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SPECIAL COMMITTEE ON
SUSTAINABLE AQUACULTURE

Sechelt

Tuesday, October 17, 2006

Issue No. 24

ROBIN AUSTIN, MLA, CHAIR

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**SPECIAL COMMITTEE ON
SUSTAINABLE AQUACULTURE**

Sechelt
Tuesday, October 17, 2006

Chair: * Robin Austin (Skeena NDP)

Deputy Chair: * Ron Cantelon (Nanaimo-Parksville L)

Members: Al Horning (Kelowna-Lake Country L)
* Daniel Jarvis (North Vancouver-Seymour L)
* John Yap (Richmond-Steveston L)
Gary Coons (North Coast NDP)
* Scott Fraser (Alberni-Qualicum NDP)
* Gregor Robertson (Vancouver-Fairview NDP)
* Shane Simpson (Vancouver-Hastings NDP)
Claire Trevena (North Island NDP)

**denotes member present*

Other MLAs: Nicholas Simons (Powell River-Sunshine Coast NDP)

Clerk: Craig James

Committee Staff: Brant Felker (Committee Research Analyst)
Dorothy Jones (Committees Assistant)

Witnesses: Bernie Bennett (Target Marine Products LLP)
Brad Benson (Sunshine Coast Conservation Association)
Ruby Berry (Georgia Strait Alliance)
Justin Henry
Rob Hoehn (Gemini Marine Services Ltd.)
Barry Janyk (Mayor, Town of Gibsons)
Guy Johnson
David Lane (T. Buck Suzuki Environmental Foundation)
Cameron Reid (Mayor, District of Sechelt)
Sharon Robinson (Thunder Bay Saw Shop Ltd.)
Paul Schachter (Okeover Ratepayers Association)
Geoff Senichenko (Western Canada Wilderness Committee)
Wendy Simmonds
Bill Vandervert (West Coast Fishculture Ltd.)
Glen Williams (Gitanyow Hereditary Chiefs)

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MINUTES

SPECIAL COMMITTEE ON SUSTAINABLE AQUACULTURE



Tuesday, October 17, 2006
12 p.m.
Main Hall, Sechelt Seniors Activity Centre
Sechelt

Present: Robin Austin, MLA (Chair); Ron Cantelon, MLA (Deputy Chair); Daniel Jarvis, MLA; Scott Fraser, MLA; Shane Simpson, MLA; Gregor Robertson, MLA; John Yap, MLA

Unavoidably Absent: Claire Trevena, MLA; Gary Coons, MLA; Al Horning, MLA

1. The Chair called the committee to order at 12:07 p.m.
2. Opening statement by the Chair, Robin Austin, MLA
3. The following witnesses appeared before the Committee and answered questions:

1)	Gemini Marine Services	Rob Hoehn
2)	West Coast Fishculture Ltd.	Bill Vandervert
3)	T. Buck Suzuki Environmental Foundation	David Lane
4)	Thunder Bay Saw Shop Ltd.	Sharon Robinson
5)	Gitanyow Hereditary Chiefs	Glen Williams
6)	Wendy Simmonds	
7)	Georgia Strait Alliance	Ruby Berry
8)	Target Marine Products LLP	Bernie Bennett
9)	Western Canada Wilderness Committee	Geoff Senichenko
10)	Guy Johnston	
11)	Okeover Ratepayers Association	Paul Schachter
12)	District of Sechelt	Mayor Cameron Reid
13)	Town of Gibsons	Mayor Barry Janyk
14)	Sunshine Coast Conservation Association	Brad Benson
15)	Justin Henry	
4. The Committee adjourned to the call of the Chair at 5:03 p.m.

Robin Austin, MLA
Chair

Craig James
Clerk Assistant and
Clerk of Committees

TUESDAY, OCTOBER 17, 2006

The committee met at 12:07 p.m.

[R. Austin in the chair.]

R. Austin (Chair): Good afternoon, everyone. My name is Robin Austin. I am Chair of the Special Committee on Sustainable Aquaculture and the New Democratic member for Skeena in the Legislative Assembly of British Columbia.

I would like to take this opportunity to welcome everyone here to this committee's public hearings in Sechelt. It's our pleasure to be in your community and to hear directly from you on the issue that has been referred to this all-party legislative committee.

Today's meeting of the committee is a public meeting which will be recorded and transcribed by Hansard Services. A copy of today's transcripts, along with the minutes of this meeting, will be printed and will be made available on the committee's website at www.leg.bc.ca/cmt/aquaculture.

In addition to the meeting transcript, a live audio webcast of this meeting is also produced and is available on the committee's website to enable interested listeners to hear the proceedings as they occur. When this is not technically feasible, an archived copy of the audio broadcast is still available on the committee's website.

Let me also, for the benefit of all witnesses, read out the committee's mandate. The Special Committee on Sustainable Aquaculture was reissued the following terms of reference by the Legislative Assembly on February 20, 2006: that the committee be empowered to examine, inquire into and make recommendations with respect to sustainable aquaculture in British Columbia and in particular, without limiting the generality of the foregoing, to consider the economic and environmental impacts of the aquaculture industry in B.C.; the economic impact of aquaculture on B.C.'s coastal and isolated communities; sustainable options for aquaculture in B.C. that balance economic goals with environmental imperatives, focusing on the interaction between aquaculture, wild fish and the marine environment; as well as to look into B.C.'s regulatory regime as it compares to other jurisdictions around the world.

This committee is to report to the House no later than May 31, 2007. The committee reports directly to the House and not to the government.

The committee is unique in the Commonwealth, as an opposition member holds the chair, while a government private member holds the Deputy Chair position. The majority of members hail from the opposition as well.

Accompanying this committee from Hansard are, on my right, Karol Morris and Graham Caverhill. They'll be recording what is said.

Joining me in a few minutes will be the Clerk Assistant and Clerk of Committees, Craig James, and at the front of the hall or the entrance of the hall we have the committee's research analyst, Brant Felker, along with Dorothy Jones, who can assist you with any questions you may have about the work of our committee.

I would now like to begin by inviting the members of the committee, starting on my right, to introduce themselves.

D. Jarvis: Good afternoon. I'm Daniel Jarvis, and I'm the MLA for North Vancouver–Seymour.

J. Yap: Hello, I'm John Yap, the MLA for Richmond–Steveston.

R. Cantelon (Deputy Chair): Hello, and nice to be here. I'm Ron Cantelon, the MLA for Nanaimo–Parksville.

S. Simpson: Shane Simpson, MLA for Vancouver–Hastings.

[1210]

G. Robertson: Gregor Robertson, Vancouver–Fairview.

S. Fraser: Scott Fraser, Alberni–Qualicum, just across the strait.

R. Austin (Chair): Before calling the first witness I would just like to make a couple of comments. We have an absolutely full agenda here that takes us all the way up to five o'clock. I would ask that the witnesses try to keep their comments to within 15 minutes max. That enables the members of the committee to have time to ask questions. We've found so far that that's a very important part of this, so if you could make sure to keep your comments between ten and 15 minutes, that would help.

We don't have a lot of leeway today because, unfortunately with the logistics, there are floatplanes and all kinds of stuff involved in taking all of this equipment and us to another place, so we can't run too late today. With that in mind, I would like to begin by inviting Rob Hoehn from Gemini Marine Services to come up to the witness table and make his presentation.

Presentations

R. Hoehn: Hi there. I'm a local business owner. My name is Rob Hoehn, as stated there. We're a tugboat company, located just north of here in Pender Harbour. What I'd briefly like to discuss is who we are, what we do and the economic benefits for B.C. and also locally that we're involved with.

First of all, as stated, we are a tug and barge company. We transport fish feed from Vancouver to destinations north as far as Klemtu, the west coast of the island. We do this with many vessels involved: tugboats, landing crafts and coastal freighter. We've been involved with the coast aquaculture here since the start — over 18 years. We started off as a one-person company. Now we're up to over 24 employees on the coast. Aquaculture comprises about 85 percent of our business. On average, over the 18 years it has been 90 to 95 percent of our business.

The economic benefits for B.C. that we're involved with. On average, shipyard bills total over \$900,000 per

year, which is all spent in the lower mainland. We also constructed a new barge in 2002. This purchase was over \$2.5 million. It's used 100 percent for aquaculture. It was one of the first barges built in B.C. for an independent company in over 20 years. VanShip calculated that it was about 14 years of man-labour involved to build this barge at a time when shipbuilding was — and still is — not strong in the province. Our fuel bills are over \$1.5 million a year. That is all purchased either locally or in the lower mainland. Also, miscellaneous equipment purchases are over \$250,000 in the lower mainland.

Importantly for the coasts that we're involved with, we have a slate of about 17 to 22 employees, depending on the time of year, with an annual payroll of over \$1.2 million last year. Some 90 percent of our crew are from the Sunshine Coast and include a good portion of ex-commercial fishermen. Over the years we have paid to train local people, including ex-commercial fishermen, to be part of the tugboat industry to service aquaculture.

We also support local stores such as Pender Harbour, which is a small village. We spend over \$120,000 a year on groceries — \$40,000 for our own purposes, the remainder to be distributed up and down the coastline. Also, local purchases include over \$200,000 a year for miscellaneous parts and repairs in the Pender Harbour area and north of there. We also purchase fuel and miscellaneous lubricants from the Sechelt area here, totalling over \$75,000 per year.

Aquaculture obviously is very important to our business, being the main part of it, and we have been involved over the many years seeing the hurdles involved with our transport industry. We regulate ourselves more than just Environment Canada and Transport Canada because this is our livelihood and also our crewmembers'.

R. Austin (Chair): Thank you very much, Rob.

S. Fraser: Two things: fuel costs have, of course, been an issue over the last few years. Has that had an effect on your viability as a business? Has that been covered by your working relationship with the industry?

[1215]

R. Hoehn: The initial fuel jumps about three or four years ago really hindered us. Our contracts did not have the fuel compensation clauses in them, so we ate the costs for the first number of years with the increased fuel rates. Recently we have adjusted our contracts, and they do include the fuel surcharges in there. So it is now basically a passed-on cost to the customers.

S. Fraser: If I may.... Thanks for that. You said that 85 percent of your business currently is from aquaculture, down from up to as high as 95 percent. What's the other, say, 15 percent now? What is that mostly made up of, or is it a mixture?

R. Hoehn: Mostly out of that 15 percent are aggregates coming from remote areas, either to the States or down

to Vancouver and mixed in with a little bit of miscellaneous freight.

S. Fraser: All right. Then lastly, of the, you say, 85 percent aquaculture, is that all salmon finfish aquaculture, or do you do work also for shellfish?

R. Hoehn: It's 100 percent with the salmon.

S. Simpson: Thank you very much for the presentation, Rob. A couple of questions. You said that most of your work with the fish farms relates to movement of feed?

R. Hoehn: Yes — correct.

S. Simpson: How many farms do you service, or how does that work? Do you service to individual farms, or do you go to distribution points and then they do distribution?

R. Hoehn: We service to individual farms. At any given time we service 65 sites.

R. Cantelon (Deputy Chair): Well, that covered one question. So it's primarily feed. You're not transporting the finished product at all.

R. Hoehn: Negative. It's a majority of feed with a little bit of miscellaneous dry freight.

R. Cantelon (Deputy Chair): Is it principally year-round, then, or is there a seasonal element to it as well?

R. Hoehn: It's year-round.

R. Cantelon (Deputy Chair): Right. And the other — yeah, that covers it. Thank you.

J. Yap: Thank you for your presentation, Rob. I understand that in the '90s there were some difficult years for the industry, and you've been an operation through that period. How did your company cope when there were tough times in aquaculture?

R. Hoehn: Being a lot skinnier then. We have a very small operation. We're not top-heavy at all. We have very minimal management, office, etc., so the direct cuts were, unfortunately, with the crew members.

We went down, at one point in time, to about three or four crew members.

R. Austin (Chair): Thank you very much. Thanks for your presentation.

I would now like to call Bill Vandervert from West Coast Fishculture Ltd.

B. Vandervert: Greetings to the committee members. I would like to thank all of you for this opportunity to speak with you.

I am here representing West Coast Fishculture, an independent, family-operated farm. Our principal owner,

Ward Griffioen, sends his regrets that he cannot be here. He has been farming salmon since 1973. Initially he started in a research capacity, and later on as one of the pioneers in the independent salmon-farming industry.

Presently West Coast Fishculture operates a salmon farm in Lois Lake, which is a hydro reservoir. For nearly 20 years we have been licensed as a freshwater salmon- and trout-rearing operation. Our principle production has been the rearing of smolts under contracts for other companies as well as steelhead trout for the market sales.

We presently employ about 20 people who work at various jobs within the company. Some of these employees and their families have been with us for 15 years. Through the years we have employed many students during the busy summer months.

Lois Lake is a very deep reservoir with an excellent water exchange. Continual water quality monitoring has shown no major effects or increase in the phosphate, nitrate and potassium levels of the reservoir. Looking at the wild-faring local kokanee salmon and trout populations in the lake, it may be concluded that the presence of the farm has had a positive ecological effect on this otherwise nutrient-low reservoir.

[1220]

Our company is not just net pens in a reservoir. In order to stay competitive, we have developed a land-based hatchery for early egg- and fry-rearing and a small, licensed processing facility for cleaning and shipping our products.

West Coast Fishculture has explored numerous new technologies for rearing salmon in freshwater environment. We have found that we have some research advantages over the larger companies in that we are flexible for doing the small, short-term projects.

For example, we were the first company in B.C. to test closed-containment rearing, and found that for our situation it would be uneconomical and environmentally unsound. We were also one of the first companies in B.C. to test and apply recirculation technology as a tool to aid our hatchery program. Our steelhead growing operation is done by implementing organic standards, and we are working as a member of the Pacific Organic Seafood Association toward getting a certified organic label for our products.

We have always been a small, independently owned Canadian company. However, it is becoming extremely difficult to stay independent with the present-day desire by government to control and regulate the salmon-farming industry. It comes as no surprise to us that the large numbers of small Canadian-owned aquaculture companies have been forced to sell, as our government prefers to deal with the larger and well-funded operations.

The few large, well-financed aquaculture companies left in B.C. have extensive staff, expertise and associated consultants who specialize in responding to the increased demand on biological, social and economic regulations as well as the increase in demand for more detailed scientific information and reports.

On the other hand, we as a family-run operation are financially limited. We would appreciate it if this committee would consider West Coast Fishculture's survival when you draw up the new set of recommendations and regulations after these hearings. An extensive demand for more regulations may well be the undoing of the few small, salmon-farming, family operations left on the coast.

In conclusion I would like to ask this committee to remember that not all of the aquaculture companies represented in these meetings are large multinational companies. There are a few small aquaculture companies such as West Coast Fishculture that depend on this industry to be both environmentally and economically sustainable. We at West Coast Fishculture would like to pass this heritage of salmon-farming to the generations to come.

S. Fraser: Thanks, Bill, for clueing us in to the issues around being a small independent. We've seen that challenge before with.... I know some of the shellfish operations are ma-and-pa kinds of operations. The regulatory regime is the same regardless, so it can be daunting, and I hear that message loud and clear.

A question about organic certification. That's a pretty bold step to make, and I know it's a difficult one. I don't know of anyone else in the industry, even shellfish or finfish, that have received that designation yet. This is with steelhead, first of all, in particular?

B. Vandervert: Yeah.

S. Fraser: Do the steelhead get fed a similar feed? What do you have to do to get that organic certification that would be different than you would otherwise have to do?

B. Vandervert: Well, presently there is no organization that gives organic certification for farmed salmon in B.C. That's what the POSA is working toward — developing that so there is a certification standard. The things that would be required in it are the sustainability of the process for rearing the steelhead, the feed that goes into them, the animal husbandry, the humane treatment of the animals, both during rearing and harvesting, and looking at the sources from where they come.

S. Fraser: All right. Thank you, and good luck with that.

D. Jarvis: Thank you very much for your report. Could you tell me: on the steelhead aspect of it, how many other hatcheries are there out there that are in competition with you — off the top your head, say, in your area that you're marketing to?

B. Vandervert: Not very many have specifically targeted that, so we have a niche market that we can approach.

D. Jarvis: So you potentially have been able to control the market, to some degree, that you're selling to.

B. Vandervert: That's right.

[1225]

D. Jarvis: What is onerous in the rules and regulations that have been set up that you would recommend changing?

B. Vandervert: Well, streamline the process, for one thing, so that we aren't dealing with so many agencies over the units. If we find ourselves going into the same things more than once, dealing with the same agencies, that becomes difficult. We would like to see some of the information simplified so that the small companies don't have to deal with the consultants at these huge costs in order to be able to grow and develop even further than they exist right at present.

D. Jarvis: Steelhead — just a quick thought — are pretty much in demand right at the moment, because we're losing that fishery too. There seems to be no end to that. Is there not a big demand, then, for your...?

B. Vandervert: At present there is, yeah. That's true.

D. Jarvis: Are you financially making any money on what you're doing now, or do you think that the rules and regulations are causing you a hardship in that sense?

B. Vandervert: No. It's further expanding of the company, because a lot of what we're finding is that it's more difficult to compete as a small company with our cost of overhead. You have to be at a certain level of production to do that.

J. Yap: I missed your figure. How many employees do you have?

B. Vandervert: We have 20 employees at present, some part-time.

J. Yap: Right. I think I heard you say that you tested closed containment farming and found it to be uneconomic. Would you please tell us a bit about that experience and the highlights of what you tried and why it didn't work?

B. Vandervert: Initially we looked at the closed containment for environmental controls within the lake for rearing the smolts that we were dealing with. It was a joint-venture project with the company that initiated it. We put the process in, and it required that we keep a generator on site out in the water along with the hydraulic pack that services it.

The things that came up for us... We were concerned that we would have problems with the material that the bag was made of initially, so we had nets installed as well as the containment. We found that the material did rip, so we didn't have the confidence for what we wanted in there in that kind of situation. Luckily, that's kept things under control.

When you have a generator that's out on site... It required us to shuttle fuel back and forth, and we have no service industry that can meet us on a lake situation in that reservoir, so we had to do that ourselves. We found it onerous and a risk to be continuing to run that amount of fuel back and forth.

J. Yap: So the system you were testing was a closed bag in the lake, and the fuel was required for the power to do...?

B. Vandervert: To run the pumps to keep the...

J. Yap: To run the pumps for the water to be pumped through.

B. Vandervert: Yeah.

J. Yap: How long did you run this test?

B. Vandervert: We ran the test for about four months, and after six months we pulled it out and reviewed it and thought at that time it was not sustainable for us. The risk was too great, and economically it wouldn't pay. We felt it was more of a risk.

J. Yap: Since then have you looked at other closed containment technologies to see if they could work for you?

B. Vandervert: After that initial try, about two years later we tried it one more time on a smaller scale where we could run it from an electric source on shore. We continued with that for about two and a half months, but at the same time it was a trial, a test program. We found that for us it doesn't work. If we were on the grid, possibly, and for somebody else, it may. But for us it was too expensive.

S. Simpson: I have a couple of questions, but I want to pick up for a moment on John's questions around closed containment.

[1230]

We've had a lot of people talk to us about it, pro and con. We've had people who are looking for changes in the industry who, obviously, have said closed containment, particularly floating closed containment — it seems most people appreciate that the energy costs around land-based are pretty extreme — needs to be looked at seriously, and people in the industry who have told us that they don't think it is commercially viable. You've made those kinds of comments yourself.

As somebody who is in the industry and looking at the options, one of the things that's part of the discussion... I think there's a group called Agrimarine. There are a couple of people out there who are looking at piloting models to see if they can be done in a commercially viable way, depending on how they approach them.

I guess the question I'd have for you as somebody who is in the industry is: do you think there would be value in the government looking at maybe working

with companies like Agrimarine that want to do that — maybe with some of the universities that could provide some of the analysis — to see whether this actually is a viable option in terms of a pilot where information could be provided to the industry and to the public who have an interest?

I'd be very interested in your comments about it, as somebody who has at least explored the idea of closed containment a little bit.

B. Vandervert: I think, just as a personal view, that the closed containment has some flaws in it that we tend not to agree on. It has to do with the risk management and keeping everything without risk or very minimal risk as compared to net pen culture. Yet we substitute the confidence that we have in this risk for increased energy costs, so we talk of Kyoto on one term, and then we talk about adding fuel costs to this kind of a production.

As far as a government looking at it, that would probably be a decision for you guys to make over it. But for industry, I would say that it would be better to collaborate with the industry for those who have tested it and find the results that have come out there. It's not a matter of not wanting to do something; it's a matter of finding something that works. For us at this point it hasn't worked. Research is always valuable if the government wants to pursue that.

S. Simpson: I think that's fair comment. One of the things that we've heard from people in the industry is that it hasn't been done over a period of time. Nobody's done it commercially at a viable level, so that's obviously the concern that industry has — and understandably so. They're saying: "We're not sure it's viable no matter what you do with it."

Part of the question is: do we have to take a good, hard look at whether it is? You talked about a number of the risk factors — whether they're environmental or economic risks or whatever, to determine: okay, are those risks real? Where are they? How do you measure them and determine whether they're worth taking? Everything's a risk. I appreciate that.

The other question I had.... You talked about streamlining processes, the regulatory regime, and about having to engage different departments or regulators around different aspects of what you do. Would it be beneficial if at the regulator's side — the government's side as regulator — those processes, which still all need to be dealt with, went through one shop, where you could deal with a single shop on all of these items rather than dealing with different regulators in different places who may or may not be talking with each other?

B. Vandervert: I wish I could give you a straight answer on that. Ward is really the one who deals directly with those issues, and he was the one who had brought this to my attention. For him it was.... I can't answer you. I'm not sure on that.

S. Simpson: That's fair enough.

R. Cantelon (Deputy Chair): Again going back to closed containment and your experience. Just to be clear in my mind, it was for smolts only. You weren't raising fish to maturity, and then you went onshore with that same technology. Is that ultimately what happened? Or are you just doing hatchery now, not smolts?

B. Vandervert: I'm not quite sure. We originally did the bag for smolt production, and that's what we tested it with. Then we did another pilot project with smolts again, but that was generated from power. Then we have a hatchery that we use for smolt production, which is a research hatchery.

R. Cantelon (Deputy Chair): Okay. To qualify it, then, you said it was uneconomical. By what factor was it uneconomical?

By what percentage did it raise your costs? And was that component principally energy costs, then?

[1235]

B. Vandervert: It was principally energy costs. Even though they were able to carry more fish in the containment, we also, at a point, had to bring in other things like oxygen in order to generate it. So our costs went up from that as well. But I can't give you the figure on that, as to how much. I don't remember the numbers on the tip of my tongue.

R. Austin (Chair): Thank you very much, Bill, for your presentation.

I would now like to call David Lane of the T. Buck Suzuki Environmental Foundation to come to the witness table, please.

D. Lane: My name is David Lane, and I'm the executive director of the T. Buck Suzuki Environmental Foundation. I would just like to point out that our membership largely does come from the commercial fishery — the salmon fishery, largely — commercial fishermen and plant workers. They have a stake in our wild salmon stocks and are very concerned about any impacts that there could be in the future.

