

## Fish Farm Fuss

Why are consumers being swayed away from farmed **fish**? Who benefits? Who funds this?

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**January 2010**

01/25/2010

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01/19/2010

### **Where Did The David Suzuki Foundation Get \$27.4 Million? How Much Came From American Sources?**

Please read: [Important Notice and Disclaimer](#)

The David Suzuki Foundation says that it is the "most credible voice in Canada" on major environmental issues. Indeed, the David Suzuki Foundation has a significant influence. As such, its fair to ask questions about its sources of funding and their disclosure.

According to calculations based on information that is publicly available at the web-site of [Revenue Canada](#), since 2000 the David Suzuki Foundation has had revenues of about \$61.3 million. Of that, \$32.2 million (53 percent) was from tax-receipted donations, \$4.9 million (8 percent) was from other registered charities, and \$22.5 million (27 percent) was from other gifts and other revenues. A total of \$1.7 million (3 percent) was from fees, interest and dividends, rental income, and income from the sale of goods and services.

A total of about \$27.4 million - 35 percent of all amounts received - was from other registered charities and other sources. Where did these funds originate?

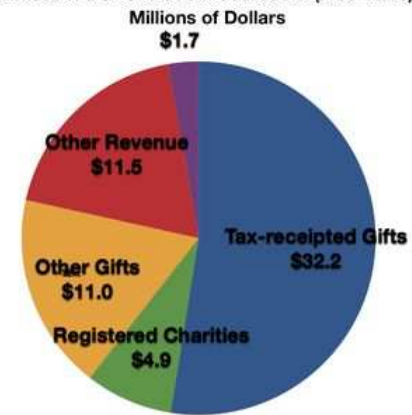
U.S. tax returns and information from [Capital Research](#) shows that American foundations have granted about [\\$US 10 Million](#) to the David Suzuki Foundation. Several of these American foundations - including the David and Lucile Packard Foundation - have simultaneously provided substantial funding to American organizations that [promote Alaskan salmon](#).

In addition, three of these same American foundations have granted [\\$US43.7Million](#) to [Tides Canada Foundation](#) which re-grants to the David Suzuki Foundation and other organizations.

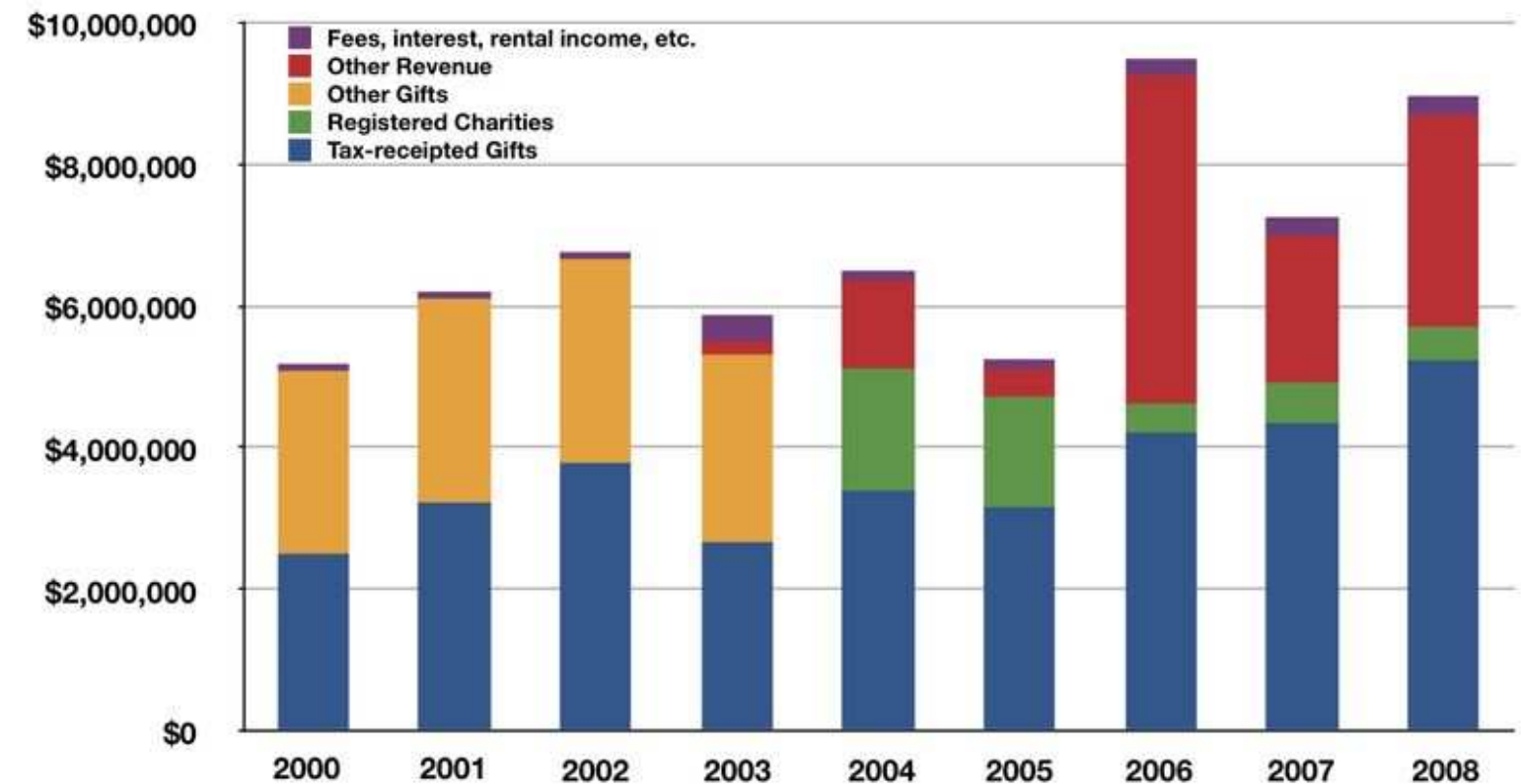
In her account of its [history](#), the president of the David Suzuki Foundation says that the foundation got started with a fund-raising trip to [Alaska](#). In the London Times, the David Suzuki Foundation is described as "a Canadian environmental organization which campaigns on behalf of Alaskan wild salmon fishing." Several [Alaskan fishing companies](#) use the David Suzuki Foundation's materials, such as the brochure, "[Why You Shouldn't Eat Farmed Salmon](#)," in their on-line marketing.

Of the \$27.4 million that the David Suzuki Foundation has received since 2000 from other charities and other sources, how much originated from American sources?

Revenues of the David Suzuki Foundation (2000 - 2008)



## Revenues of the David Suzuki Foundation (2000 - 2008)



For a larger, easier-to-read view, click on the table below:

**Revenues of the David Suzuki Foundation (2000 - 2008)**

Source of Amount Received (Line item)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000 - 2008
Total Tax-receipted Gifts (100)	\$2,473,933	\$3,204,243	\$3,735,757	\$2,633,913	\$3,362,887	\$3,121,740	\$4,177,210	\$4,320,976	\$5,200,760	\$32,231,419
Registered Charities (4510)					\$1,751,565	\$1,573,582	\$443,986	\$580,213	\$507,265	\$4,856,611
Total Other Gifts (102)	\$2,609,272	\$2,898,471	\$2,888,564	\$2,658,458						\$11,054,765
Other Revenue (4650)				\$190,130	\$1,249,327	\$392,107	\$4,643,091	\$2,068,047	\$2,977,671	\$11,520,373
Other (see below)	\$105,658	\$104,362	\$99,695	\$345,876	\$122,952	\$131,577	\$224,132	\$270,826	\$276,353	\$1,681,431
<b>(A) Sub-total:</b>	<b>\$5,188,863</b>	<b>\$6,207,076</b>	<b>\$6,724,016</b>	<b>\$5,828,377</b>	<b>\$6,486,731</b>	<b>\$5,219,006</b>	<b>\$9,488,419</b>	<b>\$7,240,062</b>	<b>\$8,962,049</b>	<b>\$61,344,599</b>
(B) Net realized capital gains	\$16,574	\$5,166	\$240							
<b>(A-B) Total Received:</b>	<b>\$5,172,289</b>	<b>\$6,201,910</b>	<b>\$6,723,776</b>	<b>\$5,828,377</b>	<b>\$6,486,731</b>	<b>\$5,219,006</b>	<b>\$9,488,419</b>	<b>\$7,240,062</b>	<b>\$8,962,049</b>	
<b>Other Sources of Amounts Received:</b>										
Other fees and earned income	\$9,396	\$4,940	\$2,099							\$16,435
Payments thru fundraising	\$18,423	\$6,131	\$14,980							\$39,534
Interest & Dividends	\$45,554	\$65,841	\$71,177							\$182,572
Other income	\$32,285	\$27,450	\$11,439							\$71,174
Interest & Investment Income (4580)				\$59,968	\$98,707	\$109,855	\$206,325	\$255,027	\$255,415	\$985,297
Rental Income								\$6,574	\$6,487	\$13,061
Sale of Goods & Services (4640)				\$285,908	\$24,245	\$21,722	\$17,807	\$9,225	\$14,451	\$373,358
									Sub-total:	\$1,681,431

Source: The above table presents calculations done by the author of this blog based on information publicly available at the web-site of [Revenue Canada](http://RevenueCanada.ca).

