

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.

Friday, June 17, 2011

**Tenue à :**

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

le vendredi 17 juin 2011



### Errata for the Transcript of Hearings on June 17, 2011

Page	Line	Error	Correction
8	32	force	forest
38	20	Cliff	Clif
41	5	CISCO	SISCO
51	46	RNA	RMA
70	29	growths	roads
73	10, 12	Mr. Miller speaking	Mr. Delaney speaking
73	23	FTP	FDP
82	27	Dr. Mark Johannessen	Dr. Mark Johannes

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## APPEARANCES / COMPARUTIONS

Brock Martland Kathy Grant Jennifer Hill	Associate Commission Counsel Junior Commission Counsel Counsel
Charles Fugère Hugh MacAulay	Government of Canada ("CAN")
Clifton Prowse, Q.C. Boris Tyzuk, Q.C.	Province of British Columbia ("BCPROV")
No appearance	Pacific Salmon Commission ("PSC")
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")
No appearance	Area D Salmon Gillnet Association; Area B Harvest Committee (Seine) ("GILLFSC")

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

No appearance	Southern Area E Gillnetters Assn. B.C. Fisheries Survival Coalition ("SGAHC")
No appearance	West Coast Trollers Area G Association; United Fishermen and Allied Workers' Union ("TWCTUFA")
No appearance	B.C. Wildlife Federation; B.C. Federation of Drift Fishers ("WFFDF")
No appearance	Maa-nulth Treaty Society; Tsawwassen First Nation; Musqueam First Nation ("MTM")
No appearance	Western Central Coast Salish First Nations: Cowichan Tribes and Chemainus First Nation Hwlitsum First Nation and Penelakut Tribe Te'mexw Treaty Association ("WCCSFN")
Anja Brown Crystal Reeves	First Nations Coalition: First Nations Fisheries Council; Aboriginal Caucus of the Fraser River; Aboriginal Fisheries Secretariat; Fraser Valley Aboriginal Fisheries Society; Northern Shuswap Tribal Council; Chehalis Indian Band; Secwepemc Fisheries Commission of the Shuswap Nation Tribal Council; Upper Fraser Fisheries Conservation Alliance; Other Douglas Treaty First Nations who applied together (the Snuneymuxw, Tsartlip and Tsawout); Adams Lake Indian Band; Carrier Sekani Tribal Council; Council of Haida Nation ("FNC")
No appearance	Métis Nation British Columbia ("MNBC")

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

No appearance	Sto:lo Tribal Council Cheam Indian Band ("STCCIB")
No appearance	Laich-kwil-tach Treaty Society Chief Harold Sewid, Aboriginal Aquaculture Association ("LJHAH")
No appearance	Musgamagw Tsawataineuk Tribal Council ("MTTC")
No appearance	Heiltsuk Tribal Council ("HTC")

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Vancouver, B.C./Vancouver  
(C.-B.)  
June 17, 2011/le 17 juin 2011

1  
2  
3  
4  
5 THE REGISTRAR: The hearing is now resumed.

6 MS. MARTLAND: Mr. Commissioner, Brock Martland,  
7 appearing as Associate Commission Counsel with  
8 respect to today's hearing, and with me today are  
9 Kathy Grant and Jennifer Hill. Today's evidence  
10 is a single day focusing on forestry and logging  
11 practices and management, and focusing, of course,  
12 on Fraser River sockeye habitat, where we can.

13 We have a panel of three witnesses today.  
14 They will be affirmed in a moment. I'll just take  
15 one or two minutes to cover a few points at the  
16 outset. Dr. Peter Tschaplinski and Ian Miller  
17 from the Province, as well as Peter Delaney from  
18 the Department of Fisheries and Oceans, are all  
19 present to testify today. We had planned to have  
20 a fourth witness, Dr. Gordon Hartman, testify on  
21 this panel. He asked to withdraw last week, and  
22 in the circumstances we acceded to his request.  
23 Obviously he's not here on the panel. We'll  
24 continue with these panellists.

25 At the outset I should ask to have the Policy  
26 and Practice Report, and I'll be referring through  
27 today to what I'll refer to as our list of  
28 exhibits. But that's a list that we've circulated  
29 out to participants, listing documents we may be  
30 leading today. Number 5 on that list is the PPR  
31 entitled "Regulation of Forestry Activities  
32 Impacting Fraser River Sockeye Habitat", 20th of  
33 May, 2011. If I could ask that please be marked  
34 as a PPR in these proceedings.

35 THE REGISTRAR: That will be marked as PPR number 17.

36  
37 PPR-17: Policy and Practice Report,  
38 Regulation of Forest Activities Impacting  
39 Fraser River Sockeye Habitat, May 2, 2011  
40

41 MR. MARTLAND: As we move into questions of the panel,  
42 I will ask other counsel where they're able to, to  
43 direct questions to a particular panel member,  
44 rather than the panel as a whole, if that's  
45 possible to do so. I have time allocations from  
46 participants. I am grateful that participants  
47 have been very cooperative in compressing and

2  
PANEL NO. 48  
In chief by Mr. Martland

1 agreeing to me, to some extent, compressing their  
2 times so that we can complete. And our plan for  
3 the day is to not take a lunch break, to run from  
4 9:00 till one o'clock. I expect that around 11:00  
5 a.m. we would move to about a 20-minute break.

