



FISHERIES PART ONE OF A THREE-PART SERIES EXAMINING MARINE ECOSYSTEMS

Jellyfish of the day

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Special to Sun Media

Imagine ... you are sitting in a restaurant with your family about to order the fresh catch of the day for your dinner. You ask the waiter for tonight's special, and he replies that there is a lovely broiled jellyfish available. You sit baffled, expecting to be offered a nice filet of salmon or halibut, but there are simply no big fish left in the ocean.

Unfortunately, this scenario may become a reality within our lifetimes according to Dr. Daniel Pauly of the Fisheries Centre at University of British Columbia, unless we change how we approach

fisheries management. Dr. Pauly refers to this scenario as "Fishing down the food web," the process in which commercial fleets go through the transition from harvesting "fully exploited" large predatory fish, like salmon, halibut, and tuna, to targeting smaller shorter-lived species, like mackerel, sardines, and squid that are lower on the food chain.

Can't rebound

This complete disruption of the marine ecosystem makes it virtually impossible for fish stocks to rebound as not only are the top predators over-harvested but their prey is as well. This allows lower level predators

like the jellyfish to take over the niche once occupied by the large predatory fish.

What is the problem? Oceans are in peril from over-fishing, destructive fishing methods, and habitat destruction. From the Atlantic to the Pacific coasts, Canadian marine resources are being exploited and threatened. The history of the Atlantic cod fishery has proven that over-fishing can lead to the collapse of fisheries and the disruption of ecosystem function, and yet we continue to allow the over-harvest of wild populations of fish. The Food and Agriculture Organization of the United

Nations reports that 47% of major fish stocks in the world are considered "fully exploited," 18% are considered "over-exploited" and 10% are considered "depleted." In total 75% of the world's fish stocks are harvested either to their maximum or beyond, an alarming statistic as we move into the future.

The problems facing our fisheries are not limited to over-harvest but also include destructive fishing methods and bycatch. Bottom trawling is the marine equivalent to clear-cutting forests as the massive nets scrape along the ocean floor behind the boat, destroying deep

sea corals and sponges along with the bottom structure that serve as habitat the fish need to re-establish their populations. A healthy vibrant ecosystem can be destroyed with one pass of a trawler, leaving a barren wasteland. High seas bottom trawlers destroy an area of the ocean floor equivalent to the size of the United States every year.

Bycatch

This loss of habitat is not the only problem with trawling; these nets also collect all of the organisms in their paths, both the target species like shrimp and fish, and also non-target species such as starfish, skates, turtles and

many other species. These non-target species are classified as bycatch and are either discarded dead or are retained and sold as part of the vessel's allowed take as bycatch. Global fisheries are estimated to discard more than 20 million tonnes of fish and other marine creatures every year. This constitutes more than 20% of the global catch.