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**Who Funded The David Suzuki Foundation's Brochure, "Why You Shouldn't Eat Farmed Salmon?"**

Please read: [Important Notice and Disclaimer](#)

The David Suzuki Foundation distributes a brochure titled, "**Why You Shouldn't Eat Farmed Salmon.**" This brochure was produced as part of the Pacific Salmon Forests project. See: [Farmed Salmon: PSF Salmon Brochure](#)

Around the same time that this brochure was first published, David Suzuki personally sent a [form letter](#) to his supporters in which he falsely reported, "B.C. farmed salmon is heavily contaminated with PCBs and other toxins." David Suzuki also reported that this brochure had "quickly zoomed to the top of our web-site's 'most-downloaded file' list."

According to U.S. tax returns, American foundations have paid **\$US 2.8 million** to the David Suzuki Foundation for the Pacific Salmon Forests project, including:

- \$762,600 from the David and Lucile Packard Foundation, California (CA)
  - [\\$US 362,600 in 2000](#)
  - [\\$US 400,000 in 2001](#)
- \$ 815,000 from the William and Flora Hewlett Foundation, Menlo Park, CA
  - [\\$US 315,000 in 1999](#)
  - [\\$US 250,000 in 2000](#)
  - [\\$US 250,000 in 2001](#)
- \$ 1,080,000 from the Lannan Foundation, based in New Mexico
  - [\\$US 330,000 in 2000](#)
  - [\\$US 250,000 in 2001](#)
  - [\\$US 250,000 in 2002](#)
  - [\\$US 250,000 in 2003](#)
- \$ 180,000 from the Richard and Rhoda Goldman Fund, San Francisco, CA
  - [\\$US 150,000](#) (1999 - 2001) and [\\$US 30,000](#) in 2002
- [\\$US 20,000](#) from the Marisla Foundation, based in Laguna Beach, CA

As it appears, the \$US 762,600 from the David and Lucile Packard Foundation was provided as part of the Marine Fisheries program. This program has a strategy titled [Market Intervention Tools](#) to Conserve Marine Fisheries. Was the David Suzuki Foundation's brochure, **Why You Shouldn't Eat Farmed Salmon**, one of the Market Intervention tools paid for by the David and Lucile Packard Foundation - based in California?

Over roughly the same period that the Goldman Fund granted \$180,000 to the David Suzuki Foundation, the Goldman Fund also paid \$60,000 to the Institute for Agriculture and Trade Policy (I.A.T.P.) based in Minneapolis, Minnesota for a project titled, "[Ending Industrial Aquaculture.](#)" The I.A.T.P. co-ordinates the "[Go Wild](#)" campaign for which the stated purpose is "to break the cheap farmed **fish** habit... so that wild **fish** will be more widely distributed."

The [Salmon Shopper's Guide](#) produced by the I.A.T.P. refers readers to the David Suzuki Foundation for on-line information on "the perils of feedlot salmon farming." Another [Salmon Shopper's Guide](#) produced as part of the Go Wild campaign refers the public to SeaWeb (Seafood Choices), the Farmed and Dangerous campaign and the Marine Stewardship Council. The guides say, "There are two choices of salmon: wild and farmed." These guides make no mention of [ocean-ranching](#) or





rancher salmon.

The Goldman Fund also granted [\\$US 5 million](#) to the National Geographic Society. National Geographic published a scathing article on salmon farming, titled, "[Atlantic Salmon: Here's the catch...](#)" National Geographic also supported [sea lice research](#) done under the auspices of the University of Alberta.

The Hewlett foundation and the Marisla foundation have also provided funding to [Fundacion Terram](#), a Chilean organization which opposes salmon farming in Chile.

### Which communities is the Pacific Salmon Forests project protecting?

In her account of the [History](#) of the David Suzuki Foundation, the president describes the Pacific Salmon Project as "our all-out attempt to protect the forests and **fish** of our own home by nurturing healthy communities within healthy ecosystems." Which communities is the Pacific Salmon Forests projects seeking to nurture?

Communities that rely on commercial fishing - and the market for wild and rancher-caught salmon on which the fishing industry depends? What has this project done to protect Canadian and Chilean communities which have come to rely on salmon farming for social and economic stability and progress?

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### Why Did David Suzuki Falsely Report, "B.C. Farmed Salmon Is Heavily Contaminated With PCBs?"

Please read: [Important Notice and Disclaimer](#)

The David Suzuki Foundation says that it is "the most credible voice in Canada" on major environmental issues (1).

The seafood guide promoted by the David Suzuki Foundation indicates that regular consumption of farmed salmon poses a "health threat" because of PCBs.

**Alert Codes**

**Green = Best Choice.** This species is currently fished/ harvested sustainably and represents a best choice. Enjoy, while supporting responsible fishing and coastal livelihoods.

**Yellow = Some Concerns.** Seafood that should be consumed infrequently, or when a green choice is not available. There are conservation concerns with the current populations or practices in this fishery.

**Red = Avoid.** Do not purchase these fish for now. They come from sources that have a combination of problems—habitat damage, discard of unwanted species, poor management, low populations, can be easily harmed by fishing or may be listed by governments as Endangered.

**Health advisory.** Regular consumption of one or more species in this listing poses a health threat from  $\diamond$  mercury or from  $\ominus$  PCB, dioxins or pesticides. For further information visit: [www.seachoice.org](http://www.seachoice.org)

**Avoid**

- Caviar/ Sturgeon (Int'l) *wild*  $\ominus \diamond$
- Chilean seabass/ Patagonian toothfish  $\diamond$
- Clams (Atl.) *dredged*
- Cod: Atlantic
- Crab: King (Russia)
- Flounder/ Sole: (US Atl.), Arrowtooth (Canada)  $\ominus$
- Grenadier
- Haddock *trawl*
- Halibut: Atlantic (US) *trawl*  $\diamond$
- Lobster: Spiny (Int'l except Aus. + US)
- Monkfish  $\diamond$
- Orange roughy  $\diamond$
- Rockfish/ Snapper *trawl*  $\diamond$
- Salmon: Atlantic, Chinook *farmed*  $\ominus$
- Scallops: Sea (Canada, Mid-Atl-US)
- Shark (Atl., Int'l)  $\diamond$
- Shrimp/ Prawn: Tiger, White (Int'l)
- Swordfish (Canada, Med., SE Atl.) *pelagic longline*  $\diamond$
- Tilapia (China, Taiwan) *farmed*
- \*Tuna (Pac. Int'l) *pelagic longline*  $\diamond$
- Tuna: Bluefin  $\diamond$

David Suzuki has described farmed salmon as "full of toxic chemicals" and "poison." He's said that he wouldn't feed it to a child (2,3). The David Suzuki Foundation says that farmed salmon should be avoided, especially by women of childbearing age and young children (4).

