FISH

It's usually the last meat people give up. *Maybe it should be the first.*

by Steve Hall

North Americans have been swearing off beef, pork and chicken in droves lately. Most cite health concerns such as heart disease and cancer, while others express empathy for the environment and animals. But many still consume fish thinking it is healthy or at worst a relatively harmless indulgence. They couldn't be more wrong!

Fish's dark side—pollutants, toxins and heavy metals

Fish are very sensitive to the high number of pollutants in the water around them. As British social critic, Peter Cox says, *"describing anything which comes out of this toxic environment as a 'health food' is clearly absurd."* Fresh water and inshore fish are the riskiest but pollutants are even showing up in deep sea fish as well. Chemicals gather in their fat and bioaccumulate as the fish ages. When one fish eats another the chemicals are absorbed in the flesh of the predator.

The February 1992 issue of Consumers Report showed that PCBs were found in 43% of all salmon, 50% of white fish and 35% of deep sea fish like swordfish. High levels of PCBs are also found in trout, carp, catfish, bass, bluefish and mackerel. PCBs are particularly harmful to developing fetuses and infants because it can impair development. The pesticide DDT was banned in the 1970s but it is still being found in the flesh of fish. PCBs, mercury, DDT, dioxin and scrombold can't be destroyed by cooking or freezing fish.

Another health concern is the level of heavy metals in seafood. Shellfish carry toxic levels of lead, cadmium, arsenic and other heavy metals. The World Health Organization has concluded that there is no absolutely safe level of mercury in the human body. Fish is the main source of dietary mercury in our bodies and almost all of it is in the toxic form, methylmercury. A typical can of tuna contains 15 micrograms of mercury.

Fish also contain natural toxins such as ciquatera and scrombold which, like PCBs, mercury, DDT and dioxin, can't be destroyed by cooking or freezing. Ciquatera poisoning causes nausea, vomiting, cramps, headaches and extreme fatigue. It is found in fish like red snapper, grouper, sea bass, king mackerel and barracuda.

Raw shellfish is one of the riskiest foods you can eat. One in 250 people who eat it get food poisoning. Add to this the 30 million people around the world who are infected annually with parasites from eating raw seafood and it is easy to see why seafood is the largest source of food-borne illness. Your chance of getting sick from seafood is 25 times greater than for beef and 16 times greater than for pork or poultry. The Consumers Report study found that 40% of fish begin to spoil before they leave the supermarket.

The unsanitary conditions of beef and chicken slaughterhouses are well known but what about fish? A 1992 FDA study of American seafood processing facilities found that 20% of samples showed signs of microbiological contamination, decomposition and filth. Fish are an ideal medium for staphylocci and clostirdium that is picked up during human handling.

Fish may be relatively lower in saturated fat than other meat but like other meat it still contains no fibre or complex carbohydrates. It also is an overly concentrated source of protein. Recent studies have linked excess dietary protein to heart disease, various cancers and other diseases. Any nutritional benefits attributed to eating fish can easily be obtained in a vegetarian diet.

Ocean strip-mining

The way commercial fishing operates today is comparable to the strip-mining of the earth and clear-cutting of forests. Many parts of the ocean floor are being turned into "marine deserts" as huge, unselective nets drag the bottoms scooping up everything in their paths. The size of the worldwide fishing catch has quadrupled since World War II and there are now over 1.2 million fishing vessels on the oceans with more than 32,000 kilometers of large-scale nets in the water. These technologically advanced fleets have raised the industry's capacity to catch fish to such an extent that many fish populations have been pushed to near extinction.

Cod crisis not unique

The over-fishing of cod on the Grand Banks is one of the worst ecological disasters of the century. Twenty years ago the Grand Banks had 3 to 4 billion cod but today few remain.

What happened to the cod off the east coast of Canada is happening to many other fish species throughout the world including Peru's anchovies, Russia's pollack and the red snapper of the Gulf of Mexico. Haddock, halibut, flounder, hake, swordfish and bluefin tuna all suffer from over-fishing. In fact, 13 of the 17 major global fisheries are depleted or in serious decline with the other 4 considered to be "over exploited" or "fully exploited." The US Marine Fisheries Service reports that 42% of the 153 fish species they monitored are now over-fished.

Freshwater fisheries are also being pushed to the limit. Lake Erie's yellow perch was the largest commercial fishery in the Great Lakes but stocks are now dwindling despite reduced catch quotas.

The Nature Conservancy reports that over-fishing is one of the main reasons why one third of fish, two thirds of crayfish and almost three quarters of mussels are now "rare or imperiled."

Eating fish no better for the heart

Contrary to popular belief, eating seafood is likely no healthier for the heart than meat, poultry, or other flesh foods that have more saturated fat.

