

Commission of Inquiry into the Decline of  
Sockeye Salmon in the Fraser River



Commission d'enquête sur le déclin des  
populations de saumon rouge du fleuve Fraser

## Public Hearings

## Audience publique

**Commissioner**

L'Honorable juge /  
The Honourable Justice  
Bruce Cohen

**Commissaire**

**Held at:**

Room 801  
Federal Courthouse  
701 West Georgia Street  
Vancouver, B.C.

Thursday, August 18, 2011

**Tenue à :**

Salle 801  
Cour fédérale  
701, rue West Georgia  
Vancouver (C.-B.)

le jeudi 18 août 2011

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Tim Timberg Geneva Grande-McNeill	Government of Canada ("CAN")
Heidi Hughes	Province of British Columbia ("BCPROV")
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No appearance	B.C. Public Service Alliance of Canada Union of Environment Workers B.C. ("BCPSAC")
No appearance	Rio Tinto Alcan Inc. ("RTAI")
No appearance	B.C. Salmon Farmers Association ("BCSFA")
No appearance	Seafood Producers Association of B.C. ("SPABC")
No appearance	Aquaculture Coalition: Alexandra Morton; Raincoast Research Society; Pacific Coast Wild Salmon Society ("AQUA")
Tim Leadem, Q.C.	Conservation Coalition: Coastal Alliance for Aquaculture Reform Fraser Riverkeeper Society; Georgia Strait Alliance; Raincoast Conservation Foundation; Watershed Watch Salmon Society; Mr. Otto Langer; David Suzuki Foundation ("CONSERV")
Don Rosenbloom	Area D Salmon Gillnet Association; Area B Harvest Committee (Seine) ("GILLFSC")

**APPEARANCES / COMPARUTIONS, cont'd.**

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**APPEARANCES / COMPARUTIONS, cont'd.**

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No appearance	Musgamagw Tsawataineuk Tribal Council ("MTTC")
No appearance	Heiltsuk Tribal Council ("HTC")

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1 Vancouver, B.C. /Vancouver  
2 (C.-B.)  
3 August 18, 2011/le 18 août  
4 2011  
5

6 THE REGISTRAR: The hearing is now resumed.  
7

8 SERGIO DI FRANCO, recalled.  
9

10 BRUCE REID, recalled.  
11

12 PETER ROSS, recalled.  
13

14 THE COMMISSIONER: Mr. Timberg.

15 MR. TIMBERG: Yes, Mr. Commissioner, it's Tim Timberg  
16 and my colleague, Geneva Grande-McNeill for  
17 Canada, and we're continuing our direct  
18 examination. I have 20 minutes remaining. I'll  
19 spend approximately six minutes with Dr. Ross now  
20 and move to Mr. Reid with some questions. And,  
21 Mr. Registrar, if we could have Exhibit 1371  
22 brought up, and if we could flip through to the  
23 second, or the third page on the bottom right-hand  
24 corner. Yes, that one there. If you could  
25 highlight "Analysis / DFO Comment", please.  
26

27 CROSS-EXAMINATION BY MR. TIMBERG, continuing:  
28

29 Q Dr. Ross, yesterday you were asked if you agreed  
30 with the briefing notes analysis at page 3, that  
31 pollution in the Fraser River are unlikely to have  
32 contributed to the poor 2009 return, and you gave  
33 a simple answer that you did not agree. I'm  
34 wondering if you have any further comments to  
35 elaborate on your answer.

36 DR. ROSS: Well, I think there are two distinct issues  
37 here. One is the question of whether in 2009 a  
38 single pollution event might have explained what  
39 happened in the returns of that year. The second  
40 question though is whether contaminants or  
41 pollutants might have contributed over the long  
42 term 20 or more year decline that has been  
43 observed. And I recall that Mr. Macdonald's  
44 technical report for the Commission concluded that  
45 there was very little evidence to support the  
46 notion that a spill or an event might have  
47 contributed to the very disastrous 2009 return.

1 But the contaminants were very likely to have  
2 contributed to the long-term decline in the sense  
3 that they may have contributed through small  
4 incidents here and there, i.e., death by a  
5 thousand cuts, or they may have weakened the fish  
6 over time, such that when they went to sea, they  
7 may have been more vulnerable.

8 So I think this briefing note is taking  
9 advantage of what I fear is a slightly simplified  
10 notion that what we're looking for is a spill to  
11 explain what happened in 2009. And I would put  
12 forth that that is -- that does not reflect the  
13 current scientific understanding, the way in which  
14 many of the contaminants or many of the chemicals  
15 which we use today, and many of the chemicals that  
16 get into Fraser River sockeye habitat behave in  
17 terms of toxicity.

18 Q Thank you. If we could then move back to the  
19 slide we were on when we concluded yesterday.  
20 That's Exhibit 1381, and if we could move to  
21 slide 4, please. The pages aren't numbered at the  
22 top. There we go, thank you. And, Dr. Ross, can  
23 you -- this slide talks about a spill in the  
24 Cheakamus River. Is this the type of spill that  
25 you are concerned about regarding contaminants  
26 entering the Fraser River?

27 A Well, clearly the Cheakamus incident indicates how  
28 vulnerable a migrating species could be. They  
29 have to run a gauntlet of point sources, they have  
30 to run a gauntlet of different habitat  
31 constraints, if you will, barriers, obstacles,  
32 along the way. And a single spill can result in a  
33 catastrophic outcome such as this one. And this  
34 is alarming. But what we saw here was there was a  
35 wealth of respondents. We had the RCMP involved,  
36 Transport Canada, Environment Canada, DFO, Fire,  
37 et cetera, et cetera.

38 The problem, though, is that most  
39 contaminants entering a sockeye habitat, into  
40 sockeye habitat and into the life history of  
41 sockeye, are ones that we don't see. They're  
42 invisible and they come from multiple point  
43 sources and multiple nonpoint sources. And a lot  
44 of the contaminants or chemicals that we use and  
45 see getting into Fraser River sockeye today are  
46 ones that will weaken them as they go to sea. We  
47 may fail to see any kind of visible evidence,

1 what's going on. We may fail to see a correlation  
2 in that regard.

3 Q And how large are -- or how common are large  
4 spills compared to these smaller invisible spills  
5 that you're -- or contaminants that you're  
6 speaking about?

7 DR. ROSS: Well, I think Canada and the United States  
8 have gone a long way in terms of improving our  
9 end-of-the-pipe discharges and regulations and  
10 permitting systems, and we understand the  
11 potential impacts of those point sources. In the  
12 case of sockeye, though, two things emerge. One  
13 is that they migrate past many hundreds of point  
14 sources, and we have no clue as to what the  
15 cumulative impacts might be. And the second is  
16 nonpoint sources, in other words, ones that are  
17 -- when contaminants are transported through the  
18 atmosphere or through ocean currents or biological  
19 implications from different species, and up to  
20 probably the vast majority of contaminants getting  
21 into sockeye habitat.

22 I note two elements of interest here. One is  
23 that I saw a presentation by a United States Coast  
24 Guard official from Puget Sound, who indicated  
25 that every year in Puget Sound the small spills  
26 from marinas and small vessels and ship-borne and  
27 land-based activities amounts to approximately  
28 four times the volume accidentally released by the  
29 Exxon Valdez disaster every year in Puget Sound.  
30 So it highlights the importance of nonpoint  
31 sources or the overall contributions of many point  
32 sources.

33 Here in British Columbia, my understanding  
34 from colleagues at Environment Canada is that the  
35 nonpoint source discharges account for about 80  
36 percent of the pollutants getting into our coastal  
37 waters. So I think we -- now, we recognize that  
38 it's very complicated but we note that there is an  
39 important -- it is important for us to better  
40 understand a lot of these nonpoint sources as they  
41 relate to something like Fraser River sockeye.

42 Q Thank you. And I recognize we're running out of  
43 time here. If we could move to slide 20, which  
44 is, I think, the last page here. I think the next  
45 page -- or, is that the last page? Let's go back  
46 one page, then. Oh, are you going to the very end  
47 of the document, and if you go back one page

1           there's a title saying "The take-home messages" at  
2           the top. There we go.

3           Can you summarize what your take-home message  
4           is from this presentation that you provided to  
5           DFO?

6       DR. ROSS: Well, probably bullet number 3 is a very  
7           important one, with the exclamation mark. We're  
8           severely constrained by lack of data. We have  
9           been able to conduct some research on the effects  
10          of pesticides on salmon and others, and looked at  
11          persistent contaminants in salmon, but we've lost  
12          our research funding base to conduct any more work  
13          in salmon. So it's very difficult to conclude  
14          that contaminants are or are not affecting salmon.  
15          So I think that's key, as I sit here today. It's  
16          very difficult for me to provide salient testimony  
17          today because we simply don't have a lot of  
18          evidence.

19          However, based on a weight of evidence and  
20          from examples elsewhere in the world, we know that  
21          there are many contaminants in Fraser River  
22          sockeye that they're exposed to in their habitat,  
23          that could contribute to a weakening of fish,  
24          making them more vulnerable to disease, making  
25          them less viable, making them less vulnerable if  
26          climate change does indeed continue to linger as a  
27          major threat to salmonids.

28       Q       Okay. Dr. Ross, what work are you doing now, top  
29           follow up on this presentation. What's the next  
30           step that's being undertaken?

31       DR. ROSS: Well, in the absence of funding, we're  
32           essentially trying to take advantage of an  
33           opportunity to provide a risk-based analysis of  
34           the threats that are out there for Fraser River  
35           sockeye salmon. We note the sensitivity of  
36           anadromous fish to natural events, in terms of  
37           biology and ecology, their thousands of kilometres  
38           migrations, the obstacles they have to go through  
39           in a natural sense, the various forms of threats  
40           that they encounter along the way, whether it's  
41           biological pathogens, whether it's chemicals,  
42           pesticides, forestry impacts, fishing, predators,  
43           et cetera. And we're trying to publish this as a  
44           work that will shed some structured insight into  
45           the natural and anthropogenic threats that  
46           anadromous fish face, and to highlight the need  
47           for a different way forward, as we look ahead to

1 better research, better monitoring and better  
2 management.

3 Q Thank you, Dr. Ross. I now will ask some  
4 questions for Mr. Reid. I've got three areas of  
5 questioning. I'll ask Mr. Reid to describe what  
6 is integrated management, describe PNCIMA program,  
7 and then to describe linkages of -- questions  
8 about linkages between PNCIMA to the Wild Salmon  
9 Policy. If we could have Canada's Tab 48.

10 So, Mr. Reid, can you -- I understand you're  
11 the manager of the Regional Oceans Division; is  
12 that correct?

13 MR. REID: That's correct.

14 Q And using this exhibit, can you describe how the  
15 Pacific Region Oceans Division fits into the  
16 overall organizational structure of the Region.

17 MR. REID: Yes. So the Oceans Program or Division  
18 reports to the Regional Director of Ecosystems  
19 Management Branch, which is formerly the Oceans,  
20 Habitat and Enhancement Branch, OHEB, and so I may  
21 use both those terms interchangeably. We just  
22 changed this spring to Ecosystems Management  
23 Branch. And my Director reports to the Regional  
24 Director of Fisheries of Oceans, Sue Farlinger. I  
25 also have a functional relationship to managers in  
26 Prince Rupert, and in Nanaimo, who also have some  
27 responsibility for Oceans. So I have staff in  
28 Vancouver and we also have some Oceans staff in  
29 Prince Rupert and Nanaimo.

30 MR. TIMBERG: Okay, thank you. And could that be  
31 marked as the next exhibit.

32 THE REGISTRAR: That will be Exhibit 1382.

33

34 EXHIBIT 1382: Pacific Region Ocean Program  
35 Structure

36

37 MR. TIMBERG:

38 Q And what is DFO striving to achieve with  
39 integrated management?

40 MR. REID: Well, integrated management is a way of  
41 managing and planning human activities so that  
42 those don't conflict with each other, so that  
43 different activities don't conflict with each  
44 other. And so those factors are considered in  
45 conservation and sustainable use to fisheries  
46 resources.

47 And so I understand, Mr. Commissioner, you've

1 heard about Integrated Fisheries Management Plans,  
2 and IFMPs, and so that's an example of a  
3 integrated management plan that's looking at one  
4 activity, fishing, and how the different fisheries  
5 integrate with each other, and also some of the  
6 DFO activities that relate to that. So DFO  
7 develops Integrated Fisheries Management Plans for  
8 different fisheries, and so that's one example.

9 And I do want to speak today about another  
10 integrated planning process we're doing, called  
11 Pacific North Coast Integrated Management Area,  
12 PNCIMA is the acronym, and it's an initiative  
13 that's an Integrated Oceans Management Plan that  
14 Fisheries and Oceans is leading.

15 Q Okay. And if we could then move to Canada's Tab  
16 6, And can you identify this document.

17 MR. REID: Yes. This is a document that one of my  
18 staff prepared and presented at an Integrated  
19 Harvest Planning Committee meeting in May of 2011.

20 MR. TIMBERG: And if this could be marked as the next  
21 exhibit.

22 THE REGISTRAR: Exhibit 1283 -- I'm sorry, 1383.

23  
24 EXHIBIT 1383: Pacific North Cost Integrated  
25 Management Area (PNCIMA) initiative update, A  
26 Balanced Approach to Integrated Oceans  
27 Management, May 2001, IHPC meeting  
28

29 MR. TIMBERG: Thank you.

30 Q And can you -- is PNCIMA relevant to the  
31 management of Fraser River sockeye salmon?

32 A The geographic area for PNCIMA is fairly large.  
33 It extends from the border of Alaska to the north,  
34 and extends south to the Campbell River in the  
35 Strait of Georgia, and on the West Coast of  
36 Vancouver Island to Brooks Peninsula. So in this  
37 area juvenile salmon migrate out to sea, as well  
38 as adult sockeye migrate into the Strait of  
39 Georgia, ultimately to the Fraser River. So one  
40 of the species that utilizes this area, of course,  
41 is sockeye salmon.

42 Q Okay. Now, Mr. Commissioner, I have, I think,  
43 three minutes left. So I'm going to ask that a  
44 number of exhibits be identified, and then we'll  
45 ask you about the relationship of PNCIMA to the  
46 Wild Salmon Policy.

47 If we could have Canada's Tab 5 brought up,

1 please. And can you please identify this  
2 document?

3 A Yeah, this is a document that was developed by the  
4 PNCIMA initiative, which outlines how we were  
5 going to engage a variety of stakeholders, NGOs,  
6 conservation groups, in the PNCIMA initiative, and  
7 it was developed by the PNCIMA Planning Office.

8 MR. TIMBERG: And if that could be marked as the next  
9 exhibit.

10 THE REGISTRAR: Exhibit 1384.

11

12 EXHIBIT 1384: PNCIMA Initiative Engagement  
13 Strategy, May 30, 2010

14

15 MR. TIMBERG:

16 Q And if we could then have Canada's Tab 4 brought  
17 up. And can you describe what this document is?

18 MR. REID: This is another document produced by the  
19 PNCIMA Planning Office, and it identifies the key  
20 areas of interest in developing the PNCIMA  
21 Integrated Oceans Management Plan.

22 MR. TIMBERG: And if that could be marked as the next  
23 exhibit.

24 THE REGISTRAR: Exhibit 1385.

25

26 EXHIBIT 1385: PNCIMA Plan: Issue Outputs  
27 and Tasks, Review & Recommendations, February  
28 24, 2011

29

30 MR. TIMBERG:

31 Q Right. And if we could have Canada's binder Tab  
32 41, and this is a Strategic Directions Committee  
33 presentation of July 28th, 2011. Could you  
34 identify this document?

35 MR. REID: Yes. This is a document that was presented  
36 at a meeting of our Regional Strategic Directions  
37 Committee. It's a subcommittee of our Regional  
38 Management Committee. I attended this meeting and  
39 one of my staff actually contributed to the  
40 development of this deck.

41 Q Okay, thank you. And if could move to slide 7,  
42 please. And, Mr. Reid, what are some of the ways  
43 in which the work on PNCIMA is related to the Wild  
44 Salmon Policy?

45 MR. REID: So there's two areas that are related.  
46 First of all, Wild Salmon Policy refers to  
47 Strategy 4, which is -- identifies developing

1 strategic plans for conservation units. And so  
2 the PNCIMA initiative and the Wild Salmon Policy  
3 Strategy 4, there's common elements in the process  
4 that is described around gathering information and  
5 identifying objectives, as well as some of the  
6 principles of a planning process. There's common  
7 ground there, as well.

8 Q And could the integrated planning under PNCIMA be  
9 harmonized with integrated planning under the Wild  
10 Salmon Policy?

11 MR. REID: So there's a key difference between PNCIMA  
12 and integrated planning under Wild Salmon Policy.  
13 PNCIMA is at a large scale, high level scale, and  
14 the strategic plan for Wild Salmon Policy under  
15 Strategy 4 are at a smaller scale, geographic  
16 scale. That being said, and while we don't know  
17 the outcome of the PNCIMA planning process yet, we  
18 do anticipate there will be either ecosystem  
19 objectives or specific strategies for monitoring  
20 and developing indicators that may have  
21 application at a smaller scale, such as the  
22 conservation unit level scale.

23 Q And a final question, then. What are some of the  
24 lessons we can learn from implementation of  
25 integrated management in PNCIMA, that could be  
26 applied to implementation of the Wild Salmon  
27 Policy?

28 MR. REID: Yeah. Some of the key lessons are it takes  
29 time to establish relationships for the  
30 individuals that might participate in the planning  
31 process. It's very important to have a governance  
32 structure in place that provides leadership for  
33 planning process. It takes resources to do the  
34 plan, and you need to have a work plan that is  
35 realistic and achievable in delivering on a plan.

36 Q And, sorry, my last question is, is the Province  
37 of British Columbia involved in PNCIMA?

38 MR. REID: Yes. There is a governance MOU, a  
39 collaborative governance MOU for the PNCIMA  
40 initiative. It was originally signed by Fisheries  
41 and Oceans on behalf of Canada and two First  
42 Nation organizations, Coastal First Nations and  
43 North Coast Skeena Stewardship Society. And then  
44 in fall of 2010, the Province of British Columbia  
45 also signed the governance MOU and another First  
46 Nation group, Nanwakolas Council signed early in  
47 2011.

1 MR. TIMBERG: Thank you, those are all my questions.

2 THE REGISTRAR: Did you wish Tab 41 to be marked?

3 MR. TIMBERG: Yes, thank you.

4 THE COMMISSIONER: That will be marked as Exhibit  
5 number 1386.

6

7 EXHIBIT 1386: A DFO Framework for Applying  
8 an Ecosystem Approach to Management,  
9 Strategic Directions Committee, July 28, 2011

10

11 MS. GAERTNER: Mr. Commissioner, the MOU that's been  
12 discussed by the witness and the adjustments  
13 adding the province were put into evidence earlier  
14 during the Aboriginal Fishing week, and I can get  
15 those exhibit numbers for you.

16 THE COMMISSIONER: Thank you, Ms. Gaertner. Mr.  
17 Timberg, I wonder if we could just have the  
18 witness explain for me and the others, unless they  
19 already know, the area that he described,  
20 geographic area he described, why that area? In  
21 other words, how did that geographic location be  
22 determined.

23 MR. TIMBERG: I'm just going to find a map to help us  
24 with that conversation.

25 Q Okay. So it's Exhibit 1383, slide 3, and if that  
26 could be enlarged. And so the question, as I  
27 understand it, Mr. Reid, is can you explain why  
28 this area was selected for PNCIMA?

29 MR. REID: So in 2005 the Department published a report  
30 called Canada's Action Plan, and in that  
31 particular document it identified five areas in  
32 Canada to develop a large Ocean Management Plan.  
33 One of those five areas was referred to as the  
34 Pacific North Coast area, and so this thicker  
35 geographic area was identified in the Canada's  
36 Oceans Action Plan. The actual boundaries of this  
37 area coincide with one of four bio-geographic  
38 areas on the Pacific Coast that were identified  
39 through a Science process. There is features and  
40 common elements of this area, hence the boundaries  
41 of the area were taken from that.

42 THE COMMISSIONER: Thank you.

43 MS. BAKER: The province is up next, although they  
44 don't need their time, so we'll move to the next  
45 party who is here today will be Mr. Leadem.

46 MR. LEADEM: For the record Leadem, initial T.,  
47 appearing as counsel for the Conservation

1 Coalition.

2

3

CROSS-EXAMINATION BY MR. LEADEM:

4

5

Q Can you hear me okay there, Mr. Di Franco?

6

MR. DI FRANCO: Loud and clear.

7

Q Thank you. And welcome back, Dr. Ross. I enjoyed our discussion on sewage and waste, and I must say, just from my own perspective and speaking entirely for myself, I find your presence here very refreshing and I thank you for it.

10

11

12

13

14

15

I want to begin by examining the Auditor General's report which is document number 1 from the Conservation Coalition's documents. Are you familiar with this report, Mr. Di Franco?

16

MR. DI FRANCO: Yes, I am.

17

18

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Q And in December of 2010 the Auditor General released a report that I would suggest is very critical of Transport Canada and the Canadian Coast Guard with respect to what will happen in the event that oil spills come from ships. And have you read that report, Mr. Di Franco?

23

MR. DI FRANCO: Yes, I have.

24

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26

27

Q All right. And I want to turn with you to page 2 and 3 of the report, under the heading "What we found", and I find these words:

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While Transport Canada and the Canadian Coast Guard have carried out risk assessments related to oil spills from ships, they have not used a consistent or systematic approach, nor are there formal processes for ensuring that risks are reassessed on an ongoing basis.

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Do you agree with that comment from the Auditor General's office, Mr. Di Franco?

MR. DI FRANCO: yes, I would.

42

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Q And then if I look at page 3, I find these words, the bullet beginning:

A public review panel recommended 20 years ago that the federal government establish a national regime to deal with ship-source chemical spills. Such a regime is not yet in place, and none is expected before 2013. In the meantime, Canada lacks a formal framework

1 with clearly defined roles and  
2 responsibilities for responding to chemical  
3 spills.  
4

5 Do you agree with that comment, as well?

6 MR. DI FRANCO: Yeah, I agree that a regime is not yet  
7 in place. However, the responsibility for  
8 chemical spills is well-defined and known.

9 Q Now, if I then turn with you to the appendix which  
10 lists the recommendations, page 33 of the report,  
11 what the Auditor General does is usually in an  
12 appendix, Mr. Commissioner, lists the  
13 recommendations that are contained in the body of  
14 the report. So he breaks those -- or she breaks  
15 those out and then you can find them all at the  
16 end there.

17 Now, I'm not going to take you through these  
18 point by point, but generally in terms of  
19 preparing for ship oil spills the recommendations  
20 concerning updating national emergency management  
21 plans, when I review these recommendations,  
22 generally I find that basically Coast Guard's  
23 agreed, Environment Canada's responses agreed, and  
24 Transport Canada's responses agreed to all of  
25 these recommendations; is that not correct, Mr. Di  
26 Franco?

27 MR. DI FRANCO: Yes.

28 Q So my next question is, is that what are you doing  
29 about this, I mean, other than reading the report,  
30 what if anything is the Canadian Coast Guard doing  
31 about these recommendations?

32 MR. DI FRANCO: Well, the first thing I want to point  
33 out regarding the report of the Auditor General  
34 and the Commissioner of Environment and  
35 Sustainable Development was that this report  
36 examined the management framework aspect of the  
37 program. It did not audit the operational  
38 delivery of the program. And in that respect the  
39 Coast Guard responds to approximately 1,300 marine  
40 pollution incidents every year, and we ensure an  
41 appropriate response to each one of those  
42 incidents.

43 With respect to each of the recommendations,  
44 we have -- the Coast Guard has reviewed each of  
45 the recommendations with its partners and has  
46 developed a management action plan to address each  
47 of the recommendations, and we are currently

1 working on -- on those recommendations one at a  
2 time. And in fact, we have addressed some of the  
3 recommendations that are -- that are in the  
4 report.

5 Q All right. Now, when you say that you're working  
6 with other agencies, I take it, then, that you  
7 would be working with Environment Canada and the  
8 Department of Transport in providing some response  
9 to these recommendations? Do I have that right?

10 MR. DI FRANCO: Yes, we are working with them in  
11 addressing some of the recommendations that are --  
12 that are in the report.

13 Q What about the Department of Fisheries and Oceans,  
14 have you approached that Department to  
15 specifically examine what response and how they  
16 should be contacted in the event that there's an  
17 oil spill from a ship that will impact the  
18 environment, that will likely affect fish and  
19 fishery values. What if anything are you doing  
20 with DFO?

21 MR. DI FRANCO: Well, we -- any issues that deal with  
22 fish or fish habitat, we always go through the  
23 REET for advice and information. We don't go to  
24 DFO directly, we go to the chair of REET, who will  
25 then engage DFO to obtain the required information  
26 that we need.

27 Q It just strikes me listening to the evidence  
28 yesterday that there's such an overlay of  
29 bureaucracy connected with this, that, you know,  
30 if I walk into a kitchen and there's spilled milk  
31 on the ground, you know, I don't go around asking  
32 who did it and, you know, what steps should we  
33 take to clean up the milk. I mean, if we just go  
34 at it, you clean up the milk. Why can't -- why is  
35 this level of bureaucracy in the way of actually  
36 cleaning up some oil spills once they occur? Why  
37 can't you simply address the problem and deal with  
38 it?

39 MR. DI FRANCO: Well, for every marine pollution  
40 incident that is reported to us, we, the Canadian  
41 Coast Guard, has formal processes and procedures  
42 for dealing with each incident, and we do -- we do  
43 follow those. And whenever the assessment of the  
44 incident determines various resources at risk that  
45 require the expertise of REET, then we engage  
46 those processes and procedures and engage REET and  
47 obtain their advice, and we do that for every

1 incident.

