaculture. But scientists warn that the joint threats of global heating and overfishing are reducing fisheries productivity and threatening stock health.

The 2019 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report on global biodiversity concludes that fishing has had the greatest impact on marine biodiversity in the past 50 years (IPBES, 2019). The percentage of stocks fished at biologically unsustainable levels increased from 10% in 1974 to 33.1% in 2015 (FAO, 2018). Industrial fishing now covers 55% of the ocean (Kroodsma, 2018), and overfishing is exacerbated by widespread illegal, unreported or unregulated (IUU) fishing.

Together, overfishing and IUU threaten both a global source of food and the entire ocean ecosystem.

WHAT IS OVERFISHING?

Overfishing is the removal of fish species faster than they can replenish themselves. It is defined by FAO as "stock abundance reduced by fishing to below the level that can produce maximum sustainable yield."

According to the United Nations' Food and Agriculture Organisation (FAO), 90% of fish stocks are now either fully fished (59.9%) or overfished at biologically unsustainable levels (33.1%) (FAO, 2018). That is the highest proportion ever recorded. By contrast, the number of underfished stocks have reached the lowest levels ever recorded, rapidly declining over the past decade from 24% to just 7%.

Catches from wild fisheries peaked in 1996 at around 130 million tonnes per year and have been declining by 1 million tonnes per year since then — not because we are choosing to catch fewer fish but because they simply aren't there. According to FAO, world total marine catch was 81.2 million tonnes in 2015 and 79.3 million tonnes in 2016 (FAO, 2018).

In 2015, the Mediterranean and Black Sea had the highest percentage (62.2%) of unsustainable stocks, closely followed by the Southeast Pacific (61.5%) and Southwest Atlantic (58.8%) (FAO, 2018).

As well as driving negative impacts on biodiversity, overfishing also reduces fish production. <u>Studies have estimated</u> that rebuilding overfished stocks could increase fishery production by 16.5 million tonnes and boost the industry by US\$32 billion, which would benefit the food security, economies and wellbeing of coastal communities (Ye et al., 2013).

Bycatch – the capture of sea life while fishing for a different species – is closely tied to overfishing. It is a serious marine threat that causes the needless loss of billions of fish, along with 300,000 whales and dolphins (WWF, n.d.-a) and tens of thousands of albatross (McVeigh, 2019), and is the biggest threat to endangered sea turtles (WWF, n.d.-b).

Waste is another big problem. Catching and processing fish generates a <u>significant amount of waste</u> from both discards at sea and in on-shore processing (Archer et al., 2001). According to FAO, recently there has been a slight decrease in losses between landing and consumption, but they still account for about 27% of landed fish (FAO, 2018).

Reasons for overfishing include: harmful subsidies (e.g. tax relief on fuel); poor fisheries science; poor decision-making mechanisms; lack of precautionary management; lack of transparency; absence of high seas governance; and IUU fishing.

SPECIES DEPLETION

Overfishing is driving serious species depletion.

About <u>80% of all the top predatory fish</u> have gone from coastal areas of the North Pacific and North Atlantic (Tremblay-Boyer et al., 2011). In the last 30 years, <u>European eels</u> have experienced up to 99% decline in some regions (Correia et al., 2018); <u>Pacific bluefin tuna</u> has declined by over 97% (Nickson, 2016); and <u>Atlantic bigeye tuna</u> populations are approaching collapse (Galland, 2018).

Salmon have disappeared from many rivers on both sides of the Atlantic, and global populations of wild Atlantic salmon have dropped from 8-10 million fish in the 1970s to 3-4 million today (Atlantic Salmon Trust, n.d.).

An estimated 100 million sharks are killed every year (Worm et al., 2012) and the IPBES report highlights that almost a third of shark species are threatened. Alarming recent findings by IUCN's Shark Specialist Group classified 17 of the 58 shark species it evaluated as facing extinction (Hood, 2019).

WHAT IS ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING?

IUU fishing is an international threat that massively undermines efforts to sustainably manage fisheries. It is estimated to produce seafood worth up to \$23.5 billion each year worldwide, the equivalent of up to 20% of all wild marine fish (Agnew et al., 2009). The IPBES report puts the IUU share of the global catch as up to 33%.

IUU robs poorer countries of rich natural resources, jobs and nutrition. It threatens food security, has links with international crime and puts further pressure on already endangered species.

