Farmed Salmon

*Factsheet*

### **HEALTH OF FARMED SALMON**

***More than 1 in 4 salmon die in Scottish Salmon farms before reaching the market, due to poor conditions, and mostly due to disease.* In 2019, 86% of all mortalities recorded in sea cages were due to disease**

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021.

***Death rates in UK Salmon farms are at a record high - after quadrupling over 18 years.***

* [Source](http://aquaculture.scotland.gov.uk/data/fish_farms_monthly_biomass_and_treatment_reports.aspx): Corin Smith, ‘Scotland’s Aquaculture | Fish Farms Monthly Biomass & Treatment’, accessed 15 October 2020. / SEPA (Scottish Environmental Agency)

***Salmon Farms are densely packed - Enclosed in pens with one to two hundred thousand other fish ( densities ranging from 9.7 to 34 kg m−3)***

* [*Source*](https://doi.org/10.1016/j.aquaculture.2004.09.022)*: James Turnbull et al., ‘Stocking Density and Welfare of Cage Farmed Atlantic Salmon’, Aquaculture 243 (7 January 2005): 121–32.*

***The bodies of Farmed Salmon can become deformed due to the intense farming approaches. Up to 70% of Norwegian farmed salmon are affected by humpback, whereby the fish have raised and deformed backs.***

* [*Source*](http://www.eurocbc.org/fz_lymbery.pdf)*: Philip Lymbery, ‘IN TOO DEEP: THE WELFARE OF INTENSIVELY FARMED FISH’ (Compassion in World Farming Trust, 2002),*

***¼ Fish in Fish farms are considered ‘loser fish’ - which are understood as salmon with depression. (These fish display stunted growth and misshapen hearts)***

* [*Source*](https://doi.org/10.1098/rsos.160030)*: Marco A. Vindas et al., ‘Brain Serotonergic Activation in Growth-Stunted Farmed Salmon: Adaption versus Pathology’, Royal Society Open Science 3, no. 5 (n.d.): 160030.*

***Sea Lice are an epidemic among fish farms - their numbers doubling in Scottish farms. Between 2018 and 2019, the numbers of sealice oon female fish increased by 96%.***

* [*Source*](https://www.salmon-trout.org/2019/08/21/sea-lice-numbers-on-salmon-farms-double-in-a-single-year/)*: Communications, ‘Sea Lice Numbers on Salmon Farms Double in a Single Year’, Salmon & Trout Conservation (blog), 21 August 2019.*
* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,

***Most Farmed Salmon are blind, often losing their site in summer due to cataracts.***

* [Source](https://www.fishfarmingexpert.com/article/scientists-shed-light-on-blindness-in-salmon/): Sofie Remø, Norway's National Institute of Nutrition and Seafood Research (NIFES)

***Many Farmed Salmon are deaf. 50-60% of farmed fish have vateritic otoliths, making them deaf. In wild populationis, this number wuld be less than 10%.***

* [*Source*](https://doi.org/10.1038/srep25249)*: T. Reimer et al., ‘High Prevalence of Vaterite in Sagittal Otoliths Causes Hearing Impairment in Farmed Fish’, Scientific Reports 6, no. 1 (28 April 2016): 25249.*

***Practices in Salmon Farming can lead to Cannibalism within the pens.***

* [*Source*](http://www.ciwf.org.uk/includes/documents/cm_docs/2008/c/closed_waters_welfare_of_farmed_atlantic_salmon.pdf)*: Peter Stevenson, Compassion in World Farming (Organization), and World Society for the Protection of Animals, Closed Waters: The Welfare of Farmed Atlantic Salmon, Rainbow Trout, Atlantic Cod and Atlantic Halibut (Godalming, Surrey: Compassion in World Farming, 2007).*

***Farmed Salmon often contain damaged, discolored flesh, which is disregarded, due to connective tissue formation and discoloration of surrounding skeletal musculature***

* [*Source*](http://citation)*: Helle Holm et al., ‘A Pathomorphological Description of Cross-Stitch Vertebrae in Farmed Atlantic Salmon (Salmo Salar L.)’, Aquaculture 526 (15 September 2020): 735382.*

### **SALMON FARM POLLUTION**

***Chemical runoff from salmon farms can damage surrounding fish populations.***

* [*Source*](https://www.sepa.org.uk/regulations/water/aquaculture/bbc-panorama-response/)*: Scottish Environment Protection Agency (SEPA)’, November 2018.*

***Scottissh Salmon farming produces the same amount of waste as half of Scotland’s human population.***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021.