Our organization has worked on this issue for the last 20 years, actually. I was looking through our files, and I found a publication that we had done in 1988 called *Journey to the Future*. It was from when we launched a fact-finding mission to Norway to look at what was going on at the time with salmon farming in Norway and what problems they were encountering. I was very curious to find in here direct conversations with the executive director of what was their environment ministry, which is called the Directorate for Nature Management, who was saying: "We're finding big problems that have to be dealt with, particularly sea lice and disease."

That was 18 years ago. A lot has been done in Norway since then, looking at what those particular problems mean and looking at different management to deal with that. But we find it quite astounding that

18 years later a lot in B.C. are still in denial of the particular environmental problems that we think are well proven at this point.

Personally, I've been involved in the issue for the last 17 years. I've been involved as a representative of the environmental sector in the main advisory body that was set up by the provincial government, the Salmon Aquaculture Implementation Advisory Committee. I was an environmental rep to the Aquaculture Research and Development Committee that was looking at funding science experiments, studies that would look at environmental impacts from salmon farming.

The theme that I would like to put forward today is: looking at how government formulates policy and regulations, how government involves affected parties and stakeholders, and how government resolves conflicts and looks for solutions. In the main, in my direct experience over many, many years, I have found that provincial government policy and the processes and regulations and discussions have consistently favoured the salmon-farming industry with little regard for wild salmon, environmental impacts or input from wild salmon conservation groups or affected stakeholders.

I want to go through some very specific examples of that, that I've been directly involved in. They've been initiatives purporting to deal with environmental problems and seeking dialogue with stakeholders, but in fact, in my opinion, they did little environmentally or were constructed in such a fatally flawed manner that the job just wasn't done. I think there are lessons that need to be learned from this, and we need to look at how we move forward in a different manner.

[1240]

First of all, there was a committee set up by the provincial government, looking at how to implement some of the changes recommended in the 1997 salmon aquaculture review. This was called the Salmon Aquaculture Implementation Advisory Committee.

I sat there with Laurie MacBride from the Georgia Strait Alliance as environmental representative, and we found that it was extremely difficult to get environmental issues just on the table. There were discussions driven, I think, a lot by staff, a lot in the back room, that ended up with debates about visioning and generalized principles, when we saw that there were very distinctive problems flagged by the salmon aquaculture review — whether that be waste issues, sea lice, disease or escapes — and we wanted to tackle those head-on.

We wanted to tackle that in a knowledgeable way as an advisory committee to government. We wanted to be able to have adequate information on the table to have clarity on the issues and look forward at discussing some policies that people could all agree on, which could move forward to better environmental protection. That didn't happen.

In fact, the regulations that were being put forward by government at the time were done without input from the committee. The main regulations that were put in place were put in without our knowledge. It was at the point that the government moved to lift the moratorium on new sites, without even coming to the

committee to have a discussion about that, when we decided that our participation as environmental groups in that committee was futile. We resigned in protest.

On the issue of information, it's crucial to have adequate information in order to understand environmental impacts and formulate policy and have public debate. This was something that was sorely lacking not just at SAIAC as a committee but also in general as far as the public getting access to information that government has in order to understand and formulate recommendations. I'll give you one very specific example.

We asked government for many years for the sea lice data that they were gathering as they went auditing salmon farms on the B.C. coast, which would give us some indication of the incidence of sea lice in particular areas and give us some idea about the prevalence in different geographic regions — whether density of farms was a factor. Government had this information.

We asked repeatedly for several years and got nowhere. We were stonewalled, and we finally did a formal freedom-of-information request that was stymied at every level within the Ministry of Agriculture and Lands. To this date, two years after filing that formal request, nothing has been put forward. No data that we requested has been forthcoming from government. It's just one indicator of the kind of closed-mindedness that I think stymies public debate and stymies us from moving forward.

A third example. There was a pilot program for alternative technology in 2000-2001. I was involved in some of the discussions on what could be funded and what eventually did get funded. On the positive side, this was a program that did get a closed-containment land-based facility up and running. It got a couple of these Future SEA bag projects up and running. Some things were tested, but overall there was first a desire from the conservation sector that it be a major program. Government had decided that there should be ten pilot alternative technologies tried. In the end, only three were closed containment. Two were other kinds of technologies that I don't think helped us move along very much, and the five other proposed test pilots were just dropped. No other word since then as to that program being dumped — an opportunity lost, in our opinion.

The fourth example was a fish farm relocation program that was launched because of farms being poorly sited in many circumstances earlier on in the history of the salmon-farming industry. It was strongly advanced by government as being an environmental measure to improve siting. But when you look back at the program and the farms that were actually moved, very few were moved for actual environmental reasons or reasons that would improve the environment.

[1245]

There were a couple of dozen farms that were relocated. If I give you some examples from the relocation list as to why they were flagged for being relocated: conflicts with upland owners; production limited by occurrence of harmful algae blooms; site inactive due to poor flushing; company seeks to relocate for economies of scale; and high water temperatures limit production....

I could go down the list. There were some that did have environmental implications, but the majority, in the main, were sites that just weren't very good for production or did have some conflicts with first nations or upland owners.

Overall, it was not a program that moved us forward environmentally. The biggest thing that was lacking was some understanding of the initiatives in Norway, where they realized that sea lice were a problem and that they needed some programs to deal with that and come up with some relocation mechanisms. They have done so — finding some fjords that are important migratory routes for wild salmon — and have started moving farms out of them and have a whole intensive program to deal with the impacts on wild salmon.

The fifth and last example I want to give is the B.C. Aquaculture Research and Development Committee — the acronym is BCARDC. It was set up when the moratorium on new salmon farm sites was lifted, and it was viewed as a fund for looking at environmental impacts. It was a way to say: "Well, we still know there are environmental impacts. We're lifting this moratorium, but we're pledged here to do further environmental study and hopefully move forward with better environmental management." The stated goal of the fund was to do research to enable adoption of sustainable management and operational practices as well as to address questions of public interest and policy.

Now, just using the one example of research on sea lice, a huge amount of debate within the committee — which I sat on — was on what kind of research should be done on impacts from sea lice. During 2003-2004 there was more than \$800,000 spent on sea lice research, and I would say the majority did not go at all towards looking at the main problem that had been identified, which is the probability that small, juvenile, emerging pink salmon, in the Broughton Archipelago in particular, were being devastated by sea lice generated from salmon farms in that area. That was the hypothesis that needed to be tested. Hardly any of the funds went to actually looking at that subject.

To give you an example: instead of looking directly at the most probable cause, research was funded to look at overwintering wild chinook in February as a potential reservoir for sea lice. In fact that was funded. It went ahead. They found hardly any overwintering chinook. If you were to compare the number, a couple of hundred that they found, to the millions of farm salmon in the area that have lice on them, any average person would think, "Well, that settles the matter," but no. The committee funded yet another research program identical to that, going back again in November to do exactly the same thing, as if to find some elusive thing — anything other than salmon farms — as the cause for the sea lice problem in the Broughton.

There were other programs funded that specifically didn't look at the smallest juvenile — the most vulnerable pink salmon that are at question here. Their design was to look at larger fish that are not flagged as the problem.

In the main a million dollars went to sea lice research, and the biggest travesty of all of it is that there is no

public record of what those studies produced. The studies aren't public. There is no public debate about what it means or what management changes should come of it, because, literally, all of the information that's been collected and all of the studies that were done with that money are not in the public domain.

[1250]

I'd just like to leave with some recommendations that, I believe, flow out of this — four specific recommendations. First is that the provincial government needs to establish meaningful democratic forums for public debate on issues related to environmental impacts on salmon farming, with the objective to bring together affected parties to work towards solutions.

With the lack of government initiative doing that, those of us who have been working in a number of environmental groups on the issue have been sitting down with Marine Harvest Canada to do that, without government assistance or involvement. I think you're all aware that we have been doing that for more than a year — having discussions directly with the largest fish farm company on the coast. We've had some very productive discussions, and we think that that's a way to move forward.

That kind of discussion with one company doesn't solve the problems of the coast and doesn't deal with getting everybody in the room and having the kind of discussion that we need. We believe that that needs to happen, and it needs to be constructive.

Second, we believe that given the environmental problems, sea lice in particular, we need to have a program, an interim measure, to re-establish a salmon-farming relocation program, similar to measures in Norway, to start removing farms from important juvenile salmon migration corridors. We believe that this is a golden opportunity to use the precautionary principle on the north coast and to say that the Skeena salmon stocks and the north coast wild stocks are too important to be gambling with. We should just simply have no farms on the north coast as part of that program.

Third, based on the weight of evidence to date, we believe that a transition to closed containment technologies is the only clear way to prevent disease and sea lice transfer to wild stocks. We believe that that should be a five-year transition strategy — helping the industry to make that transition.

Fourth, we believe that there needs to be a provincially funded, interim program to encourage commercial-scale, large-scale, closed containment trials to hone that technology — to make it practical, make it viable and deal with the risks. We don't want to see salmon farmers put at risk by technology that doesn't work. As the last speaker said, we need technology that works. Let's find it, and let's move ahead.

R. Austin (Chair): Thank you, David. I'll open the floor up for questions.

G. Robertson: You mentioned a trip in the late '80s to Norway to look at what they were doing then. Do you have more trips to draw on to share your findings

and conclusions, based on what changes they made to the industry there to make it more environmentally responsive and to improve their market access?

D. Lane: No, we haven't been able to afford another trip. I think that would be a very good opportunity. I think a joint delegation of affected parties would be an interesting notion. I take your point. It would be a good follow-up to compare to what the circumstance is now.

G. Robertson: The committee is hoping to have video conferencing with people in Norway and Scotland to learn from their mistakes and from their experience in terms of making the industry as sustainable as possible. It's something we're scheduled to do but, again, something we'll throw out there for anyone who comes up who has some experience and connection with those countries.

I'll pass the torch.

S. Fraser: In your reference to BCARDC — I think that was the acronym — that's the committee that...

D. Lane: The Aquaculture Research and Development Committee — yes.

[1255]

S. Fraser: ...has designated funds towards things like overwintering chinooks and that sort of study. Then you referred to a million dollars spent of that money that was not available to the public — the results of that. Do you know who did the decision-making and the oversight for that committee? How was that handled?

D. Lane: The money was provided by the provincial government — more than \$3 million. It's gone to other kinds of research as well as sea lice. It was passed on to the Science Council of B.C. and an advisory committee that was set up, very much with provincial government discussion as to the makeup of that committee, which was the oversight body for that fund.

S. Fraser: Does the body still exist? Do you know?

D. Lane: It still exists. I sat on it for a couple of years myself. At a certain point — when it seemed like every single initiative I put forward was voted down by the committee and decisions were being made in, I believe, a very unfair manner and, also, not on the basis of a scientific direction that was getting at the real answers — I resigned from that committee in protest.

I believe most of the funds have gone now.

R. Cantelon (Deputy Chair): Thank you for coming. I don't want you to take my question the wrong way, because certainly, we're open to the entire public. I'm just trying to know if I'm hearing local opinion or a broader corporate opinion. Are you from the area here, David?

D. Lane: No. Our organization is coast-wide. Our office is in New Westminster. I'm a North Vancouver citizen myself. I had applied to the Vancouver hearing in August, and it was full.

R. Cantelon (Deputy Chair): Don't take me wrong. Your opinions are certainly welcome, and we encourage them. I just wanted to know if it was locally based or not.

What sort of membership would you have here in the Sechelt area?

D. Lane: In Sechelt probably 40 or 50.

R. Cantelon (Deputy Chair): You mentioned that there are some studies. Are you not aware of what the Pacific Salmon Forum is doing? I understand that they've got about 15 studies, or in that range, on the Broughton sea lice issue currently underway. The Chair and I attended a forum — I guess you might have resigned before that got going — where they debated what issues are to be debated.

They have a number of studies that will be public. Are you aware of those or what's going on there?

D. Lane: I'm aware of those. I'm glad that the forum has taken over with some funding to back that up.

R. Cantelon (Deputy Chair): Exactly.

D. Lane: I hope the right direction is taken, as far as getting at the real questions that need to be answered.

R. Cantelon (Deputy Chair): Well, it was certainly a lively debate, but we won't go into that.

The other question I have, though, is.... We've heard a lot about containment, and the questions keep coming forward. You heard our other member of the panel ask. Suzuki is a worldwide foundation. Are you aware of any commercially operating closed containment facility anywhere in the world that we could learn more about before we take that leap of faith and invest provincial money to do it?

D. Lane: First, a minor clarification: we're not associated with the David Suzuki Foundation.

R. Cantelon (Deputy Chair): Oh. I made that leap of faith. Thank you for clarifying that.

D. Lane: T. Buck Suzuki, who the organization is named after, was a Japanese Canadian commercial fisherman who was active in conservation issues back in the '50s and '60s. We've been around for 25 years, actually.

R. Cantelon (Deputy Chair): Thank you for that information.

D. Lane: As far as internationally, there is some work being started in Iceland, I believe. But overall, this

technology does need some more trials. That's why we think there needs to be a provincial government program — we think the federal government should be kicking in as well — that will look at the best available technology and get that out there in trial runs that will prove what does work and what works the best.

R. Cantelon (Deputy Chair): So specifically, you're not aware of any commercially viable operation so far.

D. Lane: I'm not aware of any. The ones that have been tried in B.C. were pilots only.

S. Simpson: I want to come back to this BCARDC, the B.C. Aquaculture Research Development Committee. You're saying that this was established in 2001-2002 or sometime in there. When was it established? Do you know?

D. Lane: The date was September of the year that the moratorium was lifted. I believe that was 2002.

[1300]

S. Simpson: I think it was 2002 that the moratorium was lifted.

They have spent upwards of a million dollars, I think you said, on sea lice research and some of the rest of what was a \$3 million budget on research? And you said that you've not been able to access this research?

D. Lane: For the sea lice research, there is no public access to the results at this point.

S. Simpson: And you've asked for it?

D. Lane: The program was constructed in such a way that the fund itself did not have access to the results. They just gave out the money to scientists, who did the research and will do what they want with it. So there's no public record. You can't go on their website and find a list of the studies, the results of the studies.

S. Simpson: I just want to make sure that I get this right. The government put in upwards of \$3 million — a million or so into sea lice research — without any requirement that what the public paid for actually be available for the public to see.

D. Lane: That's right, in the case of the sea lice. There are some other issues where reports are available, but on sea lice, basically, there was no mechanism put in place to make sure that the research became public documents or was peer reviewed in any way by the fund.

S. Simpson: Also, then, I take it that not only aren't the results available, but in terms of the methodology of the research, that information hasn't been made available either — in terms of what it was and how it was done, let alone what the results are. Would that be accurate?

D. Lane: You will find a snapshot on the website that shows three or four paragraphs of the methodology, but I don't believe the actual proposals are publicly available, and the results are not publicly available.

S. Simpson: One last question, and it relates back to Norway. You spoke a little bit about Norway. I know that travelling is expensive. Have you had any discussions with people in Norway about the most recent messages that we're hearing about upwards of 50-plus fjords that have been now named as wild salmon fjords or wild fish fjords or whatever? We keep hearing mixed information about what is and isn't going on in Norway, and I know we're looking forward to hearing....

D. Lane: I've heard 37, but I don't have any documents that have the details of the actual program.

D. Jarvis: Thank you for your report. Your namesake there, David Suzuki, is over 25.

Some Voices: No, it's not David Suzuki.

D. Jarvis: I was being a little facetious when I said that. You said your environmental foundation was 25 years old. So is Suzuki. He's a little over 25 as well.

D. Lane: I think the David Suzuki Foundation is 20 years.

D. Jarvis: Was it? Okay.

Thank you again for your report, but I wanted to ask you what your opinion is with regards to some aspects of your farm relocation program. Costs of self-containment, for example, are pretty onerous, from what I understand. To date they've really not come up with any sort of situation where it would make it viable to do it off the land.

Then, at the same time, from what we have heard over the past few months, this is a market-driven situation, and if we are able to master the self-containment at a reasonable cost, these farms would be taken down to where the market is in North America, which is ostensibly in the United States. Therefore, all the processing plants and the fish farms would not be in British Columbia anymore. They'd be down at the market where it's closer and cheaper to work.

I've heard these things, so I just wondered if you have an answer to those remarks.

[1305]

D. Lane: Well, you need cold water to farm salmon. I've heard some rather odd statements about the industry moving to California, for example, and it just could not happen. Not only that, but it's banned in California.

Besides that, the whole notion of moving towards closed containment as an alternative — there is discussion about that amongst real players. It's been mentioned by a committee member.

Agrimarine Industries has a system that they believe is quite different. What is particularly different about it

— they want to move ahead with it immediately — is that it's on a scale that's about ten times larger. The tanks themselves that they're envisioning would be about ten times larger than the tanks they used on land at Cedar. The net-cage technology that's been used on the coast made that move a long time ago, realizing that larger systems are much more cost-effective. So there's one company that wants to do that.

I was at a meeting just over week ago with the Deputy Minister of Agriculture and Lands and some of the top aquaculture staff, and the whole question was about the potential for a closed containment program. Al Castledine was saying very clearly that there are a number of players who have approached him wanting to pursue this. That was his statement, and I believe that to be true.

I think it is something that has a future and should be brought into play sooner rather than later. I believe it needs some government assistance. New technologies, whether it's alternative energy or any of the programs that have moved us to further advance towards environmental technologies, usually have required some government assistance just at the development stage. That's what we think is needed here in B.C. now.

R. Austin (Chair): Thank you very much for your presentation, David.

I would now like to call Sharon Robinson to the witness table, please, from Thunder Bay Saw Shop.

S. Robinson: Good afternoon, gentlemen. Thank you very much for the opportunity to speak here today. I'm not going to try to state facts or information that I'm not informed or educated about. All I want to do is make it clear that all I have to offer is my opinion, and my opinion is just as valuable as everyone else's in this room. If you put them all in a cup, we can take \$1.60 and get ourselves a cup of B.C. Ferry coffee.

All I'm meaning by that is that all of our opinions are valuable. One's no more valuable than another. What we need to be clear about is whether we have our opinion or our opinion has us. Now, if our opinion has us, we're in trouble. It's no longer an opinion; it's a belief. And we might just as well all go have that cup of coffee right now. But if we are the author of our opinion, then we can make informed and educated decisions.

I've been in business for 27 years in the retail of outdoor power equipment. My husband was a falling contractor for 30 years, until his retirement six years ago. About 25 years ago we started a Christmas tree farm on our property. Contrary to some opinions, tree fallers make awesome Christmas tree farmers.

I'm not a stranger to what it is to face a little opposition in what you do for a living. I've known Ward and Maryke Griffioen of West Coast Fishculture for many years as customers and also the good folks of Target Marine. I value their business, and I respect the work they do. I feel that the community as a whole really benefits from these people.

I don't know how many they employ in total, but it does have an impact on our small community and, of

course, my business as well. I get the opportunity to sell them chainsaws, water pumps, pressure washers, and if I'm lucky, I get to fix them when they're broken.

I'm very impressed with the way West Coast Fishculture's farm has been run by Ward. I had an opportunity a few years ago to visit the site firsthand, and I was very impressed with the quality control, the precision and the cleanliness of the farm. Believe me, I can't keep my own house that clean.

I've eaten farmed salmon, and I do like it. I feel that there is definitely a place for fish farming and that there does not have to be an either-or attitude.

[1310]

R. Cantelon (Deputy Chair): I thank you for your comments and for reminding us about the value of opinion versus belief. I just want to recount that one presenter said, "Well, you have to choose what you want to believe," and he chose to believe this.

S. Robinson: That's correct.

R. Cantelon (Deputy Chair): I think we have to try to be more erudite than that, but thank you for your comments.

R. Austin (Chair): I would now like to call Glen Williams, from the Gitanyow Hereditary Chiefs, up to the witness table.

G. Williams: Good afternoon. My name is Glen Williams. I'm representing the Gitanyow Hereditary Chiefs in northwestern British Columbia. Today I'm with two staff members: Greg Rush, who's our director of fishery; and Mark Cleveland, who is our staff fishery biologist.

Today we want to give you a presentation, a PowerPoint, on who we are; where we're located; some of the interests that we have; some of the activities that we've been involved in, in rebuilding stocks in the Skeena River; and also offer some recommendations.

Basically, who we are: we're Gitksan people. We're the Gitanyow. We're situated in northwestern B.C. We have territories in parts of the upper Skeena, the upper Kitwanga River, the upper Kispiox River, and a good part of our territories are in the Nass River.

Our people are quite connected to the territory. We've had that for many centuries there. We're pretty heavily dependent on the wild salmon — all the different species, including steelhead.

This is basically our territory. Each of the poles that you see.... That's the traditional territory on the outline there, and each of our territories is broken down into what we call house territories. Each of the poles that you see there — people call them totem poles, but we call them birth poles or [Gitksan spoken] in our language — depict how we acquired the territories.

We have oral histories. We have crests. We have names, and the names of the territories as well, that go by height of land and all the different mountains and place-names throughout the whole territory. We're one

of the groups that have.... The system is still very well intact.

Over the last decade we've had some issues with some different activities that were occurring in our territory. We have gone to court on a couple of occasions, mainly to deal with the new law that's been established in the province and also from the Supreme Court of Canada. We went to court in 2002 and led some evidence of title and also of rights. Basically, the courts confirmed on at least two occasions that we had good proof or prima facie title and a strong case of aboriginal rights throughout the territory — or at least some parts of the territory in certain court cases.

[1315]

These are different parts of the territory. You'll see people in the middle photo, in the upper part. That's in the upper Nass River. The falls that you see there are the Meziadin fishway up in the upper Nass River. A good majority of the Nass sockeye stock spawn in the upper part of the Meziadin River, called the Hanna-Tintina. Approximately 80 percent of the Nass sockeye stock spawn in our territories.

The different products that we still use today — the fresh salmon, the salted. The majority of what we do is the smoking and also the drying. You'll see the photo of some of the activity that still happens in our communities.

On an annual basis we utilize about 4,000 sockeye on the Skeena, the chinook, the coho and some pink. A good majority of our fishing sites are on the Nass River. We take approximately 6,000 sockeye there and chinook, some coho and some pink as well. This is constant every year. It rises a bit. Last year I think we had approximately 10,000 sockeye that we harvested for the food fishery on the Nass River.

Over the last number of years we have been building capacity around the fishery through a program of the AFS. We have been able to do catch monitoring, enforcement programs. We've looked at the different habitats in the watershed and begun to make some plans for restoration. We've engaged in selective harvesting using fish wheels, dip nets, weirs and different stock assessments of both systems that are in our territory, and a bit of focus on the different stocks in the Nass system.

We have begun some enhancement projects. One major enhancement project that we have now is to establish — you see the photo there — a permanent counting fence on the Skeena, which is on the system that.... The river that you see there is the Kitwanga River. We built this on some resources that were from Canada and British Columbia, and a majority of it came from our own resources because of the interest that we have in the protection and the maintaining of the wild stocks in our traditional territories.

One of the things that we've noticed in some of the work we've been doing over the last decade has been a fair bit of focus on the Kitwanga River system. Historically, the reports that we've seen in the '40s have indicated that between 40,000 and 45,000 and maybe as high as 70,000 sockeye would come into the Kitwanga

River. Our counts in the last five years have indicated as few as 200 sockeye coming back and as high as 1,200 sockeye.

