

AP2/2015 Shot Head

Oral Hearing Paper provided  
by

Brian Curran

Galway Bay against Salmon  
Cages



**OHara, Mary**

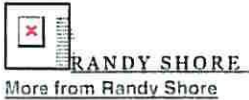
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**From:** Brian Curran [curranb52@gmail.com]  
**Sent:** 21 September 2017 15:16  
**To:** Mary Ohara (Alab)  
**Subject:** Oral Hearing on Bantry Bay application

Mary,

Further to my input to the oral hearing yesterday, I would like to forward to you an article from Canada on small wild fish entering salmon cages.

## First Nations video shows 'thousands' of wild fish in B.C. salmon farm



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There is past and ongoing research to determine to what extent wild fish are preyed upon by farmed fish within net pens. [DISCUSS THIS STORY IN OUR FORUMS](#)  
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Video shot at the Sonora Point salmon farm appears to show large numbers of wild fish inside the pens used to grow Atlantic salmon.

The Sea Shepherd Conservation Society posted footage shot by Hereditary Chief George Quocksister Jr. of the Laichwiltach Nation at a fish farm owned by Marine Harvest.

In the video, a farm worker can be heard saying the pen is empty, while the footage shows large numbers of fish swirling just beneath the surface of the water. Underwater footage appears to show several species of fish that may have entered the pen through the netting.

"I went pen to pen up there and I thought there were maybe seven tonnes of fish in that one," said Quocksister. "But there are all kinds of pens like that."

Quocksister visited several farms in August to shoot video and check for disease at farms throughout the Broughton Archipelago.

He believes Marine Harvest maybe using the fish as natural feed for farmed fish.

"Thousands" of small herring and other species are attracted to the lighting used on the farms, he said. If the fish stay long enough, they grow too big to escape the pens.

"I asked why they don't release the fish and the workers always say the same thing. 'no comment,'" he said. "If it's not for feed, then there's only one way to describe it — intentional kill."

A Marine Harvest spokesperson denied the company intentionally attracts small fish to farm sites.

"The fish are small enough to swim in (through the netting) and they are small enough to swim out," he said. "We ensure that those fish are removed from the pen when the nets are lifted after harvest."

Small fish use the pens as a way to evade predators, he said.

"It provides safety when you are inside, from any predator bigger than the mesh," he said. "The whole site acts a bit like an artificial reef."

The company's record with wild fish is not perfect.

Marine Harvest was fined \$5,000 for a 2009 incident in which it failed to release wild herring to the ocean. The company has since changed its equipment to prevent a repeat of that incident.

"We have ways throughout the production cycle to remove those fish, but some of those little ones do choose to stay, and grow too big to exit the net," said Marine Harvest spokesman Ian Roberts. "At harvest time we do our best to remove those, and most of those fish are released alive."

Those that don't survive are retained and reported to Fisheries and Oceans Canada.

There is past and ongoing research to determine to what extent wild fish are preyed upon by farmed fish within net pens, but at this time predation appears to be minimal, according to Fisheries and Oceans Canada.

Meanwhile, members of the Musgamakw Dzawada'enuxw, Namgis and other First Nations have occupied two Marine Harvest fish farms for almost four weeks, vowing to stay until all the fish farms are removed from their traditional territory.

"We never consented to having these farms here," said K'odi Nelson. The protesters blame the farms for spreading disease among wild fish and the collapse of some important traditional fisheries.

"I am a grizzly bear guide in the summer and have been a commercial fisherman in the past, and there are just no wild salmon anywhere," said Nelson. "The bears are looking for fish in rivers that not to long ago produced huge numbers annually. We natives have not had 'food' fish for two years now where I live."

Protesters are planning to interfere with any effort to restock the pens at the occupied Midsummer Island and Swanson Island fish farms.

"People are willing to get arrested," he said.

Roberts said no new fish are due to be stocked at the occupied farms, but some partly grown fish are scheduled to be moved from a nearby site to an empty Midsummer pen this week.

"We have supplied or offered all of our stocking and harvest plans to the First Nations," he said.

Marine Harvest management met with members of the Namgis First Nation on Sept. 1 in an attempt to resolve the protest, but failed to reach an agreement or to dislodge the occupation.

"Nothing much has changed since then," said Roberts.

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Regards  
Brian E Curran



**OHara, Mary**

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**From:** Brian Curran [curranb52@gmail.com]  
**Sent:** 21 September 2017 15:19  
**To:** Mary Ohara (Alab)  
**Subject:** Bantry Bay oral hearing

Mry,  
I enclose details of the scientific paper from the Chilean scientists on the toxic effects of " medication " used by salmon farms to kill lice and which also kills lobster, crab and scrimp.

Rgards  
Bian E. Curran

## Lice drugs lethal to crab larvae in tiny doses

Four of the most commonly used anti-parasitics against sea lice proved to be lethal at low concentrations for crab larvae, Chilean scientists said.

*Author: Francisco Soto*

In four different experiments, scientists from various Chilean institutions evaluated the effects of cypermethrin, deltamethrin, azamethiphos and hydrogen peroxide on larvae of the Chilean rock crab (*Metacarcinus edwardsii*), the most important commercially exploited crab in the country.

The study investigated the toxic effects on the larvae (*zoea I*) of seven different concentrations of the four chemicals mentioned above (based on manufacturers' recommendations (CRM) for the treatment of *C. rogersresseyi*); and chronic exposure for two weeks to two of these four pesticides.

### 100 per cent mortality

The experts tried to recreate what happens in the industry when they are carried out *in situ* treatments with diverse chemical compounds that later can be downloaded to the marine ecosystem.

"The concentrations and exposure times recommended by the manufacturers of the four compounds have a lethal effect on *zoea I* under acute exposure, producing 100 per cent mortality," explained the authors in their results, and said that all larvae were dead or died after 30 minutes of exposure to cypermethrin and after 40 minutes to deltamethrin at concentrations 100 and 20 times lower than the CRMs.

With respect to the other compounds, azamethiphos affected all larvae at a concentration 10 times lower than CRM and hydrogen peroxide had the lowest detrimental effects, but even so, a 100 per cent mortality rate was observed.

### Water column

The scientists concluded that "the parasitic control can cause a greater damage in other species than previously thought. In addition, several centres may be treated in a relatively small area, which increases the potential for repeated or chronic exposure", and "direct lethal effects of pyrethroids (cypermethrin and deltamethrin) on larvae are probably restricted in time and space with respect to the point of application, but the action of azametines may affect a larger area of the water column".

Regarding the effects on plankton and accumulation in the marine sediment of these chemicals, the researchers mentioned that additional studies are needed to understand the implications in the pelagic and benthic communities.

The abstract of the paper entitled "*Lethal and sub-lethal effects of commonly used anti-lice formulations on non-target crab Metacarcinus edwardsii larvae*", can be reviewed [here](#).

*Published: 31/08/2017 at 4:17 pm*