6 Mr. Prowse had asked if he, and I'll see if  
7 he still wishes to do this, he wished to perhaps  
8 use five minutes for a break after my questions on  
9 the understanding that would run into his time,  
10 and if he wishes to do that, I don't see a  
11 difficulty. We'll ask him at the end of my  
12 questions.

13 So I'll ask, first, that these panel members  
14 be affirmed, and then, Mr. Lunn, I'll be moving  
15 through numbers 1, 2 and 3, the respective c.v.s  
16 for these witnesses.

17 THE REGISTRAR: Just turn on your microphones, please.  
18 Thank you.

19  
20 PETER TSCHAPLINSKI, affirmed.

21  
22 IAN MILLER, affirmed.

23  
24 PETER DELANEY, affirmed.

25  
26 THE REGISTRAR: State your name, please.

27 DR. TSCHAPLINSKI: My name is Peter Tschaplinski.

28 THE REGISTRAR: Thank you.

29 MR. MILLER: Good morning. My name is Ian Miller.

30 MR. DELANEY: Peter Delaney.

31 THE REGISTRAR: Thank you. Counsel.

32  
33 EXAMINATION IN CHIEF BY MR. MARTLAND:

34  
35 Q Dr. Tschaplinski, I'll begin with you and I'll  
36 have number 1 on the screen, and I'll just ask, I  
37 hope an easy question. Right now you see some  
38 fish, but in a moment I think you'll see your  
39 c.v.; is that correct, sir?

40 DR. TSCHAPLINSKI: That is correct.

41 MR. MARTLAND: I'll ask that please be marked as the  
42 first exhibit today.

43 THE REGISTRAR: That will be marked as Exhibit 1104.

44  
45 EXHIBIT 1104: *Curriculum vitae* of Dr. Peter  
46 J. Tschaplinski  
47

June 17, 2011

1 MR. MARTLAND:

2 Q In brief form, Dr. Tschaplinski, I understand that  
3 you began work as a Research Scientist for the DFO  
4 in 1983, working on the Coho Salmon Program, that  
5 you obtained your Ph.D. in Marine Ecology from the  
6 University of Victoria in 1987, and worked as a  
7 contract Research Scientist for DFO until 1992,  
8 and at that point took a position as Research  
9 Scientist, Fish Habitat Biology for the Fish-  
10 Forestry Interactions and Watershed Research  
11 Program with the Ecology and Earth Sciences  
12 Section of the Research Branch of the B.C.  
13 Ministry of Forests?

14 DR. TSCHAPLINSKI: That is correct, sir.

15 Q In 2000 you became the Acting Manager of the  
16 Research Program and assumed that substantive  
17 position in 2003, and in turn in 2010 you moved to  
18 the Ministry of Environment as a Research  
19 Scientist with the Aquatic Ecosystems Conservation  
20 Science Program. In that position you continue  
21 your work on fish-forestry interactions?

22 DR. TSCHAPLINSKI: That is correct, sir.

23 Q I understand that in the course of some 25 years  
24 of research on fish-forestry interactions, you've  
25 been involved in a number of multiagency fish-  
26 forestry projects, including the Carnation Creek  
27 Fish-Forestry Interaction Project, the Queen  
28 Charlotte Islands Fish-Forestry Interaction  
29 Program, the Stuart-Takla Fisheries-Forestry  
30 Interaction Project; is that right?

31 DR. TSCHAPLINSKI: That is correct, sir.

32 Q And you currently lead the province's, what I'll  
33 be referring to as FREP, the Forest and Range  
34 Evaluation Program?

35 DR. TSCHAPLINSKI: To correct that statement, sir, I  
36 lead a component of it, not the entire program. I  
37 am the what they call the Resource Value Team Lead  
38 for the fish value, and essentially that is the  
39 fish value as affected by riparian management.

40 Q Thank you. Mr. Miller, I'll have number 2,  
41 please, brought up on screen, and when we see  
42 that, I'll ask whether you recognize that as your  
43 c.v.

44 MR. MILLER: Yes, I do.

45 MR. MARTLAND: I'll ask this please be marked as the  
46 next exhibit, Mr. Registrar.

47 THE REGISTRAR: That will be Exhibit 1105.

1 EXHIBIT 1105: *Curriculum vitae* of Ian Miller

2  
3 MR. MARTLAND:

4 Q Mr. Miller, you have a B.Sc. in Forestry from the  
5 University of British Columbia from 1984. You've  
6 been a Registered Professional Forester since  
7 1986, and in the period of 1974 to 1986, you  
8 worked in various forestry-related jobs, including  
9 a silviculture field technician, timber cruiser,  
10 logger and millworker, and I understand that you  
11 joined the B.C. Forest Service in 1985 and have  
12 remained there, although through a number of  
13 Ministry name changes over a period; is that  
14 correct?

