IN THE MATTER	**of the Resource Management Act 1991**
AND	
IN THE MATTER	**of a Board of Inquiry appointed under section 149J of the Resource Management Act 1991 to consider The New Zealand King Salmon Co. Limited's private plan change requests to the Marlborough Sounds Resource Management Plan and resource consent applications for marine farming at nine sites located in the Marlborough Sounds**

STATEMENT OF EVIDENCE PREPARED FOR THE BOARD OF INQUIRY
BY DR JOHN VOLPE, EXPERT WITNESS
ON BEHALF OF THE McGUINNESS INSTITUTE
REGARDING QUESTIONS BY MR FARNSWORTH

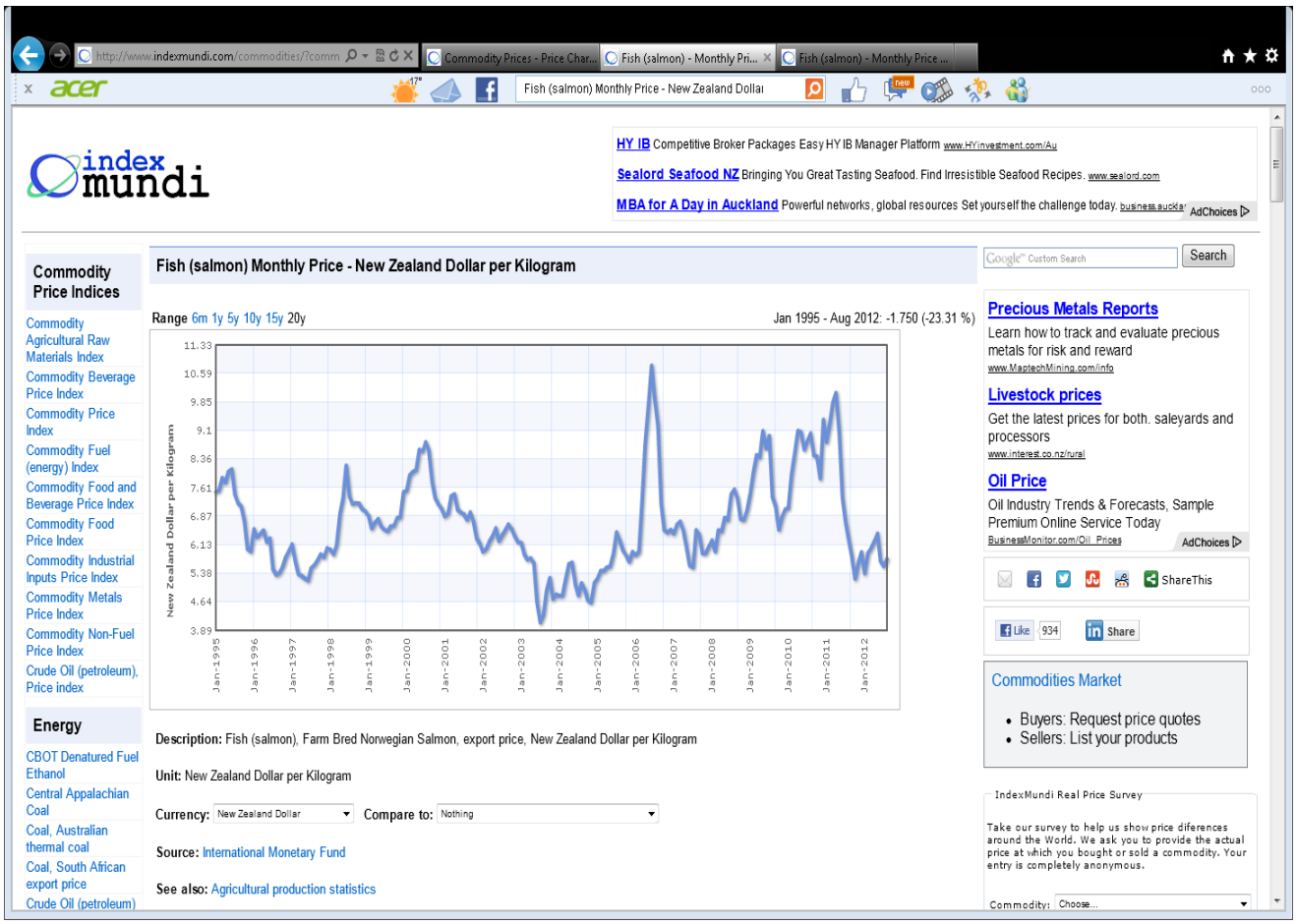
30 September 2012

Dr John Volpe
Seafood Ecology Research Group (SERG)
School of Environmental Studies
University of Victoria, PO Box 3060, Stn CSC
British Columbia, Canada V8W 3R4
JPV Office 250.472.4298 | SERG Lab 250.853.3575 | GAPI Office 250.853.3557
http://web.uvic.ca/~serg/

The statement is in response to a question asked of Wendy McGuinness by MR FARNSWORTH.[1] I understand that the Question to Mrs McGuinness was whether the figures in her Appendix 3 related to Atlantic salmon? In response, Appendix 3 shows Norwegian farm Atlantic prices. If you use the currency calculator you can then work out the NZD price of Atlantic salmon over time – see Figure 1 below.

