

Sea Lice Research Publicity

*Express*News Salmon farms kill wild salmon
Fish farms drive wild salmon populations toward extinction



New U of A study says sea lice from fish farms could wipe out wild salmon

B.C.'s pink salmon can't survive: U of A study



Wild Salmon Mortality Caused By Fish Farms
Up to 95 per cent of wild juvenile salmon killed by parasites from salmon farms

Sea lice killed up to 95% of salmon, team finds

 NATIONAL GEOGRAPHIC  cbc.ca washingtonpost.com

The New York Times

BBC NEWS

Guardian Unlimited

AP Associated Press

AFF

REUTERS 

by Vivian M. Krause
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EXECUTIVE SUMMARY

In 2000, after 17 years of salmon farming in the area, 3.1 million wild pink salmon returned to spawn in the Broughton Archipelago. According to the Department of Fisheries and Oceans Canada (DFO), this exceptionally high return was roughly eight times the historical average and higher than all previous returns observed in the past 50 years. As sometimes occurs after an extremely large return, the 2002 return of the offspring of 2000, was extremely low: 147,000. Of the four possible causes identified by DFO, the Pacific Fisheries Resource Conservation Council, the David Suzuki Foundation and Alexandra Morton have honed in on one possibility: sea lice from salmon farms.

Sea lice research, funded by the Natural Sciences and Engineering Research Council of Canada (29%), the B.C. Pacific Salmon Forum (20%), The David Suzuki Foundation (13%) and others, has been done by Krkosek et al. at the Centre for Mathematical Biology (CMB) at the University of Alberta, in Edmonton. This research has been both praised and criticized. Serious, unacceptable flaws have been noted.

The CMB presents no data as to the origin of observed sea lice. Claims regarding "farm-origin" sea lice are therefore unsupported. Many species of wild fish carry sea lice, including herring and sticklebacks. A method to determine the origin of sea lice is under development but currently does not exist. It is therefore scientifically impossible to tell whether sea lice on wild salmon originate from salmon farms or from other wild fish. Moreover, in the absence of any data on lice levels at the farms, conclusions about "farm-origin" lice are not valid. It is not possible to draw sound conclusions about the transmission of sea lice from point "A" to point "B" without measuring point "A."

The CMB has concluded that the "maximum infection pressure near the farm was 73 times greater than ambient levels." The fact is, sea lice can not infect salmon until about six days after they hatch. In the meantime, they are carried away by ocean currents. If sea lice from salmon farms were infecting wild salmon, it would be many kilometers downstream, not at the farm.

"Farm-origin lice induced **9 - 95 per cent** mortality" in juvenile pink and chum salmon, concluded a peer-reviewed, scientific paper, published by the CMB in 2006. The CMB publicized only the upper limit ("up to 95%") of that range. Furthermore, in a public hearing of the B.C. government, Mr. Martin Krkosek admitted that his data is "all correlative." (pg. 23). A correlation is not evidence of causality.

On 14 December 2007, *Science* published a paper by Krkosek et al. which concluded, "local extinction is certain, and a 99 per cent collapse in pink salmon populations is expected." In this analysis, data for Glendale Creek, the largest watershed in the region, was intentionally excluded. Returns to Glendale Creek increased from 18,200 in 2002 to 662,000 in 2004, the third highest return since 1954. Clearly, this contradicts the assertion that wild pink salmon are on the verge of extinction. (pg. 19).

In science, unsubstantiated claims lack scientific integrity. Getting such claims published in a prestigious, peer-reviewed journal does not change that.

"Integration of Aquaculture Science Messages" and an "Earned Media Campaign"

The CMB has publicized its research with *SeaWeb*, an American organization. After the publication of a sea lice research paper in 2005, *SeaWeb* generated 148 news stories, a very high volume of negative, international media coverage. At the time, *SeaWeb* had been granted \$560,000 by the Gordon and Betty Moore Foundation to co-ordinate an "antifarming campaign" involving "integration of aquaculture science messages," "earned media" and "co-ordination of media for antifarming ENGOs (environmental organizations)." This was part of the \$190 million Wild Salmon Ecosystems Initiative which has granted \$30.2 million to B.C. organizations - all of which are opposed to salmon farming as currently practiced.