 ***Fish Farm Pesticide pollution has risen by 72% in a year, according to SEPA (Scottish Environmental Protection Agency)***

* [Source](https://www.sepa.org.uk/media/526860/2019-pollutant-emissions-and-waste-transfers-from-sepa-regulated-industrial-sites-commentary-pdf.pdf.): SEPA (Scottish Environmental Protection Agency), ‘Pollutant Emissions and Waste Transfers from Sepa Regulated IndustrialSites Commentary’, 2019, accessed 15 October 2020,
* [Source](https://www2.sepa.org.uk/SPRIPA/Pages/SubstanceInformation.aspx?pid=169): SEPA (Scottish Environmental Protection Agency) ‘Pollutant Fact Sheet’, accessed 15 October 2020.

***Insecticide - Deltamethrin is damaging to surrounding ecosystems, and can impact areas up to 39km2 around salmon farms. Research has shown that it is acutely toxic to European lobster larvae.***

[Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,

***Insecticide -* Emamectin benzoate (‘Slice’) *is damaging to surrounding ecosystems, and accumulates in environments. It is known to be toxic to fish and other marine organisms as well as birds and mammals.***

[Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,

***Salmon Farms are damaging to the surrounding ecosystems, causing uninhabitable ‘dead zones’ to form. Sediment cores taken from underneath a salmon farm at Loch Crenan, a 1,500-ton salmon farm, showed reduced biodiversity up to 0.5km2 around the farm.***

* [*Source*](https://www.parliament.scot/S5_Environment/General%20Documents/20180125_SAMS_Review_of_Environmental_Impact_of_Salmon_Farming_-_Report.pdf)*:* The Scottish Parliament, ‘SAMS: REVIEW OF THE ENVIRONMENTAL IMPACTS OF SALMON FARMING IN SCOTLAND - Executive Summary and Main Report’ (European Marine Science Park, Argyll: The Scottish Parliament, January 2018)
* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,
* *Sediment cores taken from underneath a salmon farm at Loch Crenan, a 1,500-ton salmon farm, showed* ***reduced biodiversity up to 0.5km2 around the farm*** *(Reviewed by Tett et al, 2018)*

***Salmon Farms are transporting large amounts of dead fish from salmon-farms to landfill, which is prohibited and dangerous to the environment.***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,

### **ESCAPEES**

***Farmed Salmon often escape their pens - and pass diseases onto remaining wild salmon. In 2019 alone, 120,000 salmon escaped from Mowi fish farms in Scotland.***

* [*Source*](https://www.parliament.scot/S5_Environment/General%20Documents/20180125_SAMS_Review_of_Environmental_Impact_of_Salmon_Farming_-_Report.pdf)*: The Scottish Parliament, ‘SAMS: REVIEW OF THE ENVIRONMENTAL IMPACTS OF SALMON FARMING IN SCOTLAND - Executive Summary and Main Report’ (European Marine Science Park, Argyll: The Scottish Parliament, January 2018).*
* [*Source*](https://www.communitiesforseas.scot/mass-escape-from-colonsay-fish-farm-after-storm-brendan/)*: ‘Mass Escape from Colonsay Fish Farm after Storm Brendan’, Coastal Communities Network (blog), 23 January 2020,*

 ***Male Escapees are bad at breeding, but females will often spawn with wild males.***

[*Source*](https://www.theguardian.com/news/2020/sep/15/net-loss-the-high-price-of-salmon-farming)*: The Guardian, Net loss : The high price of Salmon Farming, Mark Kurlansky, September 2020*

 ***Farmed Norweigen genomes are turning up in wild populations everywhere there are salmon farms.***

[*Source*](https://www.theguardian.com/news/2020/sep/15/net-loss-the-high-price-of-salmon-farming)*: The Guardian, Net loss : The high price of Salmon Farming, Mark Kurlansky, September 2020*

### **SALMON ECONOMICS**

***Salmon aquaculture is the fastest growing food production system in the world, accounting for 70% (2.5 million metric tons) of the market. Salmon consumption worldwide is three times higher than it was in 1980.***

* Source : [WWF](https://www.worldwildlife.org/industries/farmed-salmon)

***Scotland is the world’s third largest exporter of salmon, behind only Norway and Chile. Every year, 24 to 56 million of these fish are shipped to over 50 countries***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021,

***Industry is aiming to extend salmon farming across Scotland, involving a 47-96% increase by 2030.***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021.

***2300 people are currently employed by the salmon industry in 2018.***

* [Source](https://www.foodnavigator.com/ARTICLE/2019/05/02/SCOTTISH-SALMON-FARMING-FACES-DOWN-ITS-ENVIRONMENTAL-CRITICS):‘The Scottish Salmon Producers Association, independent report ',
	+ There were 2,638,400 people employed across Scotland in all Sectors in 2018, according to the Scottish government. This means that the Scottish Salmon industry only actually provided 0.000872% of jobs in Scotland in 2018, whilst still claiming to contribute significantly to the Scottish economy, and remaining Scotland’s biggest food export.

