

# IN TOO DEEP – WHY FISH FARMING NEEDS URGENT WELFARE REFORM



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© Colin McPherson



Scottish salmon farm

'king of fish' needs urgent reform. And the situation for farmed trout can be even worse. They are often packed into tanks or ponds 2-4 times more tightly than salmon and slaughtered in a way officially condemned for its cruelty.

Philip Lymbery, author of a new Report, "In Too Deep: The Welfare of Intensively Farmed Fish" for Compassion In World Farming Trust, exposes life and death beneath the surface of the fish farm.

## CAGED & CROWDED

Fish farming in the UK represents the second largest area of farm animal production after broiler chickens. Some 70 million fish are reared and slaughtered each year. Although mainly salmon and trout, other species, such as cod and halibut, are now being farmed.

Fish farms can be as intensive as anything found on *terra firma*. Up to 50,000 salmon are confined in each sea cage. Off the Scottish west coast and islands, they are reared at stocking densities equivalent to each three quarters of a metre long (2.5 ft) salmon being allocated a bathtub of water. Packed tightly, these ocean wanderers swim as a group, or shoal, in incessant circles around the cage, like the pacing up and down of caged zoo animals. Fins and tails become worn and damaged as the fish rub against the cage sides or each other.

Crowding and confinement can cause the fish to suffer stress, which in turn makes them more susceptible to disease. Wave after wave of serious disease outbreaks have caused the deaths of millions

Tucked along remote coastlines or discreet river valleys lies one of the fastest growing sectors of intensive animal rearing – fish farming. Up to 50,000 salmon can be crowded into a single sea cage where they often swim in constant circles like caged zoo animals. Often suffering blinding cataracts, fin and tail injuries, body deformities, alarmingly high mortality, and infested with parasitic sea lice that are treated with strong chemical nerve toxins, the welfare of the

of farmed salmon. Official figures show overall death rates of 10-30%. Such high mortality would raise serious alarm bells in other types of animal farming.

The eyes of fish are particularly sensitive to stress. Since the mid-1990s, high incidences of severe cataracts have been found in farmed salmon, often so bad they cause eyes to bleed and the fish to go blind.

Norwegian farmed salmon can be affected by "humpback" where fish have deformed backs, all too often resembling carp, rather than the sleek, elongated shape of a healthy salmon.



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Farmed salmon leaping below anti-predator net

# NEEDS URGENT WELFARE REFORM

## PARASITE INFESTATION



© Colin Kirkpatrick

Sea trout infested with sea lice

Intensive farming has led to serious infestation with parasitic sea lice, which if left untreated, causes great suffering and death in affected fish. These small crustaceans feed on the host salmon. Lice damage can be so severe around the head that the living fishes' skull is exposed – a condition known as the “death crown”.

Salmon farms are also blamed for transmitting parasites to wild fish, which has been linked to declines in wild fish populations.

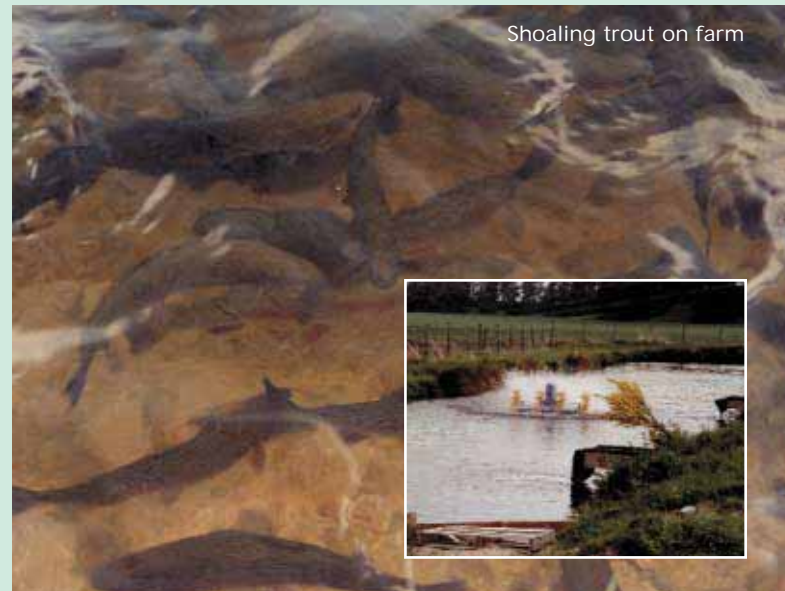
Current treatments centre on the use of strong nerve toxins. The fish are crammed together and bathed in organophosphates or synthetic pyrethroids, or receive chemical treatments in their feed. These methods are feared to have environmental repercussions.

Alternatives include bathing fish in the irritant hydrogen peroxide, or using another fish, the wrasse, as a “cleaner” to literally eat the lice off the backs of the salmon. However, many wrasse die from stress, starvation or bullying - not a welfare-friendly alternative for the wrasse.

