



## THE FISH BUSINESS

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### Cruel, unhealthy and environmentally damaging

Many people who regard themselves as vegetarians continue to eat fish in the belief that, unlike land-dwelling animals, fish are incapable of feeling pain; that fish meat and oils are vital for good health; and that the catching and preparation of fish is less environmentally damaging than the farming of pigs, sheep, cattle and poultry.



### All these assumptions are wrong

There is sound scientific evidence pointing to the capacity of fish to feel pain and stress. Fish products are typically overly rich in protein, saturated fat and cholesterol - and also come loaded with toxic chemical residues which 'bioconcentrate' in their muscles; the parts generally eaten. Furthermore, the environmental damage caused by both ocean fishing and the production of salmon and trout in factory farms is massively polluting as well as being responsible for denuding the world's oceans of once plentiful fish species. These practices also endanger many other sea and land-dwelling species who have hitherto depended for their existence on the fish plundered by human beings.

### FISH DO FEEL PAIN

Increased heart rate, increased breathing rate, adrenaline rush, writhing, gasping - fish display similar signs to humans when under stress and faced with dangerous situations. Fish feel pain out of biological necessity, just as all mammals do. They possess a brain, central nervous system and pain receptors all over their bodies. Without the ability to feel pain they would not survive. They also produce enkephalins and endorphins, chemicals known to counter pain in humans. Scientific reports from around the world substantiate these basic realities and, thereby, underscore the cruelty and suffering inherent in the catching and killing of fish.

### The evidence for pain

*'Evidence that the term pain is applicable to fish comes from anatomical, physiological and behavioural studies whose results are very similar to those of studies on birds and mammals. The fact that fish are cold blooded does not prevent them from having a pain system and, indeed, such a system is valuable in preserving life and maximising the biological fitness of individuals. The receptor cells, neuronal pathways and specialised transmitter substances in the pain system are very similar in fish to those in mammals.'*  
(Farm Animal Welfare Council Report on the Welfare of Farmed Fish, September 1996)

*Dr Donald Broom, Professor of Animal Welfare at Cambridge University, has stated:*

*'The scientific literature is quite clear. Anatomically, physiologically and biologically, the pain system in fish is virtually the same as in birds and mammals...in animal welfare terms, you have to put fishing in the same category as hunting.'*  
(Daily Telegraph, October 19, 1995.)

### EATING FISH - THE UNHEALTHY OPTION

#### Too much fat and no fibre

Like the flesh of other animals, fish meat is far from a healthy choice, reports Dr Neal Barnard of the influential Physicians Committee for Responsible Medicine ([www.pcrm.org](http://www.pcrm.org)). It contains excessive amounts of animal protein (associated with increased loss of calcium from bones), saturated fat and cholesterol. Fish meat has no complex carbohydrates and no fibre. Fish, such as sea trout, are almost one-third fat and salmon meat is more than 50 per cent fat. Ounce for ounce, shrimp has double the cholesterol of beef. And while fish and fish oil capsules do contain essential fatty acids, such as omega 3, they also contain an equal amount of artery-clogging saturated fats. A good, non-animal source of omega 3 is linseed/flax.

#### Loaded with toxic chemicals

The flesh of fish comes loaded with toxic chemical residues, which concentrate in their muscles. This is because fish swim the global ocean, picking up industrial pollution. Big fish eat little fish and the bigger the fish (e.g. tuna and salmon) the greater the bio-accumulation of toxic chemicals throughout their flesh. These concentrations can be as high as nine million times those found in the polluted waters in which they swim. Mercury - a liquid metal - is among the toxic substances that builds up in the flesh of tuna. It can cause brain damage in human consumers. Pesticides, such as DDT, plus PCBs (an industrial chemical) and dioxin (a by-product of industrial incineration) have all been linked to cancers, nervous disorders and foetal damage.

Women who eat fish, Dr Barnard reports, are more likely to give birth to sluggish infants with learning difficulties, compared with those who abstain or who rarely eat fish.

### Food poisoning risk

It is estimated that the risk of food poisoning from eating fish is far greater than that from eating beef, poultry or pork. This is because fish and the bacteria living on them flourish in the kind of temperatures found in refrigerators. Trimethylamine is the chemical that produces the 'fishy' smell we all recognise. What many people don't realise is that this odour is produced when fish begins to spoil. Fish oils decompose quickly and in the process unleash free radicals, which are linked to cell damage in the human body. Free radicals are believed to be a first important step in heart disease, cancer and the ageing process.

### Worse still for farmed fish

The above relates to ocean-going fish. The health picture with respect to farmed salmon and trout is direr still, according to a report by The Observer newspaper (Jan. 7, 2001). The captive fish, the newspaper noted, are fattened on a diet of pellets made from the rendered remains of small fish that have a high oil content to promote growth. These small fish, as we've seen, are already contaminated with man-made pollutants, such as dioxins and PCBs, which can cause cancer and learning difficulties in children. By compressing them into pellets to feed other fish, the contamination is greatly magnified.

### COMMERCIAL FISHING

#### Emptying the world's oceans

The world's wild fish populations are rapidly declining as more and more vessels chase fewer and fewer fish. Once-common large species, such as cod and tuna, are disappearing. In 1998 the United Nations estimated that nearly half the world's fish 'stocks' were fully exploited and that recovery depended on one in three of the world's fishing boats stopping fishing. With bigger fish in serious trouble, smaller species such as mackerel, sardines and anchovies are now the main targets. These smaller fish are not caught for direct consumption by humans, rather they are processed into pelleted feed for factory farmed salmon and trout. It takes around five tons of wild caught fish to grow one ton of farmed fish - clearly an unsustainable activity.

