



Jane
Goodall
Institute

Learning Resource



Commercial fishing

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Commercial fishing



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It is estimated that 260 million people worldwide are supported by marine fishing. This resource examines the fishing industry and suggests choices that consumers can take to help steer it into more sustainable practices

In this activity you and your students will:

- ▶ Learn about the jobs supported by the fishing industry across the world.
- ▶ Learn about some of the problems associated with commercial fishing and how it can be made more sustainable.
- ▶ Learn about the concept of consumer pressure.
- ▶ Carry out a survey of the fish available at a local supermarket and write to them to ask about their sourcing policies.

Fishing – a global industry

Marine fishing is a truly global industry, directly or indirectly supporting around 260 million people, 22 million of which are small-scale fishers¹. That’s a lot of people, so what are they all doing?



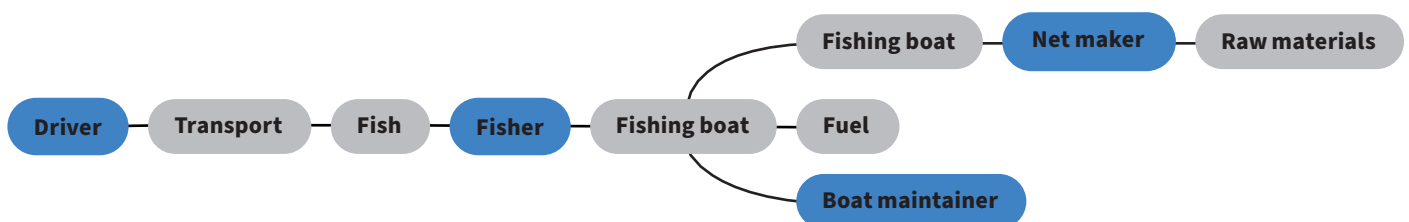
“Trawl Net Fish Sampling” by NOAA Great Lakes Environmental Research Laboratory is licensed under CC BY-SA 2.0. Via Openverse.

A fishing jobs mind map

A great way to visualise the sheer number and variety of jobs that are reliant on fishing is to make a mind map². This can either be done on the class white/blackboard or online using a tool such as MindMup (mindmup.com).

There are a lot of ways you can organise your mind map. One method would be to make bubbles of two colours, one for ‘items’ and one for ‘jobs’. Starting with the job of fisher in the centre, add bubbles for the equipment they use and the fish they catch. From those bubbles add in the jobs that are required to produce the equipment/process the catch/etc. and work out from there. We’ve made a small start in the example below with ‘items’ in grey and ‘jobs’ in blue, but you should try and cover the whole range of activities from producer to consumer.

When making your mind map, don’t forget that wild-caught fish are used in all sorts of ways, not just delivered directly to the consumer. Some fish is eaten fresh, some is processed for human consumption in cans or frozen. Other fish are processed for their oil, or (as you can learn about in our aquaculture resource) are used to feed captive fish in fish farms.



1 Contribution of marine fisheries to worldwide employment - Teh - 2013 bit.ly/3Ci8kV5

2 Unsure what a mind map is? This article should help: bit.ly/3y0IfYq

Environmental problems of fishing

Commercial fishing today causes a number of environmental problems. These include:

- ▶ **Overfishing and bycatch:** taking too much of a particular fish species out of the water can cause them to become extinct in a particular area. This can occur in two ways. *Overfishing* refers to taking too much of the target fish, an example being cod in the North Sea (you can find an in-depth article on this here: bit.ly/3V0qxB). *Bycatch* refers to accidentally taking creatures other than the target fish – some sources estimate that as much as 25% of the world's catch is bycatch!
- ▶ **Plastic waste and pollution:** many of the nets, lines and other equipment used by fishers are made of non-biodegradable plastic.

This equipment is frequently lost or abandoned at sea, contributing to the vast amount of plastic in our oceans (the UN estimated over 17 million metric tons of plastic waste entered the oceans in 2021 alone bit.ly/3Sug4cA). You can read more on Sea Shepherd here: bit.ly/3resMjt). The fuel used by fishing vessels is also often polluting for both oceans and the atmosphere.

- ▶ **Habitat destruction:** some fishing methods also contribute to habitat destruction. For example, *bottom trawling* involves dragging a weighted net over the seafloor which is extremely damaging. Living Oceans has a good overview of different fishing methods which you can read here bit.ly/3y44vAC.