2 Q All right. Dr. Ross, I'm going to turn to you  
3 just briefly. From the perspective of Department  
4 of Fisheries and Oceans and protecting the fishery  
5 values and the sockeye salmon specifically in the  
6 Fraser River, which brings us to this Commission,  
7 what steps have been engaged, to your knowledge,  
8 between Department of Transport, Environment  
9 Canada, DFO, to make sure that there's this  
10 seamless transfer of knowledge. Are we lacking  
11 that seamless transfer of knowledge?

12 DR. ROSS: Well, I may not be the best person to speak  
13 to on that issue. It strikes me that there are  
14 two separate issues here. One is when there is a  
15 spill and there is a REET, is there a formal and  
16 required role for DFO Science or Habitat to be  
17 involved in that REET, and subsequently whether  
18 the advice, the voluntary advice that it provided  
19 to Coast Guard, whether that is accepted or not.

20 But the second question which I think you're  
21 getting at here, is the question of operational  
22 frameworks. And we've heard about the existence  
23 of a very rigid and logically organized framework  
24 for Coast Guard to respond to spills, and I  
25 understand that there is work underway to improve  
26 that. I guess I remain concerned that there is no  
27 requirement for -- at the present for DFO Science  
28 or Habitat to help create or contribute to  
29 portions of that operational framework. So I  
30 worry that the provision of scientific advice and  
31 the habitat implications of a potential spill  
32 remain voluntary portions lying at the sides of a  
33 spill response that may or not see the light of  
34 day in terms of action and mitigation.

35 MR. LEADEM: Thank you for that. Could this Auditor  
36 General's Report be marked as the next exhibit,  
37 please, in these proceedings.

38 THE REGISTRAR: That will be Exhibit 1387.

39  
40 EXHIBIT 1387: Report of the Commissioner of  
41 the Environment and Sustainable Development  
42 to the House of Commons, 2010 Fall, Oil  
43 Spills from Ships, Office of the Auditor  
44 General of Canada  
45

46 MR. LEADEM: Now, I want to turn from that, and I would  
47 have loved to have spent a lot more time with you,

1 Mr. Di Franco, but I'm very limited in terms of my  
2 time. And I want to discuss a proposal that may  
3 in fact impact Fraser River sockeye much more than  
4 some of the evidence that we've heard about the  
5 spills in Robson Bight, and spill in Burrard  
6 Narrows that we heard about, the Kinder-Morgan  
7 spill, and that's the Vancouver Airport Fuel  
8 Delivery Project. Are you familiar with that  
9 proposal, Mr. Di Franco?  
10 MR. DI FRANCO: No, I'm not, sorry.  
11 Q All right. Mr. Reid, are you familiar at all with  
12 that proposal?  
13 MR. REID: I have a very basic familiarity with that  
14 proposal.  
15 Q All right. What about you, Dr. Ross, are you  
16 familiar at all with that proposal?  
17 DR. ROSS: The first time I heard about this was in the  
18 list of exhibits that we were provided three days  
19 ago.  
20 Q Okay. So you haven't been up to speed on what's  
21 going on or what's being proposed in terms of the  
22 barging of highly volatile jet fuel from sources  
23 south in Puget Sound up to the South Arm of the  
24 Fraser, and offloading that jet fuel in a port at  
25 Richmond, and then transporting it from pipeline  
26 from Richmond to the airport. That's in essence  
27 the proposal. Are you aware of that proposal by  
28 having read what I propose to enter as exhibits in  
29 these proceedings, Mr. Di Franco?  
30 MR. DI FRANCO: Sorry, can you repeat that question,  
31 please?  
32 Q Yes. Have you read the proposal as I put it in  
33 the proposed exhibits to be tendered into evidence  
34 in these proceedings?  
35 MR. DI FRANCO: No. No, I haven't.  
36 Q You have not. All right.  
37 MR. DI FRANCO: No.  
38 Q I'm at a bit of a loss, Mr. Commissioner, and it's  
39 not unusual that there's a number of exhibits and  
40 documents to be read, and I certainly can't fault  
41 witnesses for not reading everything. But let me  
42 put it to you directly, Mr. Di Franco, that the  
43 Coast Guard would be the body of first response in  
44 the event that there were a spill of highly  
45 volatile jet fuel if this proposal were to go  
46 ahead; is that not correct?  
47 MR. DI FRANCO: First response in what sense? We would

1           be -- the Coast Guard would be the agency that  
2           would receive the call, but the people doing the  
3           actual response may not be us.  
4        Q     All right. So that it may be -- it may devolve to  
5           some other bureaucratic entity, is that what  
6           you're saying?  
7        MR. DI FRANCO: (Indiscernible - overlapping speakers).  
8        Q     All right. Would a REET be involved in this  
9           process if there were to be a spill?  
10       MR. DI FRANCO: They may be involved, yes.  
11       Q     All right. What I'm after is when a proposal  
12           comes forward such as this one, what, if anything  
13           is done from the perspective of the Canadian Coast  
14           Guard to respond and say the risks are just too  
15           high, we should not be going ahead with this kind  
16           of proposal. Does the Canadian Coast Guard ever  
17           proffer any kind of advice such as that?  
18       MR. DI FRANCO: This kind of proposal to me falls  
19           within the purview of Transport Canada. Transport  
20           Canada sets in regulatory and legislative  
21           provisions for these types of, I'm assuming, oil  
22           handling facility that will be set up at this --  
23           at this facility. There are several procedures  
24           within the TERMPOL process that Transport Canada  
25           initiates that reviews terminal operations,  
26           safety, environmental issues, spill management,  
27           addressing spills, and so forth. Along with that,  
28           any oil handling facility that would be set up at  
29           this -- at this facility to accept jet fuel, would  
30           require most likely an arrangement with a  
31           certified Transport Canada certified response  
32           organization.  
33       Q     I see.  
34       MR. DI FRANCO: (Indiscernible - overlapping speakers),  
35           this proposal falls within the realm of Transport  
36           Canada and not Canadian Coast Guard.  
37       Q     Let me turn to you, Dr. Ross, because I think of  
38           all of them, you may be the only one who may have  
39           read this proposal. Did you read the proposal by  
40           Vancouver Airport Fuel Delivery?  
41       DR. ROSS: Yes, I did.  
42       Q     All right, thank you for that. Does that, from a  
43           Fisheries perspective, from a Fraser River sockeye  
44           perspective, does this proposal concern you in  
45           terms of what contaminants may emanate from a  
46           spill, when a spill occurs. And I say "when a  
47           spill occurs", not "if a spill occurs", because I

1 remember that quote from Alexander Pope years ago,  
2 *errare humanum est*, to err is to be human, so  
3 eventually accidents will happen. So does this  
4 proposal concern you as a scientist?

5 DR. ROSS: Well, I believe that the contracting party  
6 or the Vancouver Airport Authority and their  
7 consulting team have estimated that there is a  
8 risk of one spill every one to six years of  
9 approximately 10,000 litres. So by their own  
10 admission, there is a very real risk of a rather  
11 sizable spill. I guess what would concern me is  
12 if that spill took place at a time when smolts are  
13 entering the sea, or adults are returning, that  
14 such a spill would be rather uncontrollable in the  
15 Fraser Estuary.

16 This brings into question not only the timing  
17 of the sockeye salmon and other salmonids, but it  
18 brings into question the time of year. Jet A-1  
19 fuel is highly volatile, but not at low  
20 temperatures. And as I understand it, for a  
21 period of about six or eight months, this fuel  
22 would not be readily evaporating, and would likely  
23 remain within the water column for a long period  
24 of time.

25 The additional question would be the question  
26 what's happening with the tides? If the tide is  
27 falling and the Fraser River is discharging  
28 readily, then this fuel would enter the Strait of  
29 Georgia rather quickly. However, if the tide was  
30 rising, this jet fuel would rise up the river and  
31 potentially enter other arms of the Fraser River  
32 Estuary, which is in its own right a very  
33 important portion of habitat for a multiple number  
34 of species, not only anadromous fish. So I guess  
35 from a toxicological perspective, it does garner  
36 some concern from my perspective in terms of fish  
37 and fish habitat.

38 MR. LEADEM: Could we have that, the Executive Summary  
39 from the Vancouver Airport Fuel Delivery Project,  
40 which is number 9 from the Conservation  
41 Coalition's document list be tendered as the next  
42 exhibit in these proceedings, please.

43 THE REGISTRAR: Exhibit number 1388.

44  
45 EXHIBIT 1388: Executive Summary, Vancouver  
46 Airport Fuel Delivery Project  
47

1 MR. LEADEM:

2 Q Now, I'm going to stick with you, Dr. Ross,  
3 because of the panel members you seem to have  
4 followed this issue somewhat. Were you aware by  
5 virtue of having read the Sea Island Fuel Barge  
6 Facility proposal that was put forward in March of  
7 1989, that a commission was struck, and as a  
8 consequence of a panel reviewing evidence about a  
9 similar proposal that was put forward back in the  
10 late '80s, that they recommended that such a  
11 proposal not proceed because of the -- and I'll  
12 take you to the executive summary, if we could go  
13 there. And, Mr. Lunn, this is document number 8  
14 of the Conservation Coalition's documents.

15 And if we just look at the Executive Summary  
16 found at page 1, in the bold portion -- there we  
17 go. Under the heading, or in the bold portion it  
18 says:

19  
20 The Panel concludes that there is a need for  
21 additional jet fuel delivery capability to  
22 [the Airport], but there is not a  
23 demonstrated regional economic benefit  
24 associated with the...proposal. The barging  
25 of jet fuel to the facility would pose  
26 unacceptably high risks of damage to valuable  
27 fish and wildlife resources in the Fraser  
28 River estuary. The potential consequences of  
29 a fuel spill are made more severe by the fact  
30 that an adequate spill response capability  
31 does not now exist in the lower Fraser River  
32 and is unlikely to be developed in the  
33 foreseeable future.

34  
35 So there's two thoughts I want to break out of  
36 that, and one deals with whether or not the Fraser  
37 River is still considered in 2010 to be a valuable  
38 fish and wildlife resource. I think that's almost  
39 a given, is it not, Dr. Ross, that based upon some  
40 of the evidence I've heard that the estuary is  
41 indeed a very valuable fish habitat, specifically  
42 for Fraser River sockeye.

43 DR. ROSS: I would agree with that, I would say in its  
44 own right it is important to have that for a  
45 multitude of species, including a very important  
46 seabird staging area. But it's also a very  
47 important piece of habitat along the gauntlet,

1 along that migratory corridor that the sockeye  
2 salmon stocks must navigate, both heading to sea  
3 and coming back.

4 Q And my next question is to Mr. Di Franco. If I  
5 break out the second thought from that concept, or  
6 from the recommendation of the panel that met back  
7 in the late '80s, they're saying that:

8  
9 ...adequate spill response capability does  
10 not now exist in the lower Fraser River and  
11 is unlikely to be developed in the  
12 foreseeable future.

13  
14 So my question is from the Canadian Coast Guard's  
15 perspective, or from what you know of the  
16 Department of Transport, is there a spill response  
17 capability in the event that something were to  
18 occur from a spillage, from this proposal, from  
19 the Vancouver Airport proposal that I just put to  
20 Dr. Ross.

21 MR. DI FRANCO: And this is in regards to the jet fuel?

22 Q Yes.

23 MR. DI FRANCO: Well, I could say generally since 1989  
24 Canada's response capacity capability has  
25 increased substantially ever since the Brander-  
26 Smith Report was released and the establishment of  
27 the Marine Oil Spill Preparedness and Response  
28 Regime, the certification of four response  
29 organizations in Canada, especially one on the  
30 West Coast, Burrard Clean Operations. The overall  
31 response capability has increased substantially in  
32 Canada.

33 Now, with respect to fuel spills, my  
34 understanding with jet fuel spills is that they  
35 are -- it is not an easy substance to respond to  
36 or recover, mainly because of the high volatility  
37 nature of the product. Containing this type of  
38 product with containment booms or even sorbent  
39 pads or sorbent booms is quite dangerous mainly  
40 because of the explosion hazard that exists. This  
41 is akin to responding to gasoline, and in those  
42 situations it's fairly difficult to respond to, to  
43 clean this type of product up. It's different  
44 from a diesel or a crude oil or bunker C, which is  
45 less volatile and easier to deal with. This is a  
46 little bit different situation.

47 MR. LEADEM: Okay. Could we mark that Sea Island Fuel

1 Barge Facility report of March 1989, a report of  
2 the Environmental Assessment Panel, as the next  
3 exhibit, please, in these proceedings.  
4 THE REGISTRAR: Exhibit 1389.

5  
6 EXHIBIT 1389: Sea Island Fuel Barge  
7 Facility, Report of the Environmental  
8 Assessment Panel, March 1989  
9

10 MR. LEADEM: And my last document, I realize I'm  
11 running close to my limit here, is -- one of my  
12 clients, Mr. Commissioner, is Mr. Langer, who has  
13 endeavoured to testify in these proceedings  
14 before. And you may recollect I tried to get  
15 other documents of his entered into proceedings  
16 over some objections, and there they sit for  
17 identification purposes. He has produced  
18 something in conjunction with this specific  
19 proposal called the Vancouver Airport Fuel  
20 Delivery Project, a Brief to the BC Environmental  
21 Assessment Office, and it's found at Tab 10, or my  
22 document number 10 of the Conservation Coalition's  
23 documents.

24 Q And I just want to read one of the conclusions, or  
25 perhaps two of the conclusions and see if I can  
26 get the panel to agree with his recommendations  
27 with respect to this specific proposal. And if I  
28 could ask that page 24 of his brief be pulled up.  
29 This is document number 10 from the Conservation  
30 Coalition's list of documents. He says:

31  
32 The Fraser river and its estuary is still a  
33 globally significant estuary that is  
34 reasonably healthy and is a very productive  
35 ecosystem that requires a greater deal of due  
36 diligence in its restoration and protection.  
37

38 Let me just stop there before I go on to the next  
39 one. That more or less mirrors what we've been  
40 discussing, is that not correct, Dr. Ross?

41 DR. ROSS: Yes, I would say so.

42 Q And then he goes on to say:

43  
44 Shipping and unloading fuel in it --

45  
46 - meaning the Fraser River and its estuary -  
47

1                   -- is simply foolhardy planning.  
2

3                   Would you agree with that concept, Dr. Ross?  
4 DR. ROSS: I don't think it would be my choice of  
5 words.

6 Q                You're not Mr. Langer.

7 DR. ROSS: No. And I guess I would -- my question  
8 would be in comparing the proposals from 1989 to  
9 the present one, whether first of all the  
10 practices in terms of loading, offloading,  
11 navigation, the construction and design of the  
12 coupling between barge tanks and pipeline, whether  
13 that has improved substantially, and I have no  
14 knowledge to that effect.

15                And then secondly the question of operational  
16 response by Coast Guard, whether in fact, even  
17 with the best oil spill or fuel spill response,  
18 whether that would be -- whether it would indeed  
19 be feasible to mitigate after a spill where we  
20 have very high currents, where we have a complex  
21 shoreline, where we have heavy influence of tidal  
22 waters, a mix of freshwater and saltwater,  
23 multiple branches of the Fraser River, I would  
24 gather, although I am not the expert, I would  
25 gather it would be far more difficult to mitigate  
26 after a spill in such a spill environment,  
27 compared to, for example, the Port of Vancouver,  
28 Burrard Inlet. But that would be my sort of  
29 opinion as a scientist.

30 MR. LEADEM: All right. With some temerity, Mr.  
31 Commissioner, I'm going to suggest that this be  
32 marked as the next exhibit in the proceedings.

33 THE COMMISSIONER: My only concern, Mr. Leadem, is that  
34 you've only referred the panel to just this one  
35 item on this one page.

36 MR. LEADEM: Yes.

37 THE COMMISSIONER: And when you say "this exhibit", I  
38 have no idea what it contains, nor do they, unless  
39 they've read it. So I think my preference would  
40 be that it be marked for identification purposes.

41 MR. LEADEM: All right. I may have to make an  
42 application --

43 THE COMMISSIONER: Yes.

44 MR. LEADEM: -- at some stage to seek to have Mr.  
45 Langer come and for no other reason, then, to  
46 identify his -- the reports that he's prepared.

47 THE COMMISSIONER: All right.

21  
PANEL NO. 53  
Cross-exam by Mr. Leadem (CONSERV)  
Questions by the Commissioner

1 THE REGISTRAR: That will be marked as for  
2 identification MM, double "M".  
3

4 MM FOR IDENTIFICATION: Langer, Vancouver  
5 Airport Fuel Delivery Project, Brief to the  
6 BC Environmental Assessment Office, Victoria  
7 B.C., April 26, 2011  
8

9 MR. LEADEM: I'm three minutes ahead of schedule, and I  
10 told my learned colleague, Mr. Rosenbloom, if I  
11 finished early, he can have my three minutes  
12 because he was bemoaning the fact that he was  
13 getting -- he went over a little bit yesterday, so  
14 he owes me.

15 THE COMMISSIONER: Can I just cut into his three  
16 minutes just to ask one question, Mr. Leadem, just  
17 before you sit down.  
18

19 QUESTIONS BY THE COMMISSIONER:  
20

21 Q I was just trying to understand Mr. Di Franco's  
22 response with respect to the jet fuel, I want to  
23 say, volatility; I'm not sure if that's the  
24 correct term or not. But it's not common but  
25 neither uncommon to hear from time to time that  
26 jet fuel has been jettisoned by an aircraft,  
27 either leaving Vancouver Airport or returning to  
28 Vancouver Airport, for reasons of security and  
29 safety. Does the Canadian Coast Guard or DFO have  
30 in place a protocol or a response protocol that  
31 reacts to those circumstances where jet fuel is  
32 jettisoned in an area of the Pacific close to YVR  
33 and the Fraser River estuary?

34 MR. DI FRANCO: No, Mr. Commissioner, the Canadian  
35 Coast Guard does not have a mandate to respond to  
36 discharges from aircraft. So, no, we don't.

37 Q Can you tell the Commission whether or not another  
38 branch of government does have a response  
39 preparation plan in place?

40 MR. DI FRANCO: I don't know for certain. I'd be  
41 guessing. It would be Environment Canada, but I  
42 can't say for certain.

43 Q Thank you, Mr. --

44 MR. DI FRANCO: My understanding - sorry, Mr.  
45 Commissioner - my understanding is jet fuel that's  
46 jettisoned from aircraft are typically not  
47 responded to or dealt with as they normally

August 18, 2011

1           dissipate and evaporate fairly quickly in the open  
2           ocean environment.

3           THE COMMISSIONER: Thank you very much.

4           MR. ROSENBLOOM: Thank you. My name is Don Rosenbloom.  
5           I appear on behalf of Area D gillnet and Area B  
6           seiner.

7

8           CROSS-EXAMINATION BY MR. ROSENBLOOM:

9

10          Q       Using some of the Commissioner's time as opposed  
11           to my precious 13 minutes, just to follow up on  
12           the Commissioner's question. Do either of you  
13           have further response in respect to the  
14           responsibilities of agencies other than the Coast  
15           Guard in respect to the discharge of fuel of the  
16           aviation industry, as asked by the Commissioner.

17          MR. REID: Speaking, I guess, on behalf of the  
18           Fisheries and Oceans, non-Coast Guard part of  
19           Fisheries and Oceans, I'm not aware of any  
20           specific procedure or protocol that we have for  
21           dealing specifically with the aviation industry.  
22           We would rely on Environment Canada likely to have  
23           such a procedure in place, or some other entity.

24          Q       Thank you very much. Now starting my 13 minutes.  
25           Firstly, in previous testimony in respect to DFO  
26           and its lack of enforcement of various violations  
27           of the **Fisheries Act** and evidence that was given  
28           of the number of individuals that have fines  
29           outstanding, have never been paid, my question is  
30           this. You, Dr. Ross, spoke yesterday about  
31           polluters paying for cleanup and collection and so  
32           on. Is there any history with DFO of an inability  
33           to force the polluters to actually pay for their  
34           violations?

35          DR. ROSS: I'd probably have to defer to Habitat  
36           colleagues, and perhaps even my colleague to my  
37           left might have some idea on that one.

38          MR. REID: I'm not specifically aware, and likely the  
39           part of Fisheries and Oceans or the program within  
40           Fisheries and Oceans, our Conservation and  
41           Protection Sector would have that information.  
42           They are involved with the preparation materials  
43           for prosecution and, you know, the follow-up that  
44           would be involved in that. So but I'm not  
45           personally aware of any.

46          MR. ROSENBLOOM: Mr. Commissioner, I wonder if I could  
47           ask of Mr. Timberg that that information be

1 provided to the Commission, in light of the  
2 history previously of the lack of collection of  
3 various fines under the **Fisheries Act**. Mr.  
4 Timberg, are you in a position to at least attempt  
5 to provide this Commission with information  
6 whether those that are polluting have indeed been  
7 held accountable and had to -- and have paid their  
8 fines, or paid for the reparations.

9 MR. TIMBERG: Mr. Commissioner, the normal way in which  
10 questions are delivered between participants is  
11 for participants to go to Commission counsel, who  
12 then vet the question, and then contact -- they  
13 make an assessment themselves, and then they would  
14 get in contact with us. So I would suggest that  
15 it would be more appropriate for Mr. Rosenbloom to  
16 follow the ordinary procedure. Because I myself  
17 am not involved in the C&P or Enforcement  
18 hearings, and have no knowledge of what evidence  
19 has or has not been led to date. So I'm not in a  
20 position to answer him.

21 MR. ROSENBLOOM: Thank you. I'll do as my friend  
22 suggests.

23 Q Mr. Di Franco, do you have any information to  
24 bring to the Commission in respect to my question?

25 MR. DI FRANCO: Well, are you speaking with respect to  
26 recovery of costs from fines, or from marine  
27 pollution incidents?

28 Q Marine pollution incidents and the cleanup  
29 responsibilities, and whether indeed the polluters  
30 have been held accountable and have had to pay for  
31 the reparations.

32 MR. DI FRANCO: Yes. Well, the **Marine Liability Act**  
33 stipulates that the polluter is responsible for  
34 pollution and the damages they cause.

35 Q I appreciate that, Mr. Di Franco. I'm simply  
36 asking whether indeed there is a history of  
37 polluters who have not been forced to pay for the  
38 reparations of their spills.

39 MR. DI FRANCO: Not -- well, the way it -- the way we  
40 conduct our business with respect to cost recovery  
41 is we will go to the polluter first for cost  
42 recovery, and then if the polluter is unwilling to  
43 pay, then we will go to the Ship Oil Spill  
44 Pollution Fund, who will in turn go after the  
45 polluter and take them to court to recover those  
46 costs.

47 Q Precisely. And it is that very question, whether

1           indeed having -- when you do go after the  
2           polluter, have you been successful in forcing the  
3           polluter to pay for those reparations?

4       MR. DI FRANCO: In many cases yes, and in some cases  
5           no. So --

6       Q     All right. And -- sorry, go ahead. All right.  
7           And so in respect to those cases no, I will be  
8           asking for information from the government side in  
9           respect to that question. And I'd like to move  
10          on. Mr. Di Franco, we've heard a lot of evidence  
11          here at the Commission about cutbacks in budget to  
12          DFO, and which obviously your agency, Coast Guard,  
13          is encompassed within those cutbacks. Can you  
14          tell me to what extent Coast Guard has been cut  
15          back in terms of the -- their responsibilities  
16          that are the subject of the proceedings yesterday  
17          and today; what cutbacks?

18       MR. DI FRANCO: Well, ever since the regime was  
19          established in 1995, and I'm talking about the  
20          private sector regime, there was -- there was some  
21          cutbacks that we experienced with respect to O&M  
22          and Human Resource funding, and people, as well,  
23          within the organization. And that occurred in the  
24          late '90s and early 2000s. And those cutbacks  
25          affected headquarters personnel and regional  
26          personnel. And furthermore, our ability to  
27          reinvest in our oil spill response equipment was  
28          also impacted. So our equipment is older than it  
29          probably should be, although still functional and  
30          we still do -- we still maintain it. We have some  
31          fairly old pieces of equipment in our inventory.  
32          But recently we have started to reinvest funding  
33          into the Environmental Response Program, in terms  
34          of people, equipment and our -- and funding  
35          overall.

36       Q     Has your agency been subject to cutbacks, well,  
37          from 2007 until the present, incrementally, year  
38          after year?

39       MR. DI FRANCO: No. No.

40       Q     Were you cut back in the last two fiscal years?

41       MR. DI FRANCO: No. I would say no.

42       Q     You're maintaining the funding that you had  
43          previous to those two years, is that correct,  
44          that's your evidence?

45       MR. DI FRANCO: Yes, pretty much.

46       Q     Okay. Moving on, if I may, Dr. Ross, you have  
47          spoken about, and these are my words, not yours, a

1 frustration that you have that the Science Branch  
2 that you work with of DFO is -- their advice is  
3 not necessarily being received and applied by  
4 Coast Guard during these incidents. That is your  
5 evidence, is it not?

6 DR. ROSS: Yes, in part.

7 Q And that is, from your perspective, a loss of  
8 valuable knowledge that Coast Guard should apply  
9 in respect to its response to some of these spills  
10 and pollution problems, correct?

11 DR. ROSS: Well, I would gather that the Canadian  
12 government maintains experts in house in order to  
13 have those experts provide expert advice, yes.

