



Here are the largest recorded farmed Atlantic salmon escapes in history

Are expensive prevention measures worth it when a company can cover biomass losses with insurance policies in case of major escapes?

by

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Sustainability has taken hold in the salmon farming industry like never before. Companies have jumped, for the most part, on the transparency bandwagon and there are a steady drumbeat of efforts to improve fish mortality, sea lice counts, antibiotic use, marine feed ingredients ratio, certification and environmental licenses from all producing countries.

But among the challenges, one of the biggest -- certainly from a social license and financial point of view -- is escapes.

Farmed salmon escapes have been a part of the industry since its very inception, and while huge advances in technology have made escapes less likely, they still happen, and sometimes with disastrous results.

Marine Harvest Chile recently reported the latest major escape. A total 680,000 Atlantic salmon* broke free from one of the company's sites, which held 930,000 fish, after consecutive days of strong winds during which no one was able to access the site.

As soon as conditions improved, the company was able to rescue 250,000 fish from the damaged pens and transferred them to nearby farms, but the rest swam loose.

As of July 19, 44,000 salmon had been recaptured, but more than 600,000 fish remained missing.

-- Scroll down for full list of recorded major escapes

The biggest and baddest

Over the past two decades, some 20 major Atlantic salmon escapes -- of more than 100,000 escapees -- have been registered across the world. However, salmon escapes below 100,000 fish are even more common and frequent in all farming areas.

IntraFish has compiled a list with the largest ever-recorded escapes of Atlantic salmon with a bottom cap of 100,000 fish, looking at dates, companies, and reasons for the escape (scroll down for the full list).

Although conditions causing the escapes are normally extreme -- salmon farming companies know that no excuse is a good one.

"Ultimately, we have the responsibility for keeping our stock secure," Grant Cumming, managing director Grieg Seafood Shetland, told **IntraFish**.

"It is worth noting that while there may be an environmental cost to fish escapes there is also a huge financial cost to salmon farmers if they have a fish escape," he said. "It is not in our interests to lose valuable fish and we work hard to prevent escapes."

While some companies have reported isolated events, others have reported repeated events at different locations.

Meanwhile, there are many major salmon farmers in all key producing areas which have not reported any major escapes in the past two decades.

Altogether, the events listed in this report add up to more than 4 million Atlantic salmon escapes.

-- Scroll down for full list of recorded major escapes

Is it a financial matter?

Despite transparency, fish escapes are today as common as they have ever been, and strong insurance coverage could in many cases make more financial sense than the implementation of costly measures.

Some practices currently deployed to prevent escapes are:

Strong risk assessment systems covering all fish farming and wellboat operations; high standards of containment.

Ensuring all equipment meets the required standards and is appropriate for the individual site challenges.

Well-trained and experienced staff capable of making the right decisions when it comes to fish handling operations.

Regular inspection of equipment to pick up on minor issues before they become a big problem. Site-specific servicing and replacement programs for all equipment.

High levels of anti-predation measures to deter predators from trying to enter the pens.

The review of systems in the event of a fish escape.

A source from the Chilean farming industry told **IntraFish** the escapes are very damaging for a company, highlighting that businesses should not skimp on measures to avoid them.

“Companies have the responsibility to understand the specific conditions and location of their centers, to monitor the strength and direction of the currents, to assess sea conditions in a regular basis and strengthen structures where necessary,” the source said.

What are the environmental risks?

Among the main environmental challenges is the potential impact of farmed species on wild stocks which in some cases could threaten native species and their genetics (this is primarily a concern in the Atlantic, where a small but significant run of wild Atlantic salmon still exists across a handful of countries.

“When an escape occurs, the main concern is that farmed fish could successfully interbreed with local wild fish populations thereby altering the local genetic makeup,” said Cumming.

The risks posed in different areas by the escape of different fish species greatly depend on the ability the fish has to establish in the environment.

In addition, the spread of infestations such as sea lice are also a concern.

“Parasites need a host, the spread of caligus and the infestation will depend on the hostility or adequacy of the hosts,” the Chilean source said.

Speaking to **IntraFish** following the major salmon escape reported by Marine Harvest, Adrian Maldonado, corporate communication and corporate and social responsibility manager at the company, reinforced the idea that the risk of Atlantic salmon establishing in Chilean waters was low.

“There are no records in history of this species establishing in these waters, so the risk is much lower than the risk of the escapes of Pacific species,” Maldonado said.

In addition to the environmental challenges, companies face strong opposition from environmentalists, financial loss, and in some cases also lose their licenses.