We have begun to look at a number of different reasons why that happens — the luminology on the lake, the different predators that may be impacting the fry. We've done a fair bit of work, and this year we're engaging in raising 100,000 sockeye, hopefully to boost the returns coming back to the Kitwanga.

These are some of the things that we've been engaged in. We're looking at the impacts of logging that has occurred adjacent to the lake and looking at the impacts of silt coming down and suffocating some of the spawning beds. In this past year we were able to secure some resources from the Pacific Salmon Treaty to begin to look at cleaning the different spawning beds that are adjacent to the lakeshore. That has been quite successful this year.

You'll see some of the activity there: bringing in the gravel, pumping the spawning beds and then beginning to harvest some of the sockeye to put in the hatchery this year. We engaged an expert panel and produced that report this year to have a long-term plan in place to rebuild the Kitwanga wild sockeye and the different stocks there.

[1320]

In doing all this work, we became aware of the establishment of at least two, maybe three, fish farms that are now planned for the mouth of the Skeena and potentially up to 17 that may be established on the Skeena and the Nass systems.

We engaged in a number of discussions, with scientific information and our own scientists, to review that. We have concerns with respect to sea lice problems on the smolts returning to the ocean. The area that they're talking about — Strouts Point — is a good nursery area for returning smolts, and they mill around there for some time before they actually go to the ocean. We're really quite concerned about that.

We do our counts on the returning smolts on an annual basis. We're very concerned. We see that as a major threat to our food fishery and some of the activity that we're engaged in, in rebuilding some of the wild stocks on the Skeena River system.

The other area that we're quite concerned about is disease that may result from establishment of fish farms. We're very concerned about that and about some of the other chemicals that are used to treat the salmon in these pens. That's a very big concern for us — a big threat to our livelihood, our dependence on salmon and the potential to infringe on the recognized right that we have on the food fishery.

Some of our recommendations are that the science is very clear that the open-net fish farming has the potential to harm the wild salmon and to infringe on our recognized constitutional right. In mid-December the Gitanyow proposed how B.C. could begin to engage the Gitanyow and the potential infringements on our aboriginal right to the wild salmon and steelhead. We're beginning that process.

We've heard from a number of court cases of the Supreme Court of Canada giving direction to the

province when there's a known fact of a right that exists. There is a duty to consult and to accommodate our right, and if that right will be impacted or infringed upon, there could be other remedies, including abandoning the plans. Based on what we have reviewed in the scientific literature, the establishment of these farms at the mouth of the Skeena and Nass is a serious threat to our dependence on salmon and steelhead.

The Gitanyow do not support the establishment of fish farms in the estuaries of the Skeena and the Nass rivers, and B.C. should abandon these plans. If necessary, we will take whatever action that we need to take, including returning to court, to lay the groundwork that this is a serious threat to our survival, to our dependence on the resource and to our aboriginal right to the fishery.

Panel, that is our presentation this afternoon and who we are and some of the activities that we've been involved in — to share with you. We're happy to have any questions that you may have.

D. Jarvis: Thank you for your presentation. Can you tell me to what degree your stocks are down? Is there any way that you have measured it?

G. Williams: We've looked at a fair number of reports that were done by the Department of Fisheries and Oceans in the 1940s. They indicated that the reports then were between 45,000 to as high as 70,000 sockeye in that system. Now we're seeing 200 and maybe 1,200 in a given year.

D. Jarvis: What do you attribute that to?

G. Williams: Harvesting activity that may have occurred around the lake and the silt that's developed to suffocate some of these spawning beds. Certainly, the mixed-stock fishery on the coast is a big contributing problem to the reduction of stocks.

[1325]

D. Jarvis: You leave me in a quandary in a way, in the sense that you said you wouldn't want any fish farms in that area near the Skeena, say. Yet when we were in Kitkatla, they were going to give their eye teeth to put a fish farm there. So I don't know. Have you discussed it with that band?

G. Williams: We've had discussions with the aboriginal groups, our neighbours on the Skeena, but certainly, we have not had an opportunity to discuss that fully with Kitkatla. I think that we certainly made some statements to the press that we are very concerned about the establishment of those farms, probably, within Kitkatla territory. But we really don't have a say as to exactly what they do in respect to what decisions they make. Certainly, we will make them aware of the concerns that we have.

D. Jarvis: As you appreciate, they're in a prime position where they want their farm — ostensibly right at the mouth of the Skeena.

G. Williams: Yes, and we have very big concerns about the migration route of the adult sockeye coming back and the smolts. Based on the reports that the Skeena Fisheries Commission has done, the establishment of that one farm at Strouts Point is a big concern. That's a migration route for adult salmon returning and smolts going back to the ocean. The smolts there have had an established nursery created at the one farm that they want to establish at Strouts Point.

S. Fraser: Thank you, Glen, for your presentation. It was very educational.

Touching on what Dan's talking about, we've certainly heard the message of concern on the Skeena and the Nass already. We've travelled up north to some extent already.

Being mindful of court decisions — Sparrow, Delgamuukw — and meaningful consultation and a number of other decisions made in the courts, has the Gitksan...? Has there been consultation regarding the tenures in question — the ones you mentioned around the mouth of Sprouts Point — formally?

G. Williams: I'm aware that there is some discussion with the Skeena Fisheries Commission. I'm not aware of any that has been established with the Gitksan. With the Gitanyow, we've made known our concern to the province. We're currently beginning the process of how we engage in the consultation and accommodation with respect to the Gitanyow.

S. Fraser: All right. If I can just get this clear for myself, the Gitanyow have had.... Have you been consulted formally for your input in any process around tenures?

G. Williams: The province has disclosed the information of those three that are now planned for the mouth of the Skeena, and we are now beginning the process of establishing the terms of reference of how that consultation will be established with the Gitanyow.

R. Cantelon (Deputy Chair): Thank you again for your presentation. Coming back to the decreasing runs, could you elaborate on your views as far as the fishing aspect goes? Is it overfishing, or what's the causal effect there?

G. Williams: We've looked at a number of things, and we've, in fact, invested close to \$3 million to try to understand what exactly the problem is here. We've done luminology studies. We've done enumeration of the different stocks. We've looked at the habitat. But the big concern and the issue that's before us is the harvesting of timber adjacent to the lake, which is creating problems for sockeye coming and spawning on the lakeshore.

We see the siltation, the construction of roads that may be leading to lack of flushing that happens in the lake. Certainly, we know that the overexploitation of the mixed-stock fishery at the mouth of the Skeena is a

big problem — sometimes as high as 50 percent. In some years it's 26 percent.

With the data that we have now, we are in a process of influencing the decision-makers with DFO that the numbers are not looking right. This is the timing of the run. The Kitwanga stocks come at the same time as the Babine stocks, which is a bigger stock, and they're mixed in there. So the mixed-stock fishery is the biggest concern.

R. Cantelon (Deputy Chair): One quick follow-up. Your presentation refers to the Kitwanga sockeye being genetically unique. Do you have a view on ocean ranching and how that may or may not impact the genetic integrity of fish?

[1330]

G. Williams: No, we don't have a view about that.

J. Yap: Thank you, Chief Williams, for coming down to present to us.

A couple of questions. In your PowerPoint you had a slide with annual salmon use by the Gitanyow, and you had 4,000 sockeye, 600 chinook — that's in the Skeena; Nass River — 6,000 sockeye, 600 shrimp, etc. Are these the actuals or the quota, or are they one and the same?

G. Williams: They're the actuals.

J. Yap: Have they been fairly consistent over the...?

G. Williams: It fluctuates. Some years, like last year on the Nass system, we were able to harvest 10,000.

J. Yap: So it fluctuates up and down, depending on the returns.

G. Williams: Yes.

J. Yap: Okay. Is it possible, from your experience, to say what would be, say in the last ten years, a normal level for your people?

G. Williams: That would probably be normal. I think that in years past there would probably be less sockeye but now, with the growing population, that number has increased, especially the sockeye.

J. Yap: These returns and the food fishery that you're experiencing are over a period of time when there have not been a significant number of fish farms in your immediate territory.

G. Williams: I don't really get your question.

J. Yap: In the Skeena River or Nass River, at the mouth of the river at the present time, as I understand it, there are no fish farms.

G. Williams: That's right.

J. Yap: Okay. Now you mentioned in your presentation a reference to some chemicals that are typically used in fish farms. I think you said that you have concerns about the impacts of these chemicals on the wild fishery and, potentially, on your way of life. On what do you base your concerns?

G. Williams: There are a number of scientific reports out now, the more recent ones in the last month. In order to treat disease in these pens, they use some kind of chemical to reduce that. The reports have indicated that potentially it could affect the adult salmon that are returning.

J. Yap: So you or your people have read scientific reports that...

G. Williams: It's a very serious issue — the establishment of fish farms on the coast. We are very aware of it. We have technical people, and we have scientific people that we meet with on a constant basis. Yes, and they provide us briefings on a regular basis on those.

J. Yap: My understanding is that the chemicals that are used are regulated by government to ensure that they're in order as far as potential impacts.

G. Williams: Probably are, yes.

S. Simpson: Thank you, Glen, for the presentation. I want to go back a little bit to your recommendations. I think that as Scott said, when we travelled in the north and the central coast, there was no question about the message we were hearing, whether it be from aboriginal people or from the vast majority of the community. It clearly expressed the same concerns that you expressed in your presentation.

I think the sentiments were very much those of your recommendations — that there's not much desire at all to have fish farms in the central and north coast from any of the people in those communities, with noted exceptions, of course. We know that in Klemtu in the central coast the Kitasoo do have farms. We know the discussion that's going on with the Kitkatla at the mouth of the Skeena.

In both cases we heard from many aboriginal groups and aboriginal leaders who said: "These are our traditional territories. We do not support farms in our traditional territories. We want to protect the integrity of the wild salmon, and we're not interested in those farms."

Of course, when we met with the Kitkatla — and we went and met with them in their community — they made much the same argument for why they should, in fact, be able to have farms: that it is their traditional territory. Those are shared territories in some sense.

[1335]

The question I have for you, Glen, is that as we look at how to resolve those questions of a difference of

opinion between aboriginal peoples, do you believe that the government should make the decision to resolve that question, or do you believe that we should look at a way to put the questions back into the hands of the aboriginal people and say: "You need to resolve this question, and we need to respect your resolution?"

G. Williams: Well, I certainly think our view is that amongst other aboriginal groups that oppose fish farms on the Skeena, we need to engage the Kitkatla people. That's the preference we would have: to try and work this out ourselves, to look at scientific information and also be respectful of people's territories and rights within their territories. But where it impacts us upriver, we will make sure our interests and voices are heard about the threat to the livelihood and the dependence that we've had on the resource. That would be the ideal forum to resolve it — amongst ourselves and not with government.

S. Simpson: Just to follow up on that.... Clearly, when we've asked a similar question to other aboriginal leaders, that is what's reflected: that within the aboriginal communities that question should be resolved in discussions among the aboriginal communities themselves, working it out as to what works.

So that would clearly be your preference, that that be the first step at finding a resolution to those questions at this point in time, whatever that framework looks like — and I don't know what it looks like — in a broad sense.

G. Williams: That would be the preference.

R. Austin (Chair): Great. Thank you very much, Glen, for your presentation. Just before calling the next witness up to the table, I'd like to acknowledge the local MLA. Nicholas Simons is here somewhere in the audience.

N. Simons: Yeah.

R. Austin (Chair): Nicholas helped to organize the members of the committee going to visit Target Marine this morning, so I'd like to thank him for that on behalf of the committee.

I'd like to now call Wendy Simmonds up to the witness table.

W. Simmonds: Before I begin, I came in when a gentleman from the T. Buck Suzuki Foundation was speaking about a sea lice study and his inability to find it. I don't know if it's the same study that he's referring to, but the one that was published on October 2 of this year is on the website. The URL is on the document I've given you. This was peer reviewed by the PNAS and is the one that was mentioned on the news. It came out of UVic. I have printed a copy for you if you're interested in seeing it.

S. Fraser: We already have it. I think David was referring to another process.

W. Simmonds: Okay, good. I just thought you might need that information.

I'd like to preface my remarks with thanks to the committee for providing ordinary B.C. people like myself with the opportunity to speak on this issue. When I first registered to speak, I mistakenly thought that all aquaculture, not just salmon, was being discussed. So I'd like to use my particular axe to grind, which is our nurturing little bay called Churchill Bay in Pender Harbour, as a way of extending my ideas and making comparisons to the aquaculture industry as a whole.

[1340]

As we speak, there is no aquaculture in Churchill Bay, just commercial clam harvesting, but the problems the bay has are shared by many coastal locations. Increasingly imposed upon by the general public, this little tidal bay acts as a nursery for all manner of fin and shell species, providing with its two reef enclosures a safe haven from larger predators, big boats and, at low tide, most human intervention. It was in the past a site for oyster culture and is now subject to periodic clamming openings. The clams are under the oyster beds. So in the last 30 years of my observations, I've watched this tiny, 250-metre-long bay lose both diversity and number of species.

Very little good can be said about allowing a low-level economic activity like clam harvesting in an ecosystem this small. But the arguments for continuing the clam openings, from both provincial and federal governments, are the same ones, in general, that we need to address in the salmon aquaculture issue.

I've read many of the transcripts, and I note that most speakers have had a vested interest in the industry. I do not. I'm a private, born-and-bred B.C. citizen with no economic investment in any fish. However, the arguments most often put forth so far are economic. So let's look at the positive and the negative.

It seems to be automatically assumed that money generated by or from this industry is a positive for B.C. To truly be an improvement, we have to consider what was in the community before. Is a fish farm in your water a panacea for a failed industry? In that case, either the commercial fishing could be revitalized or retraining of local fishers taken seriously. Or is there new growth in a population because of the new fish farms and the spinoff industries?

If small towns are panicked about what they would do if the fish farms shut down, what is the reason? Should the artificial new population be simply moved with the fish farms to a new location and, say, repopulate the middle north? Or is there real long-term gain for a community that is associated with the industry?

First, hiring employees to fill low-paying, insecure, unskilled jobs in the business is false and unstable economy. Many fish farmers once here on the Sechelt Peninsula are now gone, having moved with the mass exodus of failed farms. Those who have stayed have found other jobs, retrained, stayed with the locally owned aquaculture business and put down roots in the community — now contributing to the real welfare of their towns. But these are the exception.

Second, the employer who is a part of the community, or is at least a B.C. company, is equally an exception. In a short study of the salmon farmers organization's files, I found only one major fish farm company that was truly locally owned — Target, here on the Sunshine Coast. The one other claims to be Canadian. The rest of the farms are owned by large multinational interests — notably, Grieg — whose assets are not shared with British Columbians.

Basically, the corporate owner does little for our economy except proliferate the idea that unskilled work is still available if you're willing to work for a wage that will not on its own sustain a livelihood. What message does that give our youth, whom we are otherwise encouraging to pursue post-secondary education or learn a much-needed trade?

Simply stated, what good does it do us to foster fish farming that is owned by foreign corporations? Does the enhanced tax base justify the potential pollution of our water, the possible extermination of wild stock, the false economy of short-term, cheap labour?

To compare the overall situation to my Churchill Bay, what amount of income made from a minimal amount of investment can justify the harm being done to herring and oyster spawn on the oyster beds? For the sake of maintaining the status quo in current clam harvesting procedures, a whole ecosystem designed to nurture sea life is being inexorably destroyed.

[1345]

What are the possible negative economic impacts? One that is already being proved is the reduction of market prices for wild stock. Wild salmon fishers are being penalized by a farm fish market that can firm and artificially colour its product. Health and safety regulations do not protect the B.C. consumer from this deception, unlike the U.S. and Japan, where all markets are required to clearly label farm fish. The wild salmon fishers are not corporations. They are B.C. small businessmen who have a stake in their province and a vested interest in the health of wild stocks.

Another negative economic impact is taking place right now in the tourism industry. First, American cruisers are not travelling in B.C. waters. All areas are down this year, but as many businesses will tell you, travel north of Johnstone Strait and the Yuculta Rapids is drastically reduced. Now, we can't totally blame fish farms for that. Obviously, there are other factors — like gas prices, the exchange rate — but if you actually try to find a good anchorage north of the Yucultas recently, you'll know that the best spots are taken by the aquaculture industry.

This is not why we go boating. Increasingly, our pristine coast is being tarnished by reports of dying fish and dwindling wild stocks. According to several high-end marina owners north of the Yucultas, Europeans and Americans who come here to experience the untamed beauty of B.C. are possibly becoming disillusioned and staying away, or they're just travelling through on their way to Alaska.

The October 11 worldwide protest against, specifically, our governmental lack of management of the fish farm

industry cannot help tourism. Whether this reverse trend in ecotourism will continue or not, one thing is certain: tourism is suffering — in part, because of the well-documented perception that B.C. is not looking after its own.

What about science, its evidence and the apparent dilemma about what to do about the farms? There seems to have been a love-hate relationship between fish farm companies, both governments and the scientific community in the past. Either you accept scientific research that is done outside the industry or you don't. But please don't fight. Stop the fighting. There's absolutely no logic in accepting science done from within.

Self-regulation is an absurd concept. The idea of risk-management regulation is equally disastrous. All you have to do as a human being to know this is to think about the last time you took the last cookie, even though you knew there weren't enough for everyone. The beast is human. We are all greedy. So it is absolutely ridiculous to assume that any interest group or business is going to make the morally and ethically correct decision, if it goes against capital gain.

But the villain is not the fish farmer. The fish farmers are doing what they're told, acting within the law, just as the clambers in my bay are acting within the law. It is the law that must be changed. As taxpayers, we expect that governments act in our best interests and pass laws that will sustain our land.

Second, if a group of scientists — like the recently published study out of UVic, the October 2 one — concludes from their peer-approved research that up to 95 percent of the fry in the archipelago are being killed by lice, they must be accepted. You cannot have it both ways. Therefore, it's most distressing to note that a senior official in the FOC actually discounted the research. Did he do the research? Is the taxpayer financing the Fisheries and Oceans to just pass off or scoff at independent research? And why isn't the FOC providing the professional guidance that it's supposed to?

If I look at the Churchill Bay scenario and the people of MAREP and other provincial institutions I've talked to, all they keep telling me from their federal and provincial offices is that they are understaffed and that they do not have the resources to conduct a conclusive study, which would give more scientific evidence than observation does to prove that my bay is suffering a loss of diversity and numbers of species. I really do not need that study. I can see it with my own eyes. The ultimate irony is that the only way I can protect the bay is to have it declared "contaminated."

[1350]

Do we need to wait for a species to hit the endangered list before we start taking corrective action? We know that some fish are being killed by lice; we know that some fish have escaped and spawned in west coast rivers. We know that an alien species, the Atlantic salmon — defended from its own diseases by antibiotics — is out there being caught in significant numbers by fishers in Johnstone Strait and the west coast.

This committee probably knows all of this and more by now. We do not have to be nuclear scientists

or wait for the next, more definitive report, announcing the red-listing of all wild salmon species, to get this. All of us know that something is wrong. Instead of a fish war, why don't we find a solution? It is possible to have both species on this coast. Let's just back up and isolate them.

I've done a fair bit of research into other projects — the Australians in the Northern Territory are just this year, after four years of planning and one test case begun in 2002, beginning to farm barramundi with steel, full-enclosure cages. The Hawaiians have a fascinating project using a deep-sea pod to raise the highly marketable kona kampachi. Even the Norwegians have new rules in effect around estuaries to protect their salmon-producing rivers. B.C., on the other hand, jumped into the industry with the Norwegians and did no studies, no tests, and has been basically back-paddling since the first morts hit the news.

We made a mistake, but we can fix it. I say "we" because we are all responsible. We, most of us baby-boomers, should be ashamed of ourselves. We all share in the irresponsible, not-my-business attitude, and we all need to fix it. It is not appropriate to say that it doesn't matter, that global warming will get us anyway, or that we don't know for sure that what we're doing is wrong, or that yes, this is wrong, but other industries are doing bad things too, so why can't we? We all know we are wrong, and it is our kids and grandkids who will inherit our greedy, lazy legacy. It must stop. We must do what we can now.

First, it should be completely obvious to everyone by now that fully enclosed pens are necessary, at whatever cost. If the fish farmers say they can't afford it, they are not interested in the welfare of our province or the sustainability of our resources, and we don't need them. Revoke their licences, put the fish on land — whatever is necessary to stop Atlantic salmon from creating irrevocable harm in the whole ecosystem.

Second, the FOC and the provincial government should start listening to, and fostering, many of the people in the fish farm industry who are doing research and actually producing Pacific salmon in farms and ranches. They should also consider putting a stop to stream enhancement and flashy community forums and get back to real community stewardship, like the raising of fish on small streams. I did this with my classes decades ago in the salmonids in the classroom program. It was not only successful in terms of repopulating dead streams in our area, but it also taught a whole generation of citizens to respect and care for this most unique fish.

I sincerely hope that we do not have to wait for a mad cow scenario in humans and/or fish before this committee does its work. The wild stocks are not ours. They are just reproducing here.

[1355]

It's our responsibility to keep them healthy so they can continue their part in the global life we know so very little about. You, the committee, have the power to make ethical decisions and see that our government does something about the issue now, before all of the world's wild salmon fry are dead.

R. Austin (Chair): Thank you, Wendy, for your presentation. Any members have questions? Thanks again for coming.

I would now like to call Ruby Berry from the Georgia Strait Alliance to the witness table, please.

R. Berry: Thank you for the opportunity to address you today. There are many issues of concern surrounding salmon aquaculture as it currently exists in British Columbia. I appreciate that you're dedicating your time and attention to understanding and addressing these issues.

Today I'd like to focus on the externalized cost of the industry. The salmon farmers are diligent in pointing out the financial benefit of the industry to this province, but we seldom hear about some of the costs, both current and future, that will be borne by the rest of us, whether it be the effects of environmental degradation and cleanup or lost opportunities of other industries that have been negatively impacted by salmon farming.

We're seeing on a global scale that it's perilous to ignore environmental impacts — that the ocean is not, as we earlier assumed, vast enough to absorb our neglect. Conservative estimates are that fish farms are producing waste equivalent to the sewage of a city of 100,000. The farms are meant to be located on sites that flush easily so that the waste material from the fish is taken away.

We're seeing the devastating effects in the ocean today of the erroneous idea that there is such a thing as "away." The cost of treating the waste produced must be factored into the industry's cost of doing business. Uneaten feed, as well as any antibiotics, therapeutants and pesticides both in the uneaten feed or in the feces of fish, is getting into the marine environment and affecting other marine species.

For example, prawns are a similar animal to sea lice, and indications are that the treatment for sea lice, which is administered in the feed, is affecting the prawn populations around the fish farms. Prawn fishermen are starting to report that they can tell us when the fish are treated with the pesticide, by the drastic decrease in the number of prawns they're catching. This impact means that there is a cost borne by the prawn fishermen rather than the salmon farming industry.

We've seen that there is a very real risk of disease transfer from farmed salmon to the wild stocks. Norway provides a devastating example, where almost 30 river systems have had to be deliberately poisoned in order to stop farm-bred disease. The costs of the loss of ecosystem and regeneration are impossible to measure and will be borne for generations.