In 1986, Albert Ascherio and colleagues at the Harvard School of Public Health asked nearly 45,000 male dentists and other health professionals to complete a questionnaire about their eating habits. Then the researchers compared the seafood consumption of the 1,543 men who had bypasses, angioplasties, or heart attacks over the next six years with the seafood consumption of the men who had no heart troubles.

The results: Zippo. Men who ate six or more servings of seafood a week had no lower risk than those who ate seafood less than once a month.

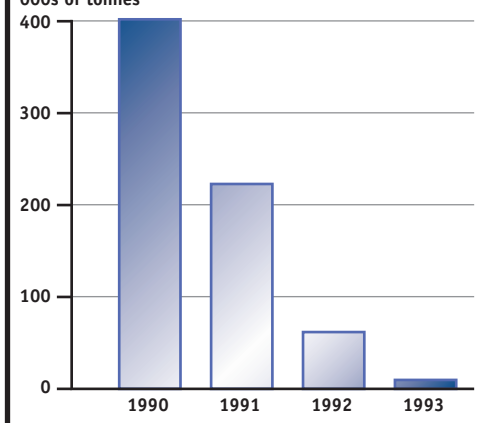
In a well-known study fifteen years earlier, it had been suggested that the Greenland Inuit had less coronary disease due to a diet rich in seafood. This caused a sensation in the sales of fish-oil extracts.

The new study suggests that either the benefit of seafood is achieved at a low level of consumption, or that the healthy Inuit and Japanese hearts were caused by factors other than seafood consumption. The fish oil hypothesis was never fully endorsed by mainstream medicine or the American Heart Association.

Source: New England Journal of Medicine 332:977, 1995 cited in Nutritional Action—June 1995, The Globe and Mail, April 14, 1995

Dwindling Stocks

Mature Northern Cod off northeast coast of Newfoundland



Source: *Federal Department of Fisheries and Oceans estimate.*

Over-fishing has serious environmental consequences. It destroys the balance of ecosystems, leaves holes in the food chain affecting predator-prey relationships, and lowers the sea's biodiversity. It also eliminates an important food source for many other sea animals such as birds, seals, whales and porpoises. In the Gulf of Alaska, the harbour seal and steller sea lion populations have declined by 90%, coinciding exactly with the rise of the local fishing industry.

As long as consumer demand for fish exceeds the ability of fish stocks to recover, entire species will continue to disappear.

Wasted resources

Today's high-tech corporate trawlers may be efficient at catching fish but they are also very wasteful—20% (or 16 million tonnes) of all fish caught are considered "bycatch" and thrown back dead or injured because they are the wrong kind or size. One Canadian fisherman admitted in 1990 that his ship dumped 100,000 pounds of undersized cod at sea on a single trip. For every shrimp caught by US boats in the Gulf of Mexico at least four non-target fish are discarded. That's over 3 billion fish needlessly killed annually! Unselective nets swallow up everything in their path, resulting in 12 to 20 billion pounds of unwanted fish, turtles, dolphins, and sea birds being thrown away. Trawlers also dump an estimated 450,000 plastic containers, 52 million pounds of plastic packaging material and 298 million pounds of plastic fishing net into the sea each year. Plastic garbage is known to kill as many as a million sea creatures a year.

Like the beef industry, the fishing industry is very energy intensive. It take 20 calories of fossil fuel energy to produce one calorie of food energy from fish, making it 50 to 100 times more energy intensive than the production of plant food.

You'd think that commercial fishing only feeds humans but according to John Robbins, more than half of all fish caught are ground up and fed to livestock.

It is well known that western industrial countries consume more than their fair share of the world's beef but the situation is no different for fish consumption. According to United Nations estimates, the world's per capita consumption of fish is 13.4 kilograms, but in Canada it's 22 kg, in Norway it's 40 kg and in Japan it's a staggering 72 kg per person.

Do fish feel pain?

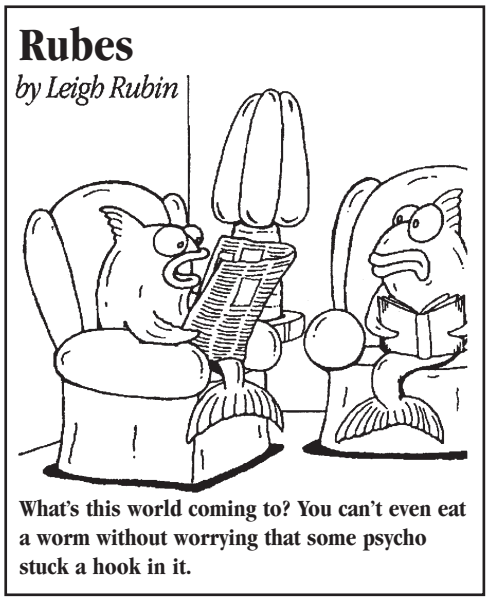
Our concept of equality in all human beings is not based on an arbitrary characteristic like intelligence, sex, or skin colour, but on the simple fact that we all have the same capacity for suffering and enjoyment and should therefore be treated equally. People concerned about the welfare of animals extend this concern for a being's capacity to feel pain and pleasure to the non-human animal population, and there is no reason fish should be excluded from this.

