Module 10: Environmental Oceanography
Topic 3 Content: Overfishing Notes

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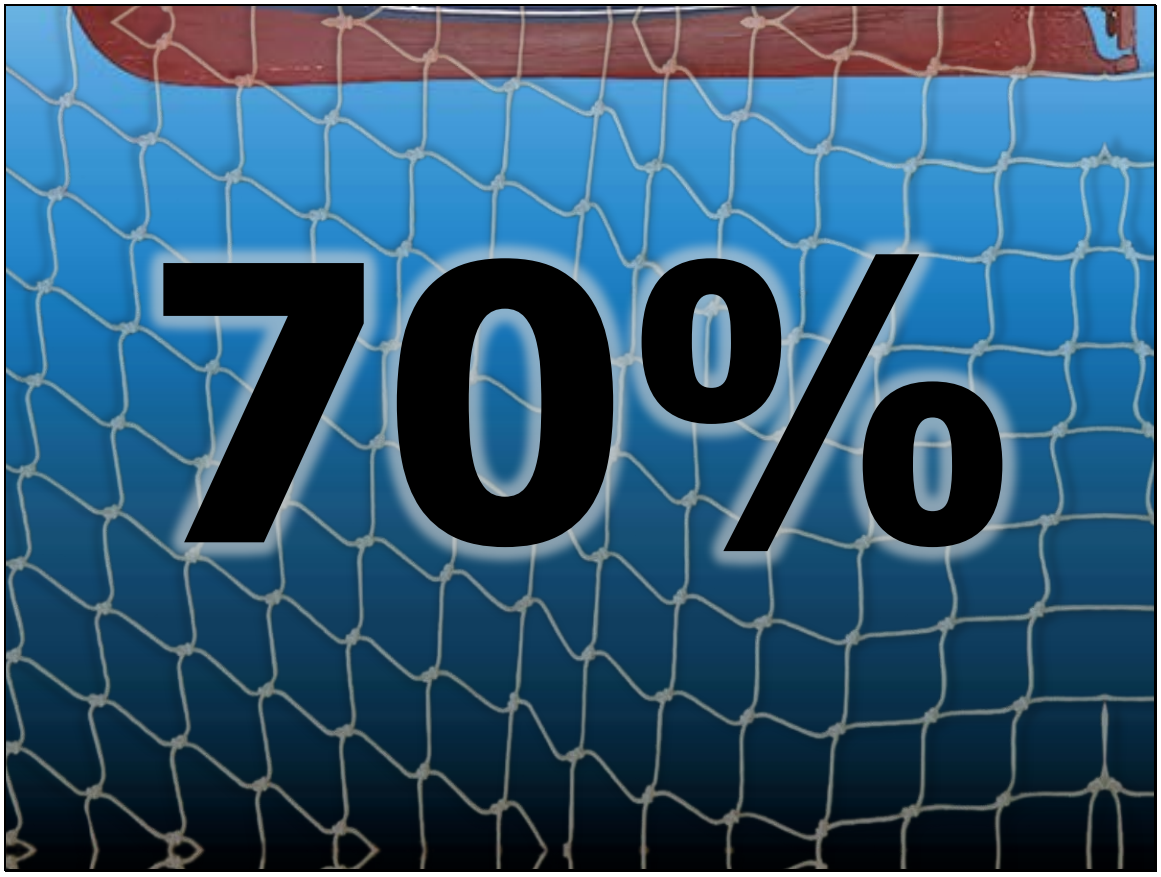
Commercial fishing is the harvesting of food and protein from the ocean for profit. This makes up ninety percent of the fishing practices. Industrial fishing makes up the other ten percent and involves removing certain species in order to produce products, skins, or medicines.



Who monitors the amount of fish that are harvested from the ocean? Fisheries management groups like the FAO [eff-aye-oh], or the United Nations Food and Agricultural Organization, monitor the amount of fish taken from the ocean. The FAO reports its findings to the world fisheries.