14 Q And so from your perspective, it simply doesn't  
15 make sense that that advice within in house, with  
16 DFO, is on some occasions being ignored?

17 DR. ROSS: That would probably be or represent the  
18 source of some of my frustrations expressed  
19 yesterday, yes.

20 Q Yes. And speaking of your frustration, Dr. Ross,  
21 and I appreciate your bluntness in coming before  
22 this Commission and speaking to some of these  
23 problems, I want to refer you to Exhibits 1377 and  
24 1378, and Mr. Lunn will put the first of those two  
25 exhibits before us. It's an email from yourself  
26 to your colleague, Mr. Reid, to your next door,  
27 and to others, dated July 31st, 2007, where you  
28 said in part in the second line of your email at  
29 the top:

30  
31 EC --

32  
33 - obviously, Environment Canada -

34  
35 -- does not have the staff, logistical  
36 infrastructure and/or expertise to deal with  
37 marine spills/impact assessments (hence  
38 enforcement). The attitude on the latter  
39 tends to be that this is EC's business and no  
40 longer DFO's [business].

41  
42 Do you still believe that to be the situation?

43 DR. ROSS: From everything I've experienced over the  
44 last six years, I would say that that still  
45 represents my opinion.

46 Q That's a pretty depressing situation in terms of  
47 your perspective that Environment Canada lacks

1 this capacity, is it not?

2 DR. ROSS: Well, Environment Canada has experts in the  
3 area of contaminants. And I guess at the end of  
4 the day, Canada has to decide whether having  
5 contaminant experts within Environment Canada's  
6 realm is sufficient to be able to protect those  
7 species that are really under the custodial  
8 stewardship and management of Department of  
9 Fisheries and Oceans. And I think therein lies  
10 the grey area that has created some of this  
11 friction and this difficulty. DFO has tremendous  
12 logistical infrastructure, technical and  
13 scientific expertise to be able to study fish and  
14 fish habitat, and anadromous fish in particular.

15 Q But, Doctor you're not only saying that DFO has  
16 that expertise, but if I read this paragraph, you  
17 are saying in your opinion Environment Canada does  
18 not have that expertise and that capacity; is that  
19 not what I'm reading into that paragraph?

20 DR. ROSS: That would be correct.

21 Q Thank you. I lead you to the next of your two  
22 emails, 1378. Again, an email from yourself to a  
23 Bruce Adkins, and this is a trail on this email,  
24 this is to Corino, and in the second paragraph of  
25 that at page 1:

26 I am not a crab expert...

27 I think that's before you. You say in part:

28  
29 I am not a crab expert but am doing some  
30 research on hydrocarbons in sediments...

31  
32 It goes on. I'm just trying to find the -- yes,  
33 the last sentence of the paragraph:

34 Over the last 3.5 years, DFO viewed EC  
35 [Environment Canada] as the lead agency, but  
36 as we have seen, there has been little  
37 capacity or interest on [Environment  
38 Canada's] part to adopt this role.

39 This is an email of September 14, 2007. Again, do  
40 you believe you continue to lack the confidence,  
41 as you expressed in this email?

42  
43 DR. ROSS: Well, I can't speak to the formal or  
44 informal discussions that have taken place between  
45  
46  
47

- 1 EC and DFO in the region or at headquarters in  
2 Ottawa, but from my perspective, having been  
3 involved in Regional Environmental Emergency  
4 Teams, or having been involved in a number of s.  
5 36 issues, I have not seen Environment Canada pick  
6 up any slack as we at DFO have pulled back on the  
7 question of contaminants in the marine  
8 environment, or contaminants in fish -- anadromous  
9 fish, fish habitat or other marine biota. So the  
10 gap has widened, if anything, between the two  
11 agencies.
- 12 Q Doctor, the public should be concerned about this,  
13 shouldn't they.
- 14 DR. ROSS: Well, in my personal view, marine pollution  
15 is one of the major threats to coastal ecosystems  
16 around the world. Professionally, this is my --  
17 my mandate is to study marine pollution, and I do  
18 have and have tried to express several of my  
19 concerns and some of my frustration with regard to  
20 the fact that I don't think that we are in a  
21 position to evaluate the effects of contaminants  
22 on a number of different marine creatures,  
23 including anadromous fish, which are the purview  
24 of this Commission.
- 25 Q Thank you. Two very short, very tight questions.  
26 Dr. Ross, you spoke today about losing budget for  
27 research on salmon, if I understood your  
28 testimony. What kind of budget did you have a few  
29 years ago that is no longer there for that  
30 research?
- 31 DR. ROSS: We still have access to research funds, but  
32 they're highly focused, pots of money to do with  
33 contaminated sites or species at risk. What we  
34 have lost is the Environmental Sciences Research  
35 Fund, which was about \$5.2 million nationally for  
36 Canada's three oceans, to look at contaminants and  
37 other anthropogenic threats.
- 38 Q And now it's zero?
- 39 DR. ROSS: Now it's zero.
- 40 Q Anything else you want to tell the Commission in  
41 respect to that budgetary problem, or that covers  
42 it?
- 43 DR. ROSS: Well, I would suggest that when we pulled  
44 back from a mandate of looking at -- at  
45 contaminants, we used the argument that s. 36 is  
46 not the purview of Environment Canada -- or not  
47 the purview of DFO, and rather Environment Canada.

1 I would put forth the contaminants are not only  
2 captured under the guise of s. 36 of the **Fisheries**  
3 **Act**. I think contaminants in the real world have  
4 multiple points of entry, diffuse sources,  
5 nonpoint sources, which are poorly characterized,  
6 not regulated at all, and become rapidly relevant  
7 to the **Oceans Act**, and **Canadian Environmental**  
8 **Protection Act**. Simply ascribing contaminants to  
9 a s. 36 envelope, I think is -- does little  
10 justice if we're trying to protect highly  
11 migratory species that are exposed to hundreds, if  
12 not thousands of chemicals along a long migratory  
13 corridor.

14 Q Thank you. One last tight question for you, Mr.  
15 Reid. If I heard your testimony yesterday, you  
16 spoke about the fact that no area director was  
17 responsible for REET. Was that not your testimony  
18 yesterday, that no appointment has ever been made?

19 MR. REID: I think what I said is that the first point  
20 of contact in the event of a spill would be an  
21 area director. So there isn't a -- and that area  
22 director may be part of a REET, if one is  
23 established, or the area director may assign an  
24 individual to be part of a REET (indiscernible -  
25 overlapping speakers).

26 Q But did I not hear you yesterday to say that in  
27 fact there's not been an appointment of a point  
28 person for REET in respect to incidents?

29 MR. REID: What I was speaking to is that in our  
30 regional headquarters office there isn't an  
31 individual point person who has been identified to  
32 respond to REET on a sort of DFO basis. Right now  
33 our model is that if there is an incident, an area  
34 director would be the point of contact, and that  
35 area director would be responsible for providing a  
36 person for REET, or to deploy staff to respond to  
37 the incident.

38 Q So there's no outstanding need to make an  
39 appointment for a point person. That's all under  
40 control.

41 MR. REID: I think the -- at this point we don't have a  
42 point person in our regional headquarters office.

43 Q Should there be?

44 MR. REID: I think there could be benefits to having  
45 somebody who has that role, just as a coordinating  
46 role.

47 Q Are we the losers that you haven't done that

1 appointment, DFO's not done that appointment?

2 MR. REID: Sorry, could you repeat the question?

3 Q is there any prejudice to the fact that  
4 appointment has not been made?

5 MR. REID: I'm sorry, I don't understand your question.

6 Q The fact that DFO has not made that appointment at  
7 -- in Ottawa, in respect to what we're talking  
8 about, is there any prejudice, is there any  
9 downside to the fact the appointment has not been  
10 made?

11 MR. REID: I think there would be a benefit to having  
12 somebody in a regional office who has that role.

13 Q Why hasn't it been done?

14 MR. REID: I think it's a point of discussion right now  
15 with our senior managers.

16 Q How long has it not -- has it been in that  
17 situation?

18 MR. REID: Since our Water Quality Group in our Habitat  
19 Program was no longer existed, at that time there  
20 was a certain individual who (indiscernible -  
21 overlapping speakers).

22 Q Which was about when? Which was when?

23 MR. REID: 2004/2005.

24 MR. ROSENBLOOM: Thank you.

25 MS. BAKER: Mr. Commissioner, the last questioners  
26 would be the First Nations Coalition, but perhaps  
27 we could take the break now and come back to allow  
28 that to complete.

29 THE COMMISSIONER: Thank you.

30 THE REGISTRAR: The hearing will now recess for 15  
31 minutes.

32  
33 (PROCEEDINGS ADJOURNED FOR MORNING RECESS)

34 (PROCEEDINGS RECONVENED)

35  
36 THE REGISTRAR: Hearing is now resumed.

37 MR. ROSENBLOOM: Thank you, Mr. Commissioner.

38 Commission counsel and I have been discussing a  
39 matter during the break and it's been suggested  
40 that I just formalize my request for the  
41 information from Canada in respect to polluters  
42 that may or may not have paid the financial costs  
43 of reparations of a site and so I will be  
44 requesting of Mr. Di Franco on the record that he  
45 produce this information. I will, of course, be  
46 following this up with a letter to commission  
47 counsel making such a request. Thank you.

1 MS. BAKER: Mr. Di Franco isn't actually on the screen,  
2 but I think that that's fine for the record.

3 MS. REEVES: Good morning, Mr. Commissioner. It's  
4 Crystal Reeves appearing for the First Nations  
5 Coalition and with me Brenda Gaertner. I have 25  
6 minutes allotted to me and will endeavour to use  
7 that time.

8 My first set of questions will go towards  
9 ecosystem-based management and the work that the  
10 Haida have been doing under the PNCIMA process and  
11 then I'll be moving on to discussing oil spills  
12 and finally talking about ecosystem-based  
13 management and the Oceans Action Plan.

14  
15 CROSS-EXAMINATION BY MS. REEVES:

16  
17 Q My first set of questions are for you, Dr. Ross.  
18 Are you familiar with the work that is being done  
19 by the Haida called The Ocean and Way of Life and  
20 this is a larger marine use planning initiative  
21 that's been done through PNCIMA?

22 DR. ROSS: Only through the exhibits as provided on the  
23 last few days.

24 Q Okay. Thank you. Mr. Lunn, if you could pull up  
25 our Tab 3 which is Exhibit 1345, please? This is  
26 a brochure discussing The Oceans and Way of Life  
27 project and if we could just go to the last page  
28 of the brochure, Mr. Lunn, and I believe that's on  
29 page -- right before the map. And if you could  
30 just pull up the second sort of small paragraph.  
31 And here the Haida are discussing that they  
32 started the research in 2007 and the purpose was  
33 to document Haida culture and traditions about the  
34 ocean and their territory. And then the next page  
35 is an accompanying map and if we could just turn  
36 to that. And this map is basically the Haida have  
37 mapped out the extent of various fisheries,  
38 traditional use areas, places of cultural practice  
39 to do with the marine environment, and my question  
40 for you, Dr. Ross, is would you agree that this  
41 type of mapping work is extremely useful for  
42 identifying migratory routes of key species,  
43 important food-gathering areas, but also sensitive  
44 ecological areas that could be impacted by  
45 contaminants?

46 DR. ROSS: Based on my own scientific experience, I  
47 would agree with that statement. We've been

1 working for probably 12 years now with a number of  
2 different First Nations communities and I like to  
3 think that I bring scientific expertise to the  
4 table, but I am powerless in the face of the  
5 wealth of knowledge that traditional knowledge  
6 brings to the table and the way I've come to view  
7 this is that science is -- science and traditional  
8 knowledge can work together to generate good  
9 understanding about habitat and ocean health, et  
10 cetera, so I do -- I very much have valued  
11 traditional knowledge and the provision of that  
12 sense of place, that sense of people, that sense  
13 of value ascribed to marine resources and as you  
14 put it, the understanding and insight into  
15 migratory corridors and habitat for some of these  
16 valued species.

17 Q Okay. Thank you. And based on your experience  
18 then, would you have any recommendations for the  
19 commission about how the complementary work of  
20 traditional ecological knowledge and science can  
21 work together moving forward, particularly, I  
22 guess, within DFO on salmon and other marine  
23 species?

24 DR. ROSS: That is a -- that's a large question, which  
25 I'm probably not in a good position to fully  
26 answer, other than beginning with the preamble I  
27 just provided you with and perhaps establishing a  
28 bit of a link to the **Oceans Act** and the mandate  
29 under the **Oceans Act** to work with stakeholders in  
30 terms of integrated management and looking at  
31 marine protected areas which would, of course, be  
32 valuable places, valued places, and marine  
33 environmental quality which provides, I think, a  
34 conduit for the provision of traditional knowledge  
35 as it relates to ocean health.

36 Q Thank you. Mr. Reid, this question is for you.  
37 Being someone being familiar with PNCIMA and I  
38 guess you have an understanding of some of the  
39 marine planning work that's been undertaken by the  
40 Haida and other First Nations under PNCIMA, are  
41 you familiar with that work?

42 MR. REID: Yes, I am.

43 Q And would you agree that this type of work that's  
44 happening there represents a type of best practice  
45 for ecosystem-based management and marine use  
46 planning and integrated management moving forward?

47 MR. REID: The information on this map is helpful

1 information in terms of understanding the  
2 resources that are available for planning  
3 purposes.

4 Q Okay. I'd like to move on now to oil pollution  
5 spill response. My first question is for you, Dr.  
6 Ross. Do we know what the impacts are to  
7 migrating species such as Fraser River sockeye  
8 salmon from oil spills or diesel spills? And here  
9 I'm speaking almost of small spills where there's  
10 like a cumulative impact over time. Do we know  
11 what the impacts are?

12 DR. ROSS: Well, indeed, there are many thousands of  
13 scientific studies around the world looking at the  
14 effects of fuels and hydrocarbons, related  
15 hydrocarbons on the health of fish. In moderate  
16 to higher concentrations, we'll see acute  
17 toxicity. We'll see belly-up. In lower  
18 concentrations, we can see malformations in fish  
19 fry, death of eggs, we can see difficulties in  
20 transforming from fresh water to salt water. We  
21 can see narcosis, a dulling of the senses and  
22 confusion in adult fish that are migrating through  
23 these -- through such spills. So we -- I think  
24 there exists ample understanding about the risks  
25 posed by a number of different types of  
26 hydrocarbons, the extent to which we can apply  
27 that to a B.C. setting is a little bit unclear,  
28 because there is no research being carried out  
29 right now on any kinds of hydrocarbons and their  
30 effects on any species in British Columbia.

31 Q Okay. And -- okay. My next question then is for  
32 you, Mr. Di Franco. Yesterday when you were  
33 talking about small spills in the marine  
34 environment, did I understand correctly that the  
35 Canadian Coast Guard is the first responder for  
36 those small spills and does an assessment to see  
37 if something more is required?

38 MR. DI FRANCO: Yes.

39 Q Okay. And what is -- what does the Canadian Coast  
40 Guard use in making that assessment of whether  
41 REET should be activated or whether something more  
42 is required?

43 MR. DI FRANCO: Well, the assessment basically is a  
44 visual observation of what is going on and our  
45 national contingency plan basically outlines the  
46 steps that are taken in the assessment phase to  
47 determine what needs to be done and if there's

1 anyone else that needs to be contacted or if we  
2 need to engage other agencies. And, you know, in  
3 a nutshell, if you refer to the national  
4 contingency plan, it basically states verification  
5 that the incident actually occurred, trying to  
6 identify a source for the pollution, so basically  
7 trying to find the vessel or -- and an owner  
8 associated with that vessel, trying to identify  
9 the resources at risk which can include anything  
10 from shoreline or freshwater intake. I don't  
11 think that would apply as much on the West Coast,  
12 but in the Great Lakes it's warranted.  
13 Aquaculture sites, beaches, anything -- any visual  
14 observation, any resources at risk that can be  
15 visually observed by the environmental response  
16 duty officer is noted, and then further steps are  
17 taken after that.

18 Q And I guess my question then would be when a  
19 person that's noting these or observing these and  
20 moving forward to assessing whether something more  
21 should be done, would you say that that person in  
22 the Canadian Coast Guard would have an  
23 understanding of the short-term and long-term  
24 impacts to fish and marine species and habitat  
25 from oil spills of various sizes or are they  
26 immediately referring that to people that do have  
27 that understanding?

28 MR. DI FRANCO: During the -- that type of work isn't  
29 generally done in the assessment phase. That's  
30 done later on in the response, but, no, our  
31 environmental response personnel generally do not  
32 possess that expertise. That's left within the  
33 region to decide who possesses that expertise and  
34 who -- and where to get that information from.

35 Q So if I'm understanding you correctly, someone  
36 from the Canadian Coast Guard could make an  
37 assessment and decide that nothing further is to  
38 be done about an oil spill but that person  
39 wouldn't have an understanding of, say, short and  
40 long-term impacts to the environment, marine  
41 species and that sort of thing? Am I correct in  
42 understanding what you've said there?

43 MR. DI FRANCO: Yes.

44 Q Thank you. When there is a spill incident does  
45 the Canadian Coast Guard contact local First  
46 Nations who may be impacted by this spill?

47 MR. DI FRANCO: If there is reason to believe that they

1           might be impacted, then they would be contacted,  
2           yes.

3           Q     And how is that determination made that First  
4           Nations would be impacted?

5           MR. DI FRANCO:  It would be done by regional Coast  
6           Guard personnel.  I can't say specifically how  
7           it's done, but it would be done within the  
8           organization, either by the person on scene or  
9           they would delegate that out to someone else  
10          within the organization, but it would get done if  
11          they thought it was necessary.

12          Q     And is there consultation with local First Nations  
13          community say such as the Haida about what the  
14          possible impacts to them might be, which could  
15          potentially, I guess, change an assessment or  
16          change an understanding of whether they should be  
17          notified?

18          MR. DI FRANCO:  Yes.  Yes.

19          Q     And who -- and again, who would that person be?  
20          Would it be a regional person that does that or  
21          someone from Environment Canada?  Who is making  
22          that connection or that consultation with First  
23          Nations?

24          MR. DI FRANCO:  It could be someone within the Coast  
25          Guard that would do that or it could be someone  
26          within the REET.  My understanding on the West  
27          Coast is that First Nations personnel can actually  
28          be part of the REET process in Pacific Region.  So  
29          they would be involved -- they would be part of  
30          the REET and be involved with those discussions  
31          and they would at that point bring up the issues  
32          that concern them regarding the incident and  
33          resources at risk.

34          Q     And in the event of a spill, who is doing the  
35          ongoing communication during the monitoring and  
36          clean-up with affected First Nations communities?

37          MR. DI FRANCO:  That would -- it depends on the  
38          incident and whether REET is actually engaged or  
39          not, because, you know, like I said before, each  
40          spill is different and the size and the  
41          significance and magnitude of each spill is  
42          different.  No two spills are alike, so our  
43          personnel might be engaged with First Nations  
44          people directly or if the REET's engaged, then  
45          they'll still be -- it'll be done through the  
46          REET.

47          Q     Mr. Di Franco, would you agree that given First

1 Nations concerns about food, health, from  
2 traditional sources of food and impacts to their  
3 harvesting practices that First Nations should be  
4 firstly communicated with in any event of a spill,  
5 regardless if it's small or large?

6 MR. DI FRANCO: I don't think they need to be contacted  
7 for every spill that occurs.

8 Q Okay. Yesterday we heard about spills and that  
9 were involving REET and you indicated just now  
10 that First Nations can be involved in REET in  
11 British Columbia. Is the Canadian Coast Guard  
12 doing their own engagement strategy with First  
13 Nations on developing spill response plans,  
14 policies, and perhaps even engaging in training or  
15 has that just been left to the REET program?

16 MR. DI FRANCO: No, with respect to training, the  
17 Canadian Coast Guard does do response training in  
18 First Nations communities. They do that. With  
19 respect to developing area contingency plans  
20 Canadian Coast Guard personnel would also engage  
21 REET First Nations organizations in development of  
22 their response plan to identify critical or  
23 sensitive resources that are at risk of an oil  
24 pollution incident. So they would be engaged  
25 during the development of those area response  
26 plans, as well.

27 Q And has the Canadian Coast Guard taken any action  
28 or moved to develop any protocols with First  
29 Nations on notification practices, the development  
30 of, I guess, working with them closely when a  
31 spill happens? Has that work been done?

32 MR. DI FRANCO: Generally within the regional plans and  
33 the area plans, the REET -- sorry, not the REET,  
34 the First Nations contact information is included  
35 in those plans, so, you know, if a spill occurs  
36 and it's -- it impacts First Nations people, then  
37 that contact information is already available and  
38 those First Nations people are contacted and  
39 engaged during the spill response.

40 Q Thank you. Another question I have is our clients  
41 are concerned about the cleanup of derelict  
42 vessels that may be leaking oil, diesel or other  
43 chemicals into the environment. Who's responsible  
44 for ensuring the cleanup of those types of  
45 derelict vessels and the spills into the marine  
46 environment? Is that the Canadian Coast Guard or  
47 is that Environment Canada or...?

1 MR. DI FRANCO: Well, the -- if a derelict vessel is  
2 deemed to be leaking oil or leaking a pollutant or  
3 is in imminent threat of leaking pollution, then  
4 the Canadian Coast Guard would be responsible for  
5 dealing with the pollution and the pollution  
6 threat, so that would include dealing with the on-  
7 water cleanup.

8 Q Can you repeat -- I think we've lost your voice  
9 there.

10 MR. DI FRANCO: Sure. Can you hear me now?

11 Q Yeah.

12 MR. DI FRANCO: Okay. If a derelict vessel was seen to  
13 be leaking a pollutant or is -- it's been  
14 determined that the derelict vessel is -- there's  
15 an imminent threat of pollution from the vessel,  
16 then the Canadian Coast Guard would respond to  
17 that threat or the actual discharge of the  
18 pollutant. They would respond, clean up whatever  
19 pollutants are in the water and remove, off-load  
20 any remaining pollutants on board the vessel. But  
21 for the actual removal of the derelict vessel  
22 itself, that does not remain with the Canadian  
23 Coast Guard.

24 Q Who's responsible for that piece?

25 MR. DI FRANCO: Presently if a vessel, a derelict  
26 vessel is in the water somewhere abandoned and  
27 there's no pollutants on board, it does not pose a  
28 pollution threat, then there is no federal or  
29 provincial agency that's responsible for it at  
30 this time.

31 Q Right. But I'm saying if there is one that is  
32 leaking oil, who's responsible for removing the  
33 vessel?

34 MR. DI FRANCO: The -- well, the Coast Guard would be  
35 responsible for dealing with the pollution threat,  
36 and if the pollution threat can be dealt with in a  
37 way where removing the pollutants off the vessel  
38 removes the pollution threat, then we would leave  
39 the vessel alone, once the pollutants have been  
40 removed. But if the best way of dealing with the  
41 pollution threat involves removing the vessel,  
42 taking the vessel out of the water and destroying  
43 it or deconstructing it or whatever, then the  
44 Coast Guard would do that as well. So it really  
45 depends on the state of the vessel, the situation,  
46 whether or not we can find an owner, that also  
47 comes into play. Because if we can find an owner,

1 then we will -- and try to put the onus of  
2 response on the owner of the vessel, and of course  
3 if he or she declines to do anything then we will  
4 take on that responsibility. But it depends on  
5 the situation. If removing the vessel out of the  
6 water is the best response option, then we will do  
7 that. But if off-loading the pollutants, the  
8 products, off the vessel is also a viable option  
9 without having to destroy the vessel, then we  
10 could take those steps, as well.

11 Q Thank you. Dr. Ross, do you have any, I guess,  
12 comment or recommendation for how, I guess, First  
13 Nations could be notified in the event of small  
14 spills or what should be put into an assessment  
15 about whether further action should be taken,  
16 given the possible impacts to marine foods and  
17 fish and fish habitat?

18 DR. ROSS: Well, I'd begin by just relaying some of my  
19 experience in conducting research in collaboration  
20 with First Nations. As I understand it, there are  
21 approximately 170 coastal First Nations in British  
22 Columbia. These are a lot of small communities,  
23 often remote, socioeconomically disadvantaged, so  
24 the marine environment is very, very important to  
25 the peoples inhabiting these areas. So I would  
26 begin by saying that, because I must say I've been  
27 humbled by working with some of these small  
28 communities. It's astounding what one runs into  
29 but also very rewarding to realize the knowledge  
30 and the richness in terms of the experience of  
31 many of the elders and the interest on the part of  
32 youth, so these are important communities to  
33 understand and to work with.

34 Some of our own work would indicate that the  
35 average coastal First Nation consumes 15 to 20  
36 times as much seafood as the average Canadian. So  
37 these marine resources are much more important to  
38 coastal communities, coastal First Nations  
39 communities than to the average Canadian and I  
40 think that's an important contextual  
41 consideration.

42 I think my concern in terms of the  
43 operational response to a spill would go back to  
44 the same concern I have about scientific or even  
45 habitat advice for that matter. As I understand  
46 it, there might be improvements to the operational  
47 response on the part of the Coast Guard but I'm

1 not hearing that there's any requirement to build  
2 science, habitat or aboriginal concerns into that  
3 operational framework right now, and that remains  
4 the purview of a voluntary instigation of the REET  
5 and that that REET is a good conduit for many of  
6 these concerns or many of these communications,  
7 but it's voluntary. It's not always enacted. It  
8 does not guarantee effective communication with  
9 some of the important stakeholders, so I guess  
10 those are two different issues. That's the role  
11 of the REET whether it's currently satisfactory  
12 and then before that, whether the operational  
13 response is satisfactory in terms of accommodating  
14 science, habitat or First Nations perspectives.