We as a society have been learning about the complex web of interdependence that is the natural world. We've seen that introducing open-net-cage farms has a detrimental effect on wild salmon stocks through disease transfer, the potential for colonization, or displacement of wild stocks by escaped Atlantics and degradation of habitat.

What is the cost to other species and the integrity of our ecosystem? Wild salmon are at the heart of our coastal ecosystem, supporting a host of other marine species. Scientists now understand that even the forests, even far into B.C.'s interior, depend on the nutrients in the bodies of returning wild salmon, which are spread about by bears and other animals.

If we lose our wild runs of salmon, we lose the nutrients these forests need to grow and thrive. How can we just give this up? How many other interdependencies do we risk if we allow the wild salmon stocks to be decimated?

The direct effect on other marine species is still in question. We do not fully understand the potential disease transfer or the effect of waste products into the ocean. The first nations and others that live and work in the areas around fish farms are noticing the effects on clam beds and kelp forests, among others. I've met fishermen who are convinced that waste from the fish farms is killing the kelp beds. Who knows if they're right? We don't know this. This is a question that needs to be answered. If they are right, what are the economic and social costs of this loss?

The nets used to contain the fish are treated with chemicals so toxic that when the nets are cleaned, the resulting sludge is shipped to a toxic waste site. What is the cost of the environmental effect of these nets hanging in the ocean, as well as the buildup of land-based toxic waste sites?

[1400]

There are other potentially serious costs facing taxpayers that could result from unforeseen disasters in the industry. We've seen an increasing expectation among industries of financial rescue by government when things fail economically. Net-cage farming leaves the industry susceptible to major losses from algae blooms, anoxic conditions and El Niño, as well as new disease outbreaks that would require the destruction of farmed fish, as has already happened in New Brunswick a few years ago with the infectious salmon anemia. We're supplying a submission that explains that in greater detail.

In the event of such failure, we could see the industry here in B.C. demanding expensive bailouts, as other companies in peril have done successfully in the past. If the net-cage salmon-farming industry were belatedly proven to be the source of a wild species die-off or habitat degradation, is the industry sufficiently insured to compensate British Columbians for the loss of value?

Does the province have a strong enough legal case, having allowed open-net cages to operate freely in the face of compelling scientific evidence of the impacts on wild salmon such as sea lice? Or would the taxpayers have to cover all the costs, including the loss of wild stocks? Shouldn't we be insisting that salmon-farming companies be bonded for such a contingency?

We must also take into account socioeconomic collapse of impacted traditional fisheries. The impacts of open-net-cage farming could result in the loss of existing and future jobs in important otherwise sustainable coastal industries, including wild fisheries, shellfish culture and outdoor tourism.

People come here from all around the world to see orcas, bears, eagles and other animals that are dependent upon wild salmon and to take part in salmon sport fishing. What would be the economic and social cost to British Columbians if we allow salmon farming to decimate our wild stocks, the foundation of our tourism industry?

Foreign-owned finfish companies in this province make up the majority of the companies that farm salmon. What is our assurance that these companies will take responsibility for the degradation they're causing? At the moment they're providing compensatory restoration, but only in exchange for the use of other sites. How do we pay for the restoration of these sites, once these companies have withdrawn to other, cheaper venues?

The profits of this industry are already going out of the province and the country. What assurances do we have that they will not just up and leave without properly compensating for the environmental damage they've wrought?

If farms are allowed to be sited in areas where first nations have indicated that salmon farming will negatively impact their interests, what is the possibility of required compensation costs in the treaty process? What could these costs amount to?

I've outlined some of the costs that are seldom discussed publicly by the industry — costs both real and potential that are borne by others. So what changes are called for?

The industry needs to bear the cost of independent studies that will remove scientific uncertainty about risk assessment, interspecies competition, substance introductions and other ecological impacts. How much are we the taxpayers already spending on repeated public processes studying a multitude of problems created by this industry?

Fiscal constraints over the past decade have led to increasing reliance on self-monitoring by industries. In this industry, requirements have been reduced in some cases — for example, requiring less frequent net inspections by divers.

By contrast, commercial fishermen have not seen reductions in monitoring requirements. Instead, they've had to pay for independent Fisheries observers on their boat and at off-loading. Salmon farmers should also have to pay for the cost of adequate and independent monitoring of their industry, just as commercial fishermen have had to do.

The onus should be on the salmon farmers to prove that their industry is ecologically sound. Industry advocates will reject this, claiming that if we insist on an ecologically sound industry, no one will be able to operate.

The pulp industry made a similar claim when it was faced with new regulations to limit organochlorine discharges, but it made those changes and has survived. The auto industry also made a similar claim when it was told it could no longer use leaded gas. Again, they managed to change their practices and survive. We are sure that salmon farmers are just as able to change and prosper.

The industry must be converted to closed containment as quickly as possible, as this would negate the majority of detrimental environmental effects and address many of the other issues I've outlined. Just think. If the industry had been converted to closed containment, as we urged a decade ago, we would not likely be seeing the serious impacts on salmon stocks in the Broughton today, which have been linked to sea lice.

The industry claims that fish grown in closed containment will not be economically viable in the market. This is after causing the price of salmon to drop by flooding the market with farmed salmon. The success of the B.C. Salmon Farmers is an excellent example of the power of marketing, as is the Copper River salmon phenomenon.

Wild salmon is a high-end fish that has seen significant fluctuations in price over the years. The European market has shown clear changes over the past ten years in acceptance of farmed fish and is returning to a high demand for wild sustainable salmon. The German market can't get enough of it and will pay a premium for the right product.

[1405]

The primary reason that farmed salmon can be sold at a lower price than wild salmon is because so many of the costs inherent in its production are not borne by the industry but rather by the rest of society. This needs to change. It's essential that a determination of the sustainability of salmon aquaculture take into account all of these hidden and often unrecognized costs.

Thanks for your time.

R. Austin (Chair): Thank you, Ruby.

I'll open the floor to members who have any comments or questions.

S. Fraser: Thanks, Ruby. There's a lot of material you went through there.

Just one thought came to mind. You mentioned that the industry should pay for studies where there are gaps in science that may or may not be being dealt with now at all or are being paid for by public funding. It just raises a bit of a dilemma, because the previous speaker indicated that having industry do their own work raises a certain level of suspicion about how objective it can be. How would you rectify that?

R. Berry: There are a number of ways of collecting money to pay for something without it being a direct hiring. We would suggest a tax levy or contributions towards the payment of an independent study, but not that they directly hire the person doing the study — an arm's-length arrangement.

R. Austin (Chair): Thank you very much for your presentation, Ruby.

I'd now like to call Bernie Bennett from Target Marine up to the witness table.

B. Bennett: Thank you very much, first and foremost.

I'm Bernie Bennett. I'm managing general partner of Target Marine Products. We operate eight sea sites, a processing plant and a hatchery in this area. We try to do this respectfully in the traditional territories of the Sechelt Indian Band.

Whereas a couple of other speakers have already mentioned.... We're 100-percent owned and operated by residents on the Sunshine Coast. My two partners are here with me in the room today. We produce three species of salmon and also operate a land-based sturgeon facility, which I'll get to at the end of my short talk today.

We've been here in one form or another for just about 20 years right now. I'd also like to state that I'm a businessman; I'm not a scientist. You'll get lots of scientific views in your deliberations going around. I would like to say this. This is important to me. It comes down ultimately to the concept of sustainability. If what our company or any company is doing out there in any industry is not sustainable, then we shouldn't be doing it. It's as simple as that.

We've been operating some of our sites for 20 years. They're monitored, sometimes two, three times a year. So far we've never been found to be in violation of any environmental standard. I think that's really important — this concept of sustainability. Again, if we're damaging wild salmon runs, then we ought not be doing it.

Just a little bit of history here. The Sunshine Coast, where we're sitting right now, is really where it all started for salmon aquaculture. When I first came into this business in the '80s, there were probably around 30 sea sites registered in this area and probably 20 different small companies doing it.

There have been some tremendous changes since then, mainly in terms of the globalization and the foreign investment. It's a very, very expensive business to get into. For us to get one farm up and running, you're probably looking in the range of \$6 million or \$7 million, and it's not easy to find that kind of capital.

Just a little bit about what we do economically. We're not a really big company. We produce around 4,000 tonnes of product a year. The total sales of our three companies: low \$20 millions — \$23 million or something like that. We spend over \$1 million just on local businesses here on the Sunshine Coast, not to mention what we spend off the coast.

We're very proud of our community efforts. I'll just mention a couple of them here. Over the years we've given over \$50,000 to the Pender Harbour Jazz Festival in support of the arts. We support many other arts endeavours on the Sunshine Coast, including the Festival of the Written Arts and Cops for Cancer. We provided funding for a hospice room a few years ago. We try to be as involved with the community as we can.

[1410]

We employ in the range of, at a low point, around 105 people and a high of about 125 in our peak processing season. In terms of employment, we also offer a full range of jobs, from entry level — say, somebody coming into our processing plant — right up to and including things where you need graduate school or, in the case

of a veterinarian, to the doctoral level. So it's a large range, and there are ample opportunities for advancement.

We put around \$3.5 million in payroll right here on the Sunshine Coast between here and the Powell River side. We offer a comprehensive benefit plan to all of our employees, including part-time people who do not work year-round. We pay 100 percent of B.C. medical, dental, prescription medications, a vision plan — even the eyeglasses — and various insurance and long-term disability, in case somebody is hurt on the job.

We also offer to all of our employees, including part-time employees, a contributory RRSP plan where if they contribute up to 5 percent of their salaries, we'll match it. We do that. The vast majority of our employees take advantage of that. As I always tell them: "You're crazy to turn down free money."

We do an awful lot of training: a lot of marine courses, first-aid, safety, computer courses. One really good example that I always like to use is that in our business there's a lot of diving done, and it can be very dangerous if you're not properly trained. Right now it costs us just over \$8,000 to educate one diver, and we do lots of these every year.

By the way, it's also usually young guys who are doing it. It's a young man's profession. It just about doubles their salary for them when they're working out on the farm due to the high pay rates associated with diving. We pay 100 percent of the costs for all of these endeavours.

I think the big thing that I would like to communicate to the committee today is about land-based finfish farming. I use finfish rather than salmon, because what we've been doing is with our sturgeon project, but it's the same. The principles are exactly the same.

The first thing I'd like to say is: yes, it absolutely can be done. If anybody comes before you and says that it can't be done, they're wrong. We've been doing it for six years. We have a facility that's not ten kilometres from here, which you guys — most of you — saw this morning. It's been operating continuously since, I think, 2000. I might be out a few months there. We've successfully reared fish there from the size of the head of a pin — a sturgeon egg — to up to, some of them now, over 70 kilos.

There are very good reasons to do this, too, for land-based systems. You have an enormous amount of control over growth, disease, protection from algae, predators. The list just goes on and on. All of those things can negatively affect profit. So there are lots of good reasons for us to investigate it, and we did. We've probably invested over \$2 million in this technology now.

In these systems we reuse about 98 percent of the water that goes in there. It's recirculated, passed through filtration and gone again. All solid wastes are collected via a drum filter. We use UV sterilization for the water in case there are any pathogens in there. I guess it'd be fair to ask, in the face of all this good stuff: why isn't it done? And why isn't it done anywhere in the world?

The answer is that the showstopper is the cost. We work out — and these are rough numbers, but we have

six, seven years experience with this right now — that it costs around \$15 a kilo to produce fish in these systems. This year in North America salmon prices have been pretty phenomenal, running \$6 to \$8 a kilo in some cases. There is still an enormous shortfall that you just can't make up. It's not even close. It's not like we're within a couple of dollars here, and we can make it go. It's a very big shortfall.

Even with our sturgeon that we've been culturing since 1999, the best we can do on those is about \$11 a kilo, and we're still at the \$15. We've lost money on every single pound that we've shipped to date, and our only saving grace is going to be in two years when we ship for caviar. It's going to be very politically correct fish, though, because for all of the people in here who've come up with environmental concerns, it answers every single one of them that's been mentioned here today. But it's also very expensive.

That concludes my remarks — short they may be.

[1415]

D. Jarvis: I won't try to editorialize, but I know there are about a hundred tonnes of seafood sold in the world every year, and it's getting more and more, because our population is getting larger and larger. They continue to want seafood. I guess we're going to have to go to another method if we want to save our seabeds. But I agree with you; I think that if we can't do it sustainably — in fact, environmentally sustainably — we should give it up.

When you look at the dollars and cents aspect of it.... I was mentioning to one of the other witnesses about going to self-containment and that it would leave Canada. It would go across the American border, because it'd be cheaper to market and deliver.

If we go to containment fisheries in this salmon farming entirely, what would it cost? Have you ever projected as to what it would cost for, say, an average...? A salmon dinner costs somewhere between \$12.99 and \$15.99, depending on what restaurant and what area you're in.

B. Bennett: Some I've seen in Vancouver in the \$30 range.

D. Jarvis: Yeah. Well, you make more money than I do.

B. Bennett: Who says I can afford it?

D. Jarvis: Probably, anyway. Right now, if we had to go.... The costs will go up if we go into a sustainable contained-net system. I know it's sort of a....

B. Bennett: It's a tough question.

D. Jarvis: Yeah, I know.

B. Bennett: There are scale questions involved there. There are a whole lot of factors going in. If it's costing us \$15 a kilo right now.... I would put our system above the pilot stage but not at what you'd call true

high-commercial production. It's somewhere in between. We've done some work on this. There's still a huge gap there.

D. Jarvis: So you figure a 20-percent, 30-percent, 40-percent rise?

B. Bennett: Oh, more than that. Double, probably.

J. Yap: Thank you for your presentation, Mr. Bennett. In other presentations in other communities and here, some have characterized the industry as having lower-skilled, low-paying jobs. Those are sort of the words used to describe the employment in the industry. But from hearing your business.... You say you have a hundred full-time and about 20 seasonal workers, and it sounds like you have a fairly comprehensive benefits plan.

Can you share with us the range of, you know, the salaries that you would pay your people, recognizing that there are some that are more skilled than others?

B. Bennett: It would go anywhere from sort of in the 30s somewhere, in terms of salaried people, to over 90.

S. Fraser: Thousand per year?

B. Bennett: Yeah, per annum. So it's a big range. But there are some huge skill levels too. There's a big difference between somebody coming in part-time off the street, possessing relatively few skills, and somebody who has a master's degree in engineering.

J. Yap: Those guys would be closer to the \$90,000 range?

B. Bennett: I would assume so, yes.

J. Yap: How has the turnover of your workforce been?

B. Bennett: Turnover's been difficult, and I think any employer here on the Sunshine Coast or anywhere will echo that right now. It's difficult for us right now. On the Sunshine Coast we're experiencing a huge construction boom. You just need to drive around here anywhere; you can see that. They're hauling kids out of school and paying them in the mid-\$20s an hour to hammer nails — right? Now, if that leads to an apprenticeship and a solid, long-term paying job for them, good for them. But it makes it really difficult to compete for that entry-level labour, if you will.

J. Yap: Have you had to adjust your wage rates to try to be competitive with the current market?

B. Bennett: Yes, and we're constantly monitoring that. [1420]

J. Yap: It sounds like you're also investing in the training that goes with keeping your workers up to date on the skills.

B. Bennett: You have to. There's no getting around that these days. You just have to do it. You'll lose them if you don't.

G. Robertson: Thank you for your presentation and the tour today, Bernie.

First, the \$15-a-kilo cost. Does that include capital cost? Is that fully costed?

B. Bennett: Yes.

G. Robertson: It is. Okay.

Second question. On the siting of your farms, do you have farms in what would be considered migratory routes? How would you describe the location of your farms?

B. Bennett: I think there are probably salmon in almost every stream in B.C. that's suitable for them. That's the way it's evolved over the years. But my answer to your question generally is: no, we're not on any major migratory run. Most of the streams in this area will have different species of salmon in them, however. That is taken into account when we do our monitoring and when or if the sites are being moved or if there's any question about them at all.

Even at the hatchery this morning, where we were, which is a very short run, I believe that there are some salmon going in there from time to time.

G. Robertson: Do you know the streams that are adjacent or along those routes? Do you fish those for wild fish as well? Are you aware of changes and the returns there?

B. Bennett: I don't personally. I couldn't comment on that. I'm sorry.

G. Robertson: Okay. The previous speaker from the Georgia Strait Alliance spoke about nets. We have had concerns raised about antifoulant on nets. Are you in the practice now of applying antifoulant to your nets, or do you just clean them and put them back in, as was the old practice?

B. Bennett: No, we are not currently using antifoulant on them.

I'm just going to lean over to my partner.

Interjection.

B. Bennett: Five or six years, and we've not used any antifoulant since then, and we do not use any right now. Any new nets that we've ordered in the last five or six years have no antifoulant.

G. Robertson: So there was a time period when you tried it?

B. Bennett: Yeah, there was. It does sometimes inhibit, but we find that other times it doesn't do anything at all.

What we were worried about as the new standards came in.... They do sedimentation samples right now, and most of the compounds that are used in there are copper-based, like on the bottom of most boats around B.C. today. Copper is a heavy metal, and it does build up. We became worried that this might build up underneath the farms and they might eventually say: "Hey, now you're out of compliance." That was our reason.

G. Robertson: Okay. A final question just on feed source. Do you know the content? We've also heard a lot of concerns about the sustainability of feed source and that the primary content is fish from South America. Do you know what's in your feed and where the fish meal or fish oil comes from?

B. Bennett: To an extent, yes. We're not in the feed mill every day, but our feed supplier, EWOS, who will be making a presentation to your committee tomorrow.... We seek assurances from them that the feed is coming from sustainable meal sources. Most of the meal for the aquaculture industry is coming from South American sources. It's quite clean. There's very low contamination. It has also been deemed by the FAO to be sustainable at present harvest levels. That's mainly coming out of Peru.

R. Cantelon (Deputy Chair): Thank you, Bernie. You've answered a couple of the questions, but what is the capital investment in a net pen, per se? What would that take to set up a set of eight pens or ten pens?

B. Bennett: We're redoing one of our farms right now, and this is very broad brush — okay? It's going to have five 30-metre cages, which is the industry standard today. In terms of the gear and the lines and anchors and that, going out there, it's roughly within a couple of hundred thousand dollars either way of \$2 million.

R. Cantelon (Deputy Chair): Now, at the plant that we saw in operation today, of course, those pens that were raising sturgeon weren't large enough to raise salmon, I presume.

B. Bennett: That's right.

R. Cantelon (Deputy Chair): So it would take a much larger facility on a larger scale to raise salmon in closed containment. You mentioned a figure of \$5 million, \$6 million or \$7 million. What would it cost to raise an economically viable scale of production for salmon on land?
[1425]

B. Bennett: I'll try to answer that two ways. First of all, when you come onto land, you bring energy into the equation. You have to buy that energy one way or another, either electrical or fossil-fuel-based. To run the system out there today, which is about 500-odd cubic metres, is about \$6,500 a month — to run all the pumps and all the stuff that goes through there.

Right now, for one of the cages that I just mentioned to you a minute ago — the 30-metre cage — it would

run probably, depending on the depth of the nets in there, maybe 12,000 or more cubic metres. So that's about 1/24 of one cage. If you scale that up, in terms.... Because what matters to us is how much water you've got and how much water you can work with. Does that answer your question?

R. Cantelon (Deputy Chair): In other words, it would be an exponentially huge energy cost. What about the capital cost to set up a plant on that scale?

B. Bennett: It would be enormous.

R. Cantelon (Deputy Chair): Millions and millions?

B. Bennett: Totally.

R. Cantelon (Deputy Chair): In order of — what — \$20 million?

B. Bennett: I couldn't be sure. First of all, you'd have to find the land.

R. Cantelon (Deputy Chair): Right. One other question that always niggles my brain here is: what do you do with the salty fish waste? If you do it on land.... The stuff you have now is freshwater, so it's compatible with our current organic....

B. Bennett: That's right. It can be composted, and it makes great garden fertilizer.

R. Cantelon (Deputy Chair): That does, but what about the salty fish poo?

B. Bennett: That's the thing. You just mentioned it — salt. You can't get the salt out.

R. Cantelon (Deputy Chair): So what would you do with it?

B. Bennett: I don't know.

R. Cantelon (Deputy Chair): Okay. The last question I have is.... You've been around this industry a long time. What changes have you seen in the industry with regard to environmental responsibility and changes?

B. Bennett: Since the '80s it's enormous. You almost can't state how strong it has become. British Columbia, from my reading, now has the strongest regulatory regime for net-cage aquaculture in the world. We're monitored by the Ministry of Environment, DFO, Agriculture, Coast Guard. Everybody's in there. It is strong. I don't know what's been overlooked.

R. Cantelon (Deputy Chair): Okay. Thank you.

D. Jarvis: These short questions I ask you.... I don't know if you can answer it, but I'm always interested,

and I'm going to keep asking it to everyone and see if they can give me a proper answer.

One of the major problems with salmon farming today — which is out there in front of everyone in the world — is sea lice. That's the key to everything right at the moment. It's not the full answer, but....

We all know on this coast here that every adult salmon coming back to spawn or to be caught, whatever it may be, has potentially got sea lice on them. We just strip them off and all the rest of it, and we've done it over years and years. When they go into the fresh water, the sea lice die. The sea lice can't live in fresh water.

When those little fish, the little fingerlings, get enough intelligence to start heading out to sea again, they come down that fresh water and they go into the estuaries and they hang around there, I don't know how long, until they start getting scales on them. The reason that the adult fish aren't killed or damaged by sea lice is because they have scales on them. They eat the mucus on the salmon.

At what period do those smolts get scales and go to sea? Are they still in the fresh water down in the estuary, and as soon as they get it, they head to sea?

B. Bennett: I can't answer your question. I'm sorry. It's just too science-based for me. However, one of my colleagues, Justin, whom you've met earlier today, is going to address some of that. I'm sure that he may be able to, at least, provide a clearer background for you.

S. Simpson: Thanks, Bernie, and thanks for the tour earlier today. It was quite interesting.

Ron asked you questions about land-based closed containment. I know you're doing that work, and we saw experiences of that, particularly with sturgeon and what you're doing there. Has your company, or have you in all of your years in the industry, looked at issues related to floating closed containment?

B. Bennett: Yes. I'll go back 11 years to 1995. A couple of guys came over to visit me from Nanaimo: Clayton Brenton.... It was the future sea farm. This is the bag in the water, the permeable bag of which there are some still out there. They asked us if we would do a pilot project with them at PBS in Nanaimo, and we did.

The first fish that were ever reared in those things were our coho right on a little float outside of PBS in Nanaimo there. You know? It worked. Fish fed okay in there. There are other issues there. First of all, there wasn't a heck of a lot of density. There weren't a lot of fish in the bag, so the pumping and that was able to keep up to it. We did look into that, to answer your question.

[1430]

S. Simpson: In terms of that, I know it was probably.... It was a decade ago, and our technology is different now, as all technologies are. But I guess I would raise the question with you that I think I asked one of the folks earlier. There's quite a debate about this notion of

closed containment going on in the industry now as to whether it resolves some of the open questions that are in the public debate today about impacts on sea lice, about separation from wild salmon and that.