It is believed that the amount of fish harvested from the ocean is under-reported as some fish are caught that are not desired by the specific commercial or industry use. It is believed that anglers are taking more than the maximum sustainable yield, which is the amount of fish that can be taken without depleting a population. The FAO believes that seventy percent of the worldwide fish stocks are overfished and depleted.

How did humans gain the ability to harvest so many fish in such a short period of time? The answer lies within the fishing methods. Commercial fishing uses four types of netting that all capture bycatch, or unwanted species of fish caught by accident. These four types of nets are able to capture a lot of fish at one time. There is the drift net, gill net, seine net, and trawling. Anglers also use a longline method that has less bycatch but still is not perfect.

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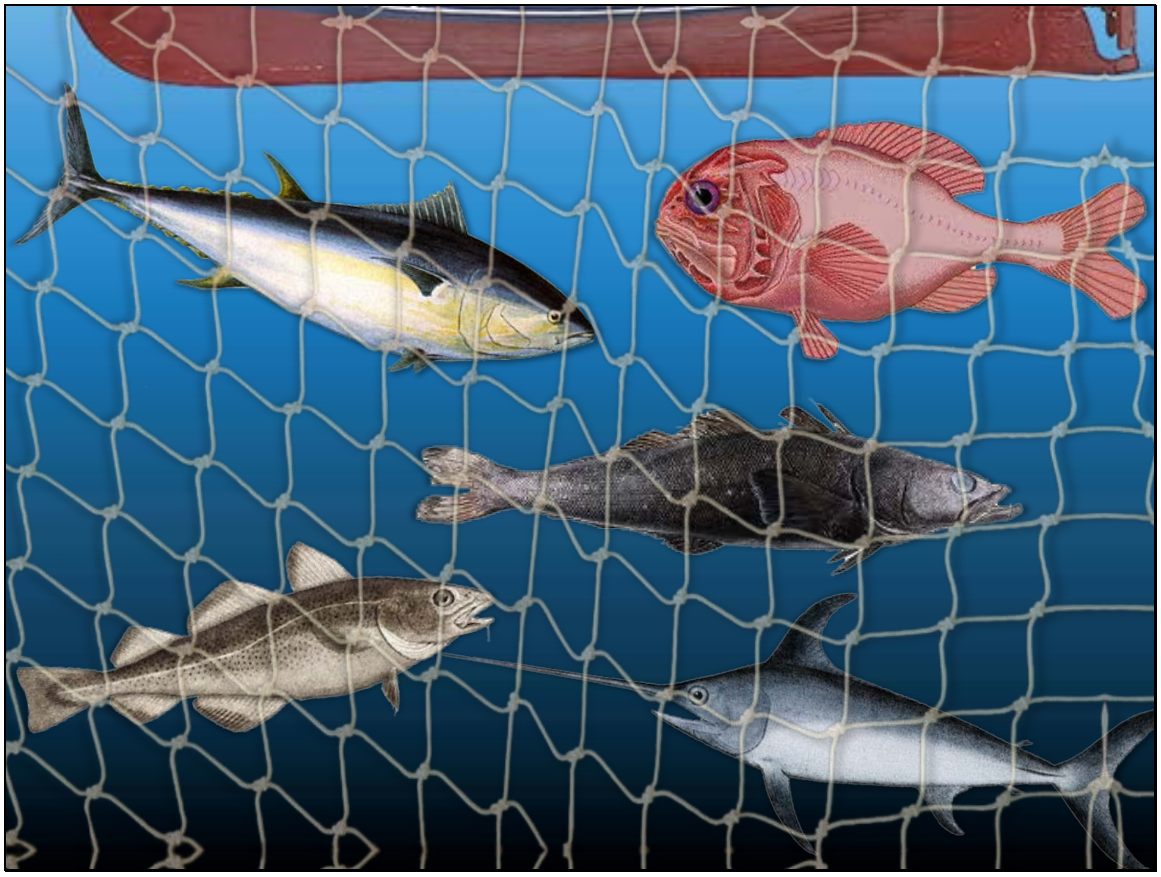
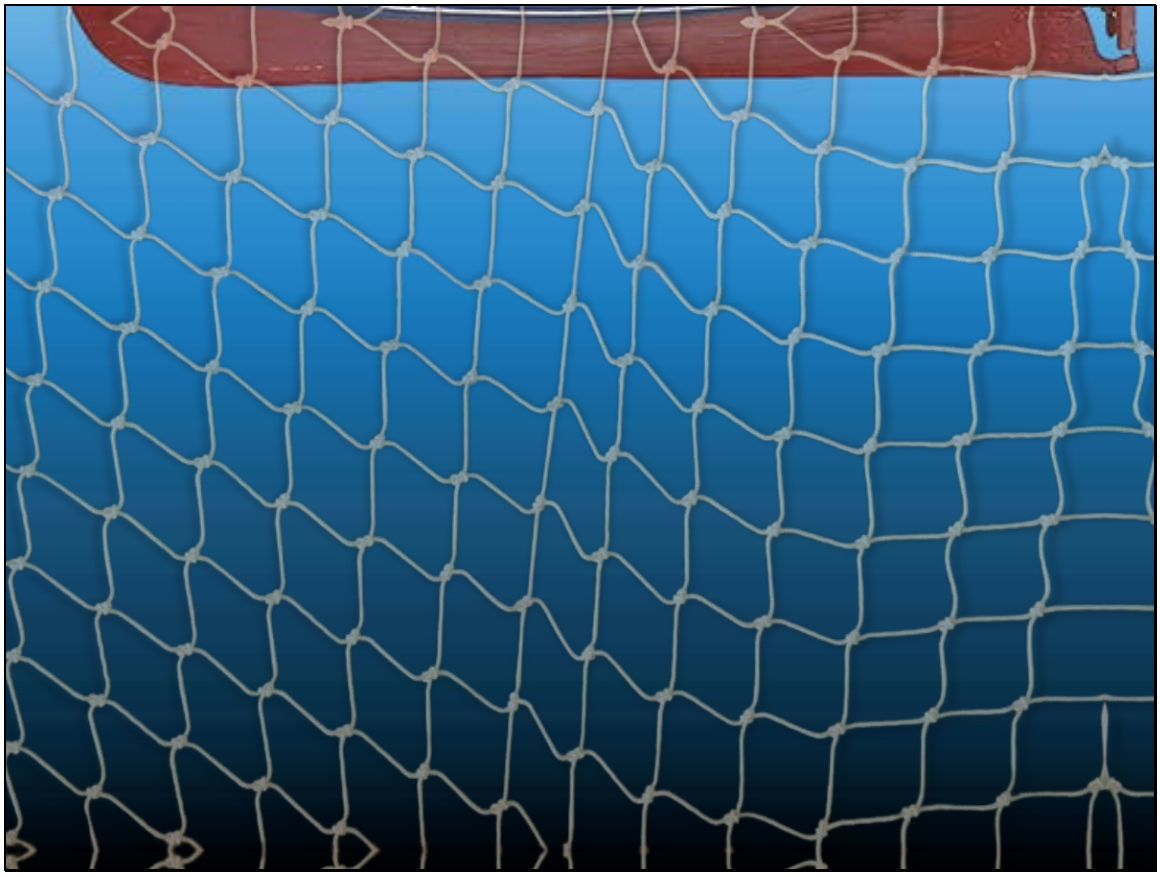