15 MR. MILLER: Yes, that is correct.

16 Q Your initial work for the Forest Service was in  
17 Resource Management and Timber Supply. In the  
18 mid-1990s, you became the Senior Harvest Practices  
19 Forester, working out of Victoria, and supervising  
20 operational planning under what we'll be referring  
21 to, as the PPR does, as the **Code**, the **Forest**  
22 **Practices Code**; is that correct?

23 MR. MILLER: Substantially, the use of the term  
24 "supervision of operational planning" might lead  
25 you to believe I had more hands-on, you know,  
26 direct guidance and leadership of the delivery of  
27 operational planning. I was a policy forester in  
28 the area of legislation and policy around  
29 operational planning. So supervising operational  
30 planning, per se, I think is perhaps overstating  
31 the case.

32 Q Thank you for clarifying that. In 2001 you moved  
33 to the position indeed of Legislation and Policy  
34 Forester, where your work focused on the  
35 transition to what's been referred to as a  
36 results-based legislation and the development of  
37 **FRPA**, F-R-P-A, the **Forest and Range Practices Act**.

38 MR. MILLER: Correct.

39 Q And since 2006 you've served as the Manager of the  
40 Sustainable Forest Management Section, and you've  
41 worked on setting up joint technical committees,  
42 including between the Province and DFO?

43 MR. MILLER: I think it would be an overstatement to  
44 say I've set up those teams. The teams were in  
45 existence prior to my engagement in all instances.

46 Q And you currently serve on the Fish Passage  
47 Technical Working Group?

1 MR. MILLER: Yes, and I chair that group.

2 Q Mr. Delaney, number 3 on our list, I hope will be  
3 your c.v. When that appears, I'll ask if you  
4 recognize that as being your c.v.; is that right?

5 MR. DELANEY: Yes, it is.

6 MR. MARTLAND: If that might be marked as the next  
7 exhibit.

8 THE REGISTRAR: Exhibit number 1106.

9

10 EXHIBIT 1106: *Curriculum vitae* of Peter W.  
11 Delaney  
12

13 MR. MARTLAND:

14 Q Mr. Delaney, you have a Bachelor's degree from  
15 1972 in Zoology and a Mater's degree in 1979 in  
16 Zoology, specifically Fisheries, both from UBC.  
17 You began work as a Fisheries Biologist with B.C.  
18 Hydro Ltd. in 1978, then worked as a consultant  
19 until joining the Habitat Division of DFO in 1981;  
20 is that correct?

21 MR. DELANEY: Yes, it is.

22 Q You have held several positions with the Habitat  
23 Division, which is now OHEB, Oceans, Habitat &  
24 Enhancement Branch, and your work with the  
25 Department has included over time developing and  
26 implementing habitat guidelines, monitoring, and  
27 enforcement initiatives related to land and water  
28 uses, representing the Department in projects such  
29 as the implementation of the province's **Code,**  
30 **Forest Practices Code** in the mid-1990s; is that  
31 correct?

32 MR. DELANEY: Yes, it is.

33 Q From 1997 to 2005 you held the position of Chief,  
34 Habitat Policy Unit and Fish Habitat Unit and in  
35 that position you were responsible for delivering  
36 regional coordination of policy and procedure  
37 related to forestry, including being DFO's  
38 representative on joint committees developed under  
39 **FRPA**; is that right?

40 MR. DELANEY: Yes, it is.

41 Q You then worked as a Senior Program Advisor in the  
42 period of 2005 to 2007, and among other things  
43 coordinated the interaction of provincial  
44 agencies, industry and regional DFO Habitat staff  
45 in relation to fish-forestry files; is that  
46 correct?

47 MR. DELANEY: Yes, it is.

1 Q And since 2007 you've worn a different hat, so to  
2 speak, and have worked as an Aboriginal  
3 Consultation Advisor with OHEB?

4 MR. DELANEY: Yes.

5 Q Thank you. Those were very long and elaborate  
6 questions, but it allowed me to cover that  
7 important background at some speed.

8 I'll start with, if you will, the broadest of  
9 questions and, Dr. Tschaplinski, I'll ask this of  
10 you. In general, I'll try to direct my questions,  
11 but invite other panel members to add additional  
12 comments if they have them, and let me know if you  
13 do. Dr. Tschaplinski, could you please identify  
14 what you see as the main forestry-related impacts  
15 on Fraser River sockeye habitat?

16 DR. TSCHAPLINSKI: There are a number of potential  
17 impacts and those impacts could be around changes  
18 to watershed hydrology, based on amount of forest  
19 harvested, the rate of harvest. The hydrology  
20 changes could influence stream flow, stream  
21 processes, channel form, erosional processes, and  
22 that translates to certain elements of fish  
23 habitat. Other ways forestry potentially could  
24 affect streams and fish, or aquatic environments  
25 and fish, is through streamside management  
26 practices, and how the streamside environment  
27 might change with different practices applied, and  
28 there could be impacts on a number of different  
29 levels, water temperature, nutrient provision to  
30 the streams, provision of wood floor channel  
31 structure, bank and stream microclimate, sub-  
32 forest microclimate, and so forth. Those are some  
33 of the main issues.

34 Q And if we move through some of these types of  
35 impacts, I'd ask for your comments, inasmuch as  
36 you're able to give them, on the nature and the  
37 level of the impact arising. I'll begin first  
38 with sedimentation.