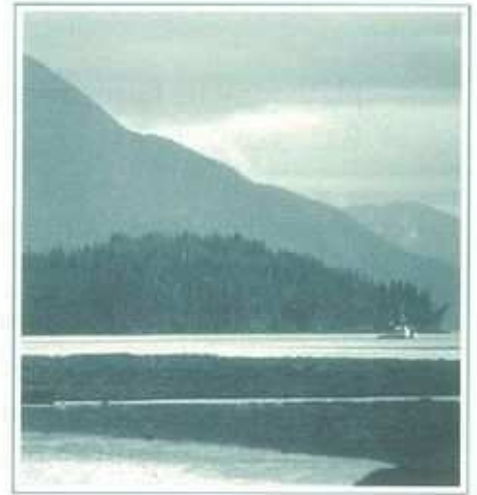
On the basis of information outlined in a [previous post](#), it is clear to the author of this blog that with regards to PCBs in farmed salmon and farmed salmon consumption, the David Suzuki Foundation's advice is gravely out of line with the world's leading health authorities.

Back in 2002, David Suzuki personally sent a [form letter](#) to his supporters - including the author of this blog. As shown below, David Suzuki's letter began, "This may be one of the most unusual "Thank you" letters you've ever received, but here goes... I want to say thank you for helping me to uncover the fact that B.C. farmed salmon is heavily contaminated with PCBs and other toxins."

# David Suzuki Foundation

Finding solutions

Vivian Krause  
1524 Mahon Avenue  
North Vancouver, BC V7M 2S5



May 21, 2002

Dear Ms. Krause,

This may be one of the most unusual "Thank you" letters you've ever received, but here goes...

I want to say thank you for helping me to uncover the fact that B.C. farmed salmon is heavily contaminated with PCBs and other toxins.

Thank you, also, for helping bring to light that over one million of these farmed salmon have escaped into B.C. waters, to mix with wild, native salmon. (A study conducted by the U.N. says that this introduction of non-native species into natural fish stocks is one of today's major environmental threats.)

I really do mean *Thank you*. This news is not good -- far from it. But it's good that we now know the scope and severity of the situation. Your last gift to the David Suzuki Foundation made this research possible. And now, we can work to shine the public spotlight on it.

The study that David Suzuki was referring to was by [Easton et al. \(2002\)](#). The Easton study and its publicity prompted immediate criticism from the scientific community. For example, Dr. Charles Santerre of Purdue University wrote a [letter to the editor](#) of the journal in which the Easton study was published. Problems noted with this study included the following:

- This sample size was only 4 "wild" salmon and 4 farmed salmon. Such an extremely small sample is not representative of either farmed or wild salmon as a whole.
- Mercury levels were actually **higher** in the wild salmon than in the farmed salmon but this wasn't mentioned in the text of the paper nor in the David Suzuki Foundation's press release.
- Rather than the conventional manner of reporting the results in parts per million (ppm), the concentrations of polycarbonate biphenyls (PCBs) were reported in parts per trillion (ppt) making the numbers seem much larger (eg. 51,216 ppt instead of 0.051 ppm).

Unfortunately, PCBs are found in trace amounts in all foods. Health Canada and the U.S. Food and Drug Agency (F.D.A.) have set limits at which concentrations of contaminants are considered tolerable. In both the U.S. and Canada, the tolerable level for PCBs in fish is 2.0 parts per million (ppm). The level of PCBs found in farmed salmon in the Easton study was 0.051 ppm - less than 3 percent of the tolerable level (2.0 ppm) set by both Health Canada and the F.D.A.

In view of the points mentioned above, it is evident that Easton et al. (2002) did not show that B.C. farmed salmon is heavily contaminated with PCBs and other toxins. It follows that David Suzuki did not uncover the "fact" that he said he did in his letter of 21 May 2002.

According to common knowledge, inaccurate, untrue reporting is false. False claims are claims that are not properly or honestly made. In this sense of the word "false,"

when David Suzuki wrote that he had uncovered the "fact" that B.C. farmed salmon is heavily contaminated with PCBs and other toxins, what David Suzuki reported is false.

Even before the Easton study was published, the David Suzuki Foundation published an article in its newsletter titled, "[Toxic Salmon](#)" (see [page 5](#)). The article was sub-titled, "Study shows BC's Farmed Salmon Contain High Levels of Contaminates." (Note: the term "contaminants" is spelled incorrectly in the headline of the David Suzuki Foundation's newsletter).



In the spring of 2009, the author of this blog sent a [series of letters](#) appealing to David Suzuki to clarify that research findings do NOT show that farmed salmon is "high" in PCBs.

## MEDIA COVERAGE

BBC World News reported the Easton study with the alarming headline, [Farmed Salmon 'Contaminated.'](#)

Publicity of the Easton study in the summer of 2001 appears to have come on the heels of market research by SeaWeb, done in the spring of the same year. One of SeaWeb's findings was that health risks - not health benefits or environmental concerns (eg. over-fishing) - are the most compelling reason why people might avoid a certain fish. In fact, when it comes to fish selection, SeaWeb found that the least important factor to consumers was whether the species was over-fished; only 18 percent of consumers would entirely give up eating farmed Atlantic salmon if they found that it was harvested in a harmful way whereas 57 percent would decide against purchasing a particular fish because of concerns about contamination or food safety. (See [Appendix 2, Questions #10 and #27](#)).

## FUNDING

In his form letter to supporters on 21 May 2002, David Suzuki said that his foundation's research on PCBs in farmed salmon was made possible by donations from supporters. According to the web-site of the Lazar Foundation, based in Portland, Oregon, the Lazar Foundation paid the David Suzuki Foundation \$US11,500 "For testing of farmed salmon and their feed for residue contamination, and for publishing the test results." The same year, the Lazar foundation paid SeaWeb \$US9,000 "For public opinion research on attitudes towards wild and farmed salmon." The Lazar Foundation also paid the David Suzuki Foundation \$US12,500 "For legal action challenging the expansion of salmon feedlots in British Columbia."

- [\\$US 11,500 for testing farmed salmon and publishing the results](#)
- [\\$US 12,500 for legal action challenging the expansion of salmon farming](#)
- [\\$US 9,000 for public opinion research on wild and farmed salmon](#)

The Lazar Foundation states in its Grant-Making Guidelines that it does not accept proposals on "toxics" and that it will not usually fund conservation-based scientific research (5). So why did the Lazar Foundation pay the David Suzuki Foundation to analyze and publicize research on contaminants in farmed salmon?

In the author's opinion, its fair to ask these questions:

- Why did David Suzuki falsely report, "B.C. farmed slamon is heavily contaminated with PCBs and other toxins?" Did he make an honest error? Did he honestly believe that B.C. farmed salmon is "heavily contaminated with PCBs" - despite the fact that the level detected (in a study of merely 4 farmed salmon) was only 3 percent of what Health Canada and the U.S. F.D.A. consider to be the tolerable level?
- Did David Suzuki and his foundation intentionally manufacture controversy over PCBs in farmed salmon because this serves the purposes of American funders? David Suzuki was asked this question in a [letter sent 21 May 2009](#). He eventually [replied on 15 June 2009](#) but did not answer the question.

## Sources:

- (1) The David Suzuki Foundation. [Press Release: David Suzuki Foundation Mourns Jim Fulton](#), 22 December 2008.
- (2) Rehn, A. Blue-tounged blizzard at Oz. In The Herald Sun, 19 October 2006.
- (3) Sampson, S. The Great Salmon Debate. The Toronto Star, 4 September 2004.
- (4) The David Suzuki Foundation. [Fishing for omega-3s](#) Undated.
- (5) The Lazar Foundation. [Grant-making Guidelines](#). Undated.

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## Why Did the University of Alberta and The David Suzuki Foundation Falsely Report, "Wild Salmon Mortality Caused By Fish Farms?"

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Please read: [Important Notice and Disclaimer](#)

A [previous post](#) concluded the actual sea lice research findings of the Center for Mathematical Biology do NOT show that sea lice originating from salmon farms cause high levels of mortality among juvenile salmon in the wild. And yet, in reporting their research findings in 2006, the University of Alberta reported, "Wild salmon mortality caused by fish farms." (See below). In view of the lack of evidence that the observed sea lice actually did originate from salmon farms, and the lack of evidence of a causal link between sea lice and mortality among juvenile salmon in the wild, this claim is false.