Technology and fishing practices has made man a more efficient fisher and has led to a dramatic decline in fish stocks. Here are just a few examples.

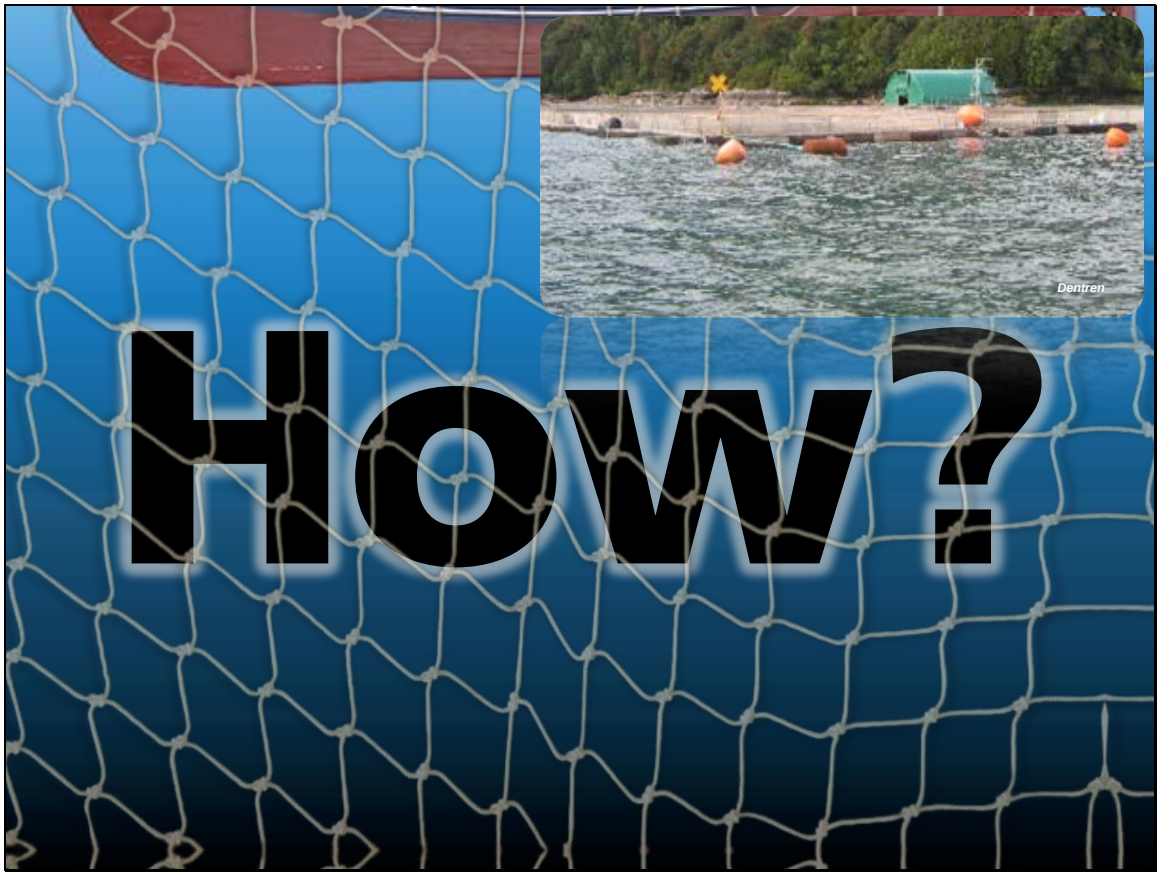
- Newfoundland and United States cod populations declined until both fisheries had to be closed.
- North Atlantic swordfish declined seventy percent.
- Atlantic bluefin tuna declined eighty percent in just three years! (This fish sells for one hundred dollars per kilogram in Japan.)
- Orange roughy off the coast of New Zealand is closed to fishing for possible extinction.
- Patagonian toothfish is closed to fishing for possible extinction.



There are also problems with accidentally catching the wrong fish. Per year around the world, it is estimated that:

- Twenty-nine million tons of stock are caught and discarded.
- Nearly forty-five thousand sea turtles are accidentally caught.
- Nine point five million tons of shrimp are accidentally caught.

What if fishermen overharvest fish lower on the food chain, like sardines? That may cause organisms higher in the food chain to suffer. This happened to the Alaskan sea lion. As Alaskan fishermen depleted the stock of pollock, the sea lion population dropped from one hundred seventy thousand to fifty thousand. Disruption of the food chain causes a major environmental concern.



How do we solve the world fisheries crisis? No one for sure knows the answer. Perhaps fish farming will take over the world market. This is called aquaculture and can happen on land or out at sea. If done properly, this can be an effective method of growing and harvesting stocks of fish. Some scientists argue that new tougher regulations and laws will be the answer. Some even argue that some marine areas just need to be protected from fishing.