39 DR. TSCHAPLINSKI: As sedimentation, the topic of  
40 sediment in itself is neither good nor bad. It's  
41 an entity. And without sediment in streams, for  
42 example, there would be no fish habitat as we  
43 recognize it.

44 The big issue is the rate of sediment input  
45 and the rate of sediment removal by the stream  
46 current. In undisturbed situations, in  
47 environments undisturbed by human activity, what

1 is moved downstream by the work of the current  
2 stream discharge is replaced from sources from  
3 upslope and from the banks. The issue around  
4 forestry is whether those processes are altered,  
5 so that acceleration of sediment delivery to the  
6 channel is an issue. Also if there are debris  
7 torrents that move down the channel through any  
8 mechanism, such as landslide input and material,  
9 mass movement of sediment out of the channel could  
10 occur.

11 Sediment can affect fish through a number of  
12 mechanisms. Sediment in excess could fill pool  
13 habitat, for example, fill other kinds of  
14 streambed features in the channel, such as the  
15 shallow riffles, filling in the spaces between the  
16 larger gravels and cobbles. These are often  
17 hiding spaces for certain species of fish.  
18 Sediment can affect benthic invertebrate  
19 production, food organisms for fish, they're  
20 important. Excess sediment is known to decrease  
21 their abundance. Sediment can also directly  
22 affect the survival of fish, egg survival,  
23 juvenile habitat in the stream. And those  
24 primarily are the things we're concerned about.

25 Q And what sorts of logging or forestry practices  
26 lead to those sorts of concerns, or issues you've  
27 just described?

28 DR. TSCHAPLINSKI: Practices on steep unstable terrain  
29 have been known to cause landslides that may enter  
30 channels directly connected to the channel  
31 network. Streamside practices that remove  
32 vegetation to the point where they could alter the  
33 proper functioning of the channel through any of  
34 those things that I have mentioned: altering  
35 shade; altering water temperature; altering  
36 nutrient organic material input to the channel;  
37 changing the dynamics of the channel; changing  
38 erosional processes, sediment storage and release.  
39 Streamside practices, harvesting trees directly  
40 from the stream bank in particular can affect some  
41 of those processes.

42 Q Let me move next to ask about stream bank  
43 stabilization, please.

44 DR. TSCHAPLINSKI: Stream banks in streams that are  
45 unaffected by human development, undisturbed  
46 channels, are able to withstand peak flood events  
47 without radically changing their form, without



1 experiencing radical rates of erosion, sediment  
2 released to the channel. The stability issue is  
3 really a dynamic one. Stream banks are not  
4 static. They change naturally over time at a  
5 natural rate.

6 The issue for stability, again under forest  
7 practices, is not to accelerate rates of change,  
8 so that the channel becomes destabilized to the  
9 extent where impacts to the stream and aquatic  
10 habitats occur, such as bank collapse due to  
11 excessive rates of erosion, disruption of stable  
12 in-stream large woody debris. That debris is  
13 partly in place because of channels that are  
14 relatively stable. When the channel banks go, the  
15 debris goes. When the debris goes, the stream  
16 becomes a more simpler environment. The  
17 alternating sequence in many low gradient streams,  
18 important for salmon, deep pools, slow moving  
19 water, faster riffle areas in between them. These  
20 features which add diversity for the channel and  
21 fish habitat, tend to become lost. The diversity  
22 declines. The habitat quality decreases, and the  
23 capacity of the stream to support fish decreases.

24 So stable banks are important for maintaining  
25 those structures, characteristics and functions.

26 Q Water flow and temperature.

27 DR. TSCHAPLINSKI: Water flow can be altered in a  
28 number of ways, the most important of which would  
29 be in the amount, the extent of watershed area  
30 harvested. That factor alone can serve to in some  
31 cases increase the levels of runoff because,  
32 number one, the full force isn't available to  
33 transpire some of the precipitation that falls to  
34 the ground, is taken up by the -- by the trees.  
35 Runoff is increased because the foliage, the  
36 amount of foliage of the forest isn't present to  
37 intercept precipitation. So what happens in this  
38 case is that water yields, as they say, from the  
39 -- from a drainage basin, from a watershed, can  
40 increase over time. And it's usually measured on  
41 an annual basis.

42 Also because of the fact that some of the  
43 forest has been removed, flow timing can alter,  
44 runoff is faster, peak flows can be reached  
45 quicker after storm events, and those peak flows  
46 may be in some cases associated with higher rates  
47 of channel alteration and consequently fish

1 habitat impact.

2 Q Two other --

3 DR. TSCHAPLINSKI: Oh, I'm sorry, I didn't answer your  
4 temperature question. The water temperature  
5 question is largely a matter of riparian  
6 vegetation removal, increasing the amount of sun  
7 that falls on the channel, directly heating the  
8 water.

9 Q That refers to not having shade effectively right  
10 at the stream level?

11 DR. TSCHAPLINSKI: That is correct.

12 Q I'll have two other of these topics to cover. One  
13 is fish passage obstructions.

14 DR. TSCHAPLINSKI: Fish habitat passage obstructions  
15 can be through both natural disturbance, or they  
16 can be also the consequence of improperly  
17 installed crossing structures in streams. Those  
18 are road crossings of streams. In particular,  
19 crossings that are built with round metal pipes or  
20 culverts, particularly an issue on fish-bearing  
21 streams, culverts can become blocked if not  
22 cleaned and maintained regularly.