The prevalence of fin and tail injuries, disease outbreaks, blinding cataracts, deformities, abnormal behaviours, high rates of mortality, and serious infestation by sea lice, show that intensive salmon farming is in urgent need of reform.

## TROUT

About 35 million farmed trout are produced in the UK each year, with more than half being produced in England and Wales. They are often crammed more tightly than salmon into freshwater ponds or fast-flowing raceway tanks, and subjected to inhumane slaughter. Farmed trout can be stocked at 60 kg of fish per cubic metre of water (60 kg/m<sup>3</sup>), the equivalent to 27 trout, each measuring a foot (30 cm) long, being allocated a bathtub of water. More normal rates are 30-40 kg/m<sup>3</sup>. Such high stocking densities lead to high levels of fin and tail injuries, adversely affecting their welfare.



Shoaling trout on farm

## BIOTECHNOLOGY, HORMONES & SEX-REVERSAL

Biotechnology to produce chromosome-manipulated fish known as “triploid” is widely used in the UK trout industry. Newly fertilised eggs are subjected to heat or pressure shock so that cells carry three sets of chromosomes instead of the normal two. This causes the resulting fish to be sterile, thereby delaying sexual maturity and a consequent reduction in flesh quality, as well as increasing their efficiency in converting feed into flesh. It also causes health and welfare problems such as spinal deformities, breathing difficulties, low blood haemoglobin levels, and higher rates of mortality.

The triploidy process is usually used in conjunction with a technique to induce all-female fish through sex reversal. This involves feeding the male sex hormone, testosterone, to young female brood fish, and using their eventual sperm to produce later-maturing female-only fish, allowing them to be reared for longer without adversely affecting flesh quality. Tens of millions of trout eggs are produced annually in Britain this way.

- *Up to 50,000 salmon are confined in each sea cage.*
- *Each salmon measuring three quarters of a metre long (2.5 ft) is allocated the equivalent of a bathtub of water.*
- *Trout are often stocked so densely that 13-27 trout measuring 30 cm (1 ft) long are allocated the equivalent of a bathtub of water.*
- *High incidences of severe and blinding cataracts have been found in farmed salmon.*
- *Infestation with parasitic sea lice is a serious problem for farmed salmon. Lice feed on their host. Damage can be so severe that the skull of the living fish can be exposed.*
- *Biotechnology is used widely in the UK trout industry to produce chromosome-manipulated "triploid" fish.*
- *Sex reversal of parent fish by hormone treatment, so that only female fish are hatched, is used to produce tens of millions of trout eggs per year in the UK.*
- *High mortality rates of 10-30% are found during seawater rearing of salmon.*

## STARVATION & SLAUGHTER

About 35 million each of salmon and trout are slaughtered annually in the UK. That represents more animals than all the pigs, sheep, cattle and turkeys killed together. Some widely used slaughter methods for farmed fish cause appalling suffering. So much so that the perpetrators would be prosecuted if they were slaughtering other farm animals in a similar way.

Farmed fish are normally starved for about 7-10 days before slaughter. Widely used slaughter methods for trout include the suffocation of fish in air or on ice. The cooling effect of the ice prolongs the time it takes for suffocating fish to become unconscious, with fish aware of what is happening to them almost 15 minutes after being taken from the water. Five years ago, the UK Government's advisory Farm Animal Welfare Council recommended that this method be banned. Today, it is still widely used.

Another inhumane slaughter method often used for salmon as well as trout is the use of carbon dioxide stunning. The bath of carbon dioxide-saturated water causes the fish to thrash around the killing container. They stop moving after 30 seconds, but do not lose consciousness for 4-9 minutes. For salmon, there is a danger that when the fishes' gills are cut with a knife as part of the slaughter process, they may be immobile but conscious as they bleed to death.

- *About 35 million each of salmon & trout are slaughtered annually in the UK.*
- *Farmed fish are normally starved for 7-10 days before slaughter.*
- *Inhumane slaughter methods for trout include suffocation in air or on ice. Carbon dioxide stunning, another inhumane method causing immobility well before unconsciousness, is used for both salmon and trout.*

## DEAD SEALS & DECLINING SALMON

Intensive fish farming has resulted in salmon and trout being readily available at the supermarket checkout. However, the true cost includes suffering fish, a damaged environment, and dead seals. Huge numbers of fish in one place form an irresistible attraction to wildlife such as fish-eating birds, seals, mink and otters. Some farmers have seen the killing of wild animals as a legitimate part of predator control. So much so, that the real price of farmed salmon includes the killing of an estimated 3,500 seals around Scottish fish farms each year.

Shot seal

# IN TOO DEEP – WHY FISH FARMING

It is often claimed that fish farming takes the pressure off wild fish by providing an alternative. However, the reverse is true. Farming carnivorous species such as salmon, trout, halibut and cod *adds* to the pressure on wild fish stocks. Farmed fish are fed wild fish in the form of fishmeal. Over 3 tonnes of wild-caught fish are needed to produce 1 tonne of farmed salmon. For species such as halibut and cod, the ratio is over 5 times the weight of wild fish per weight of farmed fish.