PRESS RELEASE

27 September 2006

Contact: Martin Krkosek, University of Alberta, Edmonton, Canada, (250) 415-7368, mkrkosek@ualberta.ca

Wild Salmon Mortality Caused By Fish Farms

Up to 95 per cent of wild juvenile salmon killed by parasites from salmon farms

Research just published has confirmed that sea lice from fish farms kill wild salmon. Sea lice are natural parasites of fish, but fish farms change the way wild salmon get infected. The result is up to 95 per cent of wild juvenile salmon are dying.

This press release includes the comments, "Research just published has confirmed that sea lice from fish farms kill wild salmon.... The result is up to 95 per cent of wild juvenile salmon are dying." The wording used in this press release gives the impression that the research results were first-hand observations of salmon dying in real life. The fact is, the actual published, research results were computer-generated, hypothetical predictions of mortality. Why did the CMB report computer-generated, hypothetical predictions (done in Edmonton, Alberta) using wording which implied that the CMB actually saw salmon dying in 'real-life' in the Broughton Archipelago of British Columbia?

Shortly after the author of this blog contacted the University of Alberta to express concern about the misreporting of sea lice research findings by the Centre for Mathematical Biology, this press release appears to have been [made inaccessible](#) at the web-site of the University of Alberta. This [link](#) shows this press release before it was made inaccessible or removed.

The David Suzuki Foundation also falsely claimed that research shows that sea lice originating from salmon farms were causing high levels of mortality among juvenile salmon in the wild. Below, is one example found [here](#) at the web-site of the David Suzuki Foundation.

Wild Salmon Mortality Caused by Fish-farm Sea Lice

Sea Lice and Salmon Farm Linkage confirmed - University of Alberta doctoral student Martin Krkosek published a study in the Proceedings of the National Academies of Science (US) demonstrating further evidence of the negative effects of salmon farms on wild salmon and thus increasing the weight of evidence that current open net pen farming must change.

Published 2006

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Since the author of this blog wrote to David Suzuki to express concern about the misreporting of sea lice research findings by his foundation, at least two press releases appear to have been removed from the web-site of the David Suzuki Foundation:

- [David Suzuki Foundation, 29 March 2005: Fish farm causes sea lice abundances thousands of times high than natural levels, new study confirms](#)
- [David Suzuki Foundation, 3 October 2006: Government must act on new study proving sea lice deadly to wild salmon](#)

The links below show the press releases that appear to have been removed:

- [David Suzuki Foundation Press Release, 29 March 2005](#)
- [David Suzuki Foundation Press Release 3 October 2006](#)

In keeping with the press releases issued by the University of Alberta and the David Suzuki Foundation, the media falsely reported that research shows that sea lice from salmon farms are killing wild salmon. For example:

- "Salmon farms kill wild salmon," reported the [University of Alberta](#)
- "Wild salmon ravaged by fish farm infections," [reported the UK Sunday Times](#)
- "Fish Farms Also Harbor Deadly Lice," [reported the NY Times](#)
- "Study: Fish farms spread lice that kill wild salmon," [reported Fox News](#)
- "Fish farms kill wild salmon, study finds," [reported CBC](#)
- "Wild salmon being ravaged by fish farm lice: study" [reported CTV](#)
- Sea lice 'killing off wild salmon,'" [reported the Vancouver SUN](#)
- "Lice from fish farms killing wild salmon," [reported National Geographic News](#)
- "Wild salmon catch killer pest from captive stocks," [reported the New Scientists](#).
- "Sea lice from salmon farms killing wild salmon, study finds," [The Seattle Times](#).

This was also falsely reported in German and Japanese:

- [Sea Läuse getötet bis zu 95% der Lachs, Team fest](#)
- [95%](#)

It would not have been easy for the Farmed and Dangerous campaign and the Pure Salmon campaign to shift consumer and retailer demand away from farmed salmon (which is what these campaigns were funded for) while admitting that 1) sea lice come from wild fish such as herring and sticklebacks and that there's no way of telling where they originate, 2) the CMB's computer-generated predictions included estimates of high SURVIVAL despite exposure to sea lice, and 3) Alexandra Morton's early studies that found high mortality were not controlled experiments, and have not been replicated.

Indeed, it would have been much easier to sway market demand away from farmed salmon with a Smarten Up Safeway campaign and the tag-line "Ingredients for Extinction," apparently based on peer-reviewed science published in a prestigious journal and widely publicized by a Canadian university and the David Suzuki Foundation.

In the wake of extensive bad press about sea lice, a "war on fish farmers" was declared and more than 20,000 people have signed Alexandra Morton's petition to close salmon farms. In view of these harsh consequences, it is the author's opinion that these questions are fair:

- Why did the University of Alberta and the David Suzuki Foundation falsely report that research findings show that sea lice from fish farms cause high levels of mortality among juvenile salmon in the wild?
- Was the reporting of a correlation as evidence of causality a matter of honest error - by the recipient of the Gold Medal of the Governor General of Canada?
- Were sea lice research findings falsely reported knowingly and purposefully?
- Were sea lice research findings falsely reported as part of the "integration of aquaculture science messages" of

**Ingredients for extinction?**

**SAFeway's Support for Farmed Salmon: A Recipe for Disaster For BC's Wild Salmon**

A growing body of evidence indicates that sea lice from salmon farms are killing BC's wild salmon. Wild salmon are the lifeblood of our coast, integral to the survival of the bears, the eagles, and the rainforest itself. Safeway continues to sell farmed salmon despite the known environmental risks. The cost of extermination



an "[anti-farming campaign](#)" to shift consumer and retailer demand away from farmed salmon? Were sea lice research findings falsely reported as part of the "Context Setting" of a marketing program called Seafood Choices, the largest program of the Center for Mathematical Biology's American "research partner?"

- Was bad press about sea lice part of the "[earned media](#)" of a marketing strategy" to shift consumers and retailers towards MSC-certified wild fish - most of which is Alaskan - and away from the competition? If this isn't the reason for the selective and inaccurate reporting of sea lice research findings, *what is?*

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## Does research show that sea lice from salmon farms put wild salmon at risk of extinction in British Columbia?

This presents the concerns, opinions and questions of the author.

Please read: [Important Notice and Disclaimer](#)

In the journal *SCIENCE*, the Centre for Mathematical Biology at the University of Alberta published a paper which claims that sea lice originating from salmon farms put wild pink salmon at serious risk of extinction in the Broughton Archipelago of British Columbia.

Two groups of scientists published critiques of this paper: [Brooks & Jones \(2008\)](#) and [Riddell et al. \(2008\)](#). The main points raised by these scientists are summarized below:

### 1. Exclusion of data prior to 2000 not appropriate

Riddell et al. (2008) note that Krkosek's conclusions follow from their selective use of data in which they defined the period of exposure to sea lice from salmon farms as having begun in 2000. The fact is, salmon farming in the Broughton Archipelago began in the late 1980s, not in 2000. Riddell et al. (2008) point out that the even-year pink salmon populations in the Broughton Archipelago reached an historic high in 2000 whereas the odd-year line has been declining since the early 1980s - well before salmon farming began in the area.

### 2. Exclusion of data from Glendale creek not justified

Krkosek et al. (2007) excluded the Glendale Creek on the grounds that it has a spawning channel. However, they did not exclude the Kakweiken river which also has a spawning channel. Riddell et al. (2008) note that juvenile pink salmon originating from the Glendale would be as susceptible to sea lice as any other salmon. The presence of a spawning channel doesn't change that.

Glendale Creek is the major pink salmon producing system in the Broughton. Between 1999 and 2005, the Glendale produced 89 per cent of the Broughton pink salmon returns in odd years and 39 per cent in even years. Returns to the Glendale Creek increased from about 18,200 in 2002 to about 662,000 in 2004. That was the third highest return observed since 1954. Evidently, this contradicts the assertion that wild pink salmon in the Broughton Archipelago are on the verge of extinction. Had the Glendale data been included, the data would not likely have supported the extinction hypothesis.

### 3. Opposite conclusions reached when entire database analyzed

Riddell et al. (2008) provide data on wild pink salmon returns to the Broughton Archipelago for odd years and for even years, going back as far as 1970. When all data are taken into consideration going back as far as 1970, it is clear that low returns observed in 2002 are within the historical range when the Glendale River is included in the analysis. In fact, Brooks and Jones (2008) note that when data for both odd years and even years are considered and the Glendale creek data is not excluded, the trend in wild pink salmon returns in the Broughton Archipelago is towards **increasing** returns since 2002, not decreasing returns. Brooks and Jones conclude, "when all of the Broughton's watersheds are considered, pink salmon stocks are seen to have steadily **increased** over the last five years with no indication that they are headed for extinction."