23 Culverts, if installed into the stream  
24 channel incorrectly, can be problematic. Some  
25 issues around their installation include culverts  
26 that are too long, for example, culverts in excess  
27 of 30 metres. Culverts that do not have any  
28 semblance of natural streambed materials in them  
29 to reduce water velocities and allow fish to pass.  
30 Culverts that are installed at the incorrect slope  
31 in the crossing, a slope that does not match the  
32 gradient of the channel. Those situations can  
33 result in the outlet of the culvert, the  
34 downstream end of the culvert being perched, and  
35 generally speaking if culverts are perched 30  
36 centimetres or more, they are a serious issue for  
37 fish passage, and in both directions.

38 Q I have a question about the mountain pine beetle,  
39 and that's a phenomenon that is, I think, well  
40 reported and people have some -- or at least  
41 awareness of, and I understand that the province  
42 has permitted salvage logging arising from the  
43 spread of the mountain pine beetle. Could you  
44 comment on the effect of mountain pine beetle and,  
45 in particular, salvage logging arising because of  
46 that, tying that back to habitat for Fraser River  
47 sockeye.

1 DR. TSCHAPLINSKI: Well, the mountain pine beetle  
2 epidemic is, of course, enormous and unprecedented  
3 in British Columbia. I believe the latest  
4 estimates that 17.5 million hectares has been  
5 affected to one extent or another. This is an  
6 area approximately five times the size of  
7 Vancouver Island, so it is substantial. And the  
8 great majority of the area that is so affected is  
9 within the Fraser River drainage. So potentially  
10 there could be issues concerning sockeye salmon  
11 habitat, spawning, rearing and migration habitats.

12 Now, we are aware that the mountain pine  
13 beetle epidemic itself, and large-scale salvage  
14 harvesting in addition can have a number of  
15 effects, some of which I've already alluded to.  
16 High rates of salvage harvest that mean high  
17 equivalent clear-cut areas in a watershed, and  
18 high levels of forest removal, could mean  
19 increased water table levels because of alteration  
20 to watershed hydrology, less interception of  
21 precipitation, faster runoff. In the Interior  
22 this could mean faster and earlier snowmelt in the  
23 spring, also contributing to high levels and rapid  
24 runoff. And these could have high energy  
25 erosional implications for both spawning and  
26 rearing habitats.

27 The mountain pine beetle epidemic, I believe,  
28 peaked approximately in 2005. It still is ongoing  
29 and we have been in the field looking at some of  
30 the potential effects or actual effects of that.  
31 And perhaps I'll speak in more detail about the  
32 Forest and Range Evaluation Program assessments  
33 later on in these proceedings. Suffice it to say  
34 that at this point our information from the field  
35 in seasons -- field seasons 2005 through to 2008,  
36 indicate that a substantial number or proportion  
37 of the impacts we have seen can be attributed to  
38 the infestation alone, and the infestation  
39 augmented by fires that can be more frequent and  
40 more severe as one of the consequences of the  
41 mountain pine beetle infestation. Dead, drying  
42 forests, dead foliage, there's the potential that  
43 fires started by any mechanism can occur. They  
44 can be more frequent, and the consequences for  
45 stream channels may be increased water  
46 temperatures, changes in the dynamics of material  
47 delivery. There could be issues of terrain

1 stability, and landslide frequency increase.

2 Our assessments in the field show that this  
3 hasn't occurred to date. For the most part,  
4 licensees who have been salvaging wood have  
5 maintained riparian management areas, as per  
6 **Forest Practices Code** or **FRPA** standard. One of  
7 the reasons may be that in most riparian areas  
8 pine is not a leading species, spruce is, and  
9 other species. So the opportunities for salvage  
10 are more complicated. For the most part we see  
11 that riparian areas have not been clear-cut any  
12 more than they normally are through normal  
13 practices.

14 Q And I wonder if I can pick up on that question of  
15 the practices of the industry, so to speak, but  
16 also you mentioned FREP, and to tie this really  
17 together in a sense, I think, I wonder whether you  
18 can -- we could move to numbers 8 and 9. And, Mr.  
19 Lunn, if you're able to bring those two up  
20 alongside each other, just at least the first page  
21 of each of those documents, that would be helpful.  
22 And the question at a general level being, and  
23 certainly welcoming you to move to discussion of  
24 FREP, although I'll ask for the two-minute  
25 overview, rather than the more detailed  
26 explanation of it.

27 But via FREP, or more generally, if you could  
28 comment on forest practices and impacts and our  
29 understanding and your understanding of the  
30 impacts of those practices, and in particular the  
31 insights through the report on the right, which is  
32 number 9 on the list, the State of Stream  
33 Channels, Fish Habitats, and their Adjacent  
34 Riparian Areas report.