Moving towards more sustainable fishing

What can be done to help steer industries like fishing into more sustainable practices?



Image by Anirnoy, CC BY-SA 4.0 <<https://creativecommons.org/licenses/by-sa/4.0/>>, via Wikimedia Commons

More sustainable fishing techniques

To make fishing more sustainable the industry needs to address each of the problem areas we looked at in the last section. Taking inspiration from more traditional fishing methods still used on a small scale around the world there are a number of things that can be done:

- ▶ **More targeted methods:** Fishing methods such as hook & line, spear fishing and cast nets reduce bycatch and avoid the habitat damage that is seen in methods like bottom trawling. They also result in less plastic being added to the oceans.
- ▶ **Seasonal fishing:** choosing which fish to catch according to the season, thus allowing populations to recover on a regular basis can greatly reduce the problems of overfishing. Read more about

this approach and more targeted fishing methods in this excellent article on National Geographic: bit.ly/3SIWlvf

- ▶ **Enforced quotas:** strictly regulating the amount of particular species which can be brought ashore and sold also plays an important role in fighting overfishing. Such quotas are difficult to negotiate and hard to enforce but there are some success stories, such as Europe's Common Fisheries Policy (<https://bit.ly/3SozZJO>)
- ▶ **Biodegradable equipment:** currently there are relatively few non-plastic options for much of the equipment required for fishing. However, a research project at the University of Portsmouth in the UK is looking to change that, aiming to produce a commercially viable biodegradable fishing net by 2023 (see bit.ly/3Rjdwwh)

Fish farming can also provide some advantages over commercial fishing, but it comes with its own set of problems, as you can read about in our aquaculture resource.

What can we do as consumers?

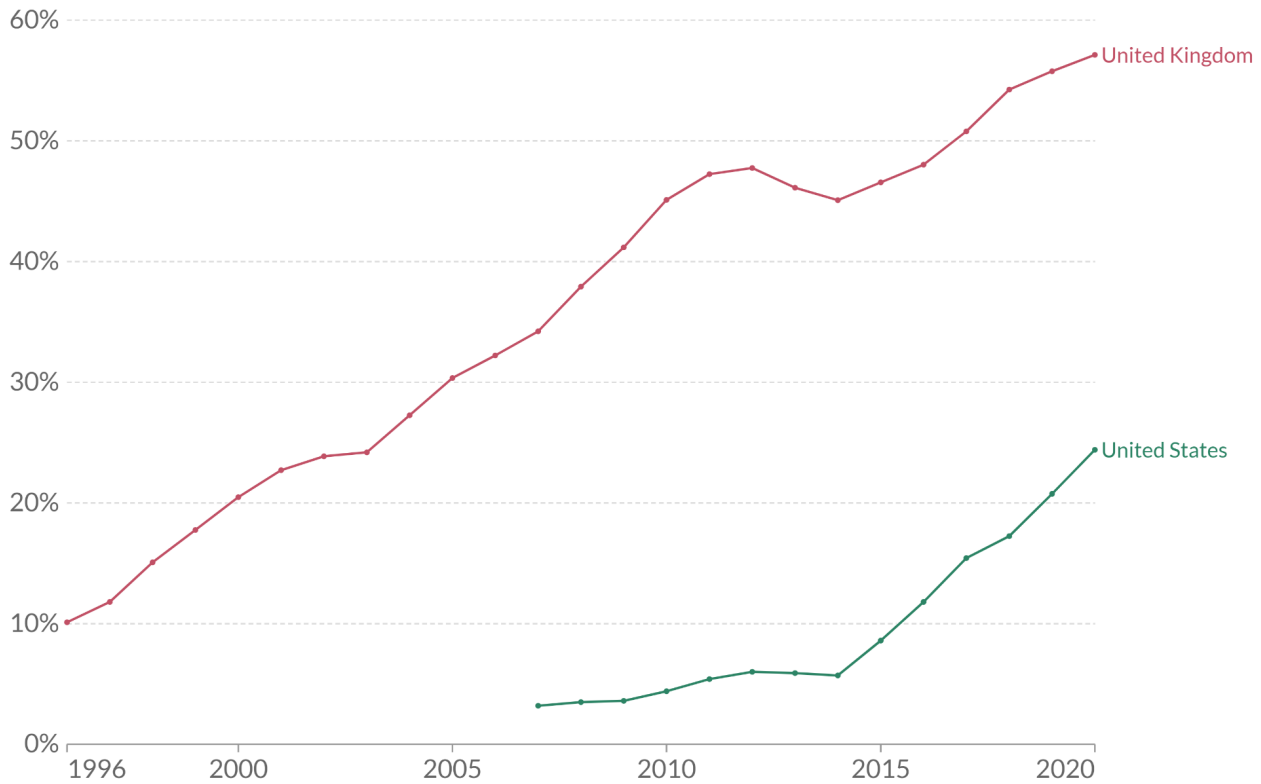
You might be forgiven for thinking that there is nothing we can do to influence the fishing industry, but that's not the case. *Consumer pressure* is real and it moves industries!