15 Q Okay. Thank you. I'd like to move on now and  
16 just talk a little bit to you, Mr. Reid, about the  
17 Oceans Action Plan and understandings of  
18 integrated management, ecosystem-based management.  
19 Mr. Lunn, could you pull up our Tab 9, go to page  
20 6? And as Mr. Lunn is pulling that up, maybe I  
21 can just ask you a starting question. Am I  
22 correct in understanding that from DFO's  
23 perspective, ecosystem-based management is  
24 embedded under integrated management? Would you  
25 say that's sort of a correct understanding of how  
26 that's viewed?

27 MR. REID: Ecosystem-based management provides a  
28 framework for which integrated management can take  
29 place, so it's setting objectives and goals,  
30 ecosystem-based objectives and goals is a  
31 foundation of integrated management.

32 Q Okay. I'd like to just, if you could blow up this  
33 whole page, Mr. Lunn, so we can look at that.  
34 This is a page from the Canada's Oceans Action  
35 Plan and starting with the heading "Integrated  
36 Oceans Management for Sustainable Development",  
37 maybe we could just blow up that column there.  
38 And it sort of starts off and talks about the  
39 importance of oceans and that there's been  
40 structural shifts, but then what I find  
41 interesting is as we go through this column and  
42 then over onto the next page, it sort of talks  
43 about integration oceans management but it starts  
44 mentioning things such as oil and gas development,  
45 aquaculture, use of ocean resources for wind  
46 farms, commercial fishing and all these sorts of  
47 things and I guess I'm just confused or our

1 clients are confused about it seems like  
2 integrated oceans management is really focused on  
3 at least in this document sort of economic  
4 development of the oceans and yet on the other  
5 hand we have ecosystem-based management which from  
6 my understanding which we've heard at this  
7 commission is more about a holistic approach to  
8 ensuring that, you know, conservation of ocean  
9 resources and that kind of thing going forward is  
10 done in a holistic manner, taking not just a  
11 single species but the total of the environment.  
12 And so how do these two, I guess, integrated  
13 management which focus on economics as described  
14 in the Ocean Action Plan and ecosystem-based  
15 management, how does DFO reconcile these two sort  
16 of seemingly opposed, I guess, management  
17 strategies or points?

18 MR. REID: As I said earlier, Mr. Commissioner,  
19 integrated management is about managing and  
20 planning human activities to avoid conflict and so  
21 a lot of the activities that are mentioned in the  
22 Oceans Action Plan are, you know, human activities  
23 - industry, oil and gas - and I think the intent  
24 is to develop ecosystem-based management  
25 objectives so those activities can take place in a  
26 way that is conserving and sustaining the use of  
27 the fisheries resources.

28 Q If you could turn to page 8 of the Oceans Action  
29 Plan, Mr. Lunn. And if you could blow up the  
30 third paragraph down which is just below the  
31 second bullet point there. So after this  
32 description of emerging industries, non-  
33 consumptive uses, the second bullet point down  
34 says:

35  
36 Non-consumptive uses of the oceans  
37 environment --

38  
39 Sorry, that's just above that third paragraph.

40  
41 Cabling for telecommunications, oil and gas  
42 pipelines, et cetera, often experience  
43 conflict due to a lack of planning concerns  
44 about lost access to ocean areas. Solutions  
45 to these problems can be found in new  
46 management models founded on the three  
47 principles of Canada's **Oceans Act** -

1                   sustainable development, precautionary  
2                   approach and integrated management.  
3

4                   So I guess I'm not seeing ecosystem-based  
5                   management mentioned here and so again, I'm just  
6                   -- we're trying to understand whether it is DFO's  
7                   perspective that ecosystem-based management comes  
8                   first and integrated management for sustainable  
9                   development is embedded within that approach and  
10                  that we're concerned about precautionary  
11                  principles and we're concerned about a holistic  
12                  approach for purposes of conservation or are we  
13                  more concerned with sustainable development and  
14                  developing sort of offshore gas and oil and other  
15                  types of activities that use the ocean?

16       MR. REID: I think there's a -- first of all, in  
17                  preparing integrated management plan or  
18                  considering integrated management the key  
19                  foundation is the system-based management  
20                  principles and I think there's a balance between  
21                  conserving and sustaining the use of ocean  
22                  resources with those industries that are using  
23                  that area.

24       Q       Thank you. My last question is for you, Dr. Ross,  
25                  and it's related to Exhibit 1381 and if you could  
26                  just pull that up, Mr. Lunn. And it's the  
27                  PowerPoint presentation that you and your  
28                  colleagues created. And if we could just go to  
29                  page 17 of the document. And on the right-hand  
30                  side there's the third bullet point down, and here  
31                  you say:

32                               Guidelines do not exist for salmon.  
33

34                               And then:  
35

36                               Only exist for a few contaminants.  
37

38                               And then go on and at the very last sentence says:  
39

40                               Guidelines fail to protect salmon.  
41

42                               My question is what did you mean by, I guess,  
43                               guidelines fail to protect salmon and why -- and I  
44                               guess my follow-up question to that would be why  
45                               are there no guidelines for salmon?  
46

47       DR. ROSS: Thank you. We in Canada have adopted a

1 paradigm whereby guidelines are developed for  
2 water quality, sediment quality and tissue  
3 residue, which would mean looking at the tissue of  
4 a fish to see if it's safe to eat for another  
5 wildlife species or, indeed, for humans. These  
6 guidelines are of the utmost importance in guiding  
7 our habitat staff or Ministry of Environment staff  
8 in British Columbia or industries that are trying  
9 to protect the receiving waters, receiving  
10 environment. These guidelines are developed to  
11 try to protect natural resources from adverse  
12 injury. These guidelines are established to clean  
13 up areas, either at sea, contaminated sites at sea  
14 or in coastal waters or contaminated sites on  
15 land. Guidelines, for example, are designed to  
16 protect fish from acid mine drainage or runoff,  
17 from metals coming from metal mines, and they  
18 exist because we do have a wealth of knowledge  
19 from scientific studies about the toxicities of  
20 certain specific chemicals or metals, elements,  
21 and we can apply those guidelines to protect or  
22 mitigate or recover areas that are adversely  
23 impacted.

24 Challenges not only in Canada but around the  
25 world are numerous. Number one, the guidelines  
26 exist for single chemicals. There's no such thing  
27 as a guideline anywhere in the world to deal with  
28 complex mixtures of contaminants which are really  
29 the real world of fish and fish habitat. So  
30 that's one big challenge.

31 Number two, guidelines for protecting fish,  
32 for example, are developed from laboratory  
33 species. These might be rainbow trout as the test  
34 species for salmonid, might be a daphnia which is  
35 a little invertebrate. So test species are used  
36 in carefully controlled conditions in the lab,  
37 basically looking at the effects of a single  
38 chemical over the course of 96 hours to that  
39 animal and LC50 is the common read-out. That's a  
40 lethal concentration 50, so at what point do you  
41 have -- at what concentration do you get 50  
42 percent of your test population dying within 96  
43 hours.

44 So in terms of Fraser River sockeye, first of  
45 all, we don't have any anadromous fish that are  
46 used in terms of developing guidelines. The  
47 guidelines that are used to guide BCMOE staff or

1 indeed risk evaluation as in this report number 2  
2 by Mr. Macdonald for the commission, these  
3 guidelines were not designed to protect anadromous  
4 fish, were not designed to protect salmonids, were  
5 not designed to protect the real world complexity  
6 of fish habitat. Whether that's easy to overcome,  
7 I don't know, but I think I would argue that (a)  
8 we need more research and supportive guidelines;  
9 (b) we have to recognize the deficiencies of these  
10 guidelines and assume, I think, that a  
11 precautionary approach would be advantageous as we  
12 looked at the particular vulnerabilities of  
13 migratory fish in the anadromous corridor such as  
14 the Fraser River.

15 Q Thank you, Dr. Ross. The only other thing I  
16 realize I failed to do was on my previous  
17 document, document tab number 9, I failed to put  
18 in as an exhibit.

19 THE REGISTRAR: It will be marked as Exhibit 1390.

20  
21 EXHIBIT 1390: Canada's Oceans Action Plan  
22

23 MS. REEVES: Thank you. And those are all my  
24 questions.

25 MS. BAKER: Thank you, Mr. Commissioner. Do you have a  
26 follow-up question?

27 THE COMMISSIONER: I do, yes.  
28

29 QUESTIONS BY THE COMMISSIONER:  
30

31 Q Mr. Reid, I just wanted to just get some  
32 clarification from you. You were asked by Mr.  
33 Timberg in relation to PNCIMA about its  
34 relationship with the Wild Salmon Policy and you  
35 referred to Strategy 4. I don't know -- I can't  
36 recall the exhibit number for the Wild Salmon  
37 Policy if you need it, but it could be brought up  
38 on the screen. I have a copy of it, hard copy,  
39 and that Strategy 4 on my hard copy starts at page  
40 24, to talk about the integrated strategic  
41 planning under Strategy 4. But I wanted to take  
42 you to page 3 of the Wild Salmon Policy, just so I  
43 have an understanding of what your answer was to  
44 Mr. Timberg.

45 On page 3 under "The importance of habitat in  
46 ecosystems", and I apologize for reading this to  
47 you. I don't really have to, but I think it just

1 helps to frame my question to you. It says:

2  
3 The roles that Pacific salmon play in  
4 marine --

5  
6 And it identifies oceanic, coastal and estuarine.

7  
8 -- freshwater lake stream and wetland and  
9 terrestrial ecosystems adjacent to streams  
10 and rivers, the riparian zone, have also  
11 become a significant issue in salmon  
12 management. Acceptance of the influence of  
13 marine ecosystems on salmon survival and  
14 production has undoubtedly been one of the  
15 major advances in recent knowledge about  
16 Pacific salmonids and this policy includes  
17 actions to progressively account for  
18 ecosystem values and salmon management.

19  
20 And then it goes on to talk about habitat  
21 pressures. And it talks again about ecosystem  
22 values.

23 I was trying to just relate your answer. You  
24 moved to Strategy 4, but this page talks about the  
25 importance of habitat on ecosystems and you talk  
26 about high level planning around PNCIMA. But sort  
27 of lower level issues around the Wild Salmon  
28 Policy in relation to ecosystem management. I'm  
29 just trying to understand in terms of the Wild  
30 Salmon Policy and the statement on page 3 how this  
31 relates to what you were addressing with respect  
32 to the PNCIMA level of planning. How do these two  
33 come together? Because they're both talking about  
34 ecosystems and they're both talking about habitat  
35 pressures and they're both talking about ecosystem  
36 values and the importance to salmon. Can you just  
37 explain the linkage to me?

38 MR. REID: It's a good question and I'll do my best to  
39 explain linkage. PNCIMA is looking at -- the  
40 PNCIMA initiative is looking at the ecosystem and  
41 that large geographic area and so that area  
42 encompasses values for salmon as well as other  
43 marine species that use that area. So it's one of  
44 the many species that use that area.

45 And so at PNCIMA we are trying to gather  
46 information and as well as identify strategies  
47 that could improve the management within that

1 area, but at a larger scale and I guess the Wild  
2 Salmon Policy where there's overlap is that that  
3 area is important for salmon, but the Wild Salmon  
4 Policy Strategy 4 is talking about strategic  
5 planning at a smaller scale, a smaller geographic  
6 area. And so I think encompassed within the  
7 PNCIMA area is probably several portions of  
8 conservation units for salmon and I do think there  
9 is information that can be used under Wild Salmon  
10 Policy to inform PNCIMA initiatives. There may be  
11 outcomes of the PNCIMA initiative that can inform  
12 planning for Wild Salmon Policy.

13 Q And can I just ask you a follow-up question to  
14 that? In terms of an ecosystem approach to  
15 management I appreciate that because of statutes  
16 or policies government agencies operate in silos  
17 which are directed by their particular statute or  
18 particular policy, but in the case of an ecosystem  
19 approach to management how do you collaborate or  
20 establish a collaboration between all of those who  
21 were involved in the ecosystem strategy, for  
22 example, Environment Canada, Transport Canada,  
23 Fisheries and Oceans and I'm sure there are  
24 others, are each of these agencies, government  
25 agencies, developing their own ecosystem approach  
26 to management or are you collaborating effectively  
27 and aggressively to ensure that you're not re-  
28 inventing the wheel as you move forward with this  
29 new approach to managing the ecosystem?

30 MR. REID: So I have two parts -- two-part answer to  
31 your question. First of all in the PNCIMA  
32 initiative, we actually have set up a governance  
33 structure, steering committee that has  
34 representation from Transport Canada, Parks  
35 Canada, Environment Canada, Port of Prince Rupert  
36 and First Nations in the Province of B.C. So  
37 there is a way there to bring in that knowledge  
38 and expertise when we are contemplating ecosystem-  
39 based management framework and approach for PNCIMA  
40 initiative.

41 You're also aware that our department,  
42 through that presentation we saw earlier, we're  
43 putting our mind to how we approach ecosystem  
44 approaches to management. I think there's  
45 considerable thinking that's going on right now  
46 around that within Fisheries and Oceans.

47 There are occasions when we are asked to

45

PANEL NO. 53

Questions by the Commissioner

Cross-exam by Ms. Gaertner (FNC)

Cross-exam by Mr. Timberg (cont'd) (CAN)

1 participate in discussions about this with, say,  
2 Parks Canada relative to the Gwaii Haanas National  
3 Marine Conservation Area in the southern part of  
4 Haida Gwaii and similarly with Environment Canada  
5 when we are participating in committees to do with  
6 the establishment of a marine national wildlife  
7 area on Scott Islands, those do allow us some  
8 opportunity to understand other departments'  
9 approach to ecosystem-based management.

10 THE COMMISSIONER: Thank you. Ms. Gaertner?

11 MS. GAERTNER: Mr. Commissioner, just following up on  
12 that question you asked about the Wild Salmon  
13 Policy and the planning units and how that works  
14 with the PNCIMA efforts.  
15

16 CROSS-EXAMINATION BY MS. GAERTNER:  
17

18 Q If you go back to the Haida map for a moment,  
19 which is the last page on 1345, I'll just ask Mr.  
20 Reid this, which is this map was produced as part  
21 of the effort of PNCIMA and you'll agree with me  
22 that when you look at a map like this, you'll have  
23 what I call gold from a Wild Salmon Policy  
24 planning perspective. You've got additional  
25 information on the overlap of different species,  
26 you've got ecosystems identification becoming  
27 readily more available. There's a whole layer of  
28 information that you didn't have before that you  
29 would now have sitting down at a Wild Salmon  
30 Policy discussion on Strategy 4; would you agree  
31 with me on that?

32 MR. REID: Certainly, you know, information is a  
33 critical part of any planning process and, you  
34 know, the information here would be -- would  
35 certainly contribute definitely to that.

36 Q And this was imperative by the First Nations that  
37 were involved in the PNCIMA that we get started  
38 with this kind of planning for this effort?

39 MR. REID: That's my understanding, yes.

40 MS. GAERTNER: Okay.

41 MS. BAKER: Do you have any re-examination?

42 MR. TIMBERG: Mr. Commissioner, I have three questions  
43 on redirect.  
44

45 CROSS-EXAMINATION BY MR. TIMBERG, continuing:  
46

47 Q First question is for you, Mr. Di Franco. In your

August 18, 2011

1 cross-examination by Tim Leadem, he asked you  
2 about the Exhibit 1387, the Auditor-General's  
3 report on oil spills and you were asked a question  
4 about what is Canadian Coast Guard doing in  
5 response and you spoke about Canadian Coast Guard  
6 undertaking a management action plan. I'm  
7 wondering if, Mr. Registrar, we could have Tab 56  
8 from Canada's documents brought up?

9 Mr. Di Franco, are you pulling that forward  
10 in front of you there?

11 MR. DI FRANCO: Yes, I'm here.

12 Q And can you identify this document that's entitled  
13 "Environmental Response Program - Management  
14 Action Plan to Respond to Audit Recommendations"?

15 MR. DI FRANCO: Yes. Basically this document was  
16 created after the auditor-general's report came  
17 out and basically what it does is it lists the  
18 recommendations that are in the auditor-general's  
19 report and lists what they are and describes what  
20 our response is and describes the actions that we  
21 have taken to date and the actions that are  
22 outstanding. So basically, it showed what the  
23 Environmental Response Program is doing in  
24 response to each of the recommendations of the  
25 auditor-general.

26 MR. TIMBERG: Thank you. And if I could have this be  
27 marked as the next exhibit, please?

28 THE REGISTRAR: Exhibit 1391.

29  
30 EXHIBIT 1391: Environmental Response Program  
31 - Management Action Plan to Respond to Audit  
32 Recommendations  
33

34 MR. TIMBERG:

35 Q And a follow-up question from Mr. Leadem is he  
36 asked what the Coast Guard was doing to inform the  
37 Department of Fisheries and Oceans to follow up to  
38 this auditor-general's report and you'll agree  
39 that the Coast Guard is part of the Department of  
40 Fisheries and Oceans as they report to the Deputy  
41 Minister of the Department of Fisheries and  
42 Oceans?

43 MR. DI FRANCO: Yes.

44 Q Thank you. Then a second question for you, Mr. Di  
45 Franco. You were asked by Ms. Reeves for the  
46 First Nations Coalition if the Canadian Coast  
47 Guard should be contacting First Nations for every

1           single spill and you gave a short answer of "no".  
2           And I'm wondering if you can elaborate on why it's  
3           your evidence that First Nations are not contacted  
4           in every case?

5       MR. DI FRANCO: Well, one has to understand the types  
6       of incidents that the Coast Guard deals with on a  
7       daily basis. The majority of the spills we deal  
8       with are small, very minor spills of oil that are  
9       very, very difficult to pick up because of their  
10       small volumes or, you know, it can be small volume  
11       or it could be where the spill occurred. Some of  
12       these audits are extremely difficult to pick up  
13       and even if you tried to pick these oils up, you  
14       couldn't pick anything up, because sorbent pads or  
15       sorbent boom or skimmers or containment boom  
16       wouldn't do anything to pick this stuff up. So  
17       the best response in a lot of those cases is to  
18       let sunlight, wave action and the dispersion of  
19       the oil itself take care of the diesel or of the  
20       contaminant, depending on what it is. So the  
21       majority of these spills that we deal with are  
22       very small. Many of them occur within harbours or  
23       ports. Many of them -- and the majority of them  
24       do not really impact First Nations areas, so in  
25       terms of a response, the response would be an  
26       assessment and after the assessment, you know, it  
27       would be determined that not much could be done  
28       with respect to the response.

29           Now, if, you know, for certain if the spill  
30       was more significant and other resources at risk  
31       were going to be impacted, then absolutely the  
32       Coast Guard would begin to escalate the response  
33       as appropriate, so, you know, we don't -- the  
34       Coast Guard does not contact First Nations for  
35       every spill because not every spill that the Coast  
36       Guard deals with warrants an escalated response.  
37       The majority of them are just too small, too  
38       insignificant for any further action.

39           In some examples, in some cases we respond to  
40       what some people think are -- it is oil, but it  
41       could be algae blooms or pollen, you know, things  
42       that aren't even oil. So that's what the  
43       assessment does. It basically verifies the  
44       pollution incident, determines the source, the  
45       type, the product, the amount, the condition, et  
46       cetera, et cetera, resources at risk and from that  
47       point on, we will make an assessment to what

1 further action needs to be taken and we'll  
2 escalate it from there. And in some cases no  
3 pollution is found at all, there's absolutely no  
4 pollution. We will go, do the assessment, and  
5 there's no pollution found at all. So no, not  
6 every spill warrants First Nations being  
7 contacted.

8 Q Thank you. And my final follow-up, redirect, Mr.  
9 Commissioner, is with respect to your final  
10 question. If we could just have Exhibit 1383  
11 brought up regarding the governance question. Mr.  
12 Reid, you provided description of the governance  
13 of the PNCIMA and I'm thinking it may be helpful  
14 if we look at page 5, 6 and 7, perhaps just  
15 briefly. 5 starts with recent -- that's correct.  
16 Governance. And Mr. Reid, I'll just ask you to  
17 look at this page and then if we could perhaps  
18 just look at the next page -- the next page, Mr.  
19 Registrar, please. Oh, it's up. And then the  
20 third page, the IOAC membership.

21 And perhaps you could just, having reviewed  
22 those three, could you just -- does this help us?  
23 Does it help you explain how the governance  
24 structure works and who's involved in PNCIMA and  
25 the multiple stakeholders?

26 MR. REID: Yes, so as I mentioned earlier, Mr.  
27 Commissioner, there's a memorandum of  
28 understanding, referred to as a collaborative  
29 governance MOU between Government of Canada,  
30 British Columbia, and there's three First Nations  
31 organizations. And so that MOU establishes a  
32 steering committee, as well as a secretariat now  
33 referred to as a planning office. So some of the  
34 documents you saw were produced by the PNCIMA  
35 planning office.

36 Essentially the steering committee is made up  
37 of representatives from each of those parties and  
38 I identify which federal government agencies are  
39 participating in it. In addition, the -- as part  
40 of that stakeholder engagement strategy it was  
41 recommended that we develop a stakeholder  
42 committee and it is referred to as the Integrated  
43 Oceans Advisory Committee. And so the IOAC, as  
44 it's referred to, membership consists of those key  
45 stakeholders that have an interest and in the  
46 PNCIMA area, so there are representatives to the  
47 commercial fishing industry, we have regional

1 districts represented, the marine conservation  
2 sector or environmental non-government  
3 organizations are represented, marine recreation,  
4 marine tourism, recreational fishing, renewable  
5 energy, non-renewable energy, shellfish and  
6 finfish aquaculture and shipping and  
7 transportation sectors. So it's a mixture of  
8 those parties who are interested.

9 This particular committee is providing advice  
10 to the PNCIMA initiative on our ecosystem-based  
11 management framework, on -- and we'll be doing  
12 work on specific areas of interest such as  
13 fishing, marine protection, marine transportation  
14 and economic strategies.

15 MR. TIMBERG: Thank you. Those are all my questions.

16 THE COMMISSIONER: Thank you.

17 MS. BAKER: Mr. Commissioner, I just unfortunately have  
18 to ask one quick question.

19  
20 RE-EXAMINATION BY MS. BAKER:

21  
22 Q In terms of -- Mr. Reid, in terms of the CUs  
23 addressed in PNCIMA planning, are any of those CUs  
24 Fraser River sockeye?

25 MR. REID: I'm not able to comment on that. And I'm  
26 just not familiar with all the boundaries of the  
27 conservation units. Because of the geographic  
28 boundary of PNCIMA which ends in southern part of  
29 Strait of -- or Campbell River, I'm just not sure.

30 MS. BAKER: Okay. Those are all my questions. We're  
31 quite a bit behind schedule now, so I would like  
32 to start with Robin Brown, even though we only  
33 have ten minutes left. So thank you very much to  
34 all the witnesses that were here for this panel.

35 THE COMMISSIONER: Yes, thank you to the witnesses and  
36 to Mr. Di Franco, who was attending by Skype.  
37 Thank you very much.

38  
39 (PANEL NO. 53 EXCUSED)

40  
41 MS. BAKER: Mr. Commissioner, while people are moving  
42 around, I'll just give you that it's Exhibit 1203  
43 and 1201, the MOU for the PNCIMA --

44 THE COMMISSIONER: Thank you.

45 MS. BAKER: 1203 and 1201.

46 THE REGISTRAR: Okay, Mr. Di Franco, we're going to  
47 shut down now. Thank you very kindly for your

50  
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1 participation.  
2 MR. DI FRANCO: Okay. You're welcome. Thank you.  
3 MS. BAKER: Thank you.

4  
5 (TELECONFERENCE CONCLUDED)  
6

7 MS. BAKER: Thank you, Mr. Commissioner. Our next  
8 witness is Robin Brown, who is the division head  
9 of Ocean Sciences -- the Ocean Science Division  
10 and be sworn in.

11 THE COMMISSIONER: His mike is off.

12 THE REGISTRAR: Yes. Thank you.

13  
14 ROBIN BROWN, affirmed.  
15

16 THE REGISTRAR: Would you state your name, please?

17 A Robin Brown.

18 THE REGISTRAR: Thank you. Counsel?

19 MS. BAKER: Thank you.  
20

21 EXAMINATION IN CHIEF BY MS. BAKER:  
22

23 Q Mr. Brown, your c.v. is at Tab 18 of the  
24 commission's documents and it'll be pulled up on  
25 the screen in a second.

26 MR. LUNN: Sorry?

27 MS. BAKER: 18.

28 MR. LUNN: Thank you.

29 MS. BAKER:

30 Q Is that your c.v.?

31 A Yes, it is.

32 Q All right. And I described your present title as  
33 being Division Head of the Ocean Science and  
34 Productivity Division at the Institute of Ocean  
35 Sciences; is that correct?

36 A Not technically correctly correct. That division  
37 is renamed the Ocean Sciences Division from the  
38 Ocean Productivity Division.

39 Q Okay. But you're at the Institute of Ocean  
40 Sciences?

41 A I am at the Institute of Ocean Sciences.

42 MS. BAKER: Okay. Thank you. I'd like that marked,  
43 please, as the next exhibit.

44 THE REGISTRAR: That's 1392.  
45

46 EXHIBIT 1392: *Curriculum vitae* of Robin  
47 Brown

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1 MS. BAKER:

2 Q Thank you. Yesterday I asked Mr. Reid about a  
3 document "Canada's Oceans Strategy" which was  
4 released in 2006 and that's been marked actually  
5 as Exhibit 263 in these proceedings. Just to get  
6 that pulled up. It's in Tab 25 of the  
7 commission's binder, if you would like to have a  
8 paper copy in front of you.

