

Literally lousy: Parasite plagues world salmon industry

Tiny crustaceans ruin farmed fish

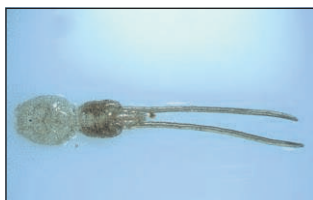
By **PATRICK WHITTLE**
Associated Press

ST. ANDREWS, New Brunswick — Salmon have a lousy problem, and the race to solve it is spanning the globe.

A surge of parasitic sea lice is disrupting salmon farms around the world. The tiny lice attach themselves to salmon and feed on them, killing or rendering them unsuitable for dinner tables.

Meanwhile, wholesale prices of salmon are way up, as high as 50 percent last year. That means higher consumer prices for everything from salmon fillets and steaks to more expensive lox on bagels.

The lice are actually tiny crustaceans that have infested salmon farms in the U.S., Canada, Scotland, Norway and Chile, major suppliers of the high-protein, heart-healthy



Dr. Shawn Robinson/
Cooke Aquaculture

Tiny lice attach themselves to salmon and feed on them, killing or rendering them unsuitable for dinner tables.

fish. Scientists and fish farmers are working on new ways to control the pests, which Fish Farmer Magazine stated last year cost the global aquaculture industry about \$1 billion annually.

So far it has been an uphill struggle that is a threat to a way of life in countries where salmon farming is a part of the culture.

“Our work has to be quicker than the evolution of the lice,” said Jake Elliott, vice president of Cooke Aquaculture in Blacks Harbour,



AP Photo/Robert F. Bukaty

Workers position their boats at a Cooke Aquaculture salmon farm near Blacks Harbour, New Brunswick, Canada, in July. A surge of parasitic sea lice is disrupting salmon farms around the world.

New Brunswick.

Experts say defeating the lice will take a suite of new and established technology, including older management tools such as pesticides and newer strategies such as breeding for genetic resistance. The innovative solutions in use or development include bathing

the salmon in warm water to remove lice and zapping the lice with underwater lasers.

Farmers worldwide consider sea lice the biggest threat to their industry and say the persistent problem is making the fish more expensive to consumers. Farmed salmon was worth nearly \$12 billion

in 2015, according to the Food and Agriculture Organization of the United Nations.

The only hope is to develop new methods to control the spread of lice, which are present in the wild, but thrive in the tightly packed ocean pens for fish farming, said Shawn Robinson, a scientist with the Canadian Department of Fisheries and Oceans.

“There are not enough tools right now to allow the farmer to really effectively deal with it,” Robinson said.

The lice can grow to about the size of a pea and lay thousands of eggs in their brief lifetime. The chance of a louse making its way to a diner’s plate is very small because salmon are checked for lice before being sent to market. But even if one did, eating it wouldn’t pose a health threat.

Atlantic salmon have held their own with sea lice in the wild for centuries, and fish farmers managed them in aquaculture environments for

many years. Then, farmers in Canada identified the lice as a problem around 1994, said Jonathan Carr, executive director of research and environment with the Atlantic Salmon Federation.

Feeding fish a pesticide with the active ingredient of emamectin benzoate became the tool of choice to control lice, Carr said. But around 2009, the lice appeared to become resistant to the pesticide, and they have spread globally since.

The industry’s key mistake was reacting when the lice evolved to survive pesticide, Carr said, rather than “getting ahead in the game.”

“The efficacy went away and pressure developed to create new treatments,” said Kris Nicholls, chief operating officer at Cooke, a major player in world salmon farming.

The worldwide supply of salmon fell almost 10 percent last year, with Norway, the largest producer in the world, especially hard hit.

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AB6478

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FREDERICK SCHALLER Husband and
KAREN SCHALLER Wife

v.

THRONEHEART MANUFACTURING AND CUSTOMS, LLC
Defendants
Case No. 17CV28254

TO: James A. Schlink
Throneheart Manufacturing and Customs, LLC
88746 Wadsworth Rd
Astoria, OR 97103

You are hereby required to appear and defend the Complaint filed against you in the above entitled action within thirty (30) days from the date of service of this Summons upon you, and in case of your failure to do so, for want thereof, Plaintiff will apply to the court for the relief demanded in the Complaint. The Complaint is seeking a money judgment for \$22,193.75 plus costs, disbursements and attorney fees arising from a construction contract Dated: September 12, 2017
Timothy M. Dolan, OSB 840370
Attorney for Plaintiffs'

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If you have any questions, you should see an attorney immediately. If you need help in finding an attorney, you may call the Oregon State Bar’s Lawyer Referral Service at (503) 684-3763, or toll-free in Oregon at (800) 452-7636.

State of Oregon,
County of Tillamook

I, Timothy M. Dolan, attorney of record for the Plaintiff, certify that the foregoing is an exact and complete copy of the original.
Timothy M Dolan
Attorney for Plaintiffs'

Published: September 21st, 28th, October 5th and 12th, 2017.

9-21 CRYPTOQUIP

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