According to tax filings to the U.S. Internal Revenue Service, the purpose of the \$560,000 grant to *SeaWeb* was "to provide a high quality toolkit and co-ordination infrastructure for use by ENGOs in their campaigns to shift consumer and retailer demand away from farmed salmon." (pg. 178-179).

SeaWeb, Environmental Defense, the Farmed and Dangerous campaign, and the David Suzuki Foundation, widely publicized the *Science* paper - the day before its publication. By 27 December 2007, Google News listed 248 news items in the U.S., (61%), Canada (24%) and in Austria, Azerbaijan, Australia, Bulgaria, France, India, Italy, Russia, Spain, the U.K. and Uruguay. (pg. 50).

The same environmental organizations that publicized the sea lice research also widely publicized the study of contaminants in wild vs. farmed salmon, by Hites et al., also published in *Science*, in 2004. Since the Hites study, environmental organizations deposition and demarket farmed salmon based on the fallacy that it is high in contaminants and should be avoided, especially by pregnant women.

The Alaskan Context

Both British Columbia and Alaska are involved in salmon aquaculture but have gone about it differently. British Columbia farms about 22 million salmon annually while Alaska ranches about 1.5 billion, 68 times as many. Nearly 2 out of every 5 Alaskan "wild" salmon (38 per cent) are actually *ranch*ed salmon, hatched in a plastic tray, fed pellets and raised in a net pen for as much as half of their lives before being released into the Pacific. Salmon farming is more precautionary than ocean-ranching in that competition over wild feed and inter-breeding between wild and ranched salmon, are avoided.

Facing stiff competition from farmed salmon and many other challenges, the value of Alaskan "wild" salmon collapsed from about \$1.2 billion (1988) to \$168 million (2002). (pg. 94). In 2003, the former Alaskan Governor announced a \$50 million Salmon Revitalization Strategy and a "new way of marketing." Since the negative publicity over contaminants in farmed salmon and salmon farming, the value of Alaskan "wild" salmon has more than doubled to \$380 million (2007).

Central to the brand marketing for Alaskan salmon is to position ranched salmon as wild or "wild caught" and to differentiate "wild" salmon from farmed. Environmental organizations facilitate product differentiation by depicting farmed salmon as unsafe and unsustainable. The Alaska Seafood Marketing Institute (ASMI) has acknowledged working with environmental groups and "conservation funders." When asked why ASMI doesn't bash farmed fish, ASMI's Executive Director once said, "It is far more credible to leave the attack to third parties, such as environmental groups and newspaper columnists, than it is for us to come out and do it ourselves."

Conclusions

Research in an "antifarming campaign" is hardly impartial. The Natural Sciences and Engineering Research Council of Canada states, "researchers must formulate sound research questions, design rigorous protocols and methodologies, meticulously collect data, and impartially analyze their findings. They must communicate research results objectively and comprehensively." Based on the opinions of senior scientists and experts as presented in this document, it appears that with regards to sea lice, the researchers associated with Centre for Mathematical Biology, have not done so.