9 All right. You're familiar with this?

10 A Yes, I am.

11 Q If you can turn to -- well, first of all, just  
12 start in the small Roman numeral "v", just  
13 identifies that Canada's Oceans Strategy --

14 MR. LUNN: Sorry? Page number again?

15 MS. BAKER: It's Roman numeral "v". There. Yes.  
16 There.

17 Q Under the Executive Summary it identifies that:

18  
19 Canada's Ocean Strategy is the Government of  
20 Canada's policy statement for the management  
21 of estuarine coastal and marine ecosystems.  
22

23 That's correct?

24 A Yes.

25 Q All right. And on page 22 of this document, a  
26 number of activities are set out relating to  
27 scientific knowledge and understanding in  
28 protecting the marine environment and you'll see  
29 under the heading "Understanding and Protecting  
30 the Marine Environment" there's a bullet:  
31

32 Improved scientific knowledge base for  
33 estuarine, coastal and marine ecosystems.  
34

35 And underneath that are a number of different  
36 bullets and I'm wondering if we could review those  
37 and you could let me -- let us know what DFO, from  
38 a DFO science perspective, what has been done in  
39 relation to these bullets. And in doing this, if  
40 you could look at bullets 1 and 3 I think are  
41 related together and we could just go through  
42 that?

43 A Right. So the first part about collection,  
44 monitoring, dissemination and related to that  
45 state of the oceans reporting, we have done quite  
46 a bit of work within DFO Science and with some  
47 collaborators in enhancing a state of the ocean

1 reporting system and this was designed to address  
2 a number of things, including some aspects of Wild  
3 Salmon Policy, Strategy 3, but also to try and get  
4 at this issue of how do climate and human  
5 activities affect what's going on in marine  
6 ecosystems and how do we include that in our  
7 planning.

8 Q Okay. And have you -- one of the -- the last  
9 statement under the first bullet is:

10  
11 ...including the integration of traditional  
12 ecological knowledge.  
13

14 Has there been any advances there?

15 A Very limited. When we did a PNCIMA ecosystem  
16 overview, that's a long document that's in the  
17 list there, and one of the -- one of the decision  
18 points we had to go through was how are we going  
19 to deal with traditional ecological knowledge in  
20 this ecosystem overview. And at the time that we  
21 were tasked to do this work, we did meet with  
22 First Nations who were independently and for other  
23 good reasons embarking on their own plans on data  
24 assembly of traditional ecological knowledge and  
25 the time span that we were allocated for doing our  
26 report was not compatible with the First Nations  
27 being able to take that -- their initiative to  
28 completion so that it could be included. So we  
29 had a couple of rounds of discussions with First  
30 Nations and we all kind of agreed that  
31 disappointed as we were, these things were not  
32 properly aligned in time so that the ecosystem  
33 overview could include some of the material which  
34 has been presented here, which has subsequently  
35 appeared.

36 Q You talked about the state of the oceans reports  
37 and we've seen some of those already in this  
38 inquiry. There's a document that we have in our  
39 materials which is called the Canadian  
40 Biodiversity Ecosystem Status and Trends document  
41 2010, is that related at all to the work you're  
42 doing?

43 A Yes, it is. This has been the growth decade for  
44 ecosystem reporting.

45 Q Tab 36.

46 A So in the region we have a State of Pacific Ocean  
47 Report that we do annually. That fed into three

1 reports from the Pacific Region that went to a  
2 national DFO State of Canadian Marine Ecosystems  
3 Report.

4 Q Mm-hmm.

5 A And the advice that came out of that report went  
6 into the Canadian biodiversity report which we now  
7 have in front of us.

8 Q Okay.

9 A So a long process.

10 MS. BAKER: Thank you. I'll have -- could I have the  
11 -- I'm just, in terms of mechanics here, I think  
12 we have a website referring to this document, but  
13 the actual document itself doesn't appear to be in  
14 the system. So I think over the lunch break,  
15 we'll clear that up and have the actual document  
16 pulled up on the system. So I will eventually get  
17 that marked, but we'll do that after lunch.

18 Q Bullet number 2 --

19 THE COMMISSIONER: Would this be a good place to take  
20 the lunch break?

21 MS. BAKER: Could we get through another bullet before  
22 the lunch break?

23 Q Bullet number 2 back in the Ocean Strategy  
24 document which is again on page 22, I'll just read  
25 it out. It says:

26  
27 Better understand ecosystem dynamics  
28 including climate, variability and the  
29 impacts of climate (sic) on living marine  
30 resources, as well as a new orientation  
31 towards operational oceanography.

32  
33 Has any work been done under that heading?

34 A Yes. Work have been done on a sequence of  
35 scientific publications that get at bits and  
36 pieces of what is climate variability answering  
37 some of the questions on ecosystem dynamics but  
38 not all of them and change on living marine  
39 resources and modest progress on operational  
40 oceanography.

41 Q Thank you. And bullet number 3 we've talked  
42 about. Number 4:

43  
44 Promote academic liaison on oceans research  
45 for and among natural and social sciences,  
46 especially through the Oceans Management  
47 Research Network;

- 1  
2 A So there's a great deal of work done in DFO  
3 Science with academics. In my group, we have  
4 about 23 research scientists on staff. Almost  
5 everyone is an adjunct professor at one or more  
6 Canadian universities. There's a long list of  
7 collaborative projects and networks, some funded  
8 through the National Science and Engineering  
9 Research Council, NSERC, you will have heard about  
10 earlier, where DFO scientists play an active role.  
11 In some respects, this is the Canadian advantage.  
12 We don't really have enough experts to have  
13 separate clubs in academia and separate clubs of  
14 experts within government. There just aren't  
15 enough of us. So scientists are well-connected  
16 across their various employers.
- 17 Q And what about the Oceans Management Research  
18 Network?
- 19 A So the Ocean Management -- as I understand it, the  
20 Oceans Management Research Network, which is kind  
21 of an unusual title, because it's a research  
22 network about oceans management, not a research  
23 network about oceans, was supported fairly  
24 strongly in the early phases and for reasons that  
25 I don't understand seems to have faded from the  
26 scene and not currently, as far as I can tell,  
27 having a lot of influence. I don't understand  
28 why.
- 29 Q The last bullet before the break:  
30  
31 Strengthen the co-ordination of ocean science  
32 in support of ocean management.  
33
- 34 Has anything been done in that respect?
- 35 A Quite a bit has been done within the Science  
36 Branch. We have identified one lead person to  
37 represent all of the divisions working with the  
38 Oceans Group that Mr. Reid heads up and that  
39 person is me. So we have reoriented some of our  
40 activity. Traditionally Science in the region  
41 provided a lot of advice to fisheries and  
42 aquaculture management, some advice to habitat.  
43 Now it's a little more balanced.
- 44 MS. BAKER: Okay.  
45 THE COMMISSIONER: We'll take a break then.  
46 MS. BAKER: Thank you.  
47 THE REGISTRAR: Hearing is now adjourned until 2:00

55  
Robin Brown  
In chief by Ms. Baker

1 p.m.  
2

3 (PROCEEDINGS ADJOURNED FOR NOON RECESS)  
4 (PROCEEDINGS RECONVENED)  
5

6 THE REGISTRAR: The hearing is now resumed.

7 MS. BAKER: Thank you. Mr. Commissioner, we had tried  
8 to pull this document up before the break and had  
9 a technical glitch, so it's now on the screen.

10  
11 EXAMINATION IN CHIEF BY MS. BAKER, continuing:  
12

13 Q Canadian biodiversity: ecosystem status and trends  
14 2010. That's the document you were referring to  
15 earlier, Mr. Brown?

16 A Yes, it is.

17 MS. BAKER: All right. Could I have that marked,  
18 please, as the next exhibit?

19 THE REGISTRAR: Exhibit number 1393.  
20

21 EXHIBIT 1393: Canadian biodiversity:  
22 ecosystem status and trends 2010  
23

24 MS. BAKER:

25 Q All right. I'd like to now turn to a document  
26 that's at Tab 9 of the commission's list which is  
27 a 2006 CSAS document titled "Aquatic Monitoring in  
28 Canada, A Report from the DFO Science Monitoring  
29 Implementation Team". Are you familiar with this  
30 document?

31 A Yes, I am.

32 Q Okay. And were you on that team?

33 A Yes, I was a member of the team from the Pacific  
34 Region.

35 MS. BAKER: Okay. I'll just have that marked, please.

36 THE REGISTRAR: 1394.  
37

38 EXHIBIT 1394: Aquatic Monitoring in Canada,  
39 A Report from the DFO Science Monitoring  
40 Implementation Team  
41

42 MS. BAKER:

43 Q Thank you. And why was this report prepared?

44 A Largely it was aimed at understanding what we were  
45 doing in monitoring the oceans, particularly that  
46 which takes place from research vessels with the  
47 goal of consolidating, rationalizing, reducing the

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- 1 costs of shift time to the overall program.
- 2 Q And the data that's in this report, I guess, would  
3 be current to what, to 2005?
- 4 A Probably 2005, 2004 as we go back through  
5 historical records where some of them aren't so up  
6 to date.
- 7 Q Okay. And has the situation with respect to  
8 aquatic monitoring as reflected in this report  
9 improved or changed since this report was done?
- 10 A It hasn't improved. Some things are a little more  
11 clearer than they were. The department and the  
12 branch continues to struggle with the -- our  
13 budget allocation that we assign for research  
14 vessels is insufficient to pay for our current  
15 usage and that financial gap is quite large, so  
16 that gap has to be made up somewhere.
- 17 Q Just while we're on that topic, maybe I could just  
18 jump ahead to something I was going to take you to  
19 at the end. You have provided us with a document  
20 setting out some of the costing for vessel  
21 research time and that's at Tab 34. What does  
22 this document tell us?
- 23 A So this is a summary of how many days each of the  
24 major research vessels were used by year for DFO  
25 Science and for other users. The Coast Guard had  
26 a mandate to provide access to research vessel  
27 time for other federal government departments so  
28 not all of the allocation of Science vessel time  
29 is for DFO Science.
- 30 Q All right. And over the -- so this is from 2004  
31 to the current time. Has the funding for vessel  
32 usage decreased then over that time period?
- 33 A So the funding, the amount of money transferred to  
34 Coast Guard to provide has gone up. The number of  
35 days that are provided has gone down. Cost for  
36 ship time in Canada and every other jurisdiction  
37 that I'm familiar with has gone up sort of --  
38 quite a bit faster than the rate of inflation.  
39 Ships use lots of fuel. Fuel has gone up a lot.  
40 So it's your classic squeeze play.
- 41 Q All right. So your days on the boats have gone  
42 down, although the funding has stayed either the  
43 same or gone up?
- 44 A It has gone up.
- 45 Q Okay.
- 46 A And the gap between what we budget for and what we  
47 actually end up paying has gotten larger.

1 Q And is that relevant to what we're here talking  
2 about in this commission, the long-term  
3 sustainability of Fraser River sockeye?

4 A It may be. The programs that you've heard about  
5 from Dr. Beamish and Dr. Trudel, those are both  
6 programs that use significant amount of the larger  
7 vessel time, the *W.E. Ricker* is a trawler in which  
8 the juvenile salmon trawling program takes place.  
9 It's a big vessel. It's expensive.

10 Q We've also heard many recommendations for  
11 additional research in the ocean environment and  
12 that would, I take it, also use these sorts of  
13 vessels?

14 A Very likely. So we spend a lot of time optimizing  
15 these and a lot of time saying no.

16 MS. BAKER: Sorry, turning back to the -- oh, sorry,  
17 yes. I should mark that vessel usage table as the  
18 next exhibit.

19 THE REGISTRAR: 1395.

20  
21 EXHIBIT 1395: DFO Science Pacific Region  
22 Vessel Usage Table  
23

24 MS. BAKER:

25 Q Thank you. I'd like to turn back to the 2006 CSAS  
26 document. All right. If we turn to page 32 of  
27 this in the ringtail numbers, page 32 it would be  
28 page 26 of the document itself. Thank you. At  
29 the top of the page there's some numbered  
30 paragraphs and under paragraph 6 it reads:

31  
32 There is considerable confusion with regard  
33 to the monitoring of contaminants.  
34 Environment Canada monitors point source.  
35 DFO monitored contaminants in Great Lakes  
36 fishes for the past 29 years, but the  
37 transfer of this activity to Environment  
38 Canada is currently being discussed.  
39

40 And it carries on with the work that at that time  
41 had been done by DFO. What do you -- can you  
42 explain what's meant by the confusion with regard  
43 to the monitoring of contaminants?

44 A So there was confusion between the mandates of the  
45 two departments, Environment Canada and DFO.  
46 There was concern about overlap in some areas.  
47 There was concern about underlap in areas where

1           neither department was really doing very much and  
2           the way it sort of shook out is that there was a  
3           realization that in the marine environment in  
4           particular, Environment Canada didn't have much  
5           capacity, didn't have much programs. And Peter  
6           Ross talked a bit about that earlier.

7           Q    All right. And has that confusion been resolved  
8           yet?

9           A    Yeah, it has been somewhat resolved. When this  
10           document -- this document was in preparation in  
11           2005. It ends up with a 2006 date, but also in  
12           2005 we implemented some expenditure review  
13           committee reductions in the department and one of  
14           the areas that was targeted for reduction was the  
15           contaminants program. So nationally in that  
16           program it was basically a third left, a third  
17           reorganized and shuffled around and roughly a  
18           third of the budget including the budget for  
19           people reduced.

20          Q    Reduced?

21          A    Yeah.

22          Q    Isn't it the case that, in fact, contaminants in  
23           the marine environment are currently not being  
24           addressed by Environment Canada and there's no  
25           funding available in DFO for that work to  
26           continue?

27          A    It's very limited funding available. You know, in  
28           fact, you know, a lot of the funding that we have  
29           pays for people's time, like Dr. Ross, the  
30           infrastructure that supports it, but the cash to  
31           get out and do research programs has been very  
32           hard to find inside DFO.

33          Q    So you would agree with the comments that Dr. Ross  
34           made earlier today when you were in the gallery  
35           and listening to him?

36          A    Yes.

37          Q    I'd like to turn then to page 37 of the ringtail  
38           document numbering, it would be 31 in the document  
39           itself. Under the heading "10.8 Monitoring  
40           Ecosystem Health" there is a statement under the  
41           first paragraph where it says:

42  
43                   Monitoring of contaminants in water, sediment  
44                   and biota is a major concern of most  
45                   Canadians. There needs to be a  
46                   rationalization of work conducted by DFO,  
47                   Environment Canada, NRCan and Health Canada

1 to ensure that these concerns are met as  
2 outlined in the Health of the Oceans portion  
3 of Canada's Oceans Action Plan.

4  
5 Can you tell us what has happened there? Has  
6 there been a rationalization of those different  
7 agencies within Canada? Is the confusion still  
8 present?

9 A To the best of my knowledge nothing of substance  
10 has happened. This was written assuming and in  
11 reference to the -- was discussed earlier with Mr.  
12 Reid about the marine environmental quality  
13 guidelines. It was assumed at the time well that  
14 was -- that would frame the discussion across  
15 federal government departments about who's doing  
16 what and what exactly is it we have in mind. And  
17 that, as he pointed out, the policy guidelines  
18 were never developed.

19 Q Okay. And then just turning to the previous page  
20 in the document. It's under the heading "10.4  
21 Monitoring to Protect Fish Habitat". The final  
22 paragraph says:

23  
24 Another gap is the ability to assess  
25 cumulative impacts.

26  
27 It talks a little bit about some work that's being  
28 done but identifies it as a gap. Is that gap  
29 still present or has there been some movement in  
30 the assessment of cumulative impacts?

31 A Very modest movement. This is a very difficult  
32 research area in marine ecosystems and in  
33 ecosystems generally. Unlike the human health  
34 situation, where we have large sample sizes and  
35 long studies and we can partition if people in the  
36 population are dying of heart attacks at a certain  
37 rate, we have enough data to say well, it's partly  
38 genetics and it's partly your diet and it's partly  
39 your exercise regime. We can't do the equivalent  
40 analysis in marine ecosystems, so we know the  
41 cumulative effects are likely at play but figuring  
42 out which ones are important and how important  
43 they are is difficult.

44 MS. BAKER: Could I ask for Canada's document number 10  
45 to be brought up?

46 Q Now, this is a document that's titled "Pacific  
47 Marine Monitoring Program" and it's dated August

60  
Robin Brown  
In chief by Ms. Baker

1           26th, 2008 and you appear to be the author of it  
2           so you're familiar with this document.

3       A     I am intimately familiar with this document.

4       Q     All right. It's stated to be a draft. Is it still  
5           a draft or has this been finalized?

6       A     It's still a draft.

7       Q     Okay. And does this follow up on the CSAS  
8           document we were just looking at?

9       A     Yes, it does.

10      MS. BAKER: Okay. I don't think I marked that CSAS  
11           document, did I? Yes, I did. Okay. So I'd like  
12           to have this Pacific Marine Monitoring Program  
13           marked as the next exhibit.

14      THE REGISTRAR: 1396.

15      MS. BAKER: Thank you.

16

17                   EXHIBIT 1396: Pacific Marine Monitoring  
18                   Program - August 26, 2008

19

20      MS. BAKER:

21      Q     All right. And why was this monitoring program  
22           report prepared?

23      A     The national science directors, so those are the  
24           people at the level of my boss across the country,  
25           found the 2006 report unrewarding in some areas,  
26           so they tasked people to write another kind of  
27           report and so this was a way of addressing that.

28      Q     Okay. And is it still current and accurate?

29      A     It's reasonably accurate.

30      Q     If you turn to page 7 of this document under the  
31           Pacific Monitoring Program results, is that still  
32           current?

33      A     Yes, these are substantively -- it's current as of  
34           2008. And very little has changed.

35      Q     All right. And paragraph 7 again refers to I  
36           think what you were just talking about:

37

38                   The marine environmental quality monitor  
39                   program is very weak. Existing efforts are  
40                   *ad hoc*. DFO mandate in some of this area is  
41                   vague.

42

43      A     Yes.

44      Q     And is that referring again to the Environment  
45           Canada/DFO conundrum over who's looking after  
46           contaminants?

47      A     And Health Canada and Indian Northern Affairs for

1           some components so, yeah.

2           Q     All right. And so that still has not been  
3                 clarified as to who's taking responsibility for --

4           A     No.

5           Q     -- contaminants in the marine environment.

6                 Yesterday we heard from Dr. Rensel about harmful  
7                 algal blooms in the Strait of Georgia and you're,  
8                 of course, familiar with that hypothesis?

9           A     I am.

10          Q     Okay. And we marked yesterday a document, Exhibit  
11                 now 1371, which is the June 2011 briefing note to  
12                 the deputy minister on the 2009 sockeye return;  
13                 are you familiar with that?

14          A     Yeah.

15          Q     Okay. This document identifies the harmful algal  
16                 bloom theory or hypothesis as a viable hypothesis  
17                 to explain the decline or the loss of the fish in  
18                 2009 and do you think that is still a viable  
19                 hypothesis yourself?

20          A     Yes, I do.

21          Q     All right. And that's the same -- that hypothesis  
22                 in the 2011 document is given the same ranking  
23                 that it was given in 2009 in Exhibit 616A which  
24                 was a briefing note in 2009; do you recall that?

25          A     Yes, but I recall two sets of rankings. There was  
26                 the ranking and I can't remember if it's in both  
27                 briefing notes, there's the ranking about the  
28                 likelihood that a hypothesis could explain the  
29                 2009 very poor returns, and then there was a  
30                 separate attempt to rank, well, if -- how good  
31                 would these hypotheses be at explaining long-term  
32                 decline. So there's some difference in those and  
33                 various hypotheses may score differently in their  
34                 perceived ability to explain those phenomena.

35          Q     All right. Well, let's have a look then. If we  
36                 flip through the documents on the screen which is  
37                 Exhibit 1371 to I think the second page is where  
38                 we find it. Yes, the next page actually. No,  
39                 it's the third page, sorry. There we go.

40

41                         Based on the most recent analysis the  
42                         following factors are most likely to have led  
43                         to the sockeye mortality at the scale  
44                         observed in 2009.

45

46                         And number 4 is toxic algal blooms.

47          A     Right. So that's addressing the one criteria.

1 Q All right. And then 616(a) if that could be  
2 brought up, and just flip through that, as well.  
3 So harmful algal blooms are at the bottom, the  
4 third bullet, where it says:

5  
6 The following factors could possibly have led  
7 to sockeye mortality at the scale observed.

8  
9 Toxic algal blooms is on that list, as well.

10 A Yeah.

11 Q Okay. Now, we've heard so far in this inquiry  
12 that there has been no research done by DFO for a  
13 number of years on harmful algal blooms; is that  
14 correct?

15 A Yes, that's correct.

16 Q And --

17 A Well, it's correct in the Pacific Region.

18 Q Right. How did this conclusion get advanced or  
19 this hypothesis get advanced and analysed for the  
20 deputy minister if there's no work being done by  
21 DFO Science in that area?

22 A DFO Science doesn't operate in a vacuum. I think  
23 I referred earlier, it's a fairly small community  
24 of scientists and community of practitioners, so  
25 our scientists were aware, some of them, including  
26 me, were in consultation with Dr. Rensel as he was  
27 developing his hypothesis. I actually tasked some  
28 of my staff to provide some data and some figures  
29 that might help him develop it, so this was not  
30 our work. We're certainly not claiming it is our  
31 work. But it is the case that we're fully aware  
32 of it and have some respect for the work that was  
33 done.

34 Q All right. And the suggestion that came forward  
35 through Dr. Rensel's testimony was that after 2004  
36 DFO stopped participating in harmful algal bloom  
37 program; is that correct?

38 A That's correct.

39 Q And why did DFO stop participating in that  
40 monitoring and analysis program.

41 A As I understand the history there was a period  
42 leading up to 2004/2005 where the department had  
43 some very specific funding to look at harmful  
44 algal blooms. This emanated from an experience on  
45 the East Coast where I think there were human  
46 deaths attributed to an unknown toxin in  
47 shellfish. That created a lot of concern. That

1 prompted development of an interdepartmental  
2 research program in which DFO participated. That  
3 brought some funding to the region which was used  
4 to address certain parts of it.

5 In approximately 2004, 2005 the funding ran  
6 out and the department kind of used that as  
7 evidence that the priority for this activity  
8 decreased. In fact, the substantive answer to the  
9 problem that had prompted the funding had been  
10 resolved, the toxin identified, the responsible  
11 organism identified. So the thing that brought  
12 the funding was a problem that had been solved.

13 Q All right. If I could ask you to turn to -- or  
14 bring up Exhibit for identification LL, which is  
15 an email from you to Ed Black. First of all,  
16 who's Ed Black?

17 A Ed Black is a senior advisor in Science in our  
18 Ottawa headquarters and importantly for this  
19 discussion in a previous life he did his Ph.D. on  
20 *Heterosigma*, so he's a person known to me to have  
21 some expertise in this.

22 Q Okay. So you were asked by Jack Rensel to have a  
23 look at his manuscript and you passed it on to Ed  
24 Black, it appears?

25 A Yes.

26 Q And you identified that toxic algae is a banned or  
27 at least unpopular topic in DFO --

28 A Banned might be a little flippant, but unpopular,  
29 certainly.

30 Q All right. And you were concerned that it might  
31 get some airing at the upcoming inquiry, is that  
32 our inquiry here today?

33 A Yes.

34 Q Okay.

35 A Yeah.

36 Q What happened as a result of this email? Was  
37 there any follow-up done by DFO?

38 A Other than to keep track of the progress of Dr.  
39 Rensel's work and his paper, no work.

40 Q Any changes in Science priorities as a result of  
41 this work?

42 A No. This has been identified as something we  
43 ought to consider. I suspect that this will get  
44 some additional thought as -- when we consider the  
45 recommendations that come from this commission.

46 MS. BAKER: I'd like that marked now as a full exhibit,  
47 please?

64  
Robin Brown  
In chief by Ms. Baker

1 THE REGISTRAR: 1397.  
2

3 EXHIBIT 1397: Emails between Robin Brown and  
4 Edward Black formerly marked LL for  
5 identification  
6

7 MS. BAKER:

8 Q If I could ask you to turn to Tab 16 of the  
9 commission's documents. I understand that this is  
10 a presentation -- or is this a document that was  
11 prepared for a presentation in May 2010 inside DFO  
12 looking at research that might be practical or  
13 feasible to address certain uncertainties in  
14 management as it says on the front. You were part  
15 of that, were you?

16 A I was part of the workshop where these materials  
17 were presented, yes.

18 Q And was the work looking at the decline of Fraser  
19 River sockeye salmon?

20 A Yes, it was.

21 Q And if you turn to Slide number 12, and this is --  
22 has Irvine at the top and I think that's Jim  
23 Irvine; is that right?

24 A Yes, it is.

25 Q And he's been a witness here in this inquiry and  
26 he -- did he do a presentation on harmful algal  
27 blooms?

28 A Yes, he did.

29 Q All right. And this slide proposes establishing a  
30 monitoring program for harmful algal blooms and  
31 you can see that on the slide in front of you.  
32 Would anything happen as a result of that?

33 A No. The purpose of this was to get our own ideas  
34 in order internally and there was a set of  
35 proposals advanced to provide the Regional  
36 Director of Science and others with kind of very  
37 rough cost estimates of what kinds of programs  
38 might be done to address various issues at kind  
39 of, you know, minimum, moderate and large program  
40 levels.