Unlike mammals, most fish lack the ability to vocalize pain, but many studies show that their sensory organs and nervous systems are just as developed. According to Australian biochemist Frank Hird: *"It is unthinkable that [fish] do not have pain receptors. They need them in order to survive."* Like all vertebrates (including humans), they have free nerve endings which register pain.

There are no guidelines or government regulations with respect to the catching and killing of fish. After being hauled up from the deep, fish experience painful decompression which often ruptures their swim bladders, pops their eyes out and pushes their asophagus and stomach out through their mouth. When fish are sorted on board, the crew use short spiked rods to stab and throw them into their respective piles. Afterwards their throats and bellies are slit while many are still alive. Fish die from many causes, including shock, asphyxiation, being squeezed and crushed by the weight of the rest of the catch in the net, and freezing on ice. Eels are killed by being buried alive in salt or chopped into pieces.

When gill nets are used big fish swim through the holes and get caught by the gills or fins when trying to back out. Many suffocate right there while others struggle and bleed to death. The nets are often left unmonitored and trapped fish suffer for days.

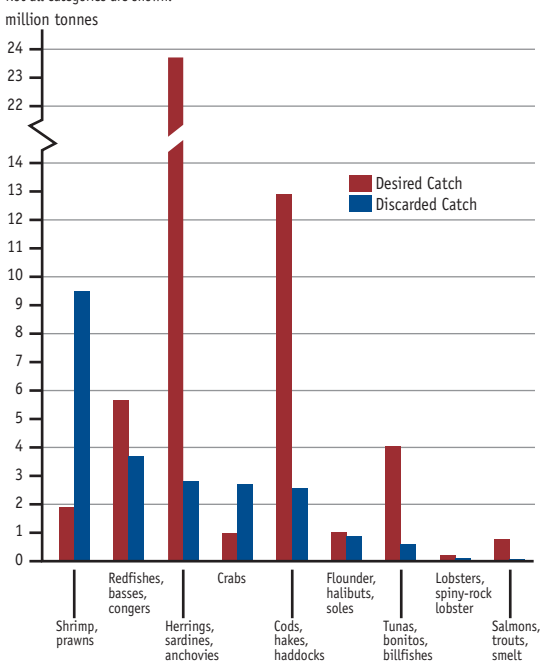
Fish are not simply a "resource" to be "harvested," they are free animals like any other and are equally deserving of our respect. High-tech commercial trawlers are wasteful and environmentally destructive—pushing entire species of fish to the brink of extinction. There is no need to eat fish especially in light of the serious nutritional drawbacks of contamination, lack of fibre and excess fat.



What's this world coming to? You can't even eat a worm without worrying that some psycho stuck a hook in it.

Wasted Fish

About 27 million tonnes of fish are wasted each year. The bar chart below compares the weight of the desired catch with the weight of other fish caught at the same time and discarded. Not all categories are shown.



Source: Greenpeace report on United Nations statistics

Fish farming and stocking—a solution?

Fish farming and the stocking of baby fish in rivers, lakes and oceans have been promoted as solutions to declining fish stocks. But many people including fisheries experts and ecologists are worried about quick-fix solutions that mask the real problems of habitat loss and over-fishing.

Fish farming, also known as aquaculture, has nearly doubled in Canada over the last decade. Far from a perfect panacea it tends to be very technology dependent—requiring feed, fertilizer and medication at every stage. Like crowded broiler chickens, fish are crammed by the hundreds in small floating pens where they are pushed to grow weight much faster than is natural.

Wastes produced by fish pens have been blamed in part for the general degradation of water quality in British Columbia's Georgia Straits. In other parts of the world, ancient mangroves are being cleared to make way for shrimp farming which does irreversible damage to the land. Other concerns include the possibility of disease spreading from fish farms to wild fish or of genetically engineered fish escaping and breeding with fish in the wild.

The environmental impact of fish stocking is also cause for concern. Introduced fish invade spawning grounds and compete for food thus displacing wild stocks. Because of interbreeding they pollute the genetic pool. A study of 40 extinct fish species by the National Fisheries Research Centre in the United States found that introduced species helped wipe out 68% of the indigenous species.

University of Toronto biologist Matt Gross sums up the fundamental problem with these two technologies: *"We can never duplicate nature, which is more complex than we can ever hope to understand."*