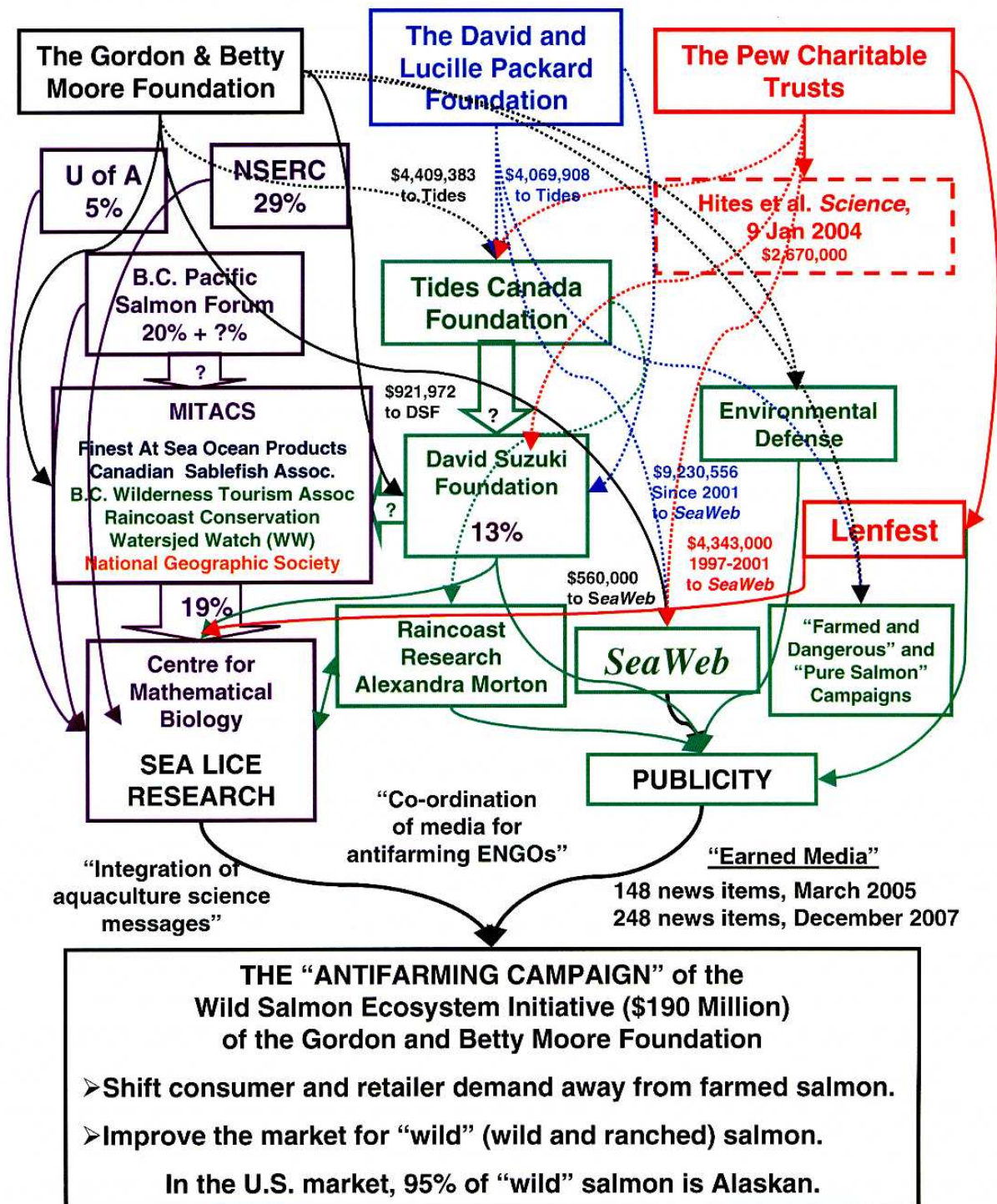
The truth is that the sea lice research findings of the Centre for Mathematical Biology are not evidence that sea lice from salmon farms harm wild salmon populations. The actual sea lice research findings have been erroneously communicated by the Centre for Mathematical Biology, in disregard of the truth.

It appears that the publicity of sea lice research is part of a large, well-funded international effort to depict salmon farming as environmentally unsustainable and thereby shift consumer and retail demand away from farmed salmon and improve the market for wild and ranched salmon, especially Alaskan salmon.

Like the publicity of the studies on contaminants in farmed salmon, the publicity of the sea lice research appears to serve marketing purposes but the research itself lacks scientific integrity.

Flouting the integrity of science to influence market share, must not be tolerated. A full investigation appears to be called for.

Funding



Solid lines denote funding related to the sea lice research and its publicity. Dotted lines denote funding to an environmental organization, for other purposes. The percentages refer to funding for the sea lice research, as reported at the web-site of the University of Alberta. The question marks indicate that according to the web-site of the University of Alberta, funding was provided but the percentage is not reported.

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