41 Q And where would this program fall on that scale?

42 A This would be a minimal to moderate program.

43 Q And has it been implemented at all?

44 A No, it hasn't.

45 MS. BAKER: Okay. If I could maybe ask you if there's  
46 another document that might be relevant. First of  
47 all, I'll have this document marked, please.

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65  
Robin Brown  
In chief by Ms. Baker

1 THE REGISTRAR: 1398.  
2

3 EXHIBIT 1398: Document prepared for DFO  
4 presentation in May 2010  
5

6 MS. BAKER:

7 Q At Tab 12 -- sorry, that's not the right number.  
8 Tab 32. This is a Fraser River Sockeye Proposed  
9 Research Framework Request for Projects August 6,  
10 2010; is that related at all to the slide  
11 presentation?

12 A Yes, I think this is -- think about the timing  
13 here. I think this was a consolidation of the  
14 kind of discussions that were touched on in the  
15 previous...

16 Q All right. And you had, just in your evidence  
17 just now, you had said that that slide  
18 presentation was part of a workshop to look at  
19 some of the costing and this document that's on  
20 the screen before you actually does set out  
21 costing for some of the projects. If you could  
22 just move to the second page. I'll just find the  
23 harmful algal bloom one.

24 A And it's kind of important to understand that, you  
25 know, developing these costings was not to be  
26 applied against an identified budget as of yet.  
27 It was to give the management and the department  
28 some sense of what might the costs be to proceed  
29 in certain directions.

30 Q All right. I take it there's been no decisions  
31 yet on where research will be directed or what  
32 funds will be expended towards them?

33 A No.

34 Q So if we look at page 4 of the document or  
35 paragraph -- topic 4, I'm sorry, the pages aren't  
36 numbered, 10 of 37, actually, there, at the  
37 bottom, Strait of Georgia, trawl, seine,  
38 oceanography and pelagic surveys, Jim Irvine's  
39 listed as a presenter on this and onto the next  
40 page is plankton sampling including toxicology,  
41 that's part of this program that's being proposed?

42 A Yes.

43 Q And the costing is set out below for the --

44 A Yes.

45 Q -- monitoring program. All right.

46 A Yes.

47 Q Has DFO Science in the Pacific --

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66  
Robin Brown  
In chief by Ms. Baker

1 MS. BAKER: Sorry, I should mark that as the next  
2 exhibit.

3 THE REGISTRAR: 1399.

4  
5 EXHIBIT 1399: Fraser River Sockeye -  
6 Proposed Research Framework Request for  
7 Projects - August 6, 2010  
8

9 MS. BAKER:

10 Q Thank you. Has DFO Science in the Pacific Region  
11 done anything to coordinate with the U.S.  
12 researchers that are working in Puget Sound, these  
13 are the NOAA researchers that Dr. Rensel referred  
14 to yesterday?

15 A Only a very limited basis and only pretty  
16 informal. We do participate in the PICES  
17 organization. It has a harmful algal bloom  
18 working group sub-unit. DFO staff, including  
19 myself, attend the meetings of that but we are --  
20 our participation is very modest.

21 Q You're there to learn but not to contribute to --

22 A We don't have a lot to contribute. Some academics  
23 from Canada also are involved in that and do  
24 contribute, but it's -- it's more learning.

25 Q Okay. And is there -- is there a movement to try  
26 and engage in some actual sampling that could be  
27 contributed to the U.S. researchers or cooperate  
28 with them in doing some of the research?

29 A We have done bits and pieces with U.S. harmful  
30 algal bloom researchers, not particularly targeted  
31 at this organism which has been a problem in the  
32 Strait of Georgia but targeted another organism  
33 that has been problematic out off the West Coast  
34 of Vancouver Island and particularly Washington  
35 and Oregon. So we had an integrated research  
36 program with those researchers that ran for a  
37 couple of years until the funding ran out.

38 Q And when did the funding run out for that one?

39 A 2008, I think. I'd have to check.

40 Q All right. Thank you. I'd like to move to a new  
41 topic and that's climate change, marine climate  
42 change research. Has DFO Science received funding  
43 for climate change work consistently over the last  
44 decade?

45 A We have received funding for climate change work.  
46 It hasn't been what I would describe as  
47 consistent.

August 18, 2011

- 1 Q Okay. In the early 2000s what funding did DFO  
2 Science have access to to look at climate change?
- 3 A There was funding under an interdepartmental  
4 program run by natural resources called The Panel  
5 on Energy Research and Development. In and around  
6 that time, there was something called the Canadian  
7 Climate Action Fund. There was also something  
8 called Action Plan 2000. The latter two seemed to  
9 be designed as interim programs while a larger  
10 Government of Canada framework for working on this  
11 was established.
- 12 Q And was a larger framework established?
- 13 A It's a little hard to say. The next phase of that  
14 was renamed the Clean Air Agenda and by renaming  
15 it, it kind of excluded aquatic climate change.
- 16 Q Does appear to have excluded it.
- 17 A Yes.
- 18 Q Given that title. Okay. Those other programs  
19 that you mentioned, the Canadian Climate Change  
20 Action Fund, the Action Plan 2000 and the panel on  
21 environment resource and development, I don't know  
22 if I got that right, were there fisheries and  
23 marine aspects to those programs?
- 24 A There was a fisheries aspect. Some of the natural  
25 resources -- there's a program I missed. It's the  
26 Natural Resources Climate Impacts and Adaptation  
27 Research Network and that ran through to 2005,  
28 perhaps. There was a fisheries node for that  
29 interdepartmental cross-Canada activity. That  
30 fisheries node was hosted and led out of the  
31 Pacific Biological Station by Dr. Kim Hyatt.
- 32 Q Is that over now?
- 33 A Yes, it is.
- 34 Q Has DFO ever been considered a lead agency with  
35 respect to climate change research in Canada?
- 36 A No. In Canada the responsibility alternates  
37 between Natural Resources Canada when it's  
38 considered to be an energy problem and Environment  
39 Canada when it's considered to be a weather or  
40 climate problem, but it doesn't usually include  
41 DFO leading it.
- 42 Q And does that -- does that fact that DFO is not a  
43 lead agency affect the funding that's available to  
44 DFO Science to do climate change research in the  
45 marine environment?
- 46 A Yes.
- 47 Q And how does it affect it?

1 A It negatively affects it. One of the ways the  
2 department understands what its priorities are  
3 relative to other federal departments is whether  
4 it's allocated funding for this issue, so in times  
5 of stress, if you're not funded when other federal  
6 departments are for something like climate change,  
7 that tends to be taken as a bit of a signal that  
8 it's not important for the department to do that  
9 work.

10 Q Has there been much research on climate change and  
11 the impacts on fisheries?

12 A There has been a fair bit. The West Coast of  
13 Canada within Canada is kind of a hotbed for  
14 climate change research and impacts. DFO  
15 researchers and others have published quite a bit  
16 about what can we glean from looking back  
17 historically looking at how the climate has varied  
18 and how might that help us predict what the future  
19 impacts might be. We have people working on  
20 global climate models for prediction with the  
21 Canada Centre for Climate Modelling Analysis.  
22 That's a research branch of Environment Canada so  
23 that's quite an intimate collaboration. We have  
24 -- I have two of my staff who spend essentially  
25 80, 90 percent of their time embedded in that  
26 laboratory putting in the ocean and the ocean  
27 biogeochemistry and ocean circulation so that  
28 Canada has a whole earth system model to look at,  
29 what will the globe be like in 50 years and 100  
30 years.

31 Q Can I -- I just want to turn back to a document  
32 that we've already marked now and that's the  
33 Canadian biodiversity ecosystem status and trends  
34 document and it's been marked now as Exhibit 1393.  
35 In that document there's an executive summary and  
36 I'm sorry, I don't know the page number. I would  
37 guess it's probably around page 7 or 8. The  
38 bottom corner on the right says:

39  
40 Lessons have been learned from preparing this  
41 assessment. Canada's long-term climate and  
42 hydrological monitoring programs ensure the  
43 reliability and relevance of climate and  
44 water trends in areas where station coverage  
45 is good.

46  
47 Then it also says:

1                   Equivalent monitoring of biodiversity and  
2                   ecosystems is rare... Relevant ecosystem-  
3                   level information is less available than  
4                   decision-makers may realize.  
5

6                   Is that an accurate statement today?

7           A        I think it's a really accurate statement. When I  
8                   read that statement I wished I had written it  
9                   myself.

10          Q        All right. So I want to go through a few more  
11                   climate change documents just with that in mind.  
12                   The climate change risk assessment report 2005 is  
13                   on our list at Tab 2. This document, are you  
14                   familiar with it?

15          A        Yes, I am.

16          MS. BAKER: I'll have that marked, please.

17  
18          THE REGISTRAR: 1400.

19  
20                   EXHIBIT 1400: Fisheries and Oceans Canada  
21                   Climate Change Risk Assessment Report  
22

23          MS. BAKER: Another milestone.

24          A        Or millstone.

25          Q        Why was this document prepared? How has it been  
26                   used?

27          A        Around this time the Treasury Board was  
28                   encouraging departments to do risk assessment of  
29                   major programs and to use a risk assessment  
30                   framework for making decisions about what's  
31                   important and what's not. And so this was one of  
32                   the first major applications in the department of  
33                   running this issue through a kind of structured  
34                   risk assessment. It's very high level. But it  
35                   was actually quite useful in helping the  
36                   department understand the relative risks in the  
37                   identified categories. It shows if you look into  
38                   the details there's some difference in how various  
39                   regions assess the risk because the ecosystems are  
40                   different.

41          Q        Now that the risks have been identified what is  
42                   the strategy going forward?

43          A        So there have been a couple of strategies. The  
44                   Science Branch has allocated some money into  
45                   something called the climate -- Climate Change  
46                   Science Initiative. And that has been combined  
47                   with some climate change work in the ecosystem

1 research initiatives which in our region focused  
2 on the Strait of Georgia. So climate change has  
3 been embedded. There's some specific funding for  
4 climate change. It's not a lot but it's specific,  
5 and also embedded in our ecosystem research  
6 initiatives, particularly in the Strait of  
7 Georgia.

8 Q All right. I'll come to those in a minute.  
9 Looking at the risk responses that are outlined in  
10 this document, the ringtail page 34 to 36 sets out  
11 a risk response section.

12 MR. LUNN: Having a technical difficulty.

13 MS. BAKER: There we go. Okay. Stop there.

14 Q Now, under this -- there's a heading "Ecosystem  
15 and Fisheries Management Risks", there's a heading  
16 "Support and Enhanced Science Program" and there's  
17 a number of bullets there. What has been done  
18 under those bullets to support and enhance the  
19 science program in relation to this risk that was  
20 identified?

21 A Not a lot other than to identify these two  
22 research program areas, the Climate Change Science  
23 Initiative and the Ecosystem Research Initiative.

24 Q Okay. Well --

25 A So everywhere where it says "enhanced" there  
26 wasn't much enhancing going on.

27 Q Okay. And where it says "support", what happened  
28 there?

29 A It's probably fair to claim that the department  
30 continued to support.

31 Q Was new funding given for areas that are said to  
32 be supported?

33 A Depending on how you calculate it, the science  
34 change science initiative and Strait of Georgia  
35 ecosystem research initiative were new programs  
36 with new money -- well, new programs with a  
37 budget. The net spending I don't think went up a  
38 lot. So it was a repackaging more than infusion  
39 of new resources.

40 Q Okay. And then I want to just move to the  
41 research agenda and planning that has been done  
42 for Science Branch of Fisheries and Oceans and  
43 Exhibit 40 is the five-year research agenda for  
44 Fisheries and Oceans and it's dated 2007 to 2012.  
45 And I'm also going to take you to Exhibit 48 which  
46 is the research plan. But starting with -- I  
47 guess starting with the research agenda, if a

1 research priority is identified in the agenda or  
2 actually in the research plan, as well, does that  
3 mean that there was funding allocated for the  
4 items identified in those plans and agendas?

5 A No. They -- these documents are separate from how  
6 funding will be allocated. They are designed to  
7 guide allocation of funding, but they don't  
8 specify funding.

9 Q Okay. If we turn to page 8 of the research agenda  
10 -- sorry, page 8 of the document. It may not be  
11 ringtail number 8. There at the bottom you'll see  
12 "Climate Change/Variability". All right. And  
13 under there priority areas for research are  
14 identified. Can you tell us what has actually  
15 been done? I'll ask you to skip the one that says  
16 assessing flood risks, but for the other bullets,  
17 if you could just identify what has been done  
18 under these priority areas?

19 A So the first bullet refers to the work that I  
20 referred to earlier, a collaboration with  
21 Environment Canada at their Climate Centre for  
22 Modelling Analysis. This is global earth system  
23 coupled climate models, so that works ongoing and  
24 has been pretty successful. The down scaling,  
25 this is -- the trouble with the global models is  
26 they're great for setting international policy and  
27 thinking about global outcomes. They're not very  
28 useful, they don't have the resolution, they don't  
29 represent all the important things that are  
30 important at a scale like the B.C. Coast or the  
31 Strait of Georgia. They just don't have the  
32 resolution.

33 So the strategy to deal with that is to take  
34 the global models, develop regional climate models  
35 which will be driven at their edges. They won't  
36 cover the whole globe, but they'll be much higher  
37 resolution in the places where you need it, drive  
38 those global -- drive the regional models with  
39 what you got out of the global models and then you  
40 can look forward at reasonable spatial resolutions  
41 in areas that are now relevant to making  
42 management decisions. So this is an identified  
43 strategy to do that. The regional climate models  
44 without oceans are coming along and Environment  
45 Canada and in parallel we are developing regional  
46 ocean climate models, so we can bring those two  
47 bits together and start doing this work.

1 Q And how much progress has been made by Fisheries  
2 and Oceans on the oceans models?

3 A Some pretty significant progress. Some of -- this  
4 is some of the work that has been funded under the  
5 Climate Change Science Initiative.

6 Q Okay. And if we could skip down to number 4  
7 there:

8  
9 - analysing climate change impacts on  
10 contaminant pathways.

11  
12 What's been done there?

13 A Some continued analysis and interpretation of some  
14 existing data, a fair bit of work in the Arctic,  
15 where these are considered to be large impacts.  
16 Not so much elsewhere.

17 Q All right. And we heard earlier today from Dr.  
18 Peter Ross on funding for contaminants research in  
19 the marine environment relevant to Fraser River  
20 sockeye; do you agree with what he said?

21 A Yes. It's been a struggle for people who work in  
22 that area in the department across the country to  
23 make a kind of contribution they would like to  
24 make. So if Peter's frustrated, he wouldn't be  
25 the only one.

26 Q The fifth bullet:

27  
28 - assessing the resilience of aquatic  
29 populations, from algae to marine mammals  
30 through...

31  
32 A series of different activities, are any of those  
33 activities relevant to Fraser River sockeye, and  
34 if so have they been developed and pursued?

35 A So this idea of resilience has gained a lot of  
36 popularity in recent years. To understand whether  
37 we're close to a tipping point or an edge in the  
38 status of populations is important. The actual  
39 science or how you measure resilience and whether  
40 you know -- whether you're close to one of these  
41 edges, has been slow to emerge. Some of this work  
42 has been taken up, some of it in the Strait of  
43 Georgia ecosystem research initiative but I expect  
44 people will be working on some of these things in  
45 25 to 30 years, as well.

46 Q And are they relevant to Fraser River sockeye?

47 A Yes, they are.

- 1 Q I want to move to the research plan and you've  
2 talked a little bit about the project in the  
3 Strait of Georgia and that's referenced in the  
4 research plan, I believe, so that's at Exhibit 40  
5 and if you could turn to page 9 of that document,  
6 one more page down, please. No, two more pages, I  
7 guess. There we go. So 3.27 -- 3.2.7, the Strait  
8 of Georgia Initiative and then 3.3 is the Climate  
9 Change Science Initiative, the Strait of Georgia  
10 work that you've been talking about, is that this  
11 program that's identified in 3.2.7?
- 12 A Yes, it is.
- 13 Q Okay. And is that work funded?
- 14 A That work is funded. When this was written it was  
15 envisioned for three years of funding. We've  
16 actually extended the programming to a fourth  
17 year.
- 18 Q And when will it complete? When will the funding  
19 end?
- 20 A It'll end at March 31, 2012.
- 21 Q And will there be a new program in the Strait of  
22 Georgia once that funding expires?
- 23 A Unknown.
- 24 Q Okay. You've provided us with a list of papers  
25 that are relevant to the work done in the Strait  
26 of Georgia and I'd ask that Tab 33 of the  
27 commissions list... Can you just identify what  
28 this is?
- 29 A So coming out of three years of research are a  
30 bunch of individual research projects and the  
31 leaders have -- are preparing a special volume in  
32 a scientific journal, *Progress in Oceanography*, I  
33 -- yes, *Progress in Oceanography* where all these  
34 papers will be brought together, peer reviewed and  
35 so you will end up, if you are the reader of  
36 *Progress in Oceanography* with a nice thick volume,  
37 a lot of up-to-date research from the Strait of  
38 Georgia Ecosystem Research Initiative. This is a  
39 kind of a common strategy with largish research  
40 programs to bundle a bunch of papers together  
41 rather than sprinkling them across 30 journals and  
42 three years.
- 43 MS. BAKER: All right. Could I have that marked,  
44 please?
- 45 THE REGISTRAR: 1401.  
46  
47

1 EXHIBIT 1401: Commitments for contributed  
2 papers to the Strait of Georgia Ecosystem  
3 Research initiative special journal issue for  
4 *Progress in Oceanography*  
5

6 MS. BAKER: Thank you. And then you can take that off  
7 the screen, Mr. Lunn, and just bring back the --  
8 that's right, the Exhibit 48, the research plan.

9 Q Climate Change Science Initiative, was that  
10 program funded?

11 A Yes, it was. I think I made reference to it  
12 earlier.

13 Q Mm-hmm. And was there any relationship in funding  
14 between the Climate Change Science Initiative and  
15 the Strait of Georgia work?

16 A Yes. In our region, and I think in some others,  
17 we chose to combine certain aspects of those  
18 things, so when we're looking at down-scaling  
19 climate models, well, it was kind of obvious to us  
20 that one of the places we might want to apply that  
21 is in the Strait of Georgia.

22 Q Okay. And is the work under the Climate Change  
23 Science Initiative relevant for Fraser River  
24 sockeye?

25 A I think it's relevant in general, particularly if  
26 we're going to look at what futures may -- the  
27 future may hold for Fraser sockeye and many other  
28 species.

29 Q You've talked a bit about these funding programs  
30 and let me just ask you first, is this funding for  
31 the Climate Change Science Initiative going to  
32 wrap up in 2012 at the same time as the Strait of  
33 Georgia does?

34 A I'm not sure I know the answer to that.

35 Q Okay. We've heard a lot about these funding  
36 envelopes that will be perhaps three or five  
37 years. I think the Strait of Georgia, you said,  
38 started as a three-year program and it got  
39 extended. Is that the model for all funding in  
40 DFO Science, these limited-term funding envelopes?

41 A It's pretty typical.

42 Q Okay. And is a three to five-year funding  
43 envelope a successful model for science research?

44 A Not particularly in my view. The average smallish  
45 research program particularly one that involves  
46 any work in the field, will take three to five  
47 years to go from design to publication. So that's

- 1           -- so a more natural term for programs would be  
2 longer than that, than the time for an individual  
3 project to complete.
- 4       Q     And we've heard that there -- the idea behind  
5 these projects is to -- these funding envelopes  
6 for limited years is to make sure that things are  
7 not going stale and that there's revisiting and  
8 reassessing. Is there a way to do that -- is that  
9 valuable work, I guess, first to re-evaluate  
10 programs and look at them? And if that is a good  
11 thing to do, is there other ways to do it other  
12 than using these limited-term funding envelopes?
- 13       A     So there are alternatives. Do longstanding  
14 programs go stale? Yes, they do, in my view. So  
15 review and analysis of programs and are they doing  
16 what we need them to do? That's a legitimate  
17 management activity. But there are other models  
18 for doing this. You can set up mid-term reviews,  
19 you can review a chunk of projects within a  
20 program every year. There are other ways to do  
21 it. There's a lot of overhead in setting up  
22 management and funding for new programs and then  
23 winding down and reporting on them. So it would  
24 be nice to amortize that over more years, in my  
25 view.
- 26       Q     We've talked a little bit about monitoring, as  
27 well, today and I do want to talk about it in a  
28 bit more detail. In terms of monitoring programs,  
29 how do these three- to five-year funding envelopes  
30 work for monitoring?
- 31       A     Well, they're a very poor model for doing  
32 monitoring. Some aspects of monitoring are  
33 slipped into these programs by clever people.  
34 Some aspects of monitoring are covered with other  
35 sources of funding.
- 36       Q     Is monitoring something that you look at as  
37 distinct from science research and science work  
38 and as distinct from data management or are they  
39 separate spheres that can operate independently or  
40 are they linked?
- 41       A     They can't operate independently. The Science  
42 Branch developed that nomenclature of monitoring,  
43 research, data management, advice and products and  
44 services as a way to describe what we do, but  
45 operationally, they're tightly bound and when we  
46 send the ship to sea, ostensibly to do monitoring,  
47 there would be a component of that that is

1 research. And the monitoring data that we bring  
2 in will form the basis of, you know, status and  
3 trends which isn't particularly research, but it  
4 will also form the basis of somebody's research  
5 paper, so conceptually they are different  
6 activities. In practice, your program needs all  
7 of these components in some rational ratio.

8 Q All right. And I know that we've got a few  
9 technical issues here and I'm being asked to take  
10 a break early, but I just want to ask one final  
11 question before we take the break. At 1396,  
12 Exhibit 1396, this is the Pacific Marine  
13 Monitoring Program that you -- document that you  
14 prepared and on page 4 of that document you have a  
15 paragraph setting out linkages to other science  
16 functions and I just wanted to have a look at the  
17 -- so this breaks it out, data management,  
18 research, advice, products and services, and data  
19 management would be monitoring and other things  
20 but it would include monitoring?

21 A It includes monitoring and research.

22 Q Okay. And then research. And then advice, I  
23 thought this was an interesting sentence you have  
24 at the end of your paragraph:

25  
26 This is a challenge for clients, and they are  
27 often only interested in the "end result  
28 (sic)" (Advice) and have limited interest in  
29 some of the costly and long lead-time  
30 components that go into Advice (like Research  
31 and Monitoring).

32  
33 Is that an issue that you see today?

34 A This is the traditional whining of the science  
35 manager to the client sectors. They just want  
36 good advice and they don't want to pay for the  
37 costs of getting us in the position to pay for --  
38 to be able to provide that good advice.

39 Q And how does monitoring fit into the ability to  
40 get good advice?

41 A So monitoring status and trends, the stocks, the  
42 environmental conditions, that's kind of critical  
43 into bringing forward this advice. You know, the  
44 first thing that goes into a stock assessment for  
45 Fraser sockeye is well, what is the pattern and  
46 trend in the returns over the last 50 years? So  
47 that's a monitoring activity to get that data.

77  
Robin Brown  
In chief by Ms. Baker

1           It's sort of the basis of much of what we do.  
2 MS. BAKER: Now, Mr. Commissioner, I think that Mr.  
3           Lunn would like us to take a break now, but I do  
4           that and I will only need a very few minutes when  
5           we come back and then we'll be able to turn it  
6           over. So can we come back in ten minutes?  
7 THE COMMISSIONER: Yes, thank you.  
8 THE REGISTRAR: Hearing will now recess for ten  
9           minutes.

10  
11                           (PROCEEDINGS ADJOURNED FOR AFTERNOON RECESS)  
12                           (PROCEEDINGS RECONVENED)

13  
14 THE REGISTRAR: The hearing is now resumed.  
15 MS. BAKER: Thank you. Mr. Brown, you'd just better  
16           put your mike on. There you go.

17  
18 EXAMINATION IN CHIEF BY MS. BAKER, continuing:

19  
20 Q       I'm going to turn to Tab 15 of the Commission  
21       documents. This is a Fisheries and Oceans 2011  
22       Corporate Risk Profile, as approved by the  
23       Departmental Management Committee, September 22,  
24       2010. Have you seen that before?

25 A       Yes, I have.

26 Q       All right.

27 MS. BAKER: Could I have that marked, please?

28 THE REGISTRAR: Exhibit 1402.

29  
30                           EXHIBIT 1402: Fisheries and Oceans Canada  
31                           2011 Corporate Risk Profile

32  
33 MS. BAKER: All right.

34 Q       At page 27 of this document, that's ringtail 27,  
35       there's a heading, it says, "9. Risk: Climate  
36       Change," and it sets out a number of -- well, for  
37       the first risk, it's that:

38  
39                           There is a risk that DFO will be unable to  
40                           adapt quickly to the effects of climate  
41                           change.

42  
43           And then there's a number of columns:

44                           Key sub-risks or elements.

45  
46           Is the first:  
47

1 Sources of the risk.  
2

3 Is second, and then consequences, and under the  
4 consequences column, there's a "Policy Response."  
5 One of the things that's identified there, right  
6 under the policy heading, "Policy Response," is  
7 that:

8  
9 DFO is developing a Policy Framework on  
10 Climate Change that will ...  
11

12 Do a number of things set out in that document.  
13 Has that policy framework on climate change been  
14 developed?

15 A Not to my knowledge yet.

16 Q Is there a plan to develop such a thing?

17 A I'm not sure, but I'm not a policy expert guy.

18 Q Do you know if there's been any funding allocated  
19 for this work?

20 A Don't know.

21 Q Is there a potential in the new budget that will  
22 be coming out for 2011 that DFO will receive  
23 money?

24 A Announced in Budget 2011 is some funding for  
25 climate change, adaptation and impact research so  
26 it is possible that DFO will be able to get some  
27 money and some resources from that allocation  
28 announced in the budget, but it hasn't been  
29 allocated to departments. The program hasn't been  
30 designed yet.