35 DR. TSCHAPLINSKI: The report that you see, number 27,  
36 the FREP report, is the outcome of to this point  
37 of field assessments of the post-harvest condition  
38 of streams and their riparian areas throughout  
39 British Columbia. The report is based on  
40 assessments in the field that were implemented by  
41 using of a comprehensive suite of indicators in a  
42 methodology that was developed by a multiagency  
43 federal-provincial academia team in 2004, 2003-  
44 2004. That methodology and protocol was piloted  
45 in that same year, 2004, made operational in 2005.  
46 We have done annual surveys ever since.

47 This report speaks to a sample of 1,441

1 streams that were assessed for post-harvest  
2 conditions, and they were assessed on the  
3 principle of what we call properly functioning  
4 condition. Every stream can be in one of four  
5 states after harvesting. Three of those are  
6 proper functioning, from the best possible state  
7 to two other states, which also although properly  
8 functioning there are some alterations that have  
9 accumulated, not enough to kick the site and the  
10 stream into a not-properly functioning condition.  
11 And our outcomes very generally, if I can put the  
12 four different possibilities into common language,  
13 the properly functioning states would be  
14 excellent, very good and good. The not properly  
15 functioning would be poor.

16 Eighty-seven percent of streams in the  
17 province were in one of those three states of  
18 properly functioning condition. About 40 percent  
19 in the best condition, another say the remainder  
20 up to 87 percent would be in the two intermediate  
21 categories. Thirteen percent of streams in the  
22 province are not properly functioning, and most of  
23 those would be very small, headwater, non-fish-  
24 bearing tributaries at the highest elevations in  
25 watersheds where much of the harvesting is  
26 occurring today. About one -- sorry, about one  
27 out of five of those channels are not properly  
28 functioning. And also about one out of ten of the  
29 smallest fish-bearing tributaries are not properly  
30 functioning.

31 Q What I should -- before I forget to do this.

32 DR. TSCHAPLINSKI: Yes.

33 Q Report #27, which you've just referred to, I think  
34 we should mark that as an exhibit, and of course  
35 that's -- we can only cover this in an overview  
36 way.

37 DR. TSCHAPLINSKI: Yes.

38 Q But the document gives us in quite some detail  
39 this classification and the results of that work.

40 DR. TSCHAPLINSKI: That's right.

41 Q And indeed were you -- did you write that report?

42 DR. TSCHAPLINSKI: I wrote the report.

43 MR. MARTLAND: If number 27 might be marked -- I'm  
44 sorry, number 9 on the exhibit list, Report #27,  
45 if that might be marked as the next exhibit.

46 THE REGISTRAR: That will be marked as Exhibit 1107.

47

1 EXHIBIT 1107: Tschaplinski, Report #27,  
2 State of Stream Channels, Fish Habitats and  
3 their Adjacent Riparian Areas, December 2010  
4 [FREP]  
5

6 MR. MARTLAND:

7 Q The document on the left is the Chief Forester's  
8 2010 Annual Report on the Forest and Range  
9 Evaluation Program, which is a more general  
10 description. The date on that is February 2011 of  
11 the work under FREP; is that correct?

12 DR. TSCHAPLINSKI: That is correct, sir.

13 MR. MARTLAND: If that might be marked as the next  
14 exhibit, please.

15 THE REGISTRAR: Exhibit 1108.  
16

17 EXHIBIT 1108: Chief Forester's 2010 annual  
18 Report on the Forest and Range Evaluation  
19 Program, February 2011 [FREP]  
20

21 MR. MARTLAND:

22 Q To what extent does the FREP report that you were  
23 involved in writing give us insights as to work  
24 under **FRPA** as opposed to the **Code**, or is this more  
25 of a picture that's painted of what was going on  
26 under the **Code** than under **FRPA**?

27 DR. TSCHAPLINSKI: It is much more a picture of what  
28 was occurring under the **Forest Practices Code** of  
29 British Columbia. Streams, riparian areas and  
30 watersheds managed under the **FRPA** are being  
31 assessed as we speak. What was really important,  
32 however, is to get a baseline of performance under  
33 the **Forest Practices Code**. The riparian  
34 management standards and practices under the **Code**  
35 have been largely migrated to the **FRPA**. Licensees  
36 can also do something alternate to these standards  
37 if so approved in a Forest Stewardship Plan. But  
38 by and large the stream classification system, the  
39 system of riparian management areas, no-harvest  
40 reserves and management zones remain the same.

41 And so to look at whether or not the **FRPA** is  
42 getting us better results, worse results or the  
43 same results, we needed to look at streams managed  
44 under the **Code** to see if those standards and  
45 practices that collectively were considered to be  
46 acceptable, were they really giving us the  
47 expected results on the ground, protection of

1 streams and fish habitat. That had never been  
2 done in a systematic way, at least province-wide.  
3 And that's where Report #27 comes in, and we have  
4 found that there are by and large good practices,  
5 but we've also identified some outcomes that are  
6 not so good, and there are a number of  
7 intermediate outcomes. What we have found is ways  
8 of making those outcomes better. So part of the  
9 FREP is to look at what is going right, what is  
10 not going right, and how to make areas that need  
11 improvement, how to make good on those.