Figure 1: Norwegian farm Atlantic prices in NZD

Source: http://www.indexmundi.com/commodities/?commodity=fish



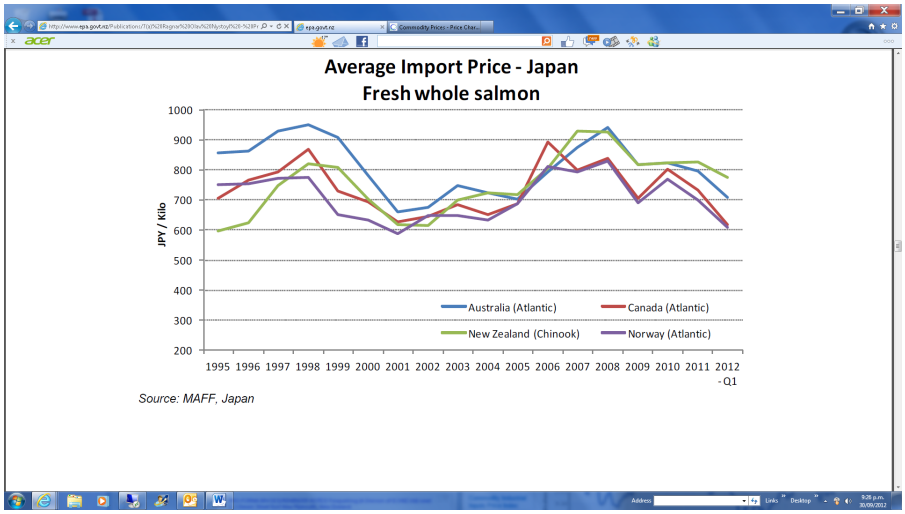
1 See excerpt from *Transcript of Proceedings of New Zealand King Salmon Board of Inquiry Hearing*, Day 23, 27 September 2012, p 2621.
MR FARNSWORTH: But can I just take you to your appendix where you list all of the prices for salmon since whatever. This is for Atlantic salmon 40 is it not? …
MS McGUINNESS: Yes, now that, once again, was something that had come up last week when I was explaining that the prices are quite variable, so where you choose to price – in the cross-examination of Fairgray, it 10 was about – I made a comment about, that you would need to be careful in choosing which price you used in regard to using the input/output model. So that is only there to indicate that over quite a considerable amount of time, I think it was 25 years, there has been – and I know this is per kilo – and I"ve got no – as I said when 15 introducing it, I have no knowledge of the source, my point was merely that it shows quite a significant change over a long period of time, and it requires far further work in respect - - -
MR FARNSWORTH: But it's for Atlantic salmon? Because did you compare it with Noel Stoles (ph 3.27) diggers? You didn't?
MS McGUINNESS: No.
MR FARNSWORTH: No, okay, well look, thank you, your Honour, I"ll leave it there.

My key observations over time are that:

- The price of Atlantic salmon fluctuates steeply – as indicated in Figure 1.
- Chinook (King) tracks Atlantic quite closely. It is all a global commodity so Chinook (King) and Atlantic share what is essentially a single market. This aligns closely with the information supplied by Ragnar Olay Nystoyl, copied below in Figure 2 below. This information shows that even in Japan, Chinook (King) and Atlantic salmon track each other very closely.

Figure 2: Average Import Price – Japan: Fresh whole salmon JPY/Kilo

Source: Ragnar Olay Nystoyl, Product and Growth Report, Statement of Evidence, June 2012, page 14 of 31. See http://www.epa.govt.nz/Resource-management/king-salmon/evidence/Pages/Demand-and-economic-evidence.aspx



I understand from Wendy McGuinness that this information is important as the macroeconomist used by NZKS (Fairgray) assumes a NZD$13,000 per tonne figure for Chinook salmon over a four year period to model economic impacts using an Input Output Model.[2]

Based on my understanding of global prices, taking into account the prices of Atlantic salmon in Figure 1, and that salmon is a global commodity – an assumption of NZD$13,000 per tonne (or NZD$13 per kilo) does seem unrealistic.