Case study: free-range eggs

Our World in Data

Share of egg production that is free-range



Source: UK DEFRA; and United States Department of Agriculture (USDA)

OurWorldInData.org/meat-production • CC BY

The percentage of eggs that are produced from free-range hens has massively increased in both the UK and the US in recent years, though the US still lags behind. This is almost entirely due to consumers demanding higher welfare standards. This kind of pressure has two effects: it influences government legislation (the worst battery-hen cages were banned in Europe in 2012 and in California in 2015) and it changes the behaviour of supermarkets and food producers. In the UK, consumer pressure has led to many supermarket chains having a 100% free-range sourcing policy for their own brand products. This change in buying habits by the supermarkets then led to increasing free-range egg production to meet demand.

Read more about this story on Hannah Ritchie's blog at bit.ly/3fpwVhU

Take action

Now you know the background it's time to take action

Inform yourself

In order to apply consumer pressure you need to be able to make informed choices. Here are two resources to help you (more can be found on the internet).

- ▶ The MSC label. The Marine Stewardship Council is a non-profit organisation which aims to set standards for sustainable fishing. Look for the blue MSC label on fish products when buying. You can also find further information about certain species on their website at msc.org
- ▶ Good Fish Guide. The Marine Conservation Society hosts a fantastic 'Good Fish Guide' on their website at mcsuk.org/goodfishguide which goes into detail on a large number of fish species. This is especially useful for species where the sustainability varies depending on catch location and catch method. It also covers farmed fish.



Public domain, via Wikimedia Commons

Find out what's available near you and apply pressure

Survey the fish products at your local supermarket. What types of fish are there? Is there enough information available to you to tell how it was caught? Any MSC labels on display?

If you have a number of different supermarket chains in your area then survey as many as possible and compare your findings. Which company stocks the most sustainable products?

Write to the head office of the supermarket(s) you surveyed with your findings and ask what their policies are when it comes to stocking and labelling sustainable fish products. Do they plan to improve this in the future?

Take personal action

Now you know what to look for and where best to shop, any fish-eating students can encourage their families to switch to more sustainable fish eating. Why not also try to replace at least some fish meals with vegetarian or vegan alternatives – here are some suggestions to get you started: bit.ly/3BTwqUR

Spread the word

Share your findings with the rest of the school in a poster, or why not write an article for the school newspaper or website?

Want to help improve this activity?

This activity is a living document! Help us by editing this activity to make it as good as possible, just use this short link (just type it into your web browser's address bar): bit.ly/3MdtRlf – full instructions are provided. Any edits that can make this resource easier to use in the classroom are very welcome, so please follow the link and make your contribution!



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JGI & DP World

The Jane Goodall Institute has partnered with DP World to support the growth of the Roots & Shoots programme. DP World are a leading provider of worldwide smart end-to-end supply chain logistics with a presence in 55 countries, enabling the flow of trade across the globe. This exciting partnership supports the creation of resources on the wider marine ecosystem as well as supporting the expansion of Roots & Shoots groups around the world. **Find out more:** bit.ly/jgi-dpw



Tell us how you got on

When your project is finished we'd love to see what you did! If you already have an account you can upload a story with images to the Jane Goodall's Roots & Shoots UAE website (find us at uae.rootsandshoots.community) to show off pictures and videos of your ships to a wider audience. If your school or youth group does not already have an account then just fill in the form on the website and we can set you up.

Keep up to date with Jane Goodall's Roots & Shoots UAE

As well as the website you can also find us on Facebook at facebook.com/RootsnShoots.ae or on Twitter as [@JaneGoodallUAE](https://twitter.com/JaneGoodallUAE)