The challenge, of course, is that, as best we've seen, there are no commercial models out there that we can find where it's being done in a way that is environmentally effective and makes sense economically for the people who are in business.

B. Bennett: That's right.

S. Simpson: Do you think that it would be of value for the government, in partnership with people in industry, to explore and try to answer some of those questions around closed containment so that we know if it works or not?

B. Bennett: My answer to that is a cautious yes. I do think that there would be some value. It would have to be set up properly. It would have to be set up above a pilot-project stage so that you can get real-life data out of it. And it would have to be appropriately managed. Without an agenda is what I mean — right?

S. Simpson: Yeah. But if that could be done in a way where all of the parties to this discussion, including the academics and the industry and others, could agree that this is a model that meets that standard, then there would be value in doing that?

B. Bennett: I would support that. I would even go so far as to say we would contribute to it in our pro rata way. I think there would be that much usefulness.

The reality is that a lot of these questions are being asked. Whether they are right or wrong or whether there has been damage or not is.... Different scientists have different opinions. But I think it could be useful to look into that, yes.

R. Cantelon (Deputy Chair): Just a follow-up to Shane's point in this case. You'd still have to deal with the issue of.... You say you did closed containment within the water. What, again, would you do with the fish waste? That's one of the things we hear. You wouldn't treat it, I presume. You would do what with it?

B. Bennett: I would assume for now, based on what we know today, that that would probably not be the crux of the question. You would probably disperse it as widely as you can, as is practised today, and try to look into some of these other issues first.

R. Cantelon (Deputy Chair): So it would deal with sea lice, disease and other issues. But as far as the waste, you'd tow it out to sea or disperse it in some other mechanical method.

B. Bennett: I think you'd put it.... It would make sense to do such a thing in a well-flushed area such as is the criterion today.

R. Cantelon (Deputy Chair): I guess my rhetorical point is that it wouldn't solve all the concerns we hear.

B. Bennett: No, it wouldn't.

R. Austin (Chair): Great, Bernie. Thank you very much for your presentation.

B. Bennett: You're welcome. Thanks for having me.

R. Austin (Chair): I'd like to now call up Geoff Senichenko of the Western Canada Wilderness Committee to the witness table, please.

G. Senichenko: Good afternoon. My name's Geoff Senichenko. I'm the research director of the Western Canada Wilderness Committee. We're Canada's largest citizen-funded wildlife and wilderness preservation organization, with over 30,000 members and an additional 30,000 supporters. Over the last 26 years we have worked to protect Canada's biodiversity. That includes Pacific wild salmon.

The Wilderness Committee is calling on the provincial government to fulfil their promise to British Columbians to protect our wild Pacific salmon and our marine environment and public health. We want the province to shut down all industrial open-net-cage salmon farms and, ultimately, to phase out salmon farming altogether, as we feel it is unsustainable.

[1435]

I've handed you all one of our educational newspapers and also supplementary information. Please move your attention to the front page of our educational newspaper. Basically, it's talking about our wild salmon here. Our wild salmon are an international treasure, an intrinsic part of the cultural, social and ecological foundation of B.C. They are the lifeblood of streams and rivers, coastal and marine ecosystems, first nations culture, coastal communities and, really, the communities all throughout B.C.

Wild salmon support wildlife, including our famous southern resident killer whales, and they also support commercial fisheries, sport fisheries and the tourism industry.

Many regions of the world have lost their wild salmon runs and other wild fish. It is imperative we protect and conserve wild salmon stocks and their habitat. Please don't let west coast wild salmon become like east coast cod. Losing our wild salmon would be an incalculable loss to the people of B.C. and to future generations.

It is well documented that open-net-cage salmon farms hurt our wild salmon and marine life in many ways. As we've discussed and you have surely heard, threats include lethal sea lice infestations; parasites and viral and bacterial disease outbreaks; pollution through raw sewage, drugs and chemical contamination; and predation and colonization by escaped farmed Atlantic salmon.

These threats have been examined by numerous peer-reviewed scientific studies. I've included some of

those studies on the handout — all the points I'm talking about today.

There are lots of scientific studies to back that up. I just want to briefly talk about some of them. Please refer to section 1 of the handout. Inside the newspaper there are the Canada, Norway and Scotland articles.

It is well known worldwide that wild salmon populations have been devastated by sea lice parasite infestations originating from salmon farms. There is strong evidence from many peer-reviewed scientific studies that confirm the link of salmon farms to sea lice epidemics and migrating wild juvenile salmon.

Even just two weeks ago yet another groundbreaking scientific study, with a strong level of evidence, was published in the peer-reviewed journal *Proceedings of the National Academy of Sciences* and confirms that sea lice from salmon farms in the Broughton Archipelago killed up to 95 percent of wild salmon during the springtime migration.

Section 2 of the handout and in the sidebar on the first page of the newspaper. There have also been other parasite and disease outbreaks from overcrowded salmon farms that spread and kill our wild salmon that swim by, such as bacterial kidney disease and infectious hematopoietic necrosis.

Section 3 of the handout. Open-net-cage salmon farms dump raw sewage directly into the sea and onto the sea floor. The amount of sewage that B.C. salmon farms spew on the delicate marine life is equivalent to a city of 100,000. This untreated waste is laced with antibiotics, pesticides and other chemicals. These toxins contaminate sea life in and around the farms, cause toxic algae blooms and deplete the oxygen in the water that then asphyxiates marine life.

The use of antibiotics facilitates the development of antibiotic-resistant bacteria, and drugs are passed to the other marine life and to humans.

Section 4 of the handout explains that escaped Atlantic salmon from salmon farms are also a major problem with the current open-net cages. Up to 1.4 million Atlantic salmon have been reported to have escaped since 1987. Atlantic salmon have been reported to be successfully spawning in many B.C. rivers. They tend to be more aggressive and out-compete Pacific salmon for food and habitat, and are known to eat juvenile wild salmon.

Section 5 and the back of the newspaper talk about inadequate legislation, regulation and enforcement of the salmon-farming industry as another major threat to our wild stocks. From the federal Auditor General and the Standing Senate Committee on Fisheries to other independent and government panels and bodies, the same message of stronger, enforceable legislation and regulation is also needed to help address the negative impacts of salmon farming.

These issues I've discussed are some of the major reasons why open-net-cage salmon farming has huge impacts on our wild salmon and our marine environment.

As a first step, we're calling on the industry to move to closed containment. As we've talked about, it can be designed to protect wild salmon and marine life.

There was a poll in 2005 saying that 80 percent of British Columbians wanted closed containment.

[1440]

However, the Wilderness Committee would go on to say that salmon farming in general, even if using closed containment systems, is unsustainable and needs to be phased out completely.

So many problems — I'll just go on with a few of them right here. If you turn to section 6 of the handout and the South America section inside the newspaper.

Salmon are carnivores. Farming them would be like trying to farm tigers. It just doesn't make sense. The world's fish stocks are being depleted to raise farm salmon. It takes two to eight kilograms of wild fish to raise one kilogram of farmed salmon. This causes a global net loss of protein. Most of the fish, like anchovies, that are used to make feed come from off the coast of Peru and Chile. So fish that could be otherwise eaten by people in developing countries, and which is often the main source of protein for them, is instead being overfished and used to raise a luxury product here in Canada. It is not an efficient and sustainable use of the world's wild fish and protein.

Another reason — that's turning to section 7 in the ocean section inside the newspaper: higher levels of toxins. Up to ten times more have been found in farm salmon when compared to wild salmon. Contaminants such as PCBs, dioxins, pesticides and PBDEs, which are used as fire retardants, pose a risk to human health in the marine environment. These toxins increase people's risk of cancer and immune system and reproductive disorders. The high toxic levels caused by bringing concentrated, contaminated fish feed and adding more chemicals while farming results in farm salmon being one of the most contaminated protein sources in the world.

Both these issues — loss of protein and the toxins — would be very difficult to solve, even in the closed containment system.

Please turn your attention to section 8 of the handout. According to 2001 statistics — the ones we were able to find — the entire B.C. aquaculture industry, of which salmon farming is a subset, employed less than 2,000 people and generated less than \$40 million in wages. Marine sport fishing alone employed 4,700 people and generated \$72 million in wages, while marine tourism employed 4,300 people and \$134 million in wages.

From the figure on section 7 of the handout, you can see that commercial fisheries and especially sports fisheries, which both depend on healthy wild salmon populations, significantly outweigh the aquaculture industry, both in terms of number of jobs and contribution to B.C.'s GDP. So even from an economic point of view, salmon farming does not make sense for society to invest in, especially since it's unsustainable and damages global wild fish stocks, other industries and coastal communities.

Why are we neglecting our precious, healthy wild salmon and trying to grow alien, unhealthy, contaminated salmon? We should be investing our money and resources into better stewardship and management of our wild

salmon fisheries, restoring salmon habitat, and tourism, which all contribute more to our economy, a healthy environment, human health and our lifestyles.

In addition, other types of sustainable fish aquaculture could be explored instead of unsustainable salmon farming, such as raising herbivore fish — such as tilapia and other fish — on land in closed containment systems without contaminants, as has been done sustainably in Asia for thousands of years. We could learn a lot from those tried-and-true systems without damaging our wild stocks, marine life and other important industries and risking people's health.

Conserving wild salmon, the natural environment and natural resources for all people and for future generations is an important responsibility that government needs to take more seriously. We want a healthy environment, economy and world for us and for our children.

The Wilderness Committee urges the provincial government to act now, to take a leading role and, also, to push the federal government and industry, to listen to the people — to first nations, local communities and all British Columbians — so that we can lead the world in a sustainable aquaculture industry. We cannot wait any longer. The wild salmon cannot wait any longer. Now is the time to act. Close the salmon farms.

R. Austin (Chair): Thank you, Geoff. I'll open the floor for any comments or questions. Seeing none, I'll thank you for your presentation. Thanks a lot.

I'd now like to invite Guy Johnson up to the witness table.

[1445]

G. Johnson: Hi. My name's Guy Johnson. Thanks for letting me come and make a presentation here. My family's been involved in aquaculture for 40 years. Myself, I've got my own oyster farm, which I've run for the past five years. For most of my life my main work has been in the commercial fishery. I've been a commercial fisherman for 30 years.

I'm from Cowichan Bay, not from here. That question was asked earlier. Their meetings are all full down there, so this is the only place I could come to. I actually had to leave fishing early. It's open right today, up in Johnstone Strait.

A number of fishermen talked together and felt it was important that somebody came down. I drew the short straw, I suppose, or the long straw, to come in front of you, so I've come down to make our presentation.

I'm here representing the North Island prawn group, the French Creek prawn group and the Powell River prawn fishermen's association. I just got back late Saturday, and I was selling fish all day yesterday. I'm contacting the other groups and the prawn advisory board and the Prawn Sectoral Committee, as well, to show what I put in the written submission. I believe it will be on behalf of all those groups. I just didn't have time to contact everybody.

From the fishery that I came from, there were farm fish caught both by the seine boats and by gill-nets

about six miles north of where I was actually fishing. I didn't catch any myself, but that was in Sunderland Channel. It was reported, and I talked to the fellows who did that.

That's enough about me. I'll get down to what I came here to talk about.

The prawn fishery has a long history here on the B.C. coast, starting back in the 1920s as a relatively small fishery at that time. During the past 30 years the fishery has expanded to a large extent — in the areas fished, the size of the catch and the market price. This has been done in a biologically sustainable manner. The landings have increased over the past ten years, averaging roughly 3.7 million pounds per year.

The average size of the prawns caught has remained fairly consistent, indicating there has not been gross overfishing — i.e., the prawns have not been fished so hard that all the mature adults are removed. In other words, we're fishing in a sustainable manner when we've been increasing the catch.

Over the past ten years the average landed value has been around \$25 million to \$30 million, divided amongst 252 licensed vessels, making this fishery very economically sustainable as well.

Also, interestingly, of the 252 licences, about 70 percent of them are from small coastal communities, places like Powell River, Pender Harbour and Cowichan Bay — where I come from. The majority of the fleet, by far, is still in small coastal communities.

First nations have a significant participation in this fishery, and this has continued to expand. That's a direction that's been encouraged by the prawn advisory board and fishermen involved in the fishery.

Fishermen have, on their own, taken a number of significant measures to ensure that the fishery remains sustainable, both biologically and economically. We've increased the minimum size twice. We've put in a minimum mesh size so that the undersized sub-legal prawns can exit the traps on the bottom. We've limited our number of traps to 300. We pay for and conduct off-season testing of the fish stocks, and we support DFO in managing the fishery on a real-time basis with in-season data collection governing the length of the season.

I'm not a scientist, but I came here to talk about SLICE — a little bit of scientific stuff. I'll just take what I got from the reading I was able to do.

SLICE is a pesticide. It's used to kill sea lice that congregate in large numbers around fish farms. The active component is emamectin, and this kills bivalves, fish, crustaceans — i.e., prawns, shrimp and crab.

The pesticide SLICE is put in the feed of the salmon and fed to them. Generally, it is accepted that as an orally taken treatment, the fish will absorb about 50 percent of the pesticide and excrete the rest in their waste products. In the fish farm net-pen, that means the ocean is where the other 50 percent goes.

[1450]

This is mainly used on farm fish when the fish are roughly halfway grown to market size, and it is used

before the juvenile salmon fry come out of the rivers in the spring.

Not all farms are using it. Only some are, and it's at certain times of year. That time of year, the time they have to use it, is also the time when crabs, prawns and shrimp are spawning. Their juvenile larvae are in their free-floating stage before they settle to the bottom, and they're obviously going to be the most susceptible to the effects of SLICE on them at that point.

In the studies by the manufacturer of SLICE, concentrations of as little as one part per billion have killed shrimp, so it's of concern. I didn't really know much about SLICE. I'd heard a little bit about it, but didn't know much more than that.

I've fished prawns for over 25 years from one end of the coast to the other. I first started fishing in the mainland inlets, what people now often call the Broughton Archipelago but fishermen call the mainland inlets. I started to fish in there in 1967.

It has always been a major area, supplying about 30 percent to 40 percent of the coast-wide landings, up until the year 2000. Since then landings have dropped off steadily. I stopped coming to fish up there in about the year 2000, but I kept on talking to friends who were fishing there and heard that fishing was continuing to get worse at a time when the biomass was increasing in all other areas of the south coast. The only place it wasn't was up in the Broughton Archipelago.

In 2006 I went back up to area 12 to fish. I just wanted to see what it would be like, what was still going on there. First off, I was struck that there were even more fish farms there than when I had left in 2000, many situated right in the middle of prime fishing areas. I started fishing in an area well away from any active farms. Fishing was reasonable. I felt hopeful that the area was rebuilding, and we might have a good catch from area 12 or what you guys call the Broughton Archipelago.

After two weeks of fishing I moved to an area that had not been fished so far this season, which I knew from long experience was a very productive fishing ground. Fishing was good at first, but as I moved closer to the fish farm, fishing got worse and worse. At first I thought that maybe it was just a small area that there were no prawns in, and that I needed to keep moving along, and I would find more prawns again. But instead, as I got within one to two miles of Marine Harvest's farm at Humphrey Rock, fishing went from one to one and a half pounds per trap to less than a quarter-pound per trap.

I was shocked. I knew I was the first boat fishing these sets, and normally I would expect to get from one to two or three pounds per trap at the beginning of the season. I started talking to other fishermen working around here. One, a long-time veteran, said that each year he had had to start farther and farther away from the fish farm to get any reasonable production.

Talking to fishermen around the Doctor Islets farm, they said that in the past they had fished right up to the farms — I mean, virtually throwing the traps underneath the farms — and had good production. You can understand why. It's a free source of feed coming

down. The prawns aren't stupid. They're scavengers. They're going in there. But starting about four or five years ago the fishing had dropped off to nothing within a quarter or a half-mile of the farm.

In the past, in fact, the fishing had gotten better the closer you got to the farm. Now the opposite was true.

After the season I talked to fishermen who fish the west coast of Vancouver Island, another area that has a lot of fish farms in it. They had similar tales. In the past they had fished right up at the farms. Now anywhere from a quarter to half a mile away production would go from 30 to 40 prawns per trap to one or two prawns per trap.

Another interesting thing was that the prawns caught close to the farms were all adults, not juveniles. It would seem to indicate that something was going on, that some adults could build up a resistance or were not killed right away, so they survived. You could still get one or two of them per trap, but the juveniles were gone in the areas close to the farms.

There are still farms in area 12 and on the west coast you can fish right up to them. You know, we go in there. We'll dangle our gear right up in their anchors because the prawns are there. As I said, they're going after the free food that is coming down. But there definitely are a number of farms that have dead zones around them.

Marine Harvest uses SLICE in their farms at Humphrey Rock and Doctor Islets. This is definitely a dead zone around these farms that was not there in the past.

[1455]

As I said, I've run into it going towards the north from Humphrey Rock, where the production started to drop off at 3.2 miles away from the farm till, when I got within a mile of the farm, there was no point. We just picked up the gear and left.

All fisheries in Canada are run on a risk-averse basis — i.e., if DFO does not know if it is safe to fish, we don't fish. In 2002, 20 million sockeye came back to the Fraser River. I've fished 30 years. That was one of the top runs that there had been in that whole 30 years — in the top five. We didn't fish. We fished a very small period of time — for two days at the very end of August, after the run was over — because they felt that it wasn't safe for us to fish. We had lots of concerns. First nations had lots of concerns. But that was your reality and what I and my crew had to live with: under risk aversion we don't fish. I didn't agree with it, but that's the way it goes.

It seems to me and other prawn fishermen that fish farms are operating on a different basis — that is, innocent until proven guilty. The environment, first nations and fishermen are paying the price. Landings of prawns went from an average of 27 percent of the coast-wide landings in the 1990s coming from the Broughton Archipelago to 14 percent in 2005 and 11 percent in 2004. We're asking: what's going on?

Fishing in areas away from the farms is as it was before, but closer to the ever-increasing number of farms it has dropped off to nothing. The ocean is not a garbage dump for toxic waste from any industry. Wild salmon need to be protected from sea lice from the

farms, but it is unacceptable for the environment to pay the bill for the fish farms.

I guess there were three points that we felt need to be made. The Prawn Sectoral Committee, which is representing all the prawn fishing organizations.... The sport fishing organizations are there as well, plus all coastal first nations. At our last meeting in September they moved a unanimous motion asking DFO to collect all available data on SLICE, its effect on the environment and on other fish, and its usages in fish farms in British Columbia.

I also phoned Dr. Bill Heath, from the provincial ministry of fisheries, to try and get that data. At this point I haven't got that data back from him in terms of what sort of use there is, what farms are using SLICE, when they are using it and that.

We also feel that until a study is done, SLICE should not be used anymore. Studies need to be done. Why can we catch prawns up to some farms and not up to others? I suspect because we.... I know that Humphrey and Doctor Islets use SLICE. I believe the other ones did not, but I would like to know that in terms of what they use, and then I would like a study to be done so we understand what is happening. Is there bioaccumulation on the bottom of the ocean? What is happening to those prawns?

I think we have to take care of the juvenile salmon fry. Until it is proven that SLICE is not causing problems, I think those farms in the major migratory routes need to lie fallow when the juvenile fry are exiting.

To sum it all up, I don't mind paying my own bills. I don't want to be paying somebody else's bills. That's what I feel, and that's what the prawn fishermen feel is happening right now. That's what I had to say. Thank you.

G. Robertson: Thanks for your presentation, Guy. A question in terms of where you can fish prawns. For example, around the Broughton, is the whole archipelago open for prawns?

G. Johnson: Yeah. We can fish the whole coast.

G. Robertson: So if we look at this predicament of a desire to move farms away from migratory routes, or at least away from the rivers where the smolts are small and first come into the ocean, we also run into the predicament that right now, industry needs to use SLICE to control sea lice at the density they farm. If we were to move those farms somewhere else and continue to use SLICE, no matter where you move them, is it going to affect prawn populations? Is that the situation?

G. Johnson: Yeah, that would seem to be the evidence. I'm not a scientist. I'm just telling you what we see, and what fishermen from all over the west coast see. Yeah, if they're using SLICE. I mean, it's an insecticide. It's there to kill crustaceans. Prawns and crabs are crustaceans. It seems logical, and from my own catch and my logbook, I can show you it's having an effect.

[1500]

I think there is another way to deal with it. You leave those farms fallow when the juvenile fry are coming out. Like I say, I have to do all sorts of things so I don't damage the environment. I accept that. I understand that I've got to do that. I realize that fish farms do that in all sorts of ways, but I'm afraid this is one other way they need to do it as well.

G. Robertson: In terms of those farms being fallow, do the prawn openings coincide roughly with when smolts are exiting?

G. Johnson: No, probably about six weeks later than that is when the prawn fishery takes place. Obviously, the effect lasts for a while, because they're using SLICE, which they leave in February, and we don't get fish until May 1. It's right there all through May and June. The other prawns weren't there in those areas.

G. Robertson: Your numbers, in terms of coastal landings in area 12, the Broughton — 27 percent down to 12 or 14 percent of coastal landings. What sort of value is that in terms of a drop of commercial value of that?

G. Johnson: I don't have a calculator, but we're \$25 million to \$30 million coast-wide on average. It used to be around 30 to 40 percent of that. Now we're down to 10 percent, so it's pretty significant.

I probably should have this. There was also a real problem on the west, in Nootka Sound, which is an area with prawns and a large number of fish farms. There was a very steep decline this year. So we're really concerned that some of the areas that are major producers of prawns....

Fish farms want to be there for the same reason. It's pristine water, it's got lots of natural feed in it, and there aren't other pollutants and stuff like that around. We're paying the price, and we're not prepared to do that.

G. Robertson: It would be helpful for us as a committee, I think, to see the stats laid out on paper. That would be really valuable.

G. Johnson: Sure. Like I say, I just got back Saturday night. I sold fish all day yesterday and just came over here two hours ago. I'm going to have it written. I think I've got till the end of the month to get it in, so we'll have it in by the end of the month.

G. Robertson: One last question: do you bottom-fish as well as prawn...? Did you say you sold fish?

G. Johnson: Salmon-trolling is what I do. I salmon-troll, and I farm oysters.

R. Cantelon (Deputy Chair): Thanks for that information. Again, I want to reiterate that it's very helpful to us and very useful. I just try to evaluate when it's local opinion versus others, but all input is very welcome.

It's quite clear, then, to your mind that it actually enhances...? If there's no SLICE, there's more, but if there is SLICE, then it's detrimental.

G. Johnson: Yup.

R. Cantelon (Deputy Chair): Do your farmers collect the information statistically on where they fish? Are they required to do that by DFO — like, how much per catch?

G. Johnson: Yeah.

R. Cantelon (Deputy Chair): So far as you know, that information then goes to DFO, so they could put a correlation together for us?

G. Johnson: Yeah.

R. Cantelon (Deputy Chair): But it hasn't been done yet, so far as you know or we know.

G. Johnson: No. We just asked them to start to look at that. You're going to have some problems. It's done by areas and subareas. They're quite large, relatively. There's nothing that would sort of give you what's happening within this specific thing. I think you have to go out there and have studies done, where you send in a boat and you test: "Here's a farm we can fish right up to; here's a farm we can't. What's the difference?" Look at if there's a level of contamination in the bottom and in the prawns.