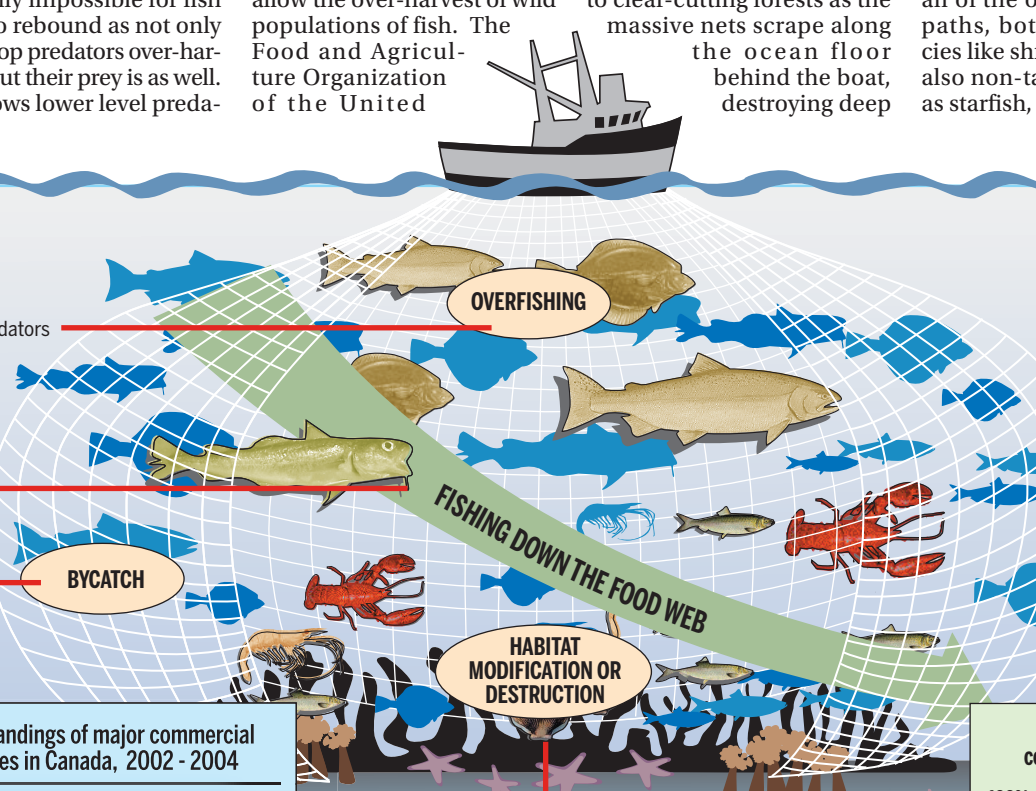
While the conditions facing our fisheries are dire, all hope is not lost if we impose further restrictions on the catch of wild fish populations. Personally, I don't look forward to the day when poached jellyfish in dill sauce is the most attractive seafood dish on the menu.

ECOSYSTEM OVERFISHING

■ **Overfishing:** Often removes top predators and can result in dramatic changes in the structure and diversity of marine ecosystems.

■ **Food web:** As the more valuable fish populations decline, fishermen begin "fishing down the food web." This causes a decline in the sustainability of the fisheries.

■ **Bycatch:** Worldwide, scientists estimate that fishermen discarded about 25% of what they caught during the 1980s and the early 1990s — that's about 60 billion pounds of fish each year.



Best choice of seafood to eat:

Currently fished/harvested sustainably.

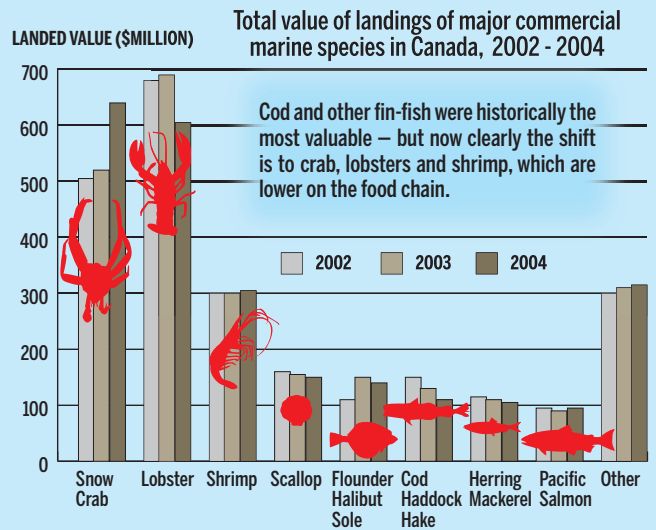
U.S. and Canadian sourced catfish	Hake	Sardine
Sturgeon	Haddock	Shrimp
Clams	HerriAng	Swordfish
Pacific cod	Lobster	Tilapia
Crab, Pollock	Mussels	Rainbow Trout
	Oysters	Tuna (except Bluefin)
	Sablefish	

Avoid these choices of seafood:

Sources that have a combination of problems.

Intl. wild sturgeon	Grenadier	Farmed salmon
Chilean seabass	Trawl-fished haddock & halibut	Scallops
Dredged clams	Monkfish	Shark
Atlantic cod	Orange roughy	Intl. shrimp
King crab	Rockfish	Swordfish
Flounder/sole		Tilapia

Source: Canada's Seafood Guide, www.seachoice.org



■ **Habitat destruction:** Fishing gear that drags along or digs into the seafloor destroys habitat needed by marine wildlife, including commercially fished species. Bottom-dwelling invertebrates can take up to five years or more to recover from one pass of a dredge.