#### No hiding place

The boats that are emptying the world's seas are vast floating factory units, equipped with radar and satellite technology to track their helpless prey. As a special report in The Guardian newspaper noted:

*'Fish have no chance of escape. Entire shoals are surrounded by nets and sucked in for processing and freezing, leaving nothing left in the sea to breed and replenish stocks.'*  
(The Guardian August 14, 2000.)

## The agony of capture

Vast drift nets, some 40 km long, are also used to trawl the seas. Fish can be dragged along the ocean bed for hours within these nets, trapped alongside rocks, debris and other sea life that has fallen in the net's path. When hauled up from the deep, fish undergo excruciating decompression. Frequently, the intense internal pressure ruptures the swimbladder, pops out the eyes, and pushes the oesophagus and stomach out through the mouth. The catch is sorted using small, spiked rods called pickers. Factory ships slaughter and process the fish at sea. Most fish are gutted whilst still alive or are left to suffocate. The whole process, totally ungoverned by humane protocols, let alone laws, is the greatest animal welfare scandal of our times.

The decline in fish populations is leading to increasing conflicts between fisheries and the wildlife who depend on them for their survival. Huge numbers of 'non target' animals are indiscriminately killed when caught up in the drift nets. And some fisheries intentionally kill or maim seals, birds, and marine mammals who they perceive as a threat to their catch.

## Rich versus poor world

Having decimated the oceans in their own geographical zones, the rich nations are moving in on the fisheries of Africa and South America and are decimating them. Notes Euan Dunn, fisheries officer of the Royal Society for the Protection of Birds: *'We are exporting our own mismanagement of Europe's fish stocks to the developing world. We are moving from stock to stock, systematically destroying it and moving on to the next.'* (The Guardian, Aug. 14, 2000.)

## Down and out

Evidence is mounting that once a fish population is seriously reduced it will never recover. An example are the cod of the Grand Banks off Newfoundland, *'once the most prolific fishery in the world'*, The Guardian article reported. The fishery was closed in 1992 in the expectation that it would have recovered within three years at most. The cod have still not returned.

## Bottom of the barrel

With the ocean's larger fish in decline and the smaller ones set to follow, the Norwegians have suggested harvesting the plankton, the smallest living organism of the ocean, which include the larvae of many fish and shellfish - this in order to provide pelleted feed for fish farms. *Said the RSPB's Dunn: 'This is taking fishing down the food chain to its ultimate conclusion and wiping out all stocks at source, literally emptying the oceans of life and preventing any recovery.'*

## INTENSIVE FISH FARMING

### Deadly crush

In much the same way that chickens, pigs, cattle and sheep have become victims of the race to produce more animals at cheaper prices, so too have salmon and trout. Wild salmon normally migrate over hundreds of miles, ranging from the rivers where they were spawned to the open sea. Scottish farmed fish start their lives in industrial hatcheries and are then moved to huge cages, often located at the mouths of sea lochs. The cages are up to 70 metres in diameter, with plans to extend them to 90 metres. Around 250,000 fish are tightly packed into each cage. Many die prematurely under this intensive regime. There is also a high level of snout, fin and other injuries - plus infestations and viral and bacterial infections.

### Dosed with drugs and chemicals

In an attempt to limit the disease, the fish are dosed with chemicals, antibiotics and other drugs. Three medicinal products were licensed for use in salmon farms in 1989. By 2000 there were 26, with a further 14 under consideration. The fish are also administered additives in their feed in order to give their flesh a colouring that will appeal to consumers. The Swiss pharmaceutical giant, Roche, produces a colour chart from which the fish farmers can select their preferred hue.

### Disease catastrophes

Despite the high drug inputs, disease is rife within the cages. Infectious salmon anaemia (ISA) is one serious viral condition that broke out in Scottish farms in 1998 and led to the culling of millions of fish. It had previously ravaged farms in Canada and Norway. The highly infectious condition, for which there is no known cure, causes the fish to suffer internal bleeding and great stress. There is evidence that human beings might also be affected by the virus.

### Eaten alive

Lice infestation is another devastating, highly stressful condition that flourishes in the cages. The lice multiply and graze on the fishes' flesh, literally eating them alive from the outside in. The industry attempts to control the lice through the use of antibiotics and toxic pesticides. But it's a losing battle and the lice spread from the cages to nearby wild fish, who have been found with up to 500 lice on them, instead of a normal and manageable five or six. Populations of wild salmon in the fish farming centre of the north-west Scottish highlands have been decimated as a result of these infestations.

### Escapes to the sea

Escapes from the farms also impact upon wild fish populations. Friends of the Earth calculate that at least 700,000 fish have escaped from farms in the three years to April 2000. (The Independent April 12, 2000). As well as carrying diseases to the wild fish, some of the escapees are almost certainly breeding with their wild cousins, causing, as yet unquantified, genetic problems.

Not satisfied with the damage already done to natural ecosystems, the fish farming industry has commissioned reckless gene engineering experiments designed to produce giant, rapid growing specimens. The result is salmon that can grow six times as fast as normal fish.

### Pollution

The intensive feeding regimes to which the caged fish are subject is one more source of damage to wild fish populations and to the wider environment. This is because much of what the fish are fed, according to a major report in The Observer newspaper (Jan. 7, 2001), drops straight through their cages and gathers on the loch bottom along with the salmon's ammonium-rich faeces. The World Wide Fund for Nature calculates that the level of pollution from fish farms on the west coast of Scotland is comparable to the sewage output of up to 9.4 million people.

### A brutal killing

Prior to slaughter, the fish are starved for days and even weeks. In some units they are killed by first being hit on the head with a club and then having their gill arches torn or cut so that they bleed to death. In other operations, the fish are placed in a tank with carbon monoxide and then clubbed or bled to death.

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