R. Cantelon (Deputy Chair): And following too, I presume.

G. Johnson: Yeah.

S. Fraser: Thanks, Guy. I know you're busy now, and it's a tough time when there's an opening when you need it.

You opened your talk today and mentioned something about that there'd been some.... Did you say five salmon were caught?

G. Johnson: Yeah. We were trolling down around Howe Island. They were gill-netting the whole straits, and seining as well. They finished seining the day before we started, and they caught Atlantic salmon in Sunderland Channel. I don't know if people know Kelsey Bay. It's very close to that, in the central part of Johnstone Strait. Then gill-netting in the same basic area, they caught a number of Atlantics as well.

S. Fraser: I know one of the things, statistically, we've seen is that there have been quite a few escapes in the past. Usually they were events, like a storm event or that sort of thing — an act of God, if you will.

Basically, the numbers of reported escapes, at least, are down to next to nothing, the last I looked. Do you

suspect that these have been surviving or have just not been reported?

[1505]

G. Johnson: Well, I think it could be both. The areas where they successfully spawn in rivers are very close to Sunderland Channel, so that potentially is there.

You wonder. It seems rather amazing to me that all of a sudden all escapes have stopped so suddenly. I mean, all I can tell you is that we caught them. The proof's in the pudding.

S. Fraser: Is that reported to DFO or...?

G. Johnson: I don't know if they still do. They were doing a thing where they were asking for it, and I haven't seen anything more recently than that. The guy who I knew that did it tried to sell them to the packer, and the packer wouldn't take them, so I don't know what happened after that.

S. Simpson: Just a quick follow-up on that. So this happened quite recently. This was in this recent fishery? So in the last...?

G. Johnson: Oh yeah, yeah. So the seine fishery was the second of October. They caught them. Then the gill-net fishery was on Thursday, about the sixth or seventh, and they caught them as well.

S. Simpson: In the last few weeks?

G. Johnson: Yeah.

R. Austin (Chair): Great. Thank you very much for your presentation, Guy.

I'd just like to recognize that Chief Councillor Stan Dixon of the Sechelt First Nation has entered. Welcome to the proceedings.

Next, I would like to call up Paul Schachter to the witness table.

P. Schachter: Good afternoon. I'd like to thank the members of the committee for taking the evidence today.

My name is Paul Schachter, and I am a member of the Okeover Ratepayers Association, the ORA. The ORA is a community organization of residents and businesses in the Okeover geographic area. We include ecotourism-based businesses. It's also one of the main areas that the province targeted for shellfish aquaculture expansion.

If you look at page 1 of the material in the handout, you'll see where Okeover is located. We're up north of Powell River in the Lund area. The circle shows what's called the Malaspina-Okeover complex. Okeover Arm or Okeover Inlet is the bottom part of the Y. The left part, on the upper going out, is the Malaspina Inlet, and that goes out into Desolation Sound.

I'd also like to point out that that map is not totally accurate. Highway 101 goes all the way up to Lund, which is its northern terminus. That's important to us,

because our area is a tourist destination where people come out to the area because there is road access. It means that we do have some world-class resorts — in our area we call it world-class resorts: Desolation Resort — and restaurants, because there is access for people coming into the Powell River area, and there's easy boating access out into Desolation Sound.

The ORA opposes unregulated siting of shellfish operations in front of residences and businesses. We seek to call a halt to aquaculture operations that conflict with sustainable uses of our coastal waters. The ORA subscribes to the definition of sustainable activities as ones that do not interfere with other sustainable activities, that do not reduce future uses of the coast and that do not alter the environmental quality or reduce the biodiversity.

[1510]

I'd like to note that the ORA is not opposed to shellfish farming in general. We maintain excellent relations with sectors of the shellfish aquaculture community, including the local shellfish farmers who work and live in our complex and the first nations. But we do not think it is healthy to allow the industry to run amok without regulation. Some, such as the representatives of the B.C. Shellfish Growers Association, claim that organizations like the ORA oppose everything on principle. That's not true. We oppose only some specific destructive practices.

What I'd like to do is address three types of operations in the Malaspina-Okeover complex, which we have observed, that conflict with sustainability and that call out for some type of legislative action.

If you look at page 2, you'll see what is termed as a deep-water shellfish aquaculture tenure. As you may know, there is no distance requirement for siting shellfish operations in proximity to residences or businesses. This is different than finfish, for which there is a geographic requirement.

This particular deep-water operation is only 50 metres from the private property whose frontage it blankets. So it's deep water in name only; it is not really in deep water. If I can just note here that it's taught us a lesson on the difference between having some regulation or no regulation, maybe, and having enforcement.

The licence that Land and Water B.C., originally, and now integrated land management gave to this particular operation said that it had to be 80 metres from shore, and that's the requirement that was put on this licence. Well, this particular operator moved it 30 metres closer and is 50 metres from the shore, which may not sound like it's a big difference, but it makes a big difference to boating, to noise, to all kinds of factors that are there.

All attempts to get the integrated land management bureau to do something about enforcement have just been ignored, and that has gone on for years. The ORA believes that it is important that a reasonable minimum distance requirement be instituted for this type of shellfish aquaculture.

The particular operation that I've shown on page 2 is about nine acres in area, and actually, none of these pictures show the entire operation, because it's really

sprawled out. As you can see from the photos on pages 2 and 3, it really is a tangle of unmarked ropes, rafts and generally a mishmash. Not only does this type of operation have no place immediately in front of private residences and businesses that were there decades before the shellfish farms were put there, but it is also a menace to local marine traffic.

Again, all of these concerns were brought to the attention of integrated land management and the Ministry of Agriculture before the tenure was sited there, but we were told repeatedly that there was no requirement that any factor be taken into consideration other than the need for expansion of the available space for shellfish aquaculture. That policy and attitude make shellfish aquaculture in this manner non-sustainable.

The province once encouraged the development of tourism businesses such as the Y-Knot Camp and Charter, where the photos on page 5 were taken. The Y-Knot is run by the De Pape family, whose roots go back to the settlers of Hornby Island. For many years — and again, this is years before the shellfish farms were put right in front of them — they operated a small business in Okeover Arm, renting kayaks and canoes and running a small commercial dock that's used by residents, visitors, loggers and others.

[1515]

The bottom photo on page 5, which doesn't really do justice to the actual conditions, shows that kayakers, canoers and other boaters are saddled with the burden of navigating this sprawling operation to be able to enjoy the waters of Okeover or go out to other parts of the complex or to Desolation Sound. Deep water and raft tenures must be limited in residential and commercial areas.

By the way, in the bottom photo on page 5, there's a cliff face which is seen as a white area in the middle of the photo, on the right. That has some very interesting aboriginal rock paintings, which are a highlight for people who go and visit the area.

The ubiquitous blue and white barrels that you've seen on this raft-type tenure — and that you will also see in the other photos that I have later on — are definitely not food-quality barrels. As shown by the photos on pages 6 and 7, the ones on this tenure primarily held ridoline, which is produced by Henkel Chemical Corporation as a caustic wash for aluminium and other metals.

At least one formulation of ridoline warns that ingestion of small amounts may result in potentially fatal hypocalcemia and system toxicity. Hypocalcemia is apparently the abnormal decrease in calcium levels in the blood. We don't know if that particular formulation of ridoline was used in the barrels of Okeover. We have no reason to believe it was or wasn't.

The response to our raising concerns that chemical barrels were being used for this oyster tenure and others in our complex was responded to by the barrels being painted over so we couldn't see the labels. So we weren't able to check out all the different chemical barrels that were being used.

Henkel does not recommend reuse of its ridoline barrels for any purpose, in part because the chemicals

leach into the plastic and cannot be entirely removed by washing. The unsustainable practice of using toxic chemical barrels as floats in the aquaculture industry is not regulated or prohibited by the province at this time.

Rafts are not the only unsustainable practice in aquaculture that we've observed in Okeover. Long-line farming is also done in a manner that is destructive to other uses of the coastal resources. If you look at the photos on pages 8 and 9, you'll see the long-line operations that, at various parts in our complex.... Basically, the barrels, floats and lines totally fill virtually every beach and bay that's accessible in the Malaspina-Okeover complex.

There are hidden hazards of cement anchor blocks and other structures with rebar and netting. I've just picked out a couple of photos. They're not necessarily the worst. I could have dozens more photos that show these type of barrels and lines in dozens and dozens of our bays and beaches throughout the Malaspina-Okeover complex.

There are precious few places where kayakers, canoers and boaters can pull out or land to enjoy the coastal resources. Most of these shellfish operations are tenures, not leases. They are not supposed to be exclusive or exclusionary, but they are. These beaches and bays should be shared resources and not used in the unsustainable way of keeping other non-conflicting uses from enjoying them.

Ecotourism kayak providers have told the province that there are virtually no safe corridors for kayakers to pull out in the Malaspina-Okeover complex in the event of storms, capsizes or other emergencies. This is, again, a very heavy area where we do have a lot of tours by kayakers and recreational use.

[1520]

As you kayak or boat along the area that I've circled on the map, what you have are the bays, which are covered by the barrels and lines and anchors from one part of the bay to the other. Then you have a high shore, which is insurmountable by small boats and kayakers. So even though there might be an area where there's not a barrel, it would be a cliff face, basically, or a high bank.

The operators maintain these barriers, many of them, because they do not want to take steps to accommodate other users. They have said that. They do not want recreational users. They do not want residents. They do not want anyone around the area where they're cultivating the aquaculture, even though it would be possible to make corridors, which would be sufficient to provide access to others in B.C. to these beaches and bays.

The treatment of the coast as the exclusive domain of shellfish farmers has resulted in the despoilation of the shore and waters by the rubble, debris and waste products of these operations, two examples of which can be seen in the photos on page 11. Again, as we go along, the shore is just littered with barrels and nets. Aquaculture farmers do not own the shore. They have water leases, yet they are using the shoreline as their exclusive domain.

The last practice I'd like to point out. Look at page 12. Page 12 is the beach at what we call Larsons Landing in Okeover Arm. Larsons Landing is an important historical site, where houses date back to the early 1900s. This beach was used by many diverse peoples, including residents, members of the Sliammon First Nation, seasonal visitors and wild clam harvesters. Since 1992 it was recognized by a map preserve as an important preservation of wild stocks for recreation and commercial harvesting of clams.

The province — and I'm not going to get into this a lot; I think other people who are addressing the committee in the future will talk about this — created a Malaspina-Okeover coastal plan to deal with conflicts in the use of coastal resources. The province asked the Powell River regional district to approve the plan and sign off on it, which the regional district did under the condition that the province impartially and diligently enforce all provisions, conditions and guidelines included in the plan. The very first guideline for the area where Larsons Landing is located says that new tenures should minimize interference with wild clam commercial and recreational harvesting.

Aside from this particular beach, there are virtually no areas where residents and visitors can come and harvest and pick the wild stocks of clams in our area anymore. As I said before, all the beaches and bays have been completely occupied. This is one of the few that was left, and it was a preserve. Despite this, integrated land management wiped out the preserve and other uses by granting this beach as a private aquaculture tenure over the objections of the residents of Larsons Landing and the entire community. It is no longer available for general access. The integrated land management bureau's action is unsustainable. It considered — and it told us it was going to consider — no factors other than the expansion of commercial shellfish aquaculture.

We'd like to point out to the committee that in its current state and levels, aquaculture in Okeover is unsustainable and conflicting with other important values for the people of British Columbia. Further expansion under current policies will have even more palpable negative consequences. The claim put forward by the shellfish industry that it is sustainable and that the activity of shellfish aquaculture as compared to finfish aquaculture is a sustainable activity is really belied by the actualities. We believe that legislative action is needed to regulate the shellfish aquaculture activities in our province.

Thank you.

[1525]

R. Austin (Chair): Thank you, Paul. I'll open the floor.

J. Yap: How recent are these photographs?

P. Schachter: Most of the photographs are from October of this year.

J. Yap: So very recent.

P. Schachter: That's one reason I didn't get a lot of them, because when I went out to take the pictures, all of a sudden we got some rain, which we needed. The ones on the chemical labels go back a couple of years, because they've been painted over, and we can't get those anymore. But almost all of the other ones are within this last month — if not the last month, within a couple of months.

J. Yap: You mention that as far as you know, shellfish farm companies have tenures versus leases and that they should not have exclusive domain. Is that something you know?

P. Schachter: Yes.

J. Yap: You've checked the documentation?

P. Schachter: Yes.

J. Yap: If that's the case, how could they block access to the public?

P. Schachter: First of all, when we've gone to integrated land management, they've said: "Well, it is a shared use, but if they're occupying it, then obviously you can't do it too. So tough luck on you." When we've gone out to try some of that in terms of — two things, basically....

People trying to boat in the area generally get harassed by the people who are doing the commercial activities. First nations get chased off when they try to do clamming, which is a traditional activity in our area, in the bays and beaches that have the longlines in there.

J. Yap: It sounds like they don't have the right to chase you off, because you're supposed to share the bay — right?

P. Schachter: It's done in a number of ways. As I said, there's no enforcement. All we have is the ability to go to integrated land management and the Ministry of Agriculture, and they do nothing. So without some type of greater declaration of right, I think that's a problem we're going to face.

Really, the other issue in terms of right of usage.... If you can't have access to it, you can't use it. If you're afraid to go in someplace because you're going to get stuck with a rebar in the nets and kayakers are going to capsize in the lines, it really isn't a shared usage. To make it a shared usage, there have to be some steps taken to enable sharing, such as safe corridors.

G. Robertson: A question on what community consultation or process actually did take place when the shellfish leases were being considered. Can you summarize that? Are you aware of what happened?

P. Schachter: Yes. Most of the leases, when they're initially put out, do go through a usual referral process. There were no hearings. There was a comment period.

The most recent one that I've shown on Larsons Landing, for example — the regional district even opposed it. We were able to talk to our regional district. But when the regional district talked to integrated land management, they said: "We're only concerned with who's first come, first served. Is it going to be good for aquaculture? So forget it."

I think the consultation process.... I don't want to say it was non-existent, but I think it was ineffective. There was partly a consultation process under the Malaspina-Okeover plan, when we had that.

[1530]

The province told us: "We will consult with you, but we're not going to try to get consensus. We're not really going to try to harmonize the interests. We'll consult, and then we'll decide what's in your plan." That was basically the way that was carried out.

G. Robertson: Do you have suggestions for how there would be an equitable way to do that that respected all interests?

P. Schachter: We were advocating for more of a consensus process — which, in fact, both the shellfish farmers and the community thought was possible and thought would have been much more productive.

R. Austin (Chair): Thank you very much for your presentation, Paul.

I'd now like to call His Worship Mayor Cameron Reid from the district of Sechelt.

C. Reid: Good afternoon. Thank you for coming to the Sunshine Coast, and welcome to the district of Sechelt. I realize that when you scheduled this you wanted a day of good weather, so we hope you're having a great day here.

I am Cameron Reid, the mayor of the district of Sechelt. I'm here because I enjoy the ocean. I love fishing, diving and sailing. I currently have a 34-foot sailboat, and each summer we spend time on the waters between here and the midcoast. I reside here in Sechelt, but I've also resided in Gibsons, Powell River and Port Hardy.

Firstly, I'd like to take this opportunity to share with you some observations that I've made in the last month. Last month I was with a delegation of 13 mayors who visited Stavanger, Norway. We had been invited by the mayor of Stavanger to come to Norway and see firsthand what they were doing in the area of aquaculture.

While we were in Norway we attended the AquaVision conference, in which there were approximately 500 people attending from 30 or so different countries in the world. We listened to a number of very informative presentations related to aquaculture.

We listened to a presentation from the WWF president, Dr. Jason Clay. It was enlightening to hear that the WWF sees aquaculture as having an important role in providing food to feed the world. In speaking with representatives from the WWF, they told us that we've learned to farm the lands and we're now learning to farm the oceans and that we're continuing to work to get it right.

The WWF reminded us of the need to think globally rather than just locally and of the need to continue to monitor, review and improve what we are doing. If you know what the problem is, you can make it better, is what they told us.

The Norwegian environmentalist organization Bellona Foundation indicated that their interest is to help to hunt for solutions. "Our ambition is to set the agenda for the political and scientific debate in the area of marine food production. With a scientific approach to environmental challenges, in partnership with research, the industry and government, Bellona intends to stake out the course for the future."

We were surprised to see such a positive response from environmentalist groups. Many of the people we met with in Norway were aware of our history of confrontation and conflict as we face environmental issues here in British Columbia. The European country displayed a more positive attitude, a can-do philosophy.

In discussions with various mayors in Norway, it became apparent that they believed that they were willing to make difficult decisions and then stand up to them. There was a refreshing air of openness, trust and respect in Norway. Industry, government and the environmentalist groups appear to be working together.

[1535]

I'd like to comment on some of the environmental impacts of aquaculture. Many of our more rural communities are resource-based and rely on opportunities which include aquaculture. We need to seize these opportunities to diversify our economies and not to rely on any one industry. Many of our coastal communities are in fact suffering and would welcome the opportunity to become involved in aquaculture — to create jobs, which are often badly needed.

Here in the Sechelt community we enjoy the presence of a locally owned and operated business, Target Marine. This company has a very strong social conscience. They profit-share with staff. They contribute significantly to our community — to many worthwhile community events, such as festivals and hospice. They are generally quiet, and many people might not know they exist here. And yet they are doing an outstanding job of operating a hatchery, fish farms and are growing sturgeon at their hatchery site.

We're fortunate to have this aquaculture business in Sechelt. Sechelt gains commercial tax. Provincial and federal governments are also able to tax incomes from people that are gainfully employed. Local businesses gain opportunity to serve the many people employed by this company as well as the company itself.

I believe our provincial government has an opportunity to start from where we are today and to move forward. There is need for leadership in the environmental sector — a need for them to work with industry and government, rather than creating conflict and confrontation.

We need facts. There are too many assumptions. Government and industry need to be open, energetic and innovative. In Norway there was a tradition of looking for opportunities, and we saw how well that works. Let us adapt and move forward. We can have it

all — a diverse economy, a happy and healthy population, and a beautiful environment.

I'd like to thank you people for sitting on the committee, putting your time and effort travelling about the province and hearing from us, from many different views.

R. Cantelon (Deputy Chair): Thank you again, Your Worship. We're enjoying a very fine day. We'd enjoy it more if we were outside, I'm sure, but that's not our lot today.

As you know, we didn't go to Norway. It's nice to talk to somebody who has actually been there recently. You mentioned an acronym for the environmental group. I'm just wondering if you have that spelled out for me.

C. Reid: WWF, the World....

R. Cantelon (Deputy Chair): Well, I know the World Wildlife Fund, but the other group you mentioned.

C. Reid: B-e-l-l-o-n-a, I believe it is. Bellona Foundation.

R. Cantelon (Deputy Chair): Do you have any other comments, or did you get any knowledge specifically about these fjords that were closed — or any other things that seem to be hot topics here that you can maybe enlighten us on?

C. Reid: Before we left, we heard a lot of rumours and innuendos about areas that were closed, areas of devastation. Norway has in fact restricted some of the fjords for additional growth while they continue to do other monitoring and review in those fjords.

There are fish farms in most of the areas that you and I would interpret as being closed, and they're continuing to operate. They are continually reviewing and assessing what's happening. Unlike our society where we tend to say, "Who is paying for the consultant?" in Europe it seems to be the case that if there is a consultant or a specialist or a scientist, he or she is accepted, and that report appears to be accepted by all people — whether it be government, the environmental sector or industry.

R. Cantelon (Deputy Chair): And does the industry seem to be growing, or what's the current status of it there?

C. Reid: The industry appears to be growing, and they're looking at ways to expand it in other species. We looked at one area where they were trying to grow halibut in farms. They're seeing an increased demand for fish food worldwide, and they're looking at ways to expand it. Having said that, they admit very openly that they don't have everything right and that they're still learning.

J. Yap: Thank you, Mayor, for your presentation. Focusing on your trip to Norway — because you are

the first I've encountered who's been to the Norwegian tour and conference — what was your impression on how the Norwegian industry is handling the sea lice issue? Are they using SLICE? Are their programs similar to what we have here?

[1540]

C. Reid: I'm not sure, John. I know they mentioned that one of their treatments was a wash of some sort. I don't believe we're using a wash. They're exploring in much depth the issue around lice and the location of farms. Their issues and concern around lice appear to be very similar to ours.

J. Yap: While that is going on, the industry continues and thrives, from the sound of it.

C. Reid: Yes.

J. Yap: Still a major presence in the industry.

I was interested in your comment that somehow the diverse stakeholders find a way to work together. From your observation, being there for a week or ten days, how do the Norwegians handle differing agendas? I was quite surprised to hear you say that the WWF was speaking favourably about aquaculture. That would seem to be out of place from a British Columbia context. How have they come to that place where they can work together?

C. Reid: We were as surprised as you were in hearing that they were not opposed. They're finding faults and areas of concern and saying: "We will work with the industry, and we will hold them accountable." The Bellona organization is the same thing. They're saying: "We will hunt for solutions." Their philosophy is to make sure we identify that there is a problem, then focus on that problem and move it ahead.

On the area of sea lice, they have very strict requirements in numbers of sea lice. They're measured throughout the year. At specific months in the year the numbers are reduced; the requirement to have less is there. The statistics we were shown indicated that they were meeting their statistical requirements very readily, but that they were continuing to improve on that. Part of it was that they were discussing the locations of the pens, the following periods and those issues — a lot about which I didn't understand.

J. Yap: Right. That's very helpful to hear.

From the sound of it, the environmental movement in Europe, in Norway — far from advocating severe restrictions or even shutting down the industry — is saying: "Let's work together to have a win-win solution."

C. Reid: The Norwegian group Bellona were definitely saying that, and the WWF. The gentleman, I believe from the United States, was saying the same. He was saying that we have to think globally, and we have to think of the need for fish food worldwide —

just not our back yard — and the growing need for it. If the health authorities are telling us we should be eating fish a minimum of two times a week, and many countries aren't able to do that, should we then step up to the plate and help? Having said that, there certainly was concern that we do it right.

J. Yap: Sounds like you had a very worthwhile visit to Norway.

C. Reid: It was interesting. The 13 mayors all came to the same conclusion — that we have to adapt and move ahead. We have to look at what works in Norway and say: "Let's try to make it work here." If we have to, let's look at bringing environmental groups here from foreign countries that will work with us, because we are all concerned with our environment. We all want to protect it and do it right. How do we do that and avoid the confrontation? How can we get into the teamwork and conciliation where we can move ahead?

S. Fraser: Thank you, Your Worship. It's been interesting to hear your perspective on the Norwegian trip too. We won't be travelling there, but we'll be speaking with experts, environmental groups and industry people from Norway and other places throughout this process.

The numbers I've seen.... I'm trying to remember. I don't have them right before me, but the wild stock salmon in Norway.... The numbers are quite small, relatively speaking and historically speaking. I think there are 200,000 returns or something like that. On the west coast of Canada, I think we have 30 million salmon returning here. We're in a slightly different place in history to be able to learn from what's happened in other places.