***The Scottish Salmon Producers Organisation claim its members do business with nearly 2,500 companies in the Highlands and Islands area***

* [Source](https://www.insider.co.uk/news/salmon-farming-industry-increased-employment-11476209): ‘The Scottish Salmon Producers Organisation, 2017

***5 Companies own over 96% of Scottish Salmon production. None of them are Scottish owned - meaning profits do not remain in scotland. Three of the main companies - Mowi, Scottish Sea Farms and Grieg Seafood – are Norwegian-owned, while The Scottish Salmon Company is registered in Jersey, and Cooke Aquaculture is Canadian (Scottish Salmon Watch, 2019)***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021

***One 12 net fish farm will only supply 6 jobs and possibly 2 apprenticeships.***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021

**SALMON COLOUR**

***Sparrows have turned pink because of salmon feed (2018)***

* [*Source*](https://www.bbc.co.uk/news/uk-scotland-glasgow-west-44612780): ‘Pink Sparrow Surprises with Garden Visit’, *BBC News*, 27 June 2018, sec. Glasgow & West Scotland.

***Populations of wild Salmon in the UK are at a crisis point, having fallen to historic lows.37,000 wild salmon were caught in 2018, the lowest since records began in 1952.***

* [*Source*](http://www.theguardian.com/uk-news/2019/apr/24/scottish-wild-salmon-stocks-crisis-anglers.)*: ‘Scottish Wild Salmon Stocks in Crisis, Say Anglers’, the Guardian, 24 April 2019,*

***Farmed Salmon are not Naturally Pink. (They are dyed pink with feed pellets using chemicals often derived from petrochemicals)***

* [*Source*](http://www.theguardian.com/uk/2003/jan/28/foodanddrink.)*:‘Salmon Pink Becomes a Grey Area for EU’, the Guardian, 28 January 2003,*

### **SALMON SEASONS**

***Some salmon farms use artificial lighting to change the salmon’s perception of the season***

* [*Source*](http://www.ciwf.org.uk/includes/documents/cm_docs/2008/c/closed_waters_welfare_of_farmed_atlantic_salmon.pdf)*: Peter Stevenson, Compassion in World Farming (Organization), and World Society for the Protection of Animals, Closed Waters: The Welfare of Farmed Atlantic Salmon, Rainbow Trout, Atlantic Cod and Atlantic Halibut (Godalming, Surrey: Compassion in World Farming, 2007).*

***Some salmon are artificially modified to produce proteins that make their bodies think it is constantly summer.***

* [*Source*](https://doi.org/10.1007/0-306-46865-4_18)*: Fletcher G.L., Hew C.L. (1999) Transgenic Salmon for Aquaculture. In: Kitagawa Y., Matsuda T., Iijima S. (eds) Animal Cell Technology: Basic & Applied Aspects. Springer, Dordrecht.*

### **LOCAL OPPOSITION**

***Local people oppose Salmon Farming in many situations across the Highlands and Islands A proposed farm off the coast of the Isle of Arran received over 456 replies to its application, almost 94% of which were objections (Coast, 2019). Locals organised a protest and a petition with over 7,600 signatures.***

* [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘'‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021

***On the Isle of Skye, local fisherman are concerned about losing fishing grounds to salmon farms***

* + [Source](https://www.ciwf.org.uk/media/7444572/ciwf_rethink-salmon_21_lr_singles_web.pdf?utm_campaign=fish&utm_source=link&utm_medium=ciwf):‘'‘Underwater Cages, Parasites & Dead Fish: Why a Moratorium on Scottish Salmon Farming Expansion is Imperative’ ’, CIWF, March 2021.
	+ *“More recently, a new salmon farm on the Isle of Skye was blocked because of the impacts on local fishermen who are losing fishing grounds to salmon farms and being pushed further out to sea into more dangerous waters with less shelter (Wayland & Wayland, 2020). Many are local family-run businesses that need the income so are at risk of going out of business (Wayland & Wayland, 2020)”*

### **SALMON FEED / ECOSYSTEM CONSUMING**

***Manufacturing Salmon Feed Pellets is a consumptive practice; damaging ecosystems. Salmon feedsnow contain high amounts (70%+) of corn and soya products.***

* [*Source*](https://www.parliament.scot/S5_Environment/General%20Documents/20180125_SAMS_Review_of_Environmental_Impact_of_Salmon_Farming_-_Report.pdf)*: The Scottish Parliament, ‘SAMS: REVIEW OF THE ENVIRONMENTAL IMPACTS OF SALMON FARMING IN SCOTLAND - Executive Summary and Main Report’ (European Marine Science Park, Argyll: The Scottish Parliament, January 2018),*