Figure 1 shows that the highest price was paid in 2006/07 when it reached about NZD$11.05 (it never reached NZD$13.00 per kilo). The lowest in that time was about NZD$3.90. Currently the price in August 2012 sits at NZD$5.45 – which is under half of what I understand NZKS's macroeconomist is current assuming.

---

2 See excerpt of *Transcript of Proceedings of New Zealand King Salmon Board of Inquiry Hearing*, p2099, Day 17, 19 September 2012
DR FAIRGRAY: Paragraph 322 at the top of page 40, where I have said in the last part of that paragraph, "the existing relationships between salmon production and gross output in value added employment are expected to remain reasonably consistent over time so it is accepted it is rather oblique, but that is where I have expressed the price per output.
MS McGUINNESS: So the figure that you have used is the last sale? The reason why this is relevant is that it has been very topsy turvey, it is where you decided to mark that point is actually absolutely relevant to value added.
DR FAIRGRAY: Well it was not the last sale the value of output from the, I believe inflation adjusted for the average over those four years, but it is round $13,000.

I have also noted that my research has been quoted by Aquaculture New Zealand,[3] and used as a evidence that New Zealand is the top salmon producer in terms of environmental performance when compared against all other major producres. It is my further understanding that Mr. Cooper did not explore the key drivers of this rating; modest production volume and small overall area of production. New Zealand production practices are in some instances superior to those characterizing nominal practices in other jurisdictions. In particular the use of antibiotics and parasiticides along with impacts accociated with organic wastes and pathogens. As production intensity increases the performance in these impact catagories necessarily drops precipitously, as was observed in virtually all other salmon farming jursidictions. Thus the doubling farm prodution will lead to a score demotion and may risk New Zealand's current leadership status within the sector.

I understand that the Board does not wish to cross-examine my evidence; however the offer to do so and/or provide the Board more detailed information remains open.

---

[3] See excerpt from *Transcript of Proceedings of New Zealand King Salmon Board of Inquiry Hearing*, Day 23, 27 September 2012, p 2634

The company itself New Zealand King Salmon which is why we are here today in our experience has a strong sense of environmental responsibility and it does aim to lead the world in Chinook salmon resource management. Now speaking of international expertise and assessment of the performance of aqua culture here in New Zealand, how are we doing in the world?

The Board's attention this morning has already been drawn to Dr John Volpe from Canada who was mentioned by one of the previous submitters. His group has assessed New Zealand aqua culture as the top out of 22 countries and New Zealand salmon farming is the highest scoring salmon farming country in the world, if not in fact fin fish. It kind of suggests that we actually doing quite well at the minute and the opportunity to grow is warranted.
Where to farm, a successful salmon farming site will meet a wide number of criteria and expert evidence already presented to the Board will have given you the idea about the amount of sheer investment that an aqua culture company has to go into to try and pick an aqua culture site.

Within New Zealand coastal waters the number of areas meeting these 40 tight criteria is restricted and the industry does go to great lengths to locate sites that are physically, physiologically and economically likely to succeed. They just do not pick them at random and aim to minimise interactions with other competing users. The Board have no doubt been asked to consider why fin fish farming should happen in coastal waters as opposed to in land based facilities are these potential offshore areas.

Whilst both of these may have a number of theoretical advantages at the minute at this time they simply do not stack up as viable alternatives to produce salmon to market readiness.

Land based facilities need large areas of coastal land which can be 10 quite expensive to buy, if you've looked at house prices. They've got high overhead and capital costs, energy costs are high, they're moving a lot of seawater around, you know, as opposed to, you get that movement of seawater free in the ocean. It's simply not profitable to grow New Zealand salmon to market size onshore.

When people talk about offshore sites, what they're really talking about is highly exposed sites, deep water, high current space, high energy, high wave energy, some distance from a shore base, it's not as simple as just taking a pre-built solution of a shelf and putting it in, it has to be 20 customised to our waters, and being in the roaring 40s some of those waters are quite challenging.

It is in fact an unproven science here in New Zealand. Just getting the infrastructure in place is only the start, we've got a wealth of challenges after that to ensure the wellbeing of animals in a high energy site, how do we feed/maintain the cage, the economics, restrictive weather access, you may not be able to get to the animals for a number of days, is that good? No. And very importantly the health and safety of workers. Offshore is currently too high risk, too high cost and too many unknowns for New Zealand at the minute. By comparison we've got, you know, at least 25 years knowledge and experience of growing salmon in our coastal waters very effectively.

……..

Dr John Volpe
Date: 01 October 2012