We've been in the Skeena and the Nass, and there's a great worry. They're so inextricably linked to the wild salmon economically and spiritually in a lot of ways. These issues get quite emotional.

[1545]

When you're seeing the attitudes in Norway.... They did have a much healthier wild salmon stock previously. Has there been any discussion about that and why it's down to the levels it is now — kind of would have, could have; and gee, if we could look back and do it differently, what would we have done?

C. Reid: That was one of the questions, because before we left we were certainly led to believe that the collapse in their wild stocks was due to the fish farms. The people we spoke to there said that was definitely not the case.

Their stocks started to go down in the '50s and '60s, and they attribute a lot of it to the overcapacity of the commercial fishing industry, the uncontrolled fishing from so many countries targeting the same species, agricultural practices, and the fact that a lot of their rivers are privately owned. Our rivers are not privately owned, so we can control a lot of the activities in our rivers and regulate them different than Norway can.

The Norwegians were telling us that no, they cannot attribute the decline in their stocks to the fish farming — the fact that the stocks were down significantly. Having said that, they're working very diligently on trying to rebuild their wild stocks. They're having some success with that.

S. Fraser: Just to follow up, when you say that Norwegians were saying that they weren't equating.... Was that across the board? Is that government? Is it industry? Is it the WWF? Is that still up for some debate?

C. Reid: I would think it's all for debate. It depends on who you're talking to. The people we spoke to were with government and industry, and mayors and the Bellona organization. We did not ask the WWF about the Norwegian stocks.

D. Jarvis: Mayor, I just want to ask you a few questions. I've read that first of all, Norway never had a wild fishery such as we have here. No other country in the world has ever had the numbers of fish that we have here. I don't know if that aspect was discussed or not, with you over there.

C. Reid: You're correct there. They're saying that their stocks never were comparable to ours.

D. Jarvis: The other thing is: at the fjords that they've closed down.... Did they discuss it with you? They've curtailed some of the farming in those fjords, and they also have close to 500-and-some-odd wild stock salmon runs. What they're doing is categorizing which is the most important, which affects this, which affects that. That's how they're restricting fishing in some fjords.

C. Reid: My interpretation was that some of the fjords are labelled as no further growth in fish farming at this time — period. There's an effort and a desire to relocate the farms that are in those fjords at the moment. They haven't been relocated. They want the ability to have some fjords that are without any fish farms, to be able to do an analysis to say: what is the impact there? Are we comparing fjord A with fjord B? So it wasn't the case that the fjords were shut down and the farms were moved out of them totally. My understanding is that that is the desired process.

D. Jarvis: Did they discuss with you that they're categorizing their stocks?

C. Reid: No, they didn't. We didn't discuss that, Dan.

D. Jarvis: This is what I've heard. They were categorizing them as to — i.e., if we did that here, we wouldn't allow anything in the Fraser, etc. — which are the most responsible areas to go into.

C. Reid: I would suspect that's what they're doing. It was interesting when we compared my little knowledge

of fish farms to theirs. They're saying that if we look at our net systems, we've got a net system that they'd die for. Our escapes are far less than their escapes, so they're holding us up as setting good examples in some areas that they're learning from.

D. Jarvis: Well, that's been one good thing, hasn't it?

C. Reid: Yes.

[1550]

S. Simpson: Thank you, Mayor, for your comments. A couple of quick questions. The conference itself — AquaVision, I believe it was called. Who sponsored that conference? Do you know?

C. Reid: All I know is that it is an annual conference. There's an AquaVision conference, and I think the next year it's AquaNor. One year it's at Stavanger, and the next AquaNor is at a different location. That's my understanding.

S. Simpson: Right. So it's a broad, industry-based conference.

C. Reid: It's industry-based, and there were a lot of government representatives there — the researchers, the scientists.

S. Simpson: A further question. You made the comment — I thought it was an important one — about trying to find collaboration to come to a resolve.

You may know that CAAR — which is the organization of, I think, nine environmental groups here under the aquaculture reform label — has an agreement with Marine Harvest. They've signed a protocol with Marine Harvest. They've been working together in the Broughton on some fallowing issues and agreeing to, hopefully, some mutually agreed-to research around lice and around different techniques that could be used.

One of the issues that has now arisen is that it looks like Marine Harvest has been purchased by Pan Fish, which may be the largest company in the industry today. I know it wasn't totally clear to us when we had discussions with Pan Fish representatives that they would, in fact, continue that protocol with CAAR over the longer term — to be talking about those issues between this coalition of environmental groups and them, now as the major player in the industry. Would you encourage Pan Fish to continue those discussions?

C. Reid: Oh, absolutely. I believe that we all have to be on the same page, working together. We can have different opinions, but if we're working toward the betterment of the industry and the environment, we can't leave the table. We have to be there. I think Pan Fish should be there.

S. Simpson: Just one last question around that. The issue of science. I think if we've discovered anything, it's that science isn't going to solve our problem for us,

in terms of whatever recommendations we have. But science is nevertheless an extremely valuable tool to inform us.

The question I would have is on the information that you received in Norway. We've seen a number of pieces of peer-reviewed research that raised serious questions about lice and about other issues. Did you see or get documentation on any research on those issues in Norway when you were there?

C. Reid: We had more documentation shoved at us so that we could fill suitcases full, and we were already overweight. I think most of us left it behind because it was heavy, and we didn't understand a lot of it.

There's a huge amount of research on lice. We had wonderful presentations, actually, from Norway and also Scotland on their research into lice and what they are doing with respect to the lice.

S. Simpson: Just one last question. I think it was from your comment. I don't want to misunderstand your comment. What we are hearing, though, and what you were hearing in Norway and from Scottish officials is that it is an issue that needs to be addressed. They're looking at the best ways to address it. But do they see it as an issue related to the farms and the linkage to wild fisheries?

C. Reid: They see it as an issue, and they've set standards or numbers. They're saying that they're meeting all of those, and they're showing the statistical reporting. During certain times of the year the farms would have to have cleaner fish, and they would do the sampling and the reporting. They're meeting all of that. But they're saying they're not satisfied with that; they have to make it better.

They're finding in the wild stock, especially trout, that trout have more lice naturally. And they're trying to find out why one species of fish has more lice than another. Yeah, they're admitting right out that lice are a problem and that in the past they have been a more serious problem. They feel they're making tremendous progress with it.

S. Simpson: But they've still got the road to go.

R. Austin (Chair): Thank you, Your Worship.

I'd now like to call His Worship Mayor Barry Janyk from the town of Gibsons.

[1555]

B. Janyk: Good afternoon, gentlemen. My name is David Suzuki. Oh, I'm sorry — wrong page. But now that I have your attention, I want to welcome you to the Sunshine Coast.

I'm here in the capacity of mayor of the town of Gibsons, as the director for the Sunshine Coast regional district and as the chair of an organization known as the Coastal Community Network. Perhaps you've heard of us. We are an organization that represents first nations, elected representatives and companies

and individuals from up and down the coast, from Prince Rupert right down to Steveston.

The intent of the organization of Coastal Community Network is fourfold: to enhance the long-term viability of coastal communities through optimal involvement in building integrated, sustainable economies; to empower coastal communities to assume greater responsibility and self-reliance in the use of resources and the environment; to provide strong advocacy on behalf of coastal communities to ensure accountability and policy development; and to facilitate communication and relations among coastal communities, including first nations, and to build alliances with other groups who share our goals.

I'm here today not to debate the issues or the pros and cons of aquaculture, which in the last discussion appeared to be primarily centred around the finfish industry. I'm here today to talk about some of the things that I've noticed in my residence on the Sunshine Coast since 1978. I've worked up and down these inlets, and I've walked along all of the mountain crests. I know this area fairly well. I've seen the disaster of the '80s when the promise of instant cash reached these shores, and I know the stories of many of the individuals who both suffered and profited from the era known as the boom of aquaculture.

I know we had a tremendous problem with the repercussions of poorly planned and badly managed fisheries. We have tons of dead fish that still sit rotting up in our dump, our landfill. It was a tremendous problem for this community for a number of years. I think we've turned a corner, and we've become a much wiser province because of it. The industry is stronger, the industry is healthier, and I believe the fish are as well.

There are some things that we need to talk about. First of all, there appear to be limited data and dated information and maps on provincial and local government websites and in their files. I know because I checked — i.e., there's no information on the regional district website. The information from 2001 and 2002 on the provincial site under the label "B.C. regional index" goes back to 2002.

I have to tell you that it's difficult to provide intelligent commentary from the perspective of governance if there is little data available. The August 2005 marine salmon farm site listing, for example, is listed by company and not by area of interest or location. It doesn't detail whether they're active or inactive, fin or shellfish. They seem to be grouped together. We even have wonderful little maps on the website that show little dots. I believe there are about a dozen in this region. Yet the information I read is that there are currently 37 aquaculture sites on the Sunshine Coast. I can't find them. The regional district doesn't have records of them.

Accurate statistics regarding employment are not readily available. Establishing the real implications of the sector for this regional district is unclear.

[1600]

The conflicting information — I don't know how I would describe it — is everywhere. It's not truth by the province or by the federal government, which of course

leads to a tremendous level of public distrust. Often countering arguments from the aquaculture industry speak to the negatives of other farming rather than centring on the value of fish as a protein source. I hear constantly that pork isn't very good for you, but fish is. I think that's a terrible argument for a food that's described as brain food.

Regardless of environmental degradation, this is something that we all witness in every region of the province. Regardless of what impact pen fish or aquaculture in general has, whatever environmental effects it has, there are aesthetic implications. When you're trying to build an ecotourism industry, as I understand is another initiative of the province, it kind of runs in contravention to logic when every available bay, nook and cove is occupied by pens or some form of aquaculture undertaking. Natural beauty is an economic asset, and it's something that needs to be accounted for when we do the equations — not compromised for the promise of economic benefit.

I want to quote to you from Assistant Deputy Minister Bud Graham, whom I'm sure you're all familiar with — the ADM of the oceans and marine fisheries division of the B.C. Ministry of Environment who, on October 5 at the Coastal Community Network annual general meeting, gave a presentation called "Fisheries and the Future of Coastal Communities." If you haven't seen it, it's on the Coastal Community website — CCN. In it are a number of very good overviews.

"Farmed salmon is the single largest food export from British Columbia." That's an important statistic. That's good to know. Secondly, the finfish aquaculture sector is \$269 million compared to the wild capture of \$358 million and growing. Interesting numbers. The shellfish aquaculture of \$17 million pales in comparison, but I want to talk about that in a moment.

The seafood wholesale trend, 1990-2005 — a wonderful overview. It shows dramatically that not only is the wild fish stable, but the farmed fish is increasing. That must mean something. It does mean something. It means that somewhere in the world, farmed fish has a market.

Here's another one: "Fifty-five percent of the total jobs are in rural communities, of which the aboriginal share is about 20 percent." Three percent of the seafood sector jobs are on the Sunshine Coast. That is a huge impact to our community.

Finally, Bud says he'd like to work cooperatively. I'm going to argue with him, because I'd like to work collaboratively. While farmed aquatic products are a present and future reality, collaboration with all sectors is a necessity.

A couple of closing comments here. While closed containment appears to offer the most effective environmental solutions — and we witnessed this on a tour last week — it is obvious that it also is an expensive alternative. We need to find some ways to try and take advantage of onshore fisheries.

I want to give you a couple of quotes from a report, a very good report. I know because I helped to author it. It's an older report, 1997, called *Charting our Course: The Lower Sunshine Coast Region Explores New Opportunities for the Marine Resource Industry*. It was a community-based

initiative done with funding from the provincial, federal and local governments. It was done by a committee called the Community Marine Resource Transition Committee, and Community Futures was a great help in this initiative.

I want to refer to the one section that discusses aquaculture, because I think the recommendations from almost a decade ago still apply today. Under aquaculture it gives about half a dozen recommendations. I'm shocked, surprised and disappointed that the provincial, federal and local governments haven't got off their duffs and done anything about instituting these.

[1605]

"We recommend expanding and promoting shellfish aquaculture." It's sort of happening but, my goodness, there's a long way to go.

"Undertake a detailed exploration of shellfish marketing potential in collaboration with B.C. and the Sunshine Coast shellfish association." Scallops, clams, particularly Manila clams, abalone — and we know abalone is a coming-on thing — California blue mussel hybrids and purple urchins could be included in this study.

"Investigating, with Fisheries and Oceans Canada, B.C. Lands, the B.C. Ministry of Fisheries" — I remember that organization — "and local government, the availability of foreshore leases and sites suitable for shellfish aquaculture, based on the 1997 shellfish culture capability appraisal for Jervis Inlet and the 1990 report, *Sechelt Inlet Coastal Strategy*" — gathering dust on a shelf somewhere, I'm sure.

"Explore the market potential of oyster farming to accommodate the present world demand for fresh oysters."

"We've also recommended researching other existing projects of land-based aquaculture, such as the cultivation of black cod." I don't know if anybody mentioned sturgeon yet, but what a thought.

"Examining the wide diversity of land-based aquaculture activities and products. This could include the rearing of freshwater trout, snails, tubafex worms and crayfish to the culture of saltwater species such as black cod, geoducks, box crabs, octopus and shrimp."

Finally: "Undertake a review of the potential for a local mariculture business."

None of these things have — in any concerted way, shape or form — ever taken place on the Sunshine Coast that I'm aware of. I don't know. I'm a relative newcomer to the locally elected scene. I've only been here a decade.

I conclude with these two final comments. I don't envy your position. That's one of them. Only the integrity and honesty of all parties involved will lead to stability in the business of ocean commodities. Until all the facts are known and endorsed by the government, no further expansion should be granted. I say again: this is a very difficult political decision but one, I would hope, that you and your colleagues would get on to. Thank you very much for your time.

R. Austin (Chair): Thank you, Your Worship.

D. Jarvis: I would go and talk to that man right over there that's smiling. He's got...

B. Janyk: Oh, I know Bernie.

D. Jarvis: ...little tiny sturgeons about the size of the table in front of you swimming around in his back yard.

B. Janyk: And bigger.

S. Simpson: One question I have is the report that you co-authored back in 1997, *Charting Our Course*.... In that series of recommendations there was no mention of finfish aquaculture. Did the report address that question at all?

B. Janyk: I will make sure that you each have copies of the report. There are recommendations about finfish — you bet. Absolutely.

R. Austin (Chair): Thank you very much for your presentation. We appreciate it.

At this time I'd like to call Brad Benson of the Sunshine Coast Conservation Association.

B. Benson: Good evening, gentlemen. I appreciate your coming to our community. I'd like to get going here because I have a report that's going to take a miracle to get done in ten minutes. So I'm going to read as fast as I can.

My name is Brad Benson, and I have lived on the Sunshine Coast for 27 years. I have been following the shellfish expansion in the southern Georgia Strait for approximately five years, ever since I joined the board of the Alliance for Responsible Shellfish Farming. This group was just recently incorporated under the B.C. Society Act with a slightly different name. The Association for Responsible Shellfish Farming is one of the member groups of an organization of which I am current chair, the Sunshine Coast Conservation Association.

[1610]

You'll be addressed by several active directors representing the Association for Responsible Shellfish Farming. I think you've already been addressed by one or two, and you're going to have one tomorrow — Denise, who is here.

However, I am here today not as a representative of that organization, but to make a personal statement about what I see has happened with the shellfish industry expansion over the last five years and to suggest recommendations that this committee should make to government to correct some of the egregious wrongs that have occurred.

I supported aquaculture in 1986 when I was a reporter for the *Coast News* — see the last page of my written submission for a copy of a story then — and I still do, though now I do have some grave concerns.

I am here to talk to you primarily about shellfish aquaculture. But before I get into that, I want to hit on an important issue for this area that my conservation

association has a mandate for — the protection of all biodiversity in our Sunshine Coast forest district, including our marine areas.

I am referring to the threat to a very important single group of species that is a key indicator of the health of both our marine and terrestrial ecosystems — wild salmon. Specifically, I'm referring to the problem of sea lice and their devastating effects on migrating salmon smolts.

The abundance of salmon today on our coastline is only a shadow of what it once was, primarily as a result of inadequate logging regulations over the years and overfishing. If we are to bring back these populations to anything near their former levels, we must be sure that finfish aquaculture farming sites are located at safe distances from the migration patterns of salmon smolts. This must be done immediately.

Back to shellfish. The reservations I have about the shellfish aquaculture almost entirely have to do with how government has refused to accept its responsibility to shepherd this relatively new industry with tough, clear regulations that will create for them a presence that is in harmony with the social and economic fabric of established communities and the environment. This industry exists today in a virtually unregulated state as regards these issues.

In the past with small, traditional shellfish operations, which were the norm, the kinds of regulations I'm referring to were not really necessary. The people who ran them were most often community members themselves, and the operations were accepted as part of an attractive rural landscape. Environmental impacts were minimal. However, with the advent of highly industrialized, high-density shellfish farming, all that changed.

People who lived in the three most nutrient areas of southern coastal B.C. — Baynes Sound, located between Denman Island and Vancouver Island; Gorge Harbour on Cortes Island; and Malaspina and Okeover Inlets in the Powell River area — suddenly found themselves waking up to rude, crude, noisy, smelly, in-your-face industrial operations without knowing what was happening. It was a travesty of social justice, and this government should be ashamed for allowing it to happen.

Communities were up in arms. Regional districts were doing their best to use zoning bylaws to mitigate their impacts, to little effect. It was in these days that the Alliance for Responsible Shellfish Farming was born. It was made up of upland homeowners, ecotourism operators, restaurateurs, boaters and environmentalists, and it raised quite a stink of its own.

Then came a consultation process for each of these areas. However, at the end of the day the results of this process amounted to nada, zip, nothing.

If my memory's correct, not one single change that the citizenry asked for was instituted. No regulation about siting criteria. No official code of practice, only a voluntary one drawn up by the industry, and I appreciate their attempt in doing that. No commitment to perform environmental assessments to determine the ability of the surrounding marine ecosystem to withstand the impacts of the operations before granting permits. No

protections for existing businesses. No respect for the sanctity of upland homeowners or the voting public. A gold rush mentality had taken hold.

Citizens, businesses and communities in the areas of Baynes Sound, Gorge Harbour and Malaspina and Okeover Inlets experienced the frustration that happens when a consultation process is used only as a manipulative device to placate the people in order to further the government's original agenda.

That may sound radical to you, but I have some papers I'd like you to have if you want to see some scientific research on that subject.

In short, the expansion of this specialized industry from the traditional, small oyster-growing operation of yesteryear to the highly industrial, mechanized monsters of today has been a travesty of any model of civil governance.

[1615]

Environmental impacts from shellfish farms. This was taken primarily from the responsible shellfish farming site, which has just gone on line as the site of the Association for Responsible Shellfish Farming.

Shellfish rafts can reduce water flows by 50 percent, and this can double sedimentation rates. All types of oyster culture negatively affect eelgrass. These are all footnoted, by the way. A single raft will produce 16 metric tonnes of feces per year. Shellfish feces adversely impact the marine environment by depleting oxygen, which can kill fish and other oxygen-dependent species. Intensive shellfish operations promote the growth of algae, which also deplete oxygen levels. This effect proceeds rapidly in small, enclosed bays. Gorge Harbour is a good example.

Raft biodeposition reduces benthic macrofauna — benthic meaning the lowest level in the water body; and macrofauna are large, living organisms — to 5 percent to 15 percent of that in reference sites. There is a quote: "Within six months after the startup culture, brittle stars had disappeared, and species originally dominant decreased in number and finally disappeared after 15 months."

A new species of shellfish has been introduced since 1998, including the galloprovincialis mussel, rated as one of the three absolute worst invasive species of shellfish known in the world. That's in a National Geographic report. With the advent of high-density shellfish farming in Cortes's Gorge Harbour, residents have observed the almost complete disappearance of starfish, crabs and some species of jellyfish; a marked decrease in the diversity of marine and non-marine species; and unprecedented deterioration of summer water quality as well as the first appearance in living memory of necrotic plankton blooms.

In Baynes Sound, two points. High densities of shellfish operations are associated with a decrease in species richness, altered species abundance and distribution, change in community intertidal structure to one composed primarily of bivalves and greater accumulations of surface sediment, silt and organic matter.

Baynes Sound is internationally recognized as an important area for migratory birds, yet very little is

known about the importance of the intertidal areas for nursing and feeding these birds, which are being affected by these processes. In your documents you'll have some footnotes to those statements.

Conclusions and recommendations. This was prepared by the association also, but it is still in draft form. This is a version which I have edited a bit myself.

We call upon the special legislative committee on aquaculture to urge the government to impose a moratorium on the granting of new shellfish aquaculture tenures and expansions of existing tenures until there are effective and enforceable social and environmental siting regulations and routine cadmium and toxin regulations. I wanted to underscore "siting." It's all about siting. Siting, siting, siting, as in retail: location, location, location.

Social siting regulations. Protect the public from industrial noise, unsightly visuals, smells, pollution and hazards to navigation by implementation of objective, effective, enforceable siting criteria, similar to the criteria for the salmon farms, that will distance all shellfish farms at least one kilometre from residential, recreational, tourist areas as described in the *Salmon Aquaculture Review* paper from the environmental review office.

This siting criteria should be consistent with local official community plans and public trust plans and be respectful of local government zoning and bylaws. Require that existing shellfish farm operations that violate the criteria be moved to locations that meet the criteria. Recognize that there are other users of the coast and that active shellfish aquaculture isn't necessarily the highest and best use of our beaches and coastal waters.

Establish a regulation that protects against the obstruction of navigational passages and shallow foreshores by recreational motorboaters, including public use of beaches.

Environmental siting regulations. Provide an environmentally sustainable industry with minimal environmental impacts by ensuring that — and this is not going to be a definitive list — unbiased, scientifically sound ecological impact assessments be required for all prospective sites prior to the granting of shellfish permits.

Set site-specific maximum levels of allowable environmental impacts to ensure that the establishment of shellfish farms will be environmentally sustainable.

[1620]

Periodic environmental assessments should be conducted to verify that the site's ecological integrity is being maintained, and if necessary, reduce the operation's environmental impacts in order to achieve sustainability.

Environmental assessment of all existing shellfish sites should be completed to determine the status of their environmental sustainability. Shellfish farming operations that are not sustainable must be brought into compliance.

The potential effects from the introduction of exotic species must be independently assessed before permitting their introduction and must be periodically monitored to protect the site's ecological integrity.

Perform environmental assessments for existing sites with exotic species to determine if they are environmentally sustainable and, if necessary, rescind permits for unacceptable species.

Routine cadmium and other toxin testing and siting regulations. These are health issues, but they are very important for siting. Only seafood with cadmium levels — I'm sure you all know what they are — that are safe for human consumption should be taken from B.C. waters for market.

This can be accomplished in part by the provincial government recognizing safe maximum levels of cadmium that meet the best international opinions — i.e., the Codex standard for mussels and scallops and the Asian standard for oysters until Codex has made its final determinations. I'm not totally familiar with that, so you'll have to take the association's word for that.