12 The Chief Forester's Report contains  
13 recommendations for the latter, how to improve  
14 results more broadly. And so there are a number  
15 of recommendations for improved results in that  
16 report, in the riparian fish section, and we have  
17 seen that our findings show that when these small  
18 streams have no-harvest buffers ten metres wide or  
19 wider, they invariably have very good outcomes.

20 So we have recommended a minimum of ten  
21 metres no-harvest buffer around small fish-bearing  
22 streams, and all perennially flowing, non-fish-  
23 bearing tributaries to them. And those are  
24 perennial streams that can provide important  
25 materials for the fish habitat downslope. Those  
26 materials, that's water, sediments needed for  
27 habitat, invertebrates for fish food, organic  
28 nutrients, and in some cases larger organic  
29 materials important for channel structure. All of  
30 those streams that provide these things, we are  
31 recommending that these reserves be implemented.

32 And for the non-perennially flowing  
33 tributaries, those that can still provide  
34 important materials for fish habitats, such as  
35 that water and the nutrients, when they do flow,  
36 we are recommending as many canopy trees as  
37 possible be retained, but all of the understory  
38 and non-merchantable vegetation.

39 For all other streams, those that are not  
40 directly connected to fish habitat, and streams  
41 that are flowing perhaps just ephemerally, we  
42 suggest that the riparian area remain intact by  
43 preserving all of the understory and non-  
44 merchantable trees in those sites.

45 We have found in FREP that a lot more  
46 retention occurs along streams than anyone ever  
47 imagined. And it's just one of those consequences

1 about going outside and seeing what's really going  
2 on. And FREP was the first --

3 Q It was better than your expectations?

4 DR. TSCHAPLINSKI: Well, yes, and my personal  
5 expectations, as well. The anecdotal information  
6 is that these small streams almost invariably were  
7 clear-cut to the stream banks. We found this not  
8 to be the case. In fact, 80 percent of the  
9 small tributary S4 fish-bearing streams received  
10 no-harvest buffers. And those buffers, on  
11 average, were 17 metres wide. And the buffers of  
12 those streams that averaged 24 metres wide, were  
13 actually in virtually pristine condition. And  
14 those were implemented in places across the  
15 province.

16 No one ever expected the outcomes for the  
17 small fish-bearing tributaries, the class S6s.  
18 Almost invariably it was commonly thought that  
19 these channels would be clear-cut. Fifty-six  
20 percent of them received no-harvest buffers, and  
21 those buffers on average were 11 metres wide. And  
22 the variance around these averages was quite  
23 small. One metre for the S6s, less than two  
24 metres for the S4s. So these practices were  
25 applied at least consistently enough to have  
26 pretty tight variation around these means.

27 Now, there are those streams that didn't get  
28 this kind of treatment, 44 percent of S6s, and  
29 about 20 percent of S4s. All kinds of different  
30 sorts of retention would occur in these sites.  
31 Not all of them would be clear-cut. But  
32 invariably where clear-cutting did occur, that's  
33 where we found the bulk of our problems. Hence,  
34 the Chief Forester's recommendations for  
35 improvement.

36 Q I'm mindful of the fact I haven't let your  
37 colleagues, or at least I haven't put questions to  
38 them, yet, so they may be wondering why they're on  
39 the panel. I'll ask, indeed, Mr. Miller - they  
40 may be happy, but I'm sorry to change that - Mr.  
41 Miller, I'm going to --

42 MR. MILLER: (Indiscernible - overlapping speakers).

43 Q -- have Mr. Lunn bring up number 7 on the list of  
44 exhibits, please. This, I hope, is an easy quick  
45 question, but we'll see if that's the case. This  
46 is the state of B.C.'s Forests 2010 report; is  
47 that correct?



1 MR. MILLER: Correct.

2 MR. MARTLAND: I'll ask that be marked as the next  
3 exhibit, please.

4 Q In brief, is it correct that this is -- or at  
5 least if I might confirm this report is issued, if  
6 not annually, periodically, prepared by the  
7 province in order to describe the state of the  
8 forest and in a sense report on industry and  
9 report on what's happening?

10 MR. MILLER: That's correct, and it is a periodic, not  
11 an annual publication.

12 MR. MARTLAND: Thank you.

13 THE REGISTRAR: Tab 9 will be marked as 1109.

14

15 EXHIBIT 1109: The State of British  
16 Columbia's Forests, 3rd Edition, 2010 [BC  
17 Ministry of Forests, Mines and Lands]  
18

19

MR. MARTLAND: Thank you.

20 Q Mr. Miller and Mr. Delaney, both, and I'll preface  
21 this by saying, although it may be artificial for  
22 people who are sitting in the courtroom watching  
23 these proceedings, we have a fairly detailed  
24 Policy and Practice Report. Later in my questions  
25 I'll direct you to some of the points that all of  
26 you as panellists have identified with respect to  
27 that report, and some clarifications or  
28 corrections. At this point, if we might take that  
29 as a shared understanding or as something that  
30 we've all looked at, with that as some context,  
31 what I'd like to focus in on is the current work  
32 that the province and DFO are doing on fish-  
33 forestry interactions. And particular, Mr.  
34 Miller, I'll start with you, if you could give us  
35 a picture of which -- I appreciate the provincial  
36 ministries change names and I don't know to what  
37 extent the responsibilities change, but if there's  
38 a present-day snapshot, who's doing what?