31 Q All right. And if some allocation was made in the  
32 new budget, will this assist Science in being able  
33 to provide advice to policymakers within DFO?

34 A It should do.

35 Q Okay. Is that a bit of a deficiency right now,  
36 that there's not somebody to hear the advice from  
37 Science when they want to give it?

38 A It's a bit of a deficiency. Much of the DFO  
39 policy development centres around some pretty  
40 operational requirements in the Department so some  
41 of the longer-term stuff and climate change,  
42 either one of these, it's been intermittent how  
43 much sort of interest in the policy group there is  
44 in these long-term issues. Most DFO scientists  
45 spend 35 years in their career at DFO Science.  
46 Most policy analysts spend less time than that.

47 Q All right. So you would argue that there's a need

- 1 to improve the policy side of things to be  
2 receptive to the advice coming from DFO  
3 scientists?
- 4 A Yes.
- 5 Q Moving quickly through a couple of other  
6 documents, 2010, the Report of the Commissioner of  
7 the Environment and Sustainable Development, we've  
8 seen one chapter from this already today. I'd  
9 like to go to chapter 3, which you'll find at  
10 Tab 21 of the Commission's documents. You're  
11 familiar with this report?
- 12 A Yes, I am.
- 13 Q All right. And climate change is addressed in  
14 this report at page 13? All right. It's hard to  
15 read, it's green, but at page 13, at the bottom,  
16 "Recommendations," section 3.25, at the bottom of  
17 the page. So the recommendation is that:  
18  
19 Environment Canada, Natural Resources Canada,  
20 Health Canada, Fisheries and Oceans Canada,  
21 and Indian and Northern Affairs Canada should  
22 identify the adaptation measures necessary to  
23 respond to the risks that climate change  
24 presents for their areas of responsibility.  
25
- 26 And if I can ask you, then, just to turn to page  
27 15, which is where the Fisheries and Oceans  
28 response to that recommendation is, and in the  
29 interests of time, I just want to cut to the chase  
30 and ask you has there been any funding to actually  
31 increase work in the areas that are identified?  
32 Does this response reflect new funding that was  
33 provided to Fisheries and Oceans Canada to respond  
34 to the recommendation?
- 35 A To the best of my knowledge, it doesn't represent  
36 new funding.
- 37 Q All right. So the response that you see there is  
38 simply a setting out of the work that was  
39 currently being done by DFO?
- 40 A Right.
- 41 Q Okay.
- 42 MS. BAKER: Could I have that document marked, please,  
43 as the next exhibit?
- 44 A And you will see, down in the third paragraph,  
45 some whining about how we didn't get any money.
- 46 MS. BAKER:
- 47 Q This is:

1                   The Department is at a distinct disadvantage  
2                   ...

3  
4           A     Yeah. Yeah, that would be that, yeah.

5           Q     And that concern remains the same today?

6           A     Yes.

7           THE REGISTRAR: That document will be marked as 1403.

8  
9                   EXHIBIT 1403: 2010 Report of the  
10                   Commissioner of the Environment and  
11                   Sustainable Development to the House of  
12                   Commons.  
13

14           MS. BAKER:

15           Q     We've talked a little bit in a general way about  
16                   research on climate change and what work the  
17                   Department is doing. What about research on  
18                   linking researching on oceans and climate change  
19                   to salmon? And we may not be doing that link to  
20                   Fraser River salmon, sockeye salmon in particular,  
21                   but if you are, please tell us, but if not, just  
22                   to Pacific salmon generally, how much work has  
23                   been done to link oceans and climate change  
24                   research to salmon?

25           A     Over the years, a fair bit has been done in the  
26                   kind of correlation of environmental factors and  
27                   environmental changes in things like timing of  
28                   return migration of salmon, routing of return  
29                   migrations, trying to account for some of the  
30                   variants around returns or spawner. Some  
31                   successful, some still lacking in clarity. Partly  
32                   for some of the reasons that people have talked  
33                   about, it's not clear exactly where all salmon  
34                   stocks are at all times so it's not obvious what  
35                   environmental factors measured in what places you  
36                   should be applying to them. So some progress has  
37                   been made, some frustrations remain.

38           Q     Would you agree that most of the work that's been  
39                   done relates to managing catch and escapement,  
40                   forecasting and not so much work on planning for  
41                   the future of the species, managing the fisheries  
42                   into the future?

43           A     The year-to-year operations of managing salmon  
44                   fisheries, where each year is a new population and  
45                   you haven't seen those fish until they appear,  
46                   this is very different than managing longer-lived  
47                   species. That consumes a lot of the effort of the

1 Department, the annual opening and closing of  
2 fisheries. Depending on who you are, you might  
3 argue that relatively little, less emphasis has  
4 been placed on, "Well, what will the conditions of  
5 these stocks be in 20 years, or 50 years," which  
6 is kind of an industrial investment cycle.

7 Q When Dr. Beamish was here in July, he talked about  
8 a program he described as the International Year  
9 of the Salmon, which was conceived as an  
10 international project to understand better what  
11 the state of the ocean is as it relates to salmon  
12 in the North Pacific. And if I could have Exhibit  
13 1311 pulled up, there was an NPAFC Long-term  
14 Research and Monitoring Plan Exhibit that we put  
15 in with Dr. Beamish that describes one of those  
16 programs. Are you familiar with that kind of a  
17 program?

18 A Yes, I'm familiar with this.

19 Q And do you support that program?

20 A I think it's a good idea. I think it's timely to  
21 do this. There are some new technologies, and new  
22 approaches, and new data sources that weren't  
23 available to people when they last did this work  
24 in the North Pacific in the '50s and '60s. But  
25 it's an expensive venture. If you read this  
26 report, it goes on to describe that capacity to do  
27 this kind of work in most of the NPAFC countries  
28 has declined so it won't be easy.

29 Q My last question for you -- as everybody around  
30 here cleans up my spilled water, thank you, that's  
31 the second one for this table so that's not a bad  
32 record -- in the Policy and Practice Report that  
33 was prepared for this section of the hearings, PPR  
34 number 19, paragraph 158, there's a paragraph  
35 which needs some clarification, and I wonder if we  
36 could have that pulled up? There we go. So do  
37 you have a comment on this paragraph that you  
38 wanted to make?

39 A Yeah.

40 Q So the claim in the foundation report is that  
41 DFO and DFO Science has switched focus away from  
42 PNCIMA and funding redirected. It's not exactly  
43 the case. It is true that we did not get more  
44 ongoing funding in PNCIMA for doing research in  
45 the area. The block of funding that we had  
46 received was to develop this ecosystem overview  
47 and assessment reports. It was basically to

1 summarize existing information, develop maps of  
2 sensitive -- ecologically sensitive areas and, you  
3 know, *de facto* we did shift some attention to the  
4 Strait of Georgia. It was a practical and  
5 technical move by science. We debated this, do we  
6 do this work in PNCIMA, do we do it in the Strait  
7 of Georgia extensively. We chose the Strait of  
8 Georgia because we knew there were important  
9 issues. And that is where the existing database  
10 was the best. We were going to use this as a  
11 model for developing the tools where we have good  
12 data so that we could apply them more confidently  
13 in PNCIMA and other areas where the data,  
14 historical database is not so strong. So that was  
15 kind of a -- that's what science managers talk  
16 about when they meet in meetings.

17 MS. BAKER: Thank you. Now, those are the questions I  
18 have for Mr. Brown. Dr. Brown. Mr., sorry.

19 A I'm not a doctor.

20 MS. BAKER: You science folks often are doctors so --  
21 but I would like to suggest, we've got 45 minutes  
22 left, and I'd like to suggest to the counsel that  
23 will be asking questions this afternoon that they  
24 attempt to limit their questions to 10 minutes  
25 each. We have questions expected from Canada,  
26 from Mr. Rosenbloom, from Mr. Leadem and from Ms.  
27 Gaertner. B.C. has indicated that they will not  
28 be asking questions this afternoon. Thank you.

29 MR. TIMBERG: Yes, and it's Tim Timberg and Geneva  
30 Grande-McNeill for Canada.

31  
32 CROSS-EXAMINATION BY MR. TIMBERG:

33  
34 Q Mr. Brown, your colleague, Mr. Reid, was asked by  
35 Ms. Baker, the PNCIMA area includes the  
36 conservation units of any Fraser River sockeye  
37 salmon. I'm wondering what your answer would be  
38 to that question?

39 A To the best of my knowledge, the conservation  
40 units for Fraser sockeye salmon are defined on the  
41 geographical area where they spawn so that is, of  
42 course, in the Fraser River. The Fraser River is  
43 not contained within the PNCIMA area, but those  
44 fish must migrate out through the PNCIMA area and  
45 must return through so it doesn't include what  
46 people think of as conservation units, but what  
47 goes on in PNCIMA is likely relevant and important

1 to those conservation units.

2 Q Thank you. I now that 12 documents that I'd like  
3 to have you explain the relevance for the  
4 assistance of the Commissioner. And given the  
5 limited period of time, I'll perhaps just move  
6 through each of these documents and ask you to  
7 explain to the Commissioner how they're of  
8 assistance. So I'll do those 12. If we could  
9 start with Canada's Tab 44.

10 A So this is a --

11 Q Oh, I'm not going to do this document, sorry.  
12 I've reduced my questions so we'll start at  
13 Canada's Tab 44.

14 MR. LUNN: Sorry, I thought this was 44.

15 MR. TIMBERG: Oh, thank you. Sorry.

16 Q Could you explain what this deck is?

17 A This is a deck that describes the Ocean Sciences  
18 Division, the chunk of the Science Branch that I'm  
19 responsible for and how it relates to other parts  
20 of the Science Branch and the priorities and  
21 characteristics of the work that we do.

22 Q All right.

23 MR. TIMBERG: If that could be marked as the next  
24 exhibit?

25 THE REGISTRAR: 1404.

26

27 EXHIBIT 1404: Ocean Sciences Division,  
28 prepared for the DND/DFO IPOC meeting  
29 October 2, 2008, Robin Brown  
30

31

MR. TIMBERG: And if we could go to Canada's Tab 45.

32 Q And this is a document entitled, "Ocean Science  
33 Division - 1000 Publications from OSD Publication  
34 database." Could you explain what this is?

35 A So I was asked by various counsel, "Well, what is  
36 it you guys do," and I said, "The best way you  
37 understand what a Science group does is look at  
38 the titles of the papers that they publish. So we  
39 have a publication database where we track so I  
40 gave them -- I provided 1,000 titles of  
41 publications, it tells you where they're  
42 published. And for the first 100, I kind of  
43 defined in some broad areas what subject areas  
44 these publications were relevant to.

45 Q All right.

46 A Climate change, arctic ecosystems, oceans  
47 management, aquaculture, others.

84  
Robin Brown  
Cross-exam by Mr. Timberg (CAN)

1 Q All right. Thank you.

2 MR. TIMBERG: If that could be marked as the next  
3 exhibit?

4 THE REGISTRAR: 1405.

5

6 EXHIBIT 1405: "Ocean Science Division - 1000  
7 Publications from OSD Publication database"

8

9 MR. TIMBERG: If we could go to Canada's Tab 57.

10 Q And this is a document that lists, as I  
11 understand, 10 of these publications and can you  
12 describe what this document is?

13 A So this document was prepared because 1,000  
14 documents hurt your head so we went down to 10.  
15 So this is the top 10, a collection of  
16 publications from our researchers and teams of  
17 researchers that I think are relevant to the  
18 question of what's going on with Fraser sockeye.

19 Q Okay. And what about the blue text, there, who's  
20 the author?

21 A I am the author of the blue text. This is my  
22 explanation of why the Commissioner might want to  
23 look at this title and understand what it is, how  
24 it relates to Fraser sockeye.

25 MR. TIMBERG: And for the assistance of the  
26 Commissioner, we've listed where a number of these  
27 have already been entered into evidence. So for  
28 example, number 2 has been entered into evidence  
29 as Exhibit 806. And if that could be marked as  
30 the next exhibit?

31 THE REGISTRAR: 1406.

32

33 EXHIBIT 1406: Top 10 publications relevant  
34 to research re Fraser sockeye salmon

35

36 MR. TIMBERG:

37 Q Could you describe some of the collaborations that  
38 research scientists at the Oceans Science Division  
39 have been involved in?

40 A Well, I think I talked earlier about the small  
41 group in Canada. So our scientists are involved  
42 in intimate collaborations with universities. The  
43 University of Victoria has a very large program,  
44 two large programs called Venus and Neptune, which  
45 are ocean observatories, cable ocean  
46 observatories, one in the Strait of Georgia, one  
47 offshore of the West Coast of Vancouver Island,

1 reaching out to the Endeavour Ridge hot vents.  
2 DFO scientists are playing lead roles in designing  
3 certain components of that array. It's a big  
4 investment, it's \$150 million. The Province of  
5 B.C. has contributed heavily to that program so we  
6 see it as taking advantage of our expertise and  
7 helping our colleagues design useful systems that  
8 will also be useful to DFO.

9 Q Thank you.

10 MR. TIMBERG: If we could then move to Canada's Tab 29.

11 Q And can you describe what this document is about,  
12 "Canada Healthy Oceans Network."

13 A So there's a collection of networks of Canadian  
14 scientists, primarily in universities, funded  
15 through the Natural Sciences Engineering and  
16 Research Council. Canadian Healthy Oceans is a  
17 network focussed on biodiversity issues and,  
18 particularly, in the benthic environment.

19 Q Okay.

20 A So a large number of academic scientists, a fairly  
21 large number of DFO scientists involved.

22 Q If we could just scroll down to the Network  
23 section on the same page. So that describes,  
24 there, that the partnership of 65 researchers with  
25 15 universities and labs, et cetera?

26 MR. TIMBERG: If that could be marked as the next  
27 exhibit?

28 THE REGISTRAR: 1407.

29

30 EXHIBIT 1407: Canadian Healthy Oceans  
31 Network  
32

33 MR. TIMBERG: If we could go to Canada's Tab 30? And  
34 if we could, again, go to -- just perhaps blow up  
35 from "Canadian Aquatic Invasive Species Network"  
36 down to the "Network Structure."

37 Q Could you describe this document?

38 A So this is yet another one of these networks. It  
39 looks kind of similar to the last one. Again, a  
40 smaller group of researchers, again, involving  
41 federal department labs, involving DFO staff. And  
42 DFO has a centre of expertise in risk assessment  
43 for aquatic invasive species, which is tightly  
44 bound to this network.

45 Q Okay.

46 MR. TIMBERG: If that could be marked as the next  
47 exhibit?

1 THE REGISTRAR: So 1408.

2

3

EXHIBIT 1408: Canadian Aquatic Invasive  
Species Network

4

5

6

MR. TIMBERG: And Tab 31, it's a similar one.

7

Q And this one is on Canadian Integrated Multi-  
Trophic Aquaculture Network. That's a similar  
kind of --

8

9

A Similar kind of network aimed at research at  
sustainable aquaculture, combining fish farms and  
shellfish aquaculture in the same places.

10

11

12

MR. TIMBERG: All right. If that could be marked as  
the next exhibit?

13

14

THE REGISTRAR: 1409.

15

16

17

EXHIBIT 1409: NSERC Canadian Integrated  
Multi-Trophic Aquaculture Network (2009-2014)

18

19

MR. TIMBERG: If we could then go to Canada's Tab 33?

20

21

Q And this is the PICES North Pacific Ecosystems  
Status Report. Perhaps we could just turn to  
page 2, briefly. If you could identify what this  
document's about?

22

23

24

MR. TIMBERG: The next page, 2. Just keep going down.  
There, that should do it. The highlights, sure.

25

26

A So this a North Pacific Basin wide assessment of  
what has been going on in the marine ecosystems  
and in the climate system forcing those around the  
edge of the North Pacific, sort of north of 40  
degrees, in the domain of the signatory countries.

27

28

29

30

31

Q All right.

32

A And the open ocean. And it's a compare and  
contrast approach to try and, from our point of  
view, learning what's going on in our ecosystems  
by looking at what's going on elsewhere. And for  
salmon, they inhabit much of this ecosystem.

33

34

35

36

37

Q Thank you.

38

MR. TIMBERG: If that could be marked as the next  
exhibit. And I'll note for the assistance of the  
Commissioner that I won't take you there, but page  
33, there's a section on salmon.

39

40

41

42

THE REGISTRAR: That's 1410.

43

44

45

EXHIBIT 1410: PICES Special Publication  
Number 4, Marine Ecosystems of the North  
Pacific Ocean, 2003-2008

46

47

1 MR. TIMBERG: Then go to Canada's Exhibit 1396, which  
2 Ms. Baker took you to, which is the Pacific Ocean  
3 Monitoring Report. I was wondering if you could  
4 just turn to page 12, there's a table of  
5 monitoring activity.

6 Q Can you explain what that table sets out?

7 A So I was tasked to develop this report to provide  
8 some additional clarity on what we're doing and  
9 what we're not doing and this was an attempt to do  
10 this by categorizing by spatial areas, going  
11 across the page, Strait of Georgia, west coast of  
12 Vancouver Island, PNCIMA, and then the open ocean,  
13 and then going down the rows, the component of the  
14 ecosystem that was being monitored.

15 Q All right. Thank you. Just so we understand,  
16 that's a good place to sort of have a summary of  
17 the ocean monitoring?

18 A Yes.

19 Q Thank you.

20 MR. TIMBERG: If we could then go to Canada's Tab 40?

21 Q This is a document entitled, "Climate Change and  
22 Pacific Fisheries deck. What is this deck and  
23 where was it presented?

24 A This deck was prepared for the fall community  
25 consultations. DFO, at that stage, was going into  
26 a dozen interior and coastal communities to talk  
27 about half a dozen issues that were important to  
28 stakeholders. So these sessions were scheduled.  
29 We went to the communities. There were some  
30 sessions that involved other stakeholders and  
31 First Nations. There were some First Nations only  
32 sessions.

33 MR. TIMBERG: If that could be marked as the next  
34 exhibit?

35 THE REGISTRAR: 1411.

36

37 EXHIBIT 1411: Climate Change and Pacific  
38 Fisheries, prepared for DFO Fall  
39 Consultations 2008  
40

41 MR. TIMBERG: And then if we could go to Canada's Tab  
42 36?

43 Q This is an inter-governmental panel on climate  
44 change assessment report. Could you describe what  
45 this document is and just advise whether Canada's  
46 a member of this inter-governmental panel?

47 A So Canada is a member of the inter-governmental

1 panel on climate change. This is done under the  
2 aegis of the U.N. This assessment, this is the  
3 fourth of a series of assessment reports on what's  
4 causing climate change, what the impacts are,  
5 adaptations to them should be globally, and a  
6 little bit of information at the regional level,  
7 but they define regional level as the Pacific  
8 Ocean.

9 Q All right. Thank you.

10 MR. TIMBERG: If that could be marked as the next  
11 exhibit?

12 THE REGISTRAR: 1412.

13  
14 EXHIBIT 1412: Climate Change 2007:  
15 Synthesis Report, Summary for Policymakers  
16

17 MR. TIMBERG: Thank you.

18 Q And what was the outcome of this work? Was there  
19 an award provided for this work?

20 A Well, following the release of this report, the  
21 Nobel Peace Prize was given to Al Gore and the  
22 contributors who made up the Intergovernmental  
23 Panel on Climate Change. Well, that's a large  
24 group of people, but it includes about a dozen DFO  
25 scientists who contributed as lead authors,  
26 coordinating lead authors, played some significant  
27 role in this series of assessment reports.

28 Q Thank you.

29 MR. TIMBERG: If we could move to Canada's Tab 24?

30 Q And this is a document on ocean fertilization, a  
31 summary for policymakers. Can you identify what  
32 this document is?

33 A This is a high-level document to talk to important  
34 people with short attention spans on aspects of  
35 ocean fertilization, what it means and what it  
36 doesn't mean, prepared by this group of  
37 organizations, kind of led by the  
38 Intergovernmental Oceanographic Commission.

39 Q Okay.

40 A And when you heard from Dr. Wendy Watson-Wright  
41 earlier, this is the organization she now heads.

42 Q Okay. Thank you.

43 A So DFO scientists were part of the small writing  
44 team that prepared this.

45 MR. TIMBERG: If that could be marked as the next  
46 exhibit.

47 THE REGISTRAR: 1413.

1                   EXHIBIT 1413: Ocean Fertilization, A  
2                   scientific summary for policy makers  
3

4       MR. TIMBERG: Go to Canada's Tab 25, and the fourth  
5                   paragraph there says -- if you could just close in  
6                   on the fourth paragraph?

7       Q       What's Canada's position with respect to ocean  
8                   fertilization?

9       A       Well, based on some work that was done by DFO  
10                  Science, we provided advice to Environment Canada,  
11                  who is the lead agency on the London  
12                  Convention/London Protocol, where the regulation  
13                  of depositing materials in the ocean is regulated,  
14                  and you could see from the text, this is what came  
15                  out of the Science advice. We're not sure that  
16                  ocean fertilization will work for its primary  
17                  purpose, and the chances of it producing some  
18                  undesirable side effects are reasonable.

19       Q       Okay. Thank you.

20       MR. TIMBERG: So if this could be marked as the next  
21                  exhibit?

22       THE REGISTRAR: 1414.

23  
24                   EXHIBIT 1414: Ocean Geo-engineering: Ocean  
25                   Fertilization  
26

27       MR. TIMBERG: And I have two final exhibits and I've  
28                  completed my questioning. If we could have  
29                  Canada's Tab 27?

30       Q       And this is a paper on cumulative effects of  
31                  human-induced and natural changes. Can you  
32                  describe what this document tells us.

33       A       This is a bit of a history of a number of  
34                  cumulative effects projects in various parts of  
35                  the ecosystem and in various regions conducted by  
36                  DFO over whatever the AE range is.

37       Q       Okay. Thank you.

38       MR. TIMBERG: If that could be marked as the next  
39                  exhibit?

40       THE REGISTRAR: 1415.

41  
42                   EXHIBIT 1415: "Quantifying and calibrating  
43                   the cumulative effects of human-induced  
44                   and natural changes to habitats and the  
45                   aquatic resources they support"  
46

47       MR. TIMBERG: And finally, Canada's Tab 28, a

Robin Brown

Cross-exam by Mr. Timberg (CAN)

Cross-exam by Mr. Leadem (CONSERV)

1 cumulative effects program by David Patterson.

2 Q Can you describe what this work is?

3 A Well, I think you've heard from Dave before. He's  
4 a research scientist working on the freshwater  
5 ecosystem. This is a cumulative effect program  
6 built largely around freshwater so the cumulative  
7 effects, the span of them can be defined by  
8 various people.

9 Q Okay.

10 A So the cumulative effects in freshwater.

11 Q All right.

12 MR. TIMBERG: And those are all my questions.

13 THE REGISTRAR: Do you wish that last document marked?

14 MR. TIMBERG: And that one should be marked, yes,  
15 please?

16 THE REGISTRAR: 1416.

17

18 EXHIBIT 1416: Cumulative effects at multiple  
19 scales: case studies of the development of  
20 habitat-population assessment tools using  
21 Fraser River salmon  
22

23

24 MR. LEADEM: Leadem, initial T., appearing as counsel  
25 for the Conservation Coalition.

26

27 CROSS-EXAMINATION BY MR. LEADEM:

28

29 Q Can you see me there, Mr. Brown?

30 A I can see you, yes.

31 Q Yeah. I'm a little bit far away. I had a whole  
32 lot of questions for you, but I just threw them  
33 out because of the lack of time and I want to  
34 focus on a couple of things that struck me as you  
35 were giving your presentation because they may  
36 follow themes that I've been trying to develop  
37 during the course of this inquiry. And one deals  
38 with the role of Science in terms of informing  
39 where we go next in terms of the sockeye and how  
40 best decisions can be made from the aspect of what  
41 scientific research should be brought to bear upon  
42 the questions that obviously arise. And you, as  
43 many other scientists who have preceded you to a  
44 panel, often take the same approach, that, "My  
45 science is important to me, I want my science  
46 funded and so let's fund my science and not  
47 necessarily some other aspect of science."

So I'm wondering, from a procedural aspect

1 and because you've had a lot of experience in  
2 managing scientists over the years, whether you  
3 can envisage structuring some sort of a forum that  
4 could go about determining how best that science  
5 can be brought to bear upon the important  
6 questions regarding Fraser River sockeye? What  
7 kind of procedural aspects? And I'm thinking of  
8 some sort of independent agency that is somewhat  
9 at arm's length from government that could  
10 actually make some decisions about where best  
11 science can be used given constraints and budget  
12 and so forth?

13 A So that would be an unconventional approach, but  
14 might be pretty useful. There are some other  
15 examples where the Royal Society of Canada has  
16 been invoked to provide broad-scale science advice  
17 to lead government decision making. There is the  
18 PFRCC potentially could play that role. I think  
19 there are a number of constructs that could be  
20 created. I think it's really important to be  
21 clear on what exact problem it is that we want to  
22 solve. Is it Fraser River sockeye, a stock  
23 aggregate on one river in B.C., an important stock  
24 aggregate, but not all? Are we talking about  
25 salmon entering the Strait of Georgia, including  
26 coho and chinook, which have got some of their own  
27 problems? Are we talking about -- do we include  
28 in this definition of the problem that we're going  
29 to solve, central coast sockeye which went through  
30 a collapse in the 1990s because of extremely low  
31 marine survival, have not recovered, do not show  
32 recovery marine survival? Do we want to talk  
33 about other fishes? We saw evidence that herring,  
34 thought to be important ecologically are co-  
35 varying with Fraser sockeye in interesting ways.  
36 So I think it's really important to formulate the  
37 problem and then, you know, there are ways of  
38 setting priorities and evaluating research  
39 proposals.