Marine Harvest is at the moment racing against time to recapture 10 percent of the escaped fish and it faces a hefty fine and even the withdrawal of its concession.

Until now, the most devastating reported case was the escape of 160,000 Atlantic salmon from Cooke Aquaculture Cypress farm, which although not the largest in number, led to a full ban of salmon farming in Washington State.

Based on the frequency of escapes, it seems unlikely that these disasters will cease to occur in the near future, and although moving salmon farming farther out would help reduce the environmental impact, fish containment will continue to prove challenging for salmon farmers.

“While the industry has taken a lot of action to try and drive down fish escapes, it will prove difficult to eliminate them completely,” said Cumming.

Unconfirmed number of escapes

Tasmanian salmon farmer Huon Aquaculture refused to confirm if an escape reported earlier this year was above or below 100,000 Atlantic salmon.

"As a result of the May mega-storm, some fish escaped from two of our pens in the south of Tasmania. It is disappointing that any fish escaped, but it was an exceptional weather event during which waves of over 11 meters passed through our lease, and it is important to note that fish escapes are rare," Peter Bender, CEO and co-founder of Huon Aquaculture, told **IntraFish**.

"The numbers quoted by media and in our local parliament were greatly exaggerated, and had no factual basis. Huon has no intention of providing a running commentary on false claims.

HUON AQUACULTURE

Media outlets reported a major escape at Tasmanian salmon company Huon Aquaculture in 2018, claiming 250,000 fish had escaped, Huon dismissed the number as false and refused to disclose the actual figure or whether it was above or below 100,000 fish.

"However, I can confirm that the number of escaped fish was not significant enough to warrant notifying the Australian Stock Exchange (ASX), meaning that the number of fish lost would not impact the market."

According to Bender, the company decided to phase out the use of ancillary equipment such as feed hoppers at exposed offshore sites following the storm.

"This will mitigate against the risk of equipment breaking loose in future extreme weather events," he said.

"It is important to bear in mind that no other company in Australia is farming in conditions like we are. We are showing that it can be done, and done successfully but like anything new, there will be challenges and we will learn from them."

And the losers are...

Let's look at the numbers. First, a caveat: Although every effort has been made to include every major recorded Atlantic salmon escape, not all information is readily available, and some figures proved extremely difficult to track down and confirm.

In addition, salmon escapes continue to be a contentious issue, and often official numbers do not match those reported by the companies.

If you think we've left a significant escape off our list, please contact Lola Navarro at lola.navarro@intrafish.com

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**Editor's note: An earlier version of this article said Marine Harvest reported the largest salmon escape ever recorded, with 930,000 escapees. Though the cage held that number, the overall escape was 680,000 fish.*

In addition, an earlier version of this article attributed the escape of 336,470 salmon from Meridian Salmon Farms in 2011 to Cooke Aquaculture. Cooke acquired the company in 2014 -- at the time of the escape, Meridian Salmon Farms was owned by Morpol.

Largest recorded Atlantic salmon escapes worldwide

Company	Year	Number of fish ▲	Cause
AquaChile Chile	2013	787,929	Damaged cages due to bad weather
Marine Harvest Chile	2018	680,000	Wind
Cypress Island Inc.	1997	369,000	Unknown
Meridian Salmon Farms	2011	336,470	High tides
Sjølaks Norway	2008	307,356	Unknown
Scottish Sea Farm Scotland	2000	258,000	Weather
Grieg Seafood Shetland Scotland	2002	238,420	Unknown
Australis Chile	2016	231,288	Displacement of modules due to strong underwater currents
SalMar Norway	2011	173,156	Unknown
Cooke Aquaculture United States	2017	150,000	Weather
Admiral Fish Farms Canada	2010	138,000	Net failure, manufacturing low mooring
Firda Sjøfarmer Norway	2013	122,914	Unknown
Firda Sjøfarmer Norway	2014	119,942	Unknown
Cermaq Chile	2017	115,703	Broken net due to major storm
Brilliant Fiskeoppdrett Norway	2009	115,000	Unknown
Cypress Island Inc.	1999	115,000	Unknown
Bakkafrost Faroe Islands	2017	109,515	Extreme weather conditions
Scan Am (later Cypress Island Inc.)	1996	107,000	Unknown
Scottish Sea Farm Scotland	1999	100,000	Weather
Sjøtroll Havbruk Norway	2008	100,000	Unknown

Chart: Lola Navarro, IntraFish Source: GSI, Scotland's Aquaculture, Norway's Directorate of Fisheries and SalmonChile

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