## 'ORGANIC' FARMED FISH

'Organic' fish farming offers consumers a less intensive alternative to industrially reared salmon and trout. The fish are reared at lower stocking densities and are slaughtered using the more humane methods. Organic standards for fish are not without welfare issues, such as allowing parasite-eating wrasse to treat salmon sea lice problems (not welfare-friendly for the wrasse), and prolonged starvation of fish before slaughter.

## CONCLUSIONS

The vast majority of the 70 million farmed fish produced in the UK are reared intensively with large numbers of fish confined in a small area. Intensive rearing methods, together with often appallingly cruel and widely used slaughter practices such as suffocation in air or on ice, and carbon dioxide stunning, are unacceptable on welfare grounds. Urgent action is needed to stop the widespread suffering of intensively farmed fish.

## WHAT YOU CAN DO

Consumers can help stop the 'cage rage' of factory fish farming by avoiding farmed fish. New EU legislation means that all farmed fish must be labelled as "farmed". Tinned wild salmon is readily available at an affordable price. Fresh wild salmon, where available, is more expensive. Alternatively, supermarkets are now stocking fresh 'organic' salmon and trout.

You can write to your MP or MSP outlining your concerns for the welfare of farmed fish. MPs can be contacted at the House of Commons, London SW1A 0AA; and MSPs, at The Scottish Parliament, Edinburgh, EH99 1SP.

Please support CIWF Trust's campaign to end the cruelty of factory fish farming.

In his book, the "Salmon Farming Handbook", Sedgwick (1988) says;

*"Salmon are animals genetically programmed to spend most of their lives swimming freely through the oceans. We now confine them in tanks or cages in close proximity and frequent physical contact with thousands of others. In the open seas they would probably never have come as close to any other fish of their own kind before returning to spawn".*



Rainbow trout in farm net

Escapes from fish farms have become a fact of life. During 2000, 411,000 salmon escaped from Scottish fish farms. 'Genetic pollution' from escapees breeding with wild salmon can affect detrimentally the survival of wild populations by altering the gene pool and thereby reducing their ability to survive. Escaped salmon can also transmit disease and parasites to wild fish. Wild salmon numbers have crashed in areas with large numbers of fish farms. The situation is now so bad that escaped farmed salmon outnumber catches of wild salmon by a staggering seven to one.

- *An estimated 3,500 seals are killed around Scottish fish farms each year as part of 'predator control'.*
- *It takes over 3 tonnes of wild-caught fish (in the form of fishmeal) to produce 1 tonne of farmed salmon.*
- *The situation with farm escapes, coupled with a decline in wild salmon, has become so bad that escaped farmed salmon now outnumber catches of wild salmon by seven to one.*

# NEEDS URGENT WELFARE REFORM

## SUMMARY OF MAIN RECOMMENDATIONS

Compassion In World Farming Trust believes that confining salmon and trout on intensive farms is unsustainable on animal welfare and environmental grounds. While industrial fish farming continues, the following reforms are urgently required:

- Stocking densities for farmed fish should be much reduced and a legislative maximum introduced.
- Salmon sea lice infestation should be controlled by reducing stocking densities, careful site selection, and less intensive management, rather than by using toxic chemicals or so-called “cleaner” fish.
- Biotechnology techniques involving chromosome manipulation (e.g. sex reversal and triploidy) should be prohibited.
- The use of genetically engineered fish for farming should be prohibited.
- Farmed fish should not be starved for prolonged periods before slaughter. Starvation periods of longer than 72 hours should be prohibited.
- Widely used slaughter methods such as suffocating fish in air or on ice, bleeding to death without pre-stunning, and the use of carbon dioxide for stunning are inhumane, totally unacceptable, and should be prohibited. Only slaughter methods that cause an instant death or render fish instantly insensible to pain until dead should be permitted.

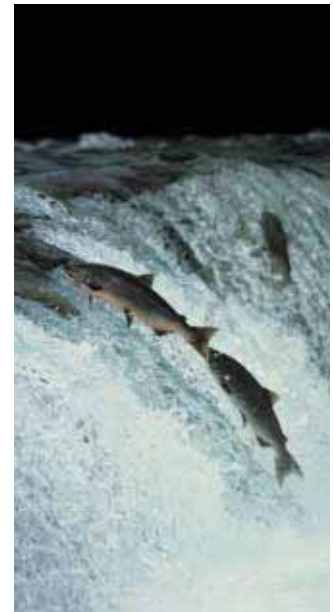
- Wildlife should not be shot, drowned or otherwise harmed as an anti-predator measure.
- As the farming of salmon, trout, halibut and cod adds pressure to wild fish stocks, the sustainability of intensive fish farming should be reviewed urgently.

This is a summary of “In Too Deep – The Welfare of Intensively Farmed Fish”, by Philip Lymbery, and published by Compassion In World Farming Trust (2002). Copies of the full report are available from:

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