### 4. Claims of high juvenile salmon mortality refuted by controlled studies

Brooks and Jones (2008) note that Krkosek et al. based their mortality estimates on studies in which alternative sources of mortality were not controlled. Under controlled, laboratory condition, mortality observed following exposure to sea lice (*L. salmonis* copepodids) has been low. Studies have found that, in stark contrast to Atlantic salmon, Pacific salmon appear to be exhibit some degree of resistance to sea lice.

### 5. Sea lice are found on juvenile wild salmon

Trudel et al. (2006) found that approximately 25 percent of juvenile pink salmon examined in the Eastern Bering Sea were infected with one to six sea lice with a mean intensity of 1.5 lice per infected fish. Trudel et al. (2006) concluded, "This study demonstrated that salmon infested with lice remain in coastal waters throughout the year. We suggest that lice on salmon that over-winter in coastal waters will contribute to the infestation of salmon smolts migrating to sea in the spring..."

Alaskan scientists, found that the prevalence of sea lice on juveniles was about 3 - 4 percent for pink and chum salmon, 8 percent for sockeye and 53 percent for coho. These findings are from Alaska where there are no salmon farms.

### 6. Variability of wild pink salmon returns missed or ignored

Brooks and Jones (2008) note that wild pink salmon returns have varied widely in the Broughton Archipelago. For example, in the Kakweiken River, returns have been characterized by repeated fluctuations from 800,000 fish in 1975 and 1983 to less than 100,000 in most years. Returns to the Klinaklini river virtually disappeared between 1974 and 1992. The population suddenly rebounded in 1998 - eleven years after salmon farming began in the archipelago. In the Duckabush River, a tributary to Hood Canal in Washington State, where there have never been any salmon farms, returns also varied markedly.

### 7. Use of the term "extinction" is inappropriate

Riddell et al. (2008) suggests that the use of the term "extinction" is inappropriate because it implies irreversibility. Loss of production from some streams is replaceable, particularly in the small streams of the Broughton Archipelago where there are no detectable genetic differences between streams. These could be re-colonized without loss of genetic diversity.

In view of the points raised by Brooks and Jones (2007), Riddell et al. (2008) and others, it is evident that Krkosek et al. (2007) does NOT show that wild pink salmon

in the Broughton Archipelago are at risk of extinction due to sea lice originating from salmon farms. Moreover, wild pink salmon returns in the Broughton archipelago were so strong in 2009 that [commercial fishing](#) was allowed in the area - in precisely the same area where Krkosek et al. (2007) predicted that wild pink salmon were on the verge of extinction.

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## Does research show that sea lice originating from salmon farms cause high levels of mortality among juvenile salmon in the wild?

This presents the concerns, opinions and questions of the author.

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Since 2001, David Suzuki, Alexandra Morton and others have claimed that research shows that sea lice from salmon farms cause high levels of mortality among juvenile salmon in the wild and put their populations at serious risk of extinction. In 2005, the scientists from the Centre for Mathematical Biology (CMB) at the University of Alberta began publishing a series of research papers which have appeared to legitimize these claims.

If sound science shows that sea lice originating from salmon farms are indeed putting wild salmon at risk of extinction, it goes without saying that salmon farming should be improved or stopped. The fact is, however, senior scientists and experts have suggested that the actual sea lice research findings from the University of Alberta (UofA) do NOT show that sea lice originating from salmon farms cause high levels of mortality among juvenile salmon in the wild. Simply put, the actual research findings do NOT show what the UofA scientists, the David Suzuki Foundation and Alexandra Morton have been saying.

### A. THE ORIGIN OF THE SEA LICE

Sea lice are found on many species of wild fish, including herring and sticklebacks. According to [Fisheries and Oceans Canada \(see page 25\)](#), a method to identify the origin of sea lice is under development but does not yet exist. In reporting to the Government of British Columbia, DFO stated, "... a method to determine the origin of sea lice (ie. did the sea lice originate from a salmon farm or a natural host?) has not yet been developed."

According to the Association of Aquatic Veterinarians of British Columbia, "... without isotopes or some other traceable signature, it is not possible to know whether the source of lice seen on the juveniles was from the farms or from a wild source."

And yet, in their published, scientific papers, the scientists associated with the Center for Mathematical Biology (CMB) at the University of Alberta have made numerous claims about "farm-origin" and "farm-induced" sea lice and "sea lice originating from salmon farms." For example:

- In a [published paper](#), Krkosek, Lewis and Volpe (2005) report, "The **farm-produced** cohort of lice parasitizing the wild juvenile hosts reached reproductive maturity and produced a second generation of lice that re-infected the juvenile salmon. This raised the infection pressure from the farm by an additional order of magnitude, with a composite infection pressure that exceeds ambient levels for 75 km of the two migration routes."
- In a [published paper](#), Krkosek et al. (2006) report, "**Farm-origin lice** induced 9-95 percent mortality in several sympatric wild juvenile pink and chum salmon populations."
- In the journal *SCIENCE*, Krkosek et al. (2007) report, "The **louse-induced** mortality of pink salmon is commonly over 80% and exceeds previous fishing mortality." "These results provide strong empirical evidence that salmon **farm-induced** *L. salmonis* infestations of juvenile pink salmon have depressed wild pink salmon populations and may lead to their local extinction."

Considering that a technique to determine the origin of sea lice does not yet exist, claims about "farm-origin," "farm-produced," and "farm-induced" sea lice, are false. Getting these claims published in a prestigious, scientific journal doesn't change that.

### B. CORRELATION OR CAUSATION?

According to [Hansard transcripts](#), Mr. Krkosek admitted to Mr. John Yap and other members of the B.C. government that this data is "all correlative." The following is a section of the exchange between Mr. John Yap and Mr. Martin Krkosek:

"J. Yap: In your study do you make a correlation, or do you conclude that there's a causation of the mortality?

M. Krkosek: In the study we're able to estimate the magnitude and spatial extent of sea lice transmission from farmed to wild salmon. Then we have independent estimates of what the pathogenicity of these lice are to these juvenile fish. When you put these two pieces of information together, then you have an estimate of what the mortality impact is from the sea lice coming from the fish farm.

J. Yap: I'm trying to get my mind clear here. Is that a causation, or is that a correlation?

M. Krkosek: **It's all correlative**. The only way you could show causation would be if you directly observed a parasite leaving a farmed fish, going through the water and attaching to a wild fish and then killing that wild fish. I'm not sure if it's even possible to do that. (Bold added).

J. Yap: So that would be the most definitive way of proving....

M. Krkosek: That would be observing a direct causal relationship, yeah.

J. Yap: And that hasn't been done yet.

M. Krkosek: No."

Indeed, a correlation is not evidence of causality.

### C. SERIOUS FLAWS

After the publication of a sea lice research paper in 2005, the Association of Aquatic Veterinarians of British Columbia issued a [statement](#): The AAVBC noted, "There was no information about the incidence or distribution of lice on the farm, nor was there any information about the presence of *Caligus* on the farm. Thus, the model cannot properly estimate the farm contribution of either *Lepeoptheirus* or *Caligus* to the infections on wild fish... The conclusions of the article are too sweeping and not supported."

Dr. Alistair McVicar, a Scottish sea lice expert, provided a [point-by-point](#) critique of a sea lice paper published in 2005 (Krkosek, Lewis and Volpe, 2005). McVicar's comments included the following:

- "There are serious inadequacies in the paper many of which could be attributable to mathematicians analyzing numerical data without adequate attention being given to the reality and complexity of the biological situation."
- "The error bars shown in Figure 2 would suggest that there are no significant differences between most of the samples and that the differences being claimed are not real."

Dr. Kenneth Brooks, an American aquaculture expert found that the conclusion of Krkosek, Lewis and Volpe (2005) does not appear plausible and is likely a result of the way in which the data were analyzed.