Require independent cadmium testing of bivalve products to identify shellfish farm sites that pose unacceptable cadmium risk to humans. Require shellfish operations on sites that produce product that exceeds safe cadmium levels to be moved to sites known to have safe cadmium levels. Resiting could be done at the expense of the agencies responsible for the original siting. I would have a lot of empathy with the industry on that.

In conclusion, this is a qualified statement of support for the shellfish aquaculture industry: "We do not blindly and in a blanket way oppose shellfish aquaculture. We oppose shellfish aquaculture carried out in inappropriate places and in an irresponsible manner, without accommodation to the environment and other existing uses." Thank you.

G. Robertson: Particularly in the last month we've had a number of people come forward with concerns about the state of shellfish aquaculture and the impact on both communities and the environment. We haven't heard much of a response to that from the industry.

Can you give any kind of indication as to conversations or dialogue that is taking place between the association and industry?

B. Benson: Personally, not at all. I did see a communication today with the Shellfish Growers Association to try to start a dialogue. Generally, the response has been favourable to do that. I certainly support it.

R. Austin (Chair): Thank you very much for your presentation.

I'd like to call Gus Angus. Is he here?

Interjection.

R. Austin (Chair): Okay. Justin Henry.

[1625]

J. Henry: Good afternoon, committee members, ladies and gentlemen. I'd like to start by recognizing that Sechelt Nation Chief Stan Dixon is here.

My name is Justin Henry. I'm an environmentalist. I'm a salmon farmer. My background is in aquaculture. I have a bachelor's degree from UBC, specializing in aquaculture, and a master's degree in aquaculture biotechnology from Aalborg University in Denmark. I have done a little

bit of research with Fisheries and Oceans, and I have some aquaculture experience in another aspect, as the president of the Sunshine Coast Salmonid Enhancement Society.

I believe that the greatest challenge facing this committee through the public hearings, the submissions and the media will be the challenge to distinguish reality from fantasy and truth from propaganda.

Today I'm going to discuss a little bit about my experiences working in the industry here on the Sunshine Coast. I'll talk a little bit about some of the impacts that salmon farming might have on local wild fish, such as salmon, rockfish and ling cod. I'll discuss a bit about what we're doing for our monitoring for sea lice, what we're monitoring for groundfish abundance, and then a little bit about a project that we're doing with an eelgrass bed.

Before I do that, I'd like to briefly mention a report that came out a few weeks ago. It was written by some well-known anti-salmon-farming activists. The lead author was a math professor from Alberta, and he came up with a mathematical model, which you can see here, that shows us the numbers of wild fish that are killed by sea lice as they swim by a salmon farm.

Now this model is too complex, with too many variables and assumptions for me to understand. Unfortunately, one of the authors was presenting to your committee in Campbell River recently, and he didn't explain the model either. But what he did say was that the basic physics is very clear, and that you don't need to read those equations. One of the other authors said that the debate is over. In other words, this is evidence enough.

Well, none of these activists came to any of our farms to do any sampling. The sad truth about nature and the environment is that we're dealing with unimaginably complex and evolving systems, and someone who thinks that they can come up with a proof or is certain about something — in this case, that's going to happen in nature — is revealing more about their belief system and their faith, not their state of knowledge.

Sea lice have been with our wild salmon here in B.C. for centuries, probably even millennia. At Target Marine we've been sampling for sea lice at our farms over the past few years as we've been legislated to do according to protocols set out by the provincial government.

I'm going to share some of our results with you here. You can also see the results on our website. It's difficult, though, to put it in perspective when you just see the sampling results, so what I thought I would do here was to be able to compare to sea lice levels on other salmon so that you can get an idea of what we're talking about.

These are the results from some of the most recently published data from Fisheries and Oceans Canada on sea lice levels on returning adult Pacific salmon. On this axis here we have the number of lice per fish, on average, and then we have the five species of Pacific salmon on the bottom. You have that paper as a hand-out. What I'll do here is add the results from our sea lice sampling at our farms to this graph.

I'm going to start with our Atlantic salmon farms. What we have here — the data that I'm putting in for our own farms — isn't the average that we've been measuring. This is the highest level we've ever measured since we started our sampling. You can see here our farmed Atlantics, our farmed coho and our farmed chinook.

When comparing lice levels from the same species, between wild and farmed, we've found with this data that the coho and chinook in the wild have a little bit more than a hundred times more lice than their farmed counterparts. This data seems to indicate that any impact coming from our farms on juvenile salmon going by is negligible.

A couple of years ago Target Marine relocated two of its farmsites, and as part of that requirement from Fisheries and Oceans, we had to monitor rockfish and ling cod populations at the new sites. Now, this wasn't because our biologist thought there was a concern for these fish, but questions were raised by concerned citizens, and we set up this monitoring program.

Any salmon farmer or someone who's worked on a salmon farm or on any large structure in the water or anyone in the field of marine biology will tell you that when you put a large structure in the ocean, the creation of a reef commences. Plant life starts to grow on the nets. Shellfish come. They're growing to consume the algae. Small fish, such as perch, will come to forage and seek shelter, then larger predators — rockfish, ling cod. This is how a reef is created.

By this logic, the numbers of rockfish and ling cod at our monitoring sites should not have decreased, but they should be increasing. That's exactly what our data shows.

On this graph the blue bar is our baseline, or our control. Then we started the sites. That was in 2004. Two years later, after two years of monitoring, our rockfish population has increased fivefold, and the ling cod population has increased ninefold at the farmsite.

What is the impact of salmon farming on rockfish and ling cod populations? In nature anything can happen, but it appears from our data that it's a positive benefit. In case there were any negative impacts on fish habitat from our relocated sites, Target developed a habitat compensation program consistent with the no-net-loss policy.

Part of this program was the creation of an eelgrass bed — this was at the mouth of Sakinaw Lake — to help protect the so-called endangered Sakinaw Lake sockeye. We started this project in the summer of 2005.

You can see some pictures here. This is what the bed looked like where we were going to transplant some eelgrass. We did. We created a bed about 284 square metres. Six months later it looked like this, and one year later, on our monitoring, it looked like this. The number of shoots in the bed had doubled, and the area of the bed had increased to about 330 square metres, so it was quite a successful project, I think — so far.

The B.C. Sea Louse Massacre — I chose this title for my presentation because I think that's what the public would think, listening to the media, listening to the

propaganda from fish fearmongers, who hold this as their belief or as their faith. The reality is that the employees of Target Marine are stewards of our environment, of our local waters here on the Sunshine Coast. Their livelihoods — our livelihoods — depend on it.

[1635]

If we were causing an unacceptable impact on the environment, we would be gone, and we should be gone. But the fact is that we're producing one of the healthiest food products in the world, and we're producing it responsibly.

There have been many true environmentalists who have also had a vision of aquaculture, and I'm going to leave you with this vision from Jacques Cousteau. He said that we must plant the sea and herd its animals, using the sea as farmers instead of hunters. That is what civilization is all about — farming replacing hunting.

R. Austin (Chair): Thank you, Justin.
I will open the floor, starting with Ron.

R. Cantelon (Deputy Chair): Justin, you are an engineer by training?

J. Henry: I have some engineering background.

R. Cantelon (Deputy Chair): I wonder if you could walk me through this formula so I could understand it.

J. Henry: Unfortunately, I can't.

R. Cantelon (Deputy Chair): Well, I think you pulled your punches. Another thing Mr. Fraser said was: "Reports like this are pure propaganda." That's what he said, so that's part of the debate we're trying to see through. But I thank you for the presentation and for the tour you gave us.

A specific question on your rock cod and ling cod studies. Now, how far are those away from the fish farms? How is that located with respect to proximity to your farms?

J. Henry: The sampling stations. We have five stations that are set up, and they are within our lease. So we have a farm set up, and between the farm and the shore is where the sampling takes place.

R. Cantelon (Deputy Chair): So within the lease it's pretty close, isn't it? It's like 30 metres or something, isn't it?

J. Henry: We're probably a distance from the farm, I would say, of 30, 40, 50 metres maybe.

R. Cantelon (Deputy Chair): So in all cases, then, you're sampling in five places. You've actually seen these other rockfish increase in abundance?

J. Henry: The graph that I presented was at one of our sites that has been there the longest. The other sites have only been there for one year, but we have.... The results look like they're the same.

Those numbers are averages. We'll take samples from the five locations along the farm, and then we'll average the numbers. Those are the protocols that we're using. They're set by the Vancouver Aquarium.

R. Cantelon (Deputy Chair): And the eelgrass? How far is that from the...? Because we've also heard reported that it kills eelgrass. How far is that from the farms?

J. Henry: We don't currently have eelgrass near our farmsite. This compensation project that we did was several kilometres away, at the mouth of Sakinaw Lake. We did that. There was a need for it there for the sockeye salmon.

R. Cantelon (Deputy Chair): Okay. I think the final question. You mentioned sea lice numbers. You're required to report on your sea lice on a regular basis. Maybe you could tell me what that reporting interval is, to refresh my memory, and what sort of sea lice counts you have on your chinook salmon.

J. Henry: Yeah, okay. The sampling protocol is set out by the provincial government. It wasn't legislated when it was started. The industry agreed to do one year of sampling and see how it went, to collect some data. What we had been doing for our chinook and coho salmon was sampling quarterly, and for the Atlantic salmon it was monthly. Now, with the Atlantic salmon, in certain times of the year in certain areas that sampling has to increase in frequency, depending on smolt migration and things like that.

For us, with the Pacific salmon, after a couple of years of sampling the government agreed the lice levels were low. That sampling has decreased in frequency, and it's opportunistic sampling now. When you have the fish out of the water, then you sample them.

For the Atlantic salmon, you asked about the numbers of lice that we get. There was once that we got up to one louse per fish, but that was only once, so that's what I presented on the graph. Typically, it's about 0.1 for the Atlantics. For the coho and chinook, it's more like one louse per hundred fish or so.

R. Cantelon (Deputy Chair): I invite you to make a comment. Alexandra Morton had told us that one louse per hundred is a deadly amount. Can you comment on that?
[1640]

J. Henry: One louse per hundred fish has essentially no impact.

J. Yap: A couple of questions. You talked about monitoring of lice. In your operation what is the extent of use of SLICE to control lice?

J. Henry: For our production fish at Target Marine we've never used it — ever.

J. Yap: Never used it. It's never been a problem so that you have to use it.

J. Henry: That's correct.

J. Yap: You were talking about the monitoring of rockfish and ling cod. Was that in proximity to the pens?

J. Henry: That's right. It was just, I think, 30 to 40 metres off the pen.

J. Yap: Right beside them.

J. Henry: Yeah, right beside the pens.

J. Yap: In the same vicinity, what was the impact of the pens on prawns? Do you know? I ask because there was a discussion about prawns today.

J. Henry: No, that's okay. The prawn fishermen in that area have our lease mapped out on their GPS, so they know exactly where our anchor lines are. They get as close as they can without getting caught.

J. Yap: So they've been able to harvest some prawns.

J. Henry: Uh-huh. As I say, it's the creation of a reef, and that extends to wildlife around there. There are lots of prawns.

J. Yap: Okay. Another question that kind of relates to what Mayor Reid was talking about — the need that he expressed for a new, more collaborative approach, a more big-picture view. In your professional experience, what are you doing, on your part, in line with that philosophy to try and reach out to others with different views, to try and find a middle ground? I'm interested because you described yourself as an environmentalist as well as a salmon farmer.

J. Henry: What we do is try to get people to come and see what we're doing, and that's easier said than done. I think if we can tour people, answer the questions they have and try to make things a little clearer so they can see firsthand what we're doing, that's a huge step.

But it is challenging, and I think a lot of the groups that are opposed to salmon farming are.... In our years we haven't had any of them come to visit our sites. Especially when they're talking about land-based aquaculture and some of the things that we're doing, I'm surprised that none of them have come to take a look at what we're doing. I would encourage that, and I think that's a big step in communication — getting people out to see what we're doing.

J. Yap: Right. So if they were interested in visiting, as we did, you would show them around as well.

J. Henry: Yeah, of course.

S. Fraser: Thanks, Justin, for the presentation, and that mathematical equation was well beyond me too.

That being said, though, that was obviously scientific, mathematical modelling. That was published in the —

what was it? — *Proceedings of the National Academy of Sciences*? Is that a for-real journal?

J. Henry: I believe so. I'm not familiar with it myself, but I wouldn't question it.

S. Fraser: Okay, but that had a number of different institutions involved, and I know it was overseen, at least in some of the comments I read, by professors from Princeton University and such that I haven't heard being previously involved one way or the other in aquaculture ever. They were just talking about the math on it, really — that it was sound, and that it would withstand any scientific scrutiny. Again, while I don't understand it, it looks beyond probably just about everybody. It still may be valid based on a peer-reviewed thing that just came out.

But that study itself, was that not done in the Broughton? Was that the gist of that? I know you say they didn't come and visit you, but in this particular case, that was specifically in the Broughton, I think, was it not?

[1645]

J. Henry: Yeah, I believe so.

S. Fraser: Okay. Your numbers are quite low on lice, and that's commendable, and maybe that's why you're not getting visited by environmental groups as such. In this case I don't know what the numbers were. In the Beamish graph here they show the level of sea lice on farmed salmon may be one or two at the most. That's what it looks like on....

J. Henry: Just to clarify, the Beamish study is only with the wild fish. The farmed one — that's our own data that I've added in for the farmed ones.

S. Fraser: Okay. Well, when do they kick in? I mean, you don't have to use it. When is it required to kick in SLICE — if you get to a...? There's a level per salmon, is there not?

R. Austin (Chair): Three motile.

J. Henry: I'm not sure, because they haven't been there, but....

R. Austin (Chair): Three motile lice per fish.

S. Fraser: Is it three?

R. Austin (Chair): Yes.

S. Fraser: Okay. I don't know the exact numbers. I don't have the report before me, the one that came out about the University of Alberta, but that one.... There was an issue — that was the Broughton.... There were issues around where pinks and chums would come out, and potentially, the way I read it, they could come out into an outward migration when they were very small — half a gram or whatever; way smaller than

anything we saw at your operation — and had not yet developed scales, as Dan mentioned earlier.

Normally, they wouldn't come in contact with major concentrations of sea lice or adult salmon, I think, is the issue. If you've got, say, two sea lice per fish, so you haven't kicked in the SLICE level yet.... What would be an average number of salmon on a farm on the Broughton, say? I'm just trying to figure this out. Are there 100,000?

J. Henry: I'm not sure in the Broughton. For our farm it probably could be 200,000 to 300,000. In the Broughton it's probably higher.

S. Fraser: Okay. So if the lice are actually at the stage — I don't know their life cycle, but just from my quick read of that — where they're producing larvae, there could be a fair number of lice there that might not be there based on a wild scenario, because the wild might be offshore when they were coming out.

I think it was a pretty specific issue that they were dealing with in that journal. It may not always be comparable, and it may not be applying to your situation at all. For us, we have to sift through all this. But there may be an issue based on that — based on what they were studying.

J. Henry: I think that's a good point to bring up. If you make a model, it's only as good as its inputs, and those inputs are going to vary from place to place; 100 metres down the coast the inputs might be different. So it's very difficult to use that as a broad brush and say this is what salmon farms are like.

S. Fraser: Agreed. I don't believe in it. At the same time, to be fair, that report should not be discounted as being poor science. I mean, the math on it was sponsored, paid for, by the National Research Council of Canada and the Natural Sciences and Engineering Research Council of Canada. They were the main sponsors, funders, for that. That model or study was actually done in a fairly objective way in a lot of cases.

No matter which way you look at it, the journal was peer reviewed and, I think, well-respected. The funder was largely the government of Canada for the mathematical model of it. And it was certainly done over a fair number — four or five — of different institutions, too, spanning more than one country. I think it's still something we.... It's as valid as anything that's come out, and we must look at it in that context.

J. Henry: Yeah, I think that we have to consider that. There are some people, I think, more qualified to look at that and say if there are any flaws in it or not. That should be up to a fish health veterinarian or someone to discuss that — someone more involved in that field.

I believe the David Suzuki Foundation was funding that as well.

S. Fraser: They and the Sablefish Association, and there was.... I think the wilderness association was a part of that, but they were supporters.

The major funders were those two federal institutions. They were the big sponsors for it. That was my understanding.

[1650]

J. Henry: Just another comment. As juvenile fish go out to sea in our area in Sechelt Inlet we probably have just as high an adult salmon population here throughout the year. Throughout the winter we probably have more chinook in the inlet than we have returning fish in the fall. There are also adult fish there throughout the year.

D. Jarvis: Justin, last July I fished for salmon up here with my grandson for close to three weeks between, say, Mary Island and above Secret Cove. Of course, any time I turned around, there were always — and this is a fact — anywhere from 15 to 20 of those lovely little cute things with the big brown eyes on them that took everything that came on your line. I eventually had to go down to start fishing for ling cod because there was no salmon left. The only one we got on was taken.

I just wonder how your figures relate to the provincial average. Every ling cod I got was undersized, small. We were restricted on our licences to be taking, I think it was, 18 inches or two feet — the ling cod. Nothing between those areas was of a decent size that you could keep. You're saying in your figures here.... Are they in relationship to the provincial average, or are they smaller fish there — or just numbers?

J. Henry: I'm not sure exactly what the provincial averages are, but as you're describing.... The ling cod that live or reside near our sites are quite a bit larger than that.

D. Jarvis: All right. Well, I'll find out where Culloden Point is next year.

My other question is.... I asked your associate earlier, and he said that you would have the answer. When the adult salmon come back from sea they usually have lice on them, attached to their gills and sucking on whatever they have on their body. When they hit the fresh water the lice die. So the fingerlings that come down at the smolt stage and come into the estuary down below.... They're all in fresh water, basically. Then they stay there for a certain amount of time, and I understand that that's the period when they start growing scales on them.

How long are they there, and how do they go out and get attacked by the sea lice if they've got...? I was told that if a salmon has scales on it, the sea lice do not really bother them. But the little smolts that are attacked — that we see all the pictures of — and being eaten are the ones without scales on them. Can you answer me on that question?

J. Henry: I can try to. The smolting behaviour of all the different species of salmon is quite different. One species will migrate a long distance. With chinook, for example, it could be a thousand kilometres inland

where they'll go to spawn, so they have a long route to take back down. Sockeye salmon go through a lake on their way back down, typically. Also, the pink and chum are going to spawn much closer to the ocean, so they're usually going to come out at a much smaller size when they go to sea. Right when they start feeding they'll go out into the estuary. The other species are larger when they go.

D. Jarvis: And have scales.

J. Henry: That's right. They'll have scales. Now, from what I understand from talking to people in salmon enhancement who work with these fish, the pink and chum will have scales early on — essentially right when they start feeding.

[1655]

They'll go out into brackish water, and they'll have scales at that time, but the scales are quite small. Of course, as the fish grow, the scales are growing as well.

Is a fish more prone to disease or sea lice when they're small? It could be. They're usually in brackish water in an estuary at that time, and I don't know if there are any salmon farms around there, in an estuary. The salinity at our farms is relatively low in the inlet, but it's still in the mid- to high 20s. By that time, the fish are pretty well adapted to salt water — by the time they would pass by our farms, for example.

D. Jarvis: The statements I hear that the sea lice are directly at fault for the lack of wild salmon returning are basically going to be about chum and the pinks, because with the distance the sockeye travel down to hit the sea, they have scales on them, and they shouldn't be affected.

J. Henry: I think sea lice will affect all wild salmon at some point in time. The larger fish will be stronger. If we look at returning populations, I don't think that sockeye populations are below their averages. I think we have to look at which populations are declining. For this entire argument about pink salmon, those populations are above their average levels as well. If there's an impact by sea lice, it's a bit unclear what that impact is or where the sea lice are coming from.

D. Jarvis: I think that's clear as mud.

S. Simpson: Thanks, Justin, for the tour earlier. The question I have is: do you believe that sea lice from fish farms have any impact on wild salmon and on juveniles?

J. Henry: Not at our farms.

S. Simpson: I'm talking generally in the industry, if you look at it. I appreciate the different farms, but we have to deal with the whole industry, not just with your farms.

J. Henry: I don't have too much expertise in other farms and what their levels of infection are. By looking

at what the levels are when treatment is required and comparing that to other sources of sea lice, it's difficult. I couldn't say that there is or is not an impact. As I've said before, anything is possible.

You have to look at what the results are. Are the returns of salmon in a certain area actually declining, or are they lower than expected to be? If the answer is actually yes, then you can start to look at what the reasons are. Some are probably way beyond any of our control or what we can resolve.

S. Simpson: I know with the study that you based your overheads on, to some degree.... Again, science is science, and everybody has their science. To some degree we have to look at what is peer-reviewed and determine whether those people who review it and say it's good or not good are smarter than we when it comes to how the science gets done. We're not scientists.

I believe they looked at 14,000 fish in that study. They assessed 14,000 fish in the Broughton and 3,000 morts to determine why they died — of the juveniles — and what caused the death of the juveniles.

The question I have to follow up on this comes back to a comment that Mayor Reid made when he was making his presentation. He talked about Norway and Scotland, and that in Norway and Scotland, while they're feeling positive that they're making progress on the issue of lice and on addressing the issue, they clearly believe there is an issue here that they need to continue to do better on and improve on. I guess the question is: do we need to take all these bits to heart?

[1700]

That was very important information for me, because those folks have been doing this longer than we've been doing it here. They've probably seen more ups and downs than we have in terms of what the industry looks like.

Do you believe that we need to look at that issue and satisfy ourselves on the question of sea lice in the work that we're doing?

J. Henry: I believe that we do have to continue to look at any issue that can impact the wild salmon. There isn't anyone in the industry who wants to have a negative impact on wild salmon. If there is a possibility or concern that the sea lice are harming the wild salmon and that those sea lice might be coming from a farm, definitely more work has to be done. The monitoring should continue, as it's doing now. It should be in the regulations, as it is now. Maybe we need more research, need to do more work.

S. Simpson: I'll ask a question, then, around that. It really follows from your comment there.

In terms of the priority that we need to have as a committee.... We have an industry here, and there are thousands of people who make a pretty good living out of this in British Columbia — up the coast, on the coast and on the Island — and we have the wild salmon. As you say, we need to try to satisfy ourselves as much as

we can as to whether there is a cause and effect here related to lice or whatever.

If we determine that, does our priority have to be the protection of the wild salmon?

J. Henry: I believe you can't progress with any industry that would put our populations of wild salmon at risk. Of course, some wild salmon are at risk from everything. Fishing, for example, is going to put a few at risk, because they end up on your dinner plate. But you have to look at the populations as a whole, and you can't proceed if there's a real risk to those fish.

R. Austin (Chair): Thank you very much. That concludes our hearing today.

Before we do actually finish I'd just like to mention that there were a few people here who came and hoped to make a presentation if there was time. I would

encourage them to continue to make their presentations by sending them to the Clerk's office so that they become part of the public record. I would encourage anybody else who has anything they would like to say on this subject to please send it to us by the deadline of October 31 so that it can become part of the public record.

I'd like to thank everybody here who came out and presented today and all of you in the community of Sechart who came to listen to these...

A Voice: Sage presentations.

R. Austin (Chair): ...very, very sage presentations. Can I have a motion to adjourn?

A Voice: So moved.

The committee adjourned at 5:03 p.m.

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