39 MR. MILLER: Who's doing what. Thank you, and I will  
40 try and keep this brief. There's many aspects of  
41 this answer and lots of detail I could get into.  
42 I'll try and limit my comments to the places I'm  
43 aware of and actively engaged in that do intersect  
44 between the province and the federal government  
45 around fisheries and fish habitat management.  
46 First of all, the -- and we've already mentioned  
47 both the **Forest Practices Code** and the **Forest and**

1           **Range Practices Act** and the various regulations  
2           and guidebooks that we haven't -- I don't know if  
3           we've mentioned the guidebooks, per se, but the  
4           guidebooks that accompany them, all of which have  
5           been created in a spirit of collaboration and  
6           consultation between the provincial and federal  
7           government.

8           Under the large heading of "monitoring and  
9           enforcement", DFO collaborates with the province  
10          on, as Dr. Tschaplinski said, the Forest and Range  
11          Evaluation Program and many of the scientific  
12          criteria that go into our monitoring program of  
13          fish water and fish habitat.

14          Compliance and enforcement. So we have a  
15          large Compliance and Enforcement staff in our  
16          Ministry and they do collaborate and do cooperate  
17          on investigations and enforcement work with the  
18          federal Department of Fisheries and Oceans.

19          We work together as a province with our  
20          federal colleagues on a joint management  
21          committee, and joint steering committee. These  
22          are two of the implementation committees that were  
23          started under the **Forest Practices Code** continue  
24          under **FRPA**. They are, from a provincial  
25          perspective, a collaboration of the resource  
26          agencies that are involved in the implementation  
27          of those two pieces of legislation, you know, one  
28          after the other, the implementation of those two  
29          pieces of legislation.

30          We collaborate with DFO at a more local level  
31          on perhaps a more *ad hoc* basis, but we do have a  
32          provincial **FRPA** implementation team, and there was  
33          provincial implementation teams for the **Code**.  
34          There are regional teams, there are interagency  
35          management committees that operate within our --  
36          the Operations arm of our Ministry that I expect  
37          include DFO representatives. I wouldn't say  
38          necessarily uniformly everywhere, but I know those  
39          committees do engage our DFO colleagues at least  
40          some times and on those issues that are most  
41          relevant.

42          Other pieces I'm most -- I have been engaged  
43          with over the years. Early in my professional  
44          forestry career, worked on -- took training and  
45          implementing the Fish-Forestry Interaction Program  
46          that predated the **Forest Practices Code**. We've  
47          collaborated with DFO on the creation of various

1           **Forest Practices Code** guidebooks and, you know,  
2           Fish Stream Identification, Forest-Fish Stream  
3           Crossing Guidebook, Watershed Evaluation, Riparian  
4           Area Management Guidebooks notable among them. We  
5           work with DFO on the Fish Passage Technical  
6           Working Group you mentioned earlier that I chair.  
7           We have a DFO representative on that group and  
8           have since -- since the beginning.

9           Not my particular area of practice, more Dr.  
10          Tschaplinski's, but we do collaborate with DFO on  
11          a number of research-related activities relative  
12          to fish and fish habitat.

13         Q       Thank you. And I will come back to ask about the  
14                 guidebooks that you've just described, and indeed  
15                 I'll have some of those brought up on screen  
16                 shortly.

17                 First, though, Mr. Delaney, if you could  
18                 please give us a description of the DFO present  
19                 involvement on these matters.

20         MR. DELANEY: Okay. Well, as outlined in the -- when  
21                 you went through my resume, I haven't been  
22                 actively involved in this file for the last four  
23                 or five years, so I have -- I was very involved up  
24                 till that time, and we did have a very active  
25                 engagement with the province in -- as Ian had  
26                 mentioned, at the corporate level on the Joint  
27                 Management Committee and the Joint Steering  
28                 Committee. We actively participated there. We  
29                 were very involved with the province also in the  
30                 development of **FRPA**, and also in the development  
31                 of the **Code**, and the subsequent guidebooks from --  
32                 that were part of the **Code** implementation. We  
33                 were also very involved from a research  
34                 perspective, our research program was working  
35                 cooperatively with the province.

36                 My understanding more recently, though, given  
37                 how **FRPA** operates, that our field engagement -- I  
38                 should add, sorry, just one other piece of  
39                 clarification. Similar to the province, we have  
40                 our headquarters staff are in Vancouver; of  
41                 course, the province in Victoria. But we also had  
42                 field staff throughout the region who are the  
43                 active day-to-day eyes and ears in the field,  
44                 looking at referrals and development activities  
45                 and enforcement activities.

46                 So many of these initiatives I was mentioning  
47                 a few minutes ago where the feds have been --

1 federal government has been involved with the  
2 province have been more at the corporate level.  
3 At the field level our staff were engaged in  
4 referral reviews, stream crossings, cut block  
5 plans, so on and so forth. More recently, though,  
6 with **FRPA**, due to a number of reasons that our  
7 field staff have been less so engaged in reviewing  
8 forestry activities, and