Fisheries and Oceans Canada (DFO) reported, "the compelling consistency in the patterns of lice infection (reported by the Centre for Mathematical Biology), that is the foundation for their analysis, is not evident, however, in data obtained independently from extensive surveys conducted by DFO in the same areas and during the same time periods.

The main flaws noted by scientists and experts are:

#### 1. Sea lice at salmon farms were not measured

No measurements of sea lice levels at salmon farms were made. The Centre for Mathematical Biology appears to have missed or avoided collecting the very data necessary to test its hypothesis that sea lice originating from salmon farms harm wild salmon.

McVicar notes, "The infection status of the farm(s) in the study area is (are) critical to the study. It is bizarre in the extreme to make conclusions on the transmission of sea lice from farm to wild salmon without including any information on the infection status of the farm involved at the time of study.

#### 2. No fish at the salmon farm during part of the data collection

Krkosek et al. (2005) report that they conducted field work during 26 days in 2003, on 17 - 27 April and 9 - 23 May. In the Science Bulletin of the David Suzuki Foundation, [Dr. Krkosek reports](#) that data collection was conducted on 14 days in the spring of 2003.

Brooks (2005) reports, "Doctor Islets (the salmon farm under study) was being harvested in the spring of 2003 and it was fallow on and after May 19, 2003. Therefore, there were no farmed fish containing gravid sea lice in this area during their final sample period when Krkosek et al. (2005) again reported peak abundance adjacent to the farm.

Thus, on five of the 26 days (or 14 days) when fieldwork was conducted in 2003, there were apparently **no fish at the farm under study**.

#### 3. Inadequate baseline data

Krkosek, Lewis and Volpe (2005) report that the juvenile salmon were "initially free of lice." This paper also reports "we did not sample for approximately 20 - 60 km of the migration routes between the landward end of the study area and the various natal streams of the studied populations." How did the researchers know that the juvenile salmon were "initially free of lice" if they did not take samples along the first 20 - 60 km of the channel?

Krkosek, Lewis and Volpe (2005) reports that temperature was taken "at most sites" and that salinity readings were taken at a subset of sites near the salmon farm. Salinity, a crucial variable, was apparently not measured at baseline. Sea lice can not survive in low salinity. In the absence of baseline salinity data, there is no way of knowing whether low sea lice levels were a function of low salinity or of the absence of salmon farms.

#### 4. Inadequate data on the sea lice species

Krkosek, Lewis and Volpe (2005) reports: "It was difficult to distinguish the two louse species with this technique for most parasitic stages except gravid females, which is when obvious morphological differences emerge (Kabata 1972; Johnson and Albright 1991). However, since both species exist on salmon, they were grouped and assayed together, as has been practiced in other studies (Morton et al. 2004)."

The Association of Aquatic Veterinarians of British Columbia noted, "The model does not differentiate the lice species being counted except for the gravid female stage. *Lepeoptheirus* and *Caligus* species have different biology, ecology and pathology and the species effects must be separated whereas in this paper the lice species are combined together. This is a serious flaw in the study."

#### 5. Inadequate quality assurance in data collection

Brooks (2005) comments, "Without adequate quality assurance to demonstrate that sub-sampling beach seines with dip nets does not produce a biased sample containing weak fry that are predisposed to sea lice infections, one cannot assume that the Krkosek et al. (in-press) study represents a random sample and therefore, one cannot draw any conclusions with respect to sea lice infections in the entire population."

#### 6. Publicly available data missed or ignored

Brooks (2006) suggests, "...the authors' failed to review or acknowledge the work of numerous scientists in British Columbia who have collected and analyzed larger data sets. A review of these other results and a better understanding of the principles of epizootiology and the biology of both sea lice and pink salmon would have revealed serious flaws in their assertions."

#### 7. Flawed assumptions

Dr. David Groves told the Special Committee on Sustainable Aquaculture, "The fact that the (Krkosek) model does not actually describe the biological reality of sea lice dynamics or wild or farmed salmon dynamics appears to result not from mathematical errors (a non mathematician must assume that the mathematicians involved can do math), but from oversights, omissions and inaccuracies in the biological assumptions on which the model is based.

McVicar (2005) suggests, "several assumptions that are made are critical to the model being employed, but either do not have supportive scientific evidence or there is actual contradiction in the scientific information available."

Brooks (2006) wrote: "Flaws in the Krkosek et al. (2005) model, described by Brooks (2005) and Brooks and Stucchi (2006), have not been resolved and continue to invalidate the conclusions reached by the authors. ... Their assumption that nauplii molt to the infective copepodid stage at a constant rate is known to not be true (see Stein et al., 2005 for a more biologically meaningful model).

In stark contrast to Brooks (2006), [Krkosek states on the web-site of the University of Alberta](#), "The model achieves an excellent fit to the data based only on information of the locations of salmon farms. That is, knowledge of salmon farm locations was the only information necessary to explain the patterns of sea lice infections in wild juvenile salmon.... Because the research results are replicated extensively over time, space, and species, the results are conclusive."

#### 8. Incorrect interpretation of data on ocean currents

Brooks (2005) suggests, "The need for careful evaluation of current vectors when investigating sea lice infections is evident in the report of Krkosek et al. (2005). These authors did not consider either the magnitude or direction of local currents in the area of Doctor Islets and assumed that larvae released from the farm were carried **north** into Tribune Channel. Long-term current meter data from Doctor Islets indicates that the net current vector is to the **west**...

#### Some Limitations Admitted

In the text of their published papers, the researchers of the Centre for Mathematical Biology and their associates acknowledge some limitations in their research. Generally speaking, however, these limitations are not reflected in the abstracts of the papers nor in the press releases nor in their comments as reported by the media. For example, in the text of a [published paper](#), Morton and Routledge (2005) state "this was not a controlled experiment," and "handling and containment likely had some effect on fish and sea lice survivorship" (read: mortality), and "in addition to temperature and salinity, we also could not control recruitment of new sea lice on fish in the barrels during this study" and "we can not exclude the possibility that there is some systematic difference between fish that had more lice and fish that had



fewer."

## CONCLUSION

Considering that 1) sea lice levels at salmon farms were not reported, 2) a technique for tracing the origin of sea lice does not yet exist, 3) much of the CMB's data is correlative and inconclusive, 4) the use of data in the CMB's mathematical modelling was selective and 5) senior scientists and experts have noted serious flaws in the assumptions on which the CMB's modelling is based, it is clear that the CMB's sea lice research findings do NOT show that sea lice originating from salmon farms cause high levels of mortality among juvenile salmon in the wild.

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Posted at 07:52 AM | [Permalink](#) | [Comments \(0\)](#)

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## SeaWeb Affiliations and Research Funding of Scientists That Have Praised the University of Alberta's Sea Lice Research

This presents the concerns, opinions and questions of the author.

Please read: [Important Notice and Disclaimer](#)

While some scientists have harshly criticized the University of Alberta's sea lice research, others have praised it.

To the best of the author's knowledge, all of the scientists that have praised this sea lice research are involved with SeaWeb or are funded by the same American foundations that funded the sea lice research itself, and its publicity in farmed salmon demarketing campaigns. For example, Dr. Daniel Pauly, Dr. Ransom Myers, Dr. Roz Naylor and Dr. Andrew Rosenberg are "science advisors" of COMPASS, the program of SeaWeb which publicized the sea lice research findings in 2005, 2007 and possibly also in 2006. According to information that the author of this blog has found on-line:

- **Dr. Daniel Pauly**, a "science advisor" of SeaWeb, described the CMB's sea lice research as "undeniable" and "definitive" and [praised Alexandra Morton](#) for "dedication to good science, integrity and resolve." According to tax returns and its on-line database, the Pew Charitable Trusts ("Pew") has granted at least \$US 14,202,000 for [Sea Around Us](#) at the University of British Columbia. Dr. Daniel Pauly is the program's director. Pew also [paid \\$300,000 to Dr. Daniel Pauly](#) to publicize the findings of the Hites study of contaminants in farmed salmon. [\(More info\)](#).
- **Dr. Andrew Rosenberg**, a "science advisor" of SeaWeb, has called the CMB's sea lice research, "The broadest look so far at the effects on a total population." "We're talking about a possible extinction within the next few years," he said. [\(Source\)](#).
- The late **Dr. Ransom Myers**, a "science advisor," of SeaWeb, described the CMB's sea lice research as "the most comprehensive to date." [\(Source\)](#). Seafood Choices provides a [link](#) (Scroll down to Science Resources) to the Myers lab at Dalhousie University. Dr. Myers said, "This study really raises the question of whether we can have native salmon and large scale aquaculture - as it is currently practiced - in the same place." [\(Source\)](#). The late Dr. Ransom Myers was also a "research partner" of the [Lenfest Ocean Program](#), a program of the Pew Charitable Trust. Pew funded Dr. Myers' lab at Dalhousie University. In 2004 alone, Pew granted [\\$1,115,000 to Dalhousie University](#) including [\\$252,000](#) specifically for Dr. Ransom Myers' work. The Pew Charitable Trusts initiated SeaWeb in 1997 and has granted a total of at least [\\$4,493,000](#) to SeaWeb since then.
- **Dr. Ray Hilborn** has said that the CMB's sea lice research raises serious concerns about aquaculture for cod, halibut and sablefish. [\(Source\)](#). These species are important to Alaskan commercial fisheries. Dr. Hilborn is involved in the [Alaska Salmon Program](#) at the University of Washington (UW). This program receives [funds](#) from the Alaska Department of Fish and Game, the Pew Charitable Trusts and the Gordon and Betty Moore Foundation. The Moore foundation reports that it granted at least \$18,450,000 to UW, including \$US12,521,951 to the School of Aquatic and Fisheries Sciences where Dr. Hilborn is a professor, and \$982,530 to the Office of the Provost. Dr. Krkosek is currently an [NSERC-funded post doctoral fellow](#) of Dr. Hilborn.
  - Grants from the Moore Foundation to the University of Washington [\\$4,110,300](#), [\\$2,365,017](#), [\\$2,430,555](#), [\\$835,719](#), [\\$4,126,379](#), [\\$155,873](#) [\\$826,657](#) and [\\$3,600,000](#).
- **Dr. Neil Frazer**, a co-author of Krkosek et al. (2006), is a professor at the School of Ocean and Earth Science and Technology ([SOEST](#)) at the University of Hawaii. The Moore foundation reports that it granted at least \$US 11,942,246 to the University of Hawaii, including \$9,642,346 for SOEST.
  - Dr. Neil Frazer wrote a paper titled, *A Canadian Tragedy* in which he refers to, "Canada's attempted deceit of its citizens regarding the effects of salmon aquaculture on wild salmon" as "just as tragic as the Iraq war." [\(page 7\)](#).
  - Grants from the Moore Foundation to the University of Hawaii: [\\$3,796,946](#), [\\$1,181,111](#), [\\$3,850,000](#), [\\$1,995,400](#) and [\\$450,000](#) for 4 gliders "for remote monitoring of marine ecosystems."
- In 2006, the **Vancouver Aquarium** awarded the [Murray Newman Prize](#) to Alexandra Morton. The Moore foundation reports that between 2004 and 2006, it granted \$U6,677,848 to the Vancouver Aquarium ([\\$2,350,516](#), [\\$1,982,332](#) and [\\$2,345,000](#)) and as well as [\\$1,113,750](#) to Middle Bay Sustainable Aquaculture Institute (MBSAI) that is developing so-called "closed containment" technology. Dr. John Nightingale is president of both the [Vancouver Aquarium](#) and MBSAI. Dr. Nightingale is also president of the [Ocean Project](#). Through SeaWeb, the David and Lucile Packard Foundation has granted at least \$757,506 to the Ocean Project

between 2000 and 2006 (Documentation available).

- [Dr. John Nightingale, MBSAI President](#)

- **The David Suzuki Foundation** has described the CMB's sea lice research as "definitive," "far-reaching," "proof," "undeniable" and "irrefutable:"
  - [David Suzuki Foundation, 29 Mar 2005 \("definitive, undeniable & far-reaching"\)](#)
  - [David Suzuki Foundation, 3 Oct 2006 \("proof" and "irrefutable"\)](#)
  - According to calculations based on U.S. tax returns and on-line databases, the David Suzuki Foundation was paid or granted about \$US 10 Million from American sources - including the David and Lucile Packard foundation, the Gordon & Betty Moore Foundation and the Pew Charitable Trusts.

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## Who Funded The Sea Lice Research Done Under The Auspices of the University of Alberta?

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### BACKGROUND

Sea lice research from the University of Alberta has been widely publicized. The lead researcher, Dr. Martin Krkosek reports that more than [500 news stories](#) have reported the findings. In the wake of extensive negative press about sea lice from salmon farms, a "war on fish farmers" was declared in British Columbia and [20,000 people](#) have signed Alexandra Morton's petition to close salmon farms.

Sea lice is now cited as the top reason for the [Farmed and Dangerous](#) campaign by a group of environmental organizations called the Coastal Alliance for Aquaculture Reform (CAAR). In response to pressure from CAAR, millions of public dollars have been allocated to sea lice research instead of other priorities. Indeed, the publicity of sea lice research from the University of Alberta has had a substantial influence. As such, its fair to ask questions about the origins of funding for this research, and the disclosure of the funding.

Regarding its sources of funding, Dr. Martin Krkosek reports: "Most of the research funds come from the National Science and Engineering Research Council of Canada and the National Research Council of Canada's Mathematics of Information Technology and Complex Systems program. Because our research program is addressing important questions on the impact of aquaculture on wild fish species we have also been successful at raising funds from interested stakeholders like commercial fishermen, wilderness tourism, and environmental organizations. These organizations contribute funding to the research because the research addresses questions that directly affect them. The funds raised from these stakeholders comprise approximately 20% of the research funding."

In a [document dated 11 October 2006](#), the Centre for Mathematical Biology reported to the administration of the University of Alberta that SeaWeb, an American organization, is one of the CMB's "research partners." This document also listed funding from [Finest At Sea Ocean Products](#), a commercial fishing company that employs about 100 fishermen. Since the author of this blog brought concerns to the attention of the University of Alberta, this document appears to have been [removed](#) from where it was found at the web-site of the University of Alberta.

SeaWeb has a history of promoting Alaskan salmon while opposing salmon farming. National Geographic is also known for its position against salmon farming as evidenced in its article and on-line video, [Atlantic Salmon, Here's the Catch](#).

On 2 November 2007, the author of this blog wrote to Dr. Mark Lewis to request clarification of the nature of the CMB's involvement with SeaWeb.

- [E-mail to Dr. Mark Lewis, 2 November 2007](#)
- [Reply from Dr. Mark Lewis, 16 November 2007](#)

Shortly after the author of this blog wrote to the CMB, the CMB added a [web-page](#) about funding for its sea lice research. The web-page of Dr. Martin Krkosek was changed to include mention of funding from "Finest At Sea" and SeaWeb. This shows how the web-pages of Dr. Martin Krkosek were different before and after Vivian Krause asked questions about the sea lice research funding: [Krkosek Web-pages Before And After Changes](#)

Note: The CMB reported to the University of Alberta that it received funding from "Finest At Sea Ocean Products" but [on-line](#) and in its [paper published in SCIENCE](#), CMB reports funding from "Finest At Sea." The words "Ocean Products" were not mentioned.

According to the information posted at the CMB's web-site as of November 2009, funding for the CMB's sea lice research was as follows:

- 29% Natural Sciences and Engineering Research Council (NSERC)
- 20% Pacific Salmon Forum
- 19% MITACS
- 13% David Suzuki Foundation
- 5% UofA Fellowships
- 4% National Geographic
- 4% The Canadian Sablefish Association
- 4% BC Wilderness Tourism Association
- 3% Finest At Sea
- 1% Raincoast Conservation Society
- 0.2% Watershed Watch
- 0.1% Canadian Society of Zoologists Leo Margolis Scholarship

Summarizing the above, the CMB's sea lice research funds came from:

- 49% from government (NSERC and the Pacific Salmon Forum)

- 22.2% from environmental organizations
- 19% from MITACS
- 7% from commercial fishing interests
- 5.1% from university scholarships

The environmental organizations that funded the sea lice research - directly and indirectly through MITACS - have in common:

- These organizations are heavily funded by the Gordon and Betty Moore Foundation.
- These organizations held the view that sea lice from salmon farms were a serious threat to wild salmon - and they held this view **BEFORE** the CMB's research fieldwork began in the spring of 2003. Note:
  - [Watershed Watch Society Sea Lice Report, December 2001](#)
  - [David Suzuki Foundation Press Release 25 November 2002](#)
  - [David Suzuki Foundation Press Release 28 January 2003](#)
  - [National Geographic, Atlantic Salmon: Here's The Catch](#)

According to the CMB, 19% of its sea lice research funds came from MITACS. Where did these funds originate? The CMB indicates that the Pacific Salmon Forum, the David Suzuki Foundation, the Canadian Sablefish Association, BC Wilderness Tourism Association and Finest At Sea and Watershed Watch are "nonacademic participants" who support MITACS. Do these environmental organizations and commercial fishing interests supported the CMB's sea lice research both directly and indirectly, through MITACS?

MITACS was asked where it got the funds that it granted to the CMB for its sea lice research. MITACS [replied](#) but did not answer the question.

On 12 June 2009, the Gordon & Betty Moore Foundation confirmed by [e-mail](#) that it granted funds to the David Suzuki Foundation and that the David Suzuki Foundation then re-granted part of those funds ("less than \$US 100,000") to the CMB for sea lice research published by Krkosek, Lewis and Volpe (2005). What this means is that not only the Gordon and Betty Moore Foundation funded SeaWeb to co-ordinate an "antifarming campaign" with "science messages" and "earned media," the Moore foundation also partially funded the sea lice research itself.

### **Did Dr. Mark Lewis Receive \$80,000 Per Annum From MITACS? If So, Where Did The Funds Originate?**

According to this [web-page](#) at the web-site of the University of Alberta, Dr. Mark Lewis is a Senior Canada Research Chair and a Professor of the University of Alberta in the departments of Mathematical and Statistical Sciences, and Biological Sciences.

Between 6 December 2007 and 13 December 2007, two different versions of the curriculum vitae for Dr. Mark Lewis were publicly available on-line at the web-site of the University of Alberta. With regards to funding from NSERC and from MITACS, these two versions of Dr. Mark Lewis's curriculum vitae are not the same.

The version posted as of 12 December 2007 included the words, "Award subamount to Lewis (including industrial matching): approximately \$80,000 per annum" but the version posted on 13 December 2007 doesn't.

- [Mark Lewis CV 12 Dec07](#)
- [Mark Lewis CV 13 Dec07](#)

These two versions of Dr. Lewis's CV were also different in that the version of 12 December 2007 mentions an NSERC grant for \$5.5 million but the version of 13 December 2007 does not.

As it appears, the reference to "\$80,000 per annum" was removed on 12 or 13 December 2007 - the same day that the author of this blog sent an open letter to the Editor-In-Chief of **SCIENCE**. The very next day, a sea lice research paper was published in **SCIENCE** under the auspices of the CMB. Dr. Lewis was the most senior author of that paper and was copied on the open letter to the Editor-In-Chief, sent on 12 December 2007.

This is the correspondence that the author of this blog sent to Dr. Mark Lewis on 11 and 12 December 2007:

- [E-mail to Dr. Mark Lewis, 11Dec07](#)
- [E-mail to Dr. Mark Lewis 12Dec07](#)

This is the letter that the author of this blog sent to the Editor-In-Chief of SCIENCE, 12 December 2007: [To the Editor-In-Chief 12Dec2007](#).

This document suggests that this version of Dr. Lewis's CV was removed from the web-site of the University of Alberta: [Mark Lewis CV, 23 January 2008](#)

The discrepancies in the two versions of Dr. Lewis's CV raise a series of questions:

- Did Dr. Mark Lewis receive \$80,000 per annum as part of a MITACS grant? If so, where did the \$80,000 originate?
- Where did the "industrial matching" originate?
- Why was the CV for Dr. Lewis modified - the day before a sea lice research paper was published in **SCIENCE**?

### **Why this is important:**

Reviewers (assuming that the CMB's sea lice papers were properly reviewed) and readers may have read the CMB's sea lice research papers differently if the CMB had disclosed that it received funds from commercial fishing interests and from SeaWeb.

The Special Committee on Sustainable Aquaculture of the Government of British Columbia might also have reviewed the University of Alberta's sea lice differently had it been told:

- The CMB's sea lice research was also partially funded by commercial fishing interests.
- SeaWeb was paid to co-ordinate an "antifarming campaign" involving "science messages" and "earned media" to shift consumer and retailer demand away from farmed salmon.
- The CMB had a "research partnership" with SeaWeb.
- The same foundation that paid SeaWeb to co-ordinate the "antifarming campaign" also partially funded the CMB's sea lice research through the David Suzuki Foundation.

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01/12/2010

**INTRODUCTION**



Please read: [Important Notice & Disclaimer](#). For an **INDEX**, click [here](#).

This blog started by taking a look at the [flawed science](#) and [false claims](#) that environmental organizations (ENGOs) are using to campaign for salmon farming "reform." Several of the so-called "peer-reviewed" studies about PCBs in farmed salmon, and sea lice, are published in journals which have been heavily funded by a handful of huge, American foundations - the same ones that are propping up Alaskan commercial fisheries by scaring consumers and retailers away from the competition: imported, farmed fish.

In essence, American interests are trying to thwart their Norwegian competitors - all in the name of Conservation and Science. British Columbia is just the boxing ring starring none other than David Suzuki and Alexandra Morton for the Americans. According to the analysis and opinions presented in this blog, this is what's at the heart of the fuss over "wild" vs. farmed salmon and the so-called "sustainable seafood movement." The real issue isn't wild salmon and their ecosystem, its the wild salmon [economy](#), the traditional livelihood, lifestyle and the cultural heritage that go along with Alaskan commercial fisheries .... and the economic and political stability which hinges on all that.

More recently, this blog is taking a look at the connections between these huge, U.S. foundations and Canadian politicians, starting with Vancouver's Mayor Gregor Robertson and his entourage. Four of these U.S. foundations (Hewlett, Packard, Moore & Pew) have [\\$US 21 Billion](#) in assets and grant about **\$1.2 BILLION** every year. The hypothesis that we're looking at here is that these U.S. foundations are protecting U.S. trade interests in the name of social change and protecting the environment. Science, sustainability and "reform" have been dumbed-down to mere code words for thwarting Canadian resource-based industries that threaten U.S. interests. A lot of consumers and rural communities are caught in the middle.

This blog presents concerns, opinions and questions. The goal is to ask fair questions in a fair way. Fair comments are welcome.

For a complete INDEX of all posts, click [here](#).

- [Mayor Gregor Robertson, U.S. "Charity" and Tides Canada Foundation](#)
- [Sea lice research](#): Flawed science, false claims and U.S funding.... who benefits?
- [Op-eds and media coverage](#)

#### **Papers:**

- [Research on Contaminants in Farmed Salmon: Science or Marketing?](#)
- [Sea Lice Research: Science or Marketing?](#) For more, click [here](#).
- [The Demarketing of Farmed Salmon](#)

#### **Most read:**

- [My unexpected encounter](#) with David Suzuki and the issue that is far more important than his short fuse and his little hissy fit: [Accountability](#)
- Revenues of David Suzuki's Foundation (2000 - 2009): [\\$70.2 Million](#)
- Why did [David Suzuki's foundation quietly remove 20 press releases](#) and on-line articles against farmed salmon?
- [The elephant in the room](#)
- [\\$US 75 Million](#) to sway market demand for fish, especially salmon
- [\\$US 12.7 Million](#) for Wal-Mart/large U.S. retailers
- [Alexandra Morton's non-profit: \\$776,613](#) from where?
- [About the author: Vivian Krause](#) See also [My Story: Part 1](#)

#### **Presentations, Submissions and Letters:**

- Submission to the [Cohen Commission](#), 9 April 2010.
- Presentation to the [City Council of Campbell River](#), 13 April 2010.
- Submission to the [Federal Standing Committee on Fisheries & Oceans](#)
- An open letter to [U.S. foundations with \\$US 21 BILLION in assets](#)

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Technorati Tags: [David and Lucile Packard Foundation](#), [David Suzuki](#), [farmed salmon](#)

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