40 This was done for the International Polar  
41 Year, a very large research program with academics  
42 and government departments. They set up a  
43 proposal review framework that was independent,  
44 decided on the allocations. Our department ended  
45 up, my scientists ended up with allocations which  
46 eventually flowed into the Department to address  
47 those priorities. And the Department embraced

- 1 those priorities. So there are models around.
- 2 Q I understand there are models around and I  
3 understand that part of the predicament is  
4 formulating the correct question and making sure  
5 that you can then, once you've formulated the  
6 correct question and all of you scientists can  
7 agree upon it, then determining a basis for  
8 attacking the science that would endeavour or  
9 allow you to answer the question. But I think I  
10 want to go back a little bit and ask you, from a  
11 DFO perspective, from being alive to the  
12 scientific community within Department of  
13 Fisheries and Oceans, whether you think that there  
14 would be an appetite for the scientists within DFO  
15 to become part of a greater community focussed  
16 upon salmonid species, whether you think that that  
17 -- I think that it's already happening to some  
18 extent, but I'm wondering if you can formalize  
19 that process and whether you think, not from a  
20 political perspective, but from a scientific  
21 perspective, where there would be such an  
22 appetite?
- 23 A Scientifically, there's always lots of appetite  
24 for creating collaborations amongst groups of  
25 smart individuals who bring something to offer.  
26 So the groups of scientists who are available in  
27 Canada, work on this stuff, they can self-assemble  
28 quite easily. Where we usually run into problems  
29 is aligning the priorities of various funding  
30 networks to address the problem holistically. So  
31 nationally -- NSERC has money that they like to  
32 spend on some things, DFO has some money that they  
33 like to spend on some things, Environment Canada.  
34 Getting those large organizations aligned on the  
35 subject area and aligned in time so you can put  
36 together a large program is challenging, but not  
37 impossible.
- 38 Q And the last few questions I want to ask you focus  
39 upon how you report out the scientists to the  
40 people who make the political decisions, who make  
41 some determinations of whether fishing is going to  
42 occur, how it's going to occur, things of that  
43 nature. And I'm bothered, I must admit, and I'll  
44 be frank with you, by some of the things that I've  
45 heard and experienced through reading voluminously  
46 in this Commission in terms of what I perceive to  
47 be politicians trying to use science to further

Robin Brown

Cross-exam by Mr. Leadem (CONSERV)

Cross-exam by Mr. Rosenbloom (GILLFSC)

1           their own aims and their own goals. And I'm  
2           wondering, as a scientist working for a  
3           governmental department, how you could insulate  
4           yourself from becoming part of that design, where  
5           you're simply used more or less as a pawn in a  
6           game that politicians like to play. You're alive  
7           to that, aren't you, the fact that your science is  
8           apt to be used by politicians to further their own  
9           specific political ends?

10          A     Well, part of it is part of the parliamentary  
11                system that we find ourselves in.

12          Q     And we're not going to change that, obviously.

13          A     We're not going to change that any time soon.  
14                There are ways of providing some level of  
15                transparency. In our department, we do have a  
16                structured way of providing advice and we do,  
17                Science does provide advice. We hold a bit of a  
18                gap between the Science and the policy people, and  
19                the Fisheries management, oceans management. When  
20                they ask for advice, we provide advice. We go  
21                through a review process. That advice that is  
22                provided is published and on the web. Now, in  
23                this system, decision makers can take the Science  
24                advice and other forms of input, whatever they  
25                might be, and end up making a decision, but the  
26                advice that they got from Science is a published  
27                durable document and, you know, people may have to  
28                speak to why you didn't take the Science advice.  
29                So it's quite transparent. It's not perfect, but  
30                it's a pretty good structure.

31          MR. LEADEM: I think my time is up. Thank you.

32          MR. ROSENBLOOM: Thank you very much. Don Rosenbloom,  
33                        I appear on behalf of Area D Gillnet, Area B  
34                        Seiner.

35

36          CROSS-EXAMINATION BY MR. ROSENBLOOM:

37

38          Q     Sir, I have a few questions for you and they all  
39                relate to the harmful algae bloom issue as we  
40                heard it yesterday and this morning. Were you  
41                present yesterday?

42          A     Yes, I was.

43          Q     Yes. And during my examination of Dr. Rensel, I  
44                drew to his attention two emails that you wrote.  
45                One of them, I believe, Ms. Baker has just, during  
46                her examination in chief, had marked as an  
47                exhibit. The other one she didn't and so for

1           identification purposes, a document that is  
2           currently an exhibit for identification, Exhibit  
3           KK, I don't believe that has been marked as an  
4           exhibit yet and, sir, I want it on the screen and  
5           just simply want you to identify that, indeed, it  
6           is your property.  
7           A     Yes.  
8           Q     It is now in front of you and you'll see the first  
9           paragraph being from you to a series of people,  
10          including Jim Gower. That is your email?  
11          A     Yes, it is.  
12          MR. ROSENBLOOM: I would ask that that be marked as an  
13          exhibit.  
14          THE REGISTRAR: The caveat will be removed, the KK  
15          caveat will be removed and it will be marked as  
16          1417.  
17          MR. ROSENBLOOM: Thank you.  
18  
19                   EXHIBIT 1417: Email entitled "West Coast  
20                   Blooms" from Robin Brown to Jim Gower et al  
21                   dated August 8, 2006, formerly marked  
22                   Exhibit KK for Identification  
23  
24          MR. ROSENBLOOM:  
25          Q     And obviously, being familiar with your comments  
26               in this email where you say, in part, that you  
27               received from NSDC is that toxic algae blooms are  
28               not a priority issue for DFO Science:  
29  
30                   With fewer staff and smaller budgets, we must  
31                   avoid the temptation to "dabble" in fields  
32                   that are considered to be low priority and  
33                   for which we really don't have the resources.  
34  
35               Those were your words?  
36          A     Absolutely.  
37          Q     And that was in 2006. Would you still be making  
38               those comments today?  
39          A     The instructions that I have have not changed in  
40               terms of the level of priority that this subject  
41               has for DFO Science.  
42          Q     Okay. And with the other emails now marked as an  
43               exhibit by Ms. Baker, and that was marked as  
44               exhibit number -- just recently.  
45          MR. ROSENBLOOM: Can counsel assist me, Commission  
46               counsel? I wrote it down here somewhere.  
47          MR. LUNN: Is it Exhibit 1397?

- 1 MR. ROSENBLOOM: Hmm?
- 2 MR. LUNN: Is it Exhibit 1397?
- 3 MR. ROSENBLOOM: 1397, the other email, and if we can
- 4 just have that briefly on the screen.
- 5 Q This is the one where you speak of the banned
- 6 topic, and then today, you were qualifying it
- 7 slightly.
- 8 A Yeah.
- 9 Q That would still apply, your comments of that day?
- 10 A Yes. Yeah, the policy direction was national.
- 11 Q Yes.
- 12 A In that harmful algal blooms were not a priority
- 13 issue. And I believe the thinking behind it was
- 14 the big issues known to be affected by harmful
- 15 algal blooms were human health through shellfish,
- 16 and we have quite a mature system in Canada with
- 17 the Canadian Food Inspection Agency, then losses
- 18 of fish in net pens, a known issue. DFO, I think,
- 19 considered it to be primarily industry's issue to
- 20 deal with. And impacts on wild fish, not
- 21 generally considered to be an important issue,
- 22 perhaps up till this point.
- 23 Q Well, let's deal with that very issue of up to
- 24 this point. We have before us a briefing document
- 25 to the Deputy Minister, Claire Dansereau --
- 26 A Yes.
- 27 Q -- which you're familiar with and has been
- 28 referred to in these proceedings, and I believe it
- 29 is Exhibit 1371, and you're aware that in the
- 30 ranking of causal connection between the 2009 run
- 31 and the various possible factors, that the algae
- 32 bloom issue appears to now have some priority in
- 33 the eyes of those that are briefing the Deputy
- 34 Minister; you'd agree with me?
- 35 A Yes.
- 36 Q Yes. And that briefing note was in 2010, I
- 37 believe. It was indeed -- excuse me, in 2011, to
- 38 the Deputy Minister. Seeing these briefing notes
- 39 to the Deputy Minister that appear to be giving
- 40 some priority to this issue, or advising the
- 41 Deputy Minister that Science believes there's some
- 42 priority, have you seen any change with Ottawa and
- 43 with your superiors in giving this issue some
- 44 priority in terms of research?
- 45 A I have not seen changes yet.
- 46 Q Can you explain why? I guess it's an unfair
- 47 question. Do you have any theory of your own?

- 1 A No. I mean, the Department does not change  
2 quickly.
- 3 Q Yes.
- 4 A So no, I don't know.
- 5 Q I appreciate that. And yesterday, and again, to  
6 speed this up, Dr. Rensel was testifying about the  
7 interface of -- let me come at it a different  
8 direction, the Commissioner asked Dr. Rensel a  
9 question, I can refer you to the transcript, if  
10 necessary, about whether there's a lot of  
11 international cooperation between our jurisdiction  
12 and the Americans, for example, on the research  
13 being done in respect to the algae bloom issue,  
14 and Dr. Rensel answered that, yes, there are  
15 international symposiums or forums where these  
16 things are discussed, but he said that he has not  
17 seen scientists from British Columbia at these  
18 events. If you wish me to read you the passage, I  
19 can get it very quickly.
- 20 A No, I remember the passage.
- 21 Q You remember it well?
- 22 A Yes.
- 23 Q You don't disagree with him?
- 24 A No, I would agree with him.
- 25 Q You would agree with him. Can you explain to us  
26 why it is that B.C. has no profile at these  
27 international conventions that are dealing with  
28 this very critical subject matter?
- 29 A So there's two components to the historical  
30 harmful algal bloom research in B.C., kind of an  
31 academic side and a government side, historically.  
32 The academic side was very, very strong for many  
33 years, led by Dr. Max Taylor at UBC, who has  
34 retired, and nobody has really stepped up on the  
35 academic side to a role of that level of  
36 international leadership. And in DFO, and we've  
37 heard -- I've talked about this earlier, this has  
38 been dropped down the priority list so I'm not  
39 going to be sending scientists to international  
40 conferences to attend sessions on things which are  
41 deemed to be low priority currently by DFO Science  
42 and the Department.
- 43 Q Well, how can you say that it is a low priority  
44 when our Deputy Minister is briefed this year  
45 that, indeed, this may be a critical factor? This  
46 problem may be a critical factor in at least  
47 explaining the 2009 decline of the stock which, in

Robin Brown

Cross-exam by Mr. Rosenbloom (GILLFSC)

Cross-exam by Ms. Gaertner (FNC)

1 turn, caused the politicians to strike this  
2 inquiry?

3 A I anticipate the priority for this will change.

4 Q Pardon me? I didn't hear you.

5 A I anticipate that the priority for this item will  
6 be changed.

7 Q I see. But you haven't witnessed that political  
8 will up to this moment in time?

9 A No, I have had no direction that I would hire a  
10 scientist or a team to address this issue and,  
11 logically, the way that we're organized in Science  
12 in this region, that activity would take place in  
13 my group.

14 Q Thank you very much.

15 MR. ROSENBLOOM: I may have completed this cross-  
16 examination one or two minutes less than I was  
17 provided and I want counsel to remember that for  
18 future.

19 MS. GAERTNER: Good afternoon, Mr. Commissioner, it's  
20 Brenda Gaertner, and with me, Crystal Reeves from  
21 the First Nations Fisheries Coalition. I did have  
22 a number of detailed questions. I will not be  
23 able to ask them. This is going to be a  
24 reoccurring problem. This is today for our  
25 coalition, it's tomorrow, it's next week, it's  
26 continuing. We are going to have to address this.  
27 I'm going to do my best, Mr. Brown, to ask you a  
28 number of questions of importance to my clients.  
29 I'm going to speak briefly with you on ecosystems  
30 and cumulative impacts. I know you've done some  
31 work on that, and then I'm going to turn to  
32 climate change and risk assessments. I want to  
33 ask one question on HABS, and then I need to ask  
34 you a question about Science research and  
35 management decisions and the interplay between  
36 that because I expect, in giving your position at  
37 Oceans, that that's something that you have to  
38 address.

39

40 CROSS-EXAMINATION BY MS. GAERTNER:

41

42 Q So I want to go first to First Nations Coalition's  
43 Tab 4. I heard earlier your comments or your  
44 responses in response to Mr. Leadem that some of  
45 the research that you're doing is trying to be  
46 transparent about the state of affairs. This is a  
47 Fisheries and Oceans document on the state of

1           affairs as of 2010 in the Canadian Marine  
2           Ecosystem Status and Trends Report. Are you  
3           familiar with this report?

4           A     Yes, I'm familiar with that report.

5           Q     And would you agree that this is an example of  
6           what you were mentioning earlier, about trying to  
7           be transparent about the state of affairs?

8           A     Yes, it is.

9           Q     And I wanted to take you to a couple of places in  
10          this document because, Mr. Commissioner, you'll  
11          see we've looked at this document before, but it  
12          looks like every component -- many of the  
13          components of the marine environment that Fraser  
14          River sockeye salmon travel through, in  
15          particular, I'll take you to page 12 on the Strait  
16          of Georgia and you'll see there the knowledge gaps  
17          that are listed include cumulative impacts on the  
18          coastal zone you further study, and also time  
19          series nutrient data are lacking. That's  
20          consistent today, also, Mr. Brown?

21          A     Yes. This is a recent report.

22          Q     All right. And then we go to the conclusion at  
23          page 33 of this report, which is a summary of the  
24          situations, or at that point it's the reoccurring  
25          themes around the Canadian marine ecosystem and we  
26          look at coastal habitats on page 33 and, again,  
27          cumulative impacts of human activities is  
28          mentioned as:

29  
30                    These ecologically important habitats are  
31                    arguably, also the most likely to be directly  
32                    impacted by cumulative impacts of human  
33                    activities.

34  
35                    You'll see that under "Coastal Habitats"?

36          A     Yes.

37          Q     And you'll also see that in the next paragraph:

38  
39                    There's a paucity of structured and  
40                    reoccurrent monitoring of these habitats and  
41                    the majority of monitoring that does occur is  
42                    targeted towards species of economic or other  
43                    interests.

44  
45          A     Yes.

46          Q     And you'll agree that that's also current in the  
47          state of affairs right now?

1 A Yes.

2 Q And then at the final page of this document, page  
3 37, it talks about the need for monitoring  
4 programs. We've heard that extensively through  
5 the questions of Ms. Baker. What I want to ask of  
6 you is to what extent have First Nations been  
7 involved in looking at the types of monitoring  
8 programs and the way, approaches that Science in  
9 this region could be reliant on?

10 A I think, fairly limited. There have been some  
11 small scale near shore inter tidal monitoring  
12 programs that have involved First Nations.  
13 There's one that takes place very close to where  
14 we live. I know that First Nations are involved,  
15 but on account of more structured, broader basis,  
16 not so much.

17 Q Then can I take you to Exhibit 1415, which your  
18 counsel just put in, which is a list of the  
19 cumulative impact projects that have been going on  
20 as it relates to this coast, or generally, and I  
21 see there's just three as I saw it by my review  
22 that reflect British Columbia work. The one in  
23 2010 and 2011, and the one during 2008 and '09.  
24 One of them was a modelling project by Dr.  
25 Patterson, the other is "Defining vulnerable  
26 marine ecosystems," by Jim --

27 A Boutillier.

28 Q Thank you. And then more recently, there is a  
29 "Cumulative Effects at Multiple Scales" that Dr.  
30 Patterson has done. These are the only studies  
31 that I can see listed in this list of cumulative  
32 studies by DFO. Were First Nations involved in  
33 any of these studies?

34 A I don't think so.

35 Q No.

36 A Perhaps Dave Patterson's study, I don't know.

37 Q The modelling study or the most recent one?

38 A Possibly, the more recent one.

39 Q But you're not aware of it?

40 A I'm not aware.

41 Q All right. And then the next area that I want to  
42 go to is climate change and risk assessment, and  
43 particularly, let's start with Exhibit 1403, which  
44 is the "Commissioner of the Environment and  
45 Sustainable Development," a report of 2010 and  
46 particularly, chapter 3. And Commission counsel  
47 took you to a couple of pages in here, but I want

1 to take you to a couple of other places. Let's go  
2 to page 22 of that document, which is s. 3.45.  
3 And that's a conclusion around the Federal  
4 Adaptation Strategy and Action Plan, and they're  
5 looking at a number of departments, as you know,  
6 in this --

7 A Yes.

8 Q -- and DFO is only one of them:

9

10 In our examination of the Department's  
11 efforts to manage climate risk and share  
12 information, we noted the government has not  
13 established clear priorities for addressing  
14 adaptation to a change in climate and,  
15 therefore, the need remains for a federal  
16 strategy and action plan.

17

18 Do you see that recommendation? And then I want  
19 to take you on to page 25. Sorry, I would  
20 questions on each of these, but I'm going to have  
21 to do them all together. And then at 3.51:

22

23 ... to date no framework, strategy,  
24 or action plan has been completed on  
25 adaptation, nor has a plan to adapt to the  
26 impacts of climate change been incorporated  
27 into any other broader environment and  
28 sustainable development policies ...

29

30 Finally, at section 3.54:

31

32 ... no federal adaptation policy, strategy,  
33 or action plan in place.

34

35 Is that exactly the same situation we have today?

36 A

37 Yes. There has -- I did mention some new  
38 allocation in the most recent budget for climate  
39 impacts adaptations. It is not a huge amount of  
40 money. It's a relatively short-term program. To  
41 my knowledge, there is no cohesive  
42 interdepartmental national program.

42 Q

43 All right. So then I want to take you to this  
44 Exhibit 1402 which is the DFO's Department  
45 Management Committee Risk Assessment, and the  
46 first preliminary question I have on you is what  
47 is Science's role in doing risk assessment? Is  
that all left to management or do you get a seat

1 at the table when looking at risk assessments?  
2 A In some parts, we get a seat at the table. And  
3 certainly, my boss's boss gets the seat at the  
4 table as the AD in Science.  
5 Q So if we go to page 27, did you have a seat at the  
6 table when DFO management was looking at climate  
7 changes and the risks associated with that?  
8 A If you look at the language in this, much of this  
9 sources of risks and much of this derives from the  
10 2005, 2007 Climate Change Risk Assessment, and  
11 Science played a pretty active role in developing  
12 that.  
13 Q All right. So to my read, and perhaps you can  
14 help me, when I read the policy response, I get a  
15 policy framework on climate change. I think of  
16 that as quite different than what the Commissioner  
17 of Environment was talking about when he was  
18 talking about an action plan.  
19 A I would think those are different things, as well.  
20 Q So how is it that we've gone from the  
21 recommendation for an action plan to a policy  
22 framework? That seems very soft from my client's  
23 perspective.  
24 A I could understand how you might think that.  
25 Q Do you agree with me?  
26 A It's a necessary evil in the Department, as I come  
27 to understand it, that you're not going to get a  
28 lot done and you're not going to make major  
29 changes until there is a policy framework for the  
30 Department to work within, it seems to me, and  
31 like, well, from the Science point of view, to  
32 scientists, policy is a necessary evil to get to  
33 where you need to go. Policy people probably see  
34 it differently.  
35 Q But when we're looking at, actually, the changes  
36 that are going on in the environment and the risks  
37 that are associated with things like algae bloom  
38 and all of those, the policy is not going to help  
39 us move on the ground quickly, is it, for those  
40 types of issues?  
41 A No, but policy is probably required, is necessary,  
42 but not sufficient conditions for the Department  
43 to change significantly.  
44 Q And you'll agree with me that it's likely if we  
45 develop the policy, Science is going to tell us  
46 that we need more monitoring and more research in  
47 order to do much?

1 A Any scientist who tells me that they couldn't get  
2 more done with more resources, I would probably  
3 want to fire.

4 Q All right. So then in the interim, while we're  
5 waiting for more monitoring and more science,  
6 let's go to the interplay between Science and  
7 Management, and I'd like to take you to Exhibit  
8 1348. This is a recent document that's been  
9 published by IPSO and IUCN and WCPA. Dr. Irvine  
10 of your Department was actually present at this  
11 conference and we've had a little bit of evidence  
12 around that, but I'd like your comments and  
13 responses. While we're waiting for all this  
14 research and while we're waiting for money, what  
15 we can do in the interim, this is the  
16 Science/Management interplay and the need to  
17 develop action plans. I want to take you to  
18 page 8 of this document and this is the  
19 recommendations that came out of the workshop. In  
20 reviewing this -- have you read this document, by  
21 the way?

22 A I have scanned it.

23 Q Great. In reviewing it, you'll see that some of  
24 the concerns that are happening in our waters, of  
25 course, are concerns all over the world, and these  
26 are high-level issues, but they recommend certain  
27 actions to restore the structure and function of  
28 marine ecosystems. And in it, there are a number  
29 of -- we don't need to go to the first two bullets  
30 there because those are management decisions, but  
31 there's:

32  
33 Establish a globally comprehensive and  
34 representative system of marine-protected  
35 areas.  
36

37 Would you suggest that we look closely at marine-  
38 protected areas on the West Coast, here?

39 A I think marine-protected areas are an important  
40 part of a tool. They're probably not a  
41 particularly important part of the toolbox for  
42 Pacific salmon because of their very, very wide  
43 migration, and probably going to be more important  
44 for species that don't move so far.

45 Q But if we were able to identify nutrient sensitive  
46 areas and things like that, that could be a useful  
47 protected area on our coast; is that correct?

1 A It could be.

2 Q Yes, all right. And then:

3

4 Preventing, reducing and strictly controlling  
5 inputs of substance that are harmful or  
6 toxic.

7

8 That would be useful? We've heard a number of  
9 days on that.

10 A Yes.

11 Q That might be an important action step?

12 A Yes.

13 Q We don't really need any more policies on that, we  
14 need to actually get down and do it?

15 A Where we see that there are negative effects  
16 coming. You know, when you write these things  
17 from a global perspective, and you compare the  
18 Fraser River to the Mississippi or the big Chinese  
19 rivers, you know, we're not on scale perhaps with  
20 -- the impacts and the specifics are important.

21 Q Well, this Commission has heard days and days and  
22 days, months and months, documents and documents  
23 of the vulnerability of Fraser River salmon to all  
24 components, including the marine, including the  
25 last two days, hearing all of the evidence around  
26 harmful of toxic substances. Are we supposed to  
27 just ignore that --

28 A No.

29 Q -- and it's not a high issue? No, clearly not.  
30 So do you agree that we need to get on with  
31 determining how to avoid, reduce or minimize? We  
32 don't need more policies on it?

33 A We have research in place to support action on a  
34 number of those issues.

35 Q All right. And similarly:

36

37 To avoid, reduce or universally or  
38 stringently regulate oil, gas, aggregate and  
39 mineral extractions.

40

41 A Stringently regulate, yes.

42 MS. GAERTNER: I don't have much more time, Mr.

43 Commissioner. I have one more question at this  
44 point of time, and I'll continue to do this.

45 Q Changing, a segue, I suppose, Mr. Brown, one of  
46 the concerns my client raised yesterday, and I'm  
47 going to raise it again with you, is it appears

1           that the data from fish farms, the sampling data  
2           is proprietary to the fish farms, and it also  
3           appears that Dr. Rensel's work was quite -- that  
4           data was quite useful in bringing it current.  
5           Would you agree that that data would be useful to  
6           DFO Science as it continues to look at the  
7           influence of harmful algae blooms on wild stocks?

8           A     Yes.

9           Q     And would you agree that it would be useful to  
10          make it mandatory that the fish farms share that  
11          information with scientists, DFO scientists and  
12          otherwise?

13          A     Yes.

14          Q     And is there any other information that  
15          immediately comes to your mind that is right now  
16          being generated in British Columbia by either the  
17          industry or otherwise that DFO could use in the  
18          marine that is not accessible to them?

19          A     Not immediately, no.

20          Q     So that's one key one?

21          A     Yes.

22          MS. GAERTNER: Those are my questions for today, Mr.  
23          Commissioner.

24          THE COMMISSIONER: Thank you, Ms. Gaertner.

25          MS. BAKER: That completes the second phase of our  
26          marine hearings, and Mr. Commission, I have no re-  
27          examination. I don't know if Canada does, though.

28          THE COMMISSIONER: Thank you very much, Mr. Brown. And  
29          we're adjourned until tomorrow morning.

30          MS. BAKER: Tomorrow, you're adjourned to aboriginal  
31          hearings tomorrow, I believe.

32          THE COMMISSIONER: All right. Thank you.

33          THE REGISTRAR: The hearing is now adjourned till 10  
34          o'clock tomorrow morning.

35

36                         (PROCEEDINGS ADJOURNED AT 4:02 P.M. TO AUGUST  
37                         19, 2011, AT 10:00 A.M.)

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1 I HEREBY CERTIFY the foregoing to be a  
2 true and accurate transcript of the  
3 evidence recorded on a sound recording  
4 apparatus, transcribed to the best of my  
5 skill and ability, and in accordance  
6 with applicable standards.  
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11 Pat Neumann  
12 Registered Court Transcriber  
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24 Susan Osborne  
25 Registered Court Transcriber  
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37 Irene Lim  
38 Registered Court Transcriber  
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