REFERENCES

Agnew, D. J., Pearce, J., Pramod, G., Peatman, T., Watson, R., Beddington, J. R., & Pitcher, T. J. (2009). Estimating the worldwide extent of illegal fishing. *PloS one, 4*(2), e4570. doi: 10.1371/journal.pone.0004570. Available at:

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0004570

Archer, M., Watson, R., and Denton, J.W. (2001). Fish Waste Production in the United Kingdom: Fish Waste Production in the United Kingdom. (Report No. SR537). The Sea Fish Industry Authority. Available at: https://www.seafish.org/media/Publications/SR537.pdf

Atlantic Salmon Trust. (n.d.). Europe's Largest Salmon Tracking Study Aims To Halt Species' Decline. Available at: https://atlanticsalmontrust.org/europes-largest-salmon-tracking-study-aims-to-halt-species-decline/

Correia, M. J., Costa, J. L., Antunes, C., De Leo, G., and Domingos, I. (2018). The decline in recruitment of the European eel: new insights from a 40-year-long time-series in the Minho estuary (Portugal). ICES Journal of Marine Science, 75(6), 1975-1983. Available at: academic.oup.com/icesjms/article-abstract/75/6/1975/5046594

FAO. (2018). The state of the world fisheries and aquaculture. Available at: http://www.fao.org/state-of-fisheries-aquaculture

Galland, G. (2018). Atlantic Bigeye Tuna is Approaching Collapse. The Pew Charitable Trusts, 12 November. Available at: https://www.pewtrusts.org/en/about/news-room/opinion/2018/11/12/atlantic-bigeye-tuna-is-approaching-collapse-fishery-managers-must-act-now

Hood, M. (2019). Many sharks closer to extinction than feared: Red List. *Phys Org,* 22 March. Available at: https://phys.org/news/2019-03-sharks-closer-extinction-red.html

IPBES. (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Available at: https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services

Kroodsma, D.A et al. (2018). Tracking the global footprint of fisheries. Science, 23 Feb 2018: vol. 359, issue 6378. doi: 10.1126/science.aao564. Available at: https://science.sciencemag.org/content/359/6378/904

McVeigh, K. (2019). Industrial fishing ushers the albatross closer to extinction, say researchers. *The Guardian*, 31 January. Available at:

https://www.theguardian.com/environment/2019/jan/31/industrial-fishing-ushers-albatross-closer-to-extinction-say-researchers

Nickson, A. (2016). New Science Puts Decline of Pacific Bluefin at 97.4 Percent. The Pew Charitable Trusts, 25 April. Available at: https://www.pewtrusts.org/en/research-and-analysis/articles/2016/04/25/new-science-puts-decline-of-pacific-bluefin-at-974-percent

Tremblay-Boyer, L., Gascuel, D., Watson, R., Christensen, V., and Pauly, D. (2011). Modelling the effects of fishing on the biomass of the world's oceans from 1950 to 2006. Marine Ecology Progress

Series, 442, 169-185. doi: 10.3354/meps09375. Available at: https://www.int-res.com/articles/meps oa/m442p169.pdf

Worm, B et al. (2012). Global catches, exploitation rates, and rebuilding options for sharks. Marine Policy 40(1):194-204. Available at: http://wormlab.biology.dal.ca/publication/view/worm-etal-2013-global-catches-exploitation-rates-and-rebuilding-options-for-sharks/

WWF. (n.d.-a). Catching fish, not flukes and flippers: A global effort to reduce whale and dolphin bycatch. Available at:

https://wwf.panda.org/knowledge_hub/endangered_species/cetaceans/threats/bycatch/

WWF. (n.d.-b). Protecting turtles from the threat of bycatch. Available at: https://www.worldwildlife.org/initiatives/protecting-turtles-from-the-threat-of-bycatch

Ye, Y., Cochrane, K., Bianchi, G., Willmann, R., Majkowski, J., Tandstad, M., and Carocci, F. (2013). Rebuilding global fisheries: the World Summit Goal, costs and benefits. *Fish and Fisheries, 14*(2), 174-185. doi: 10.1111/j.1467-2979.2012.00460.x. Available at: http://vu-nl.idm.oclc.org/login?url=https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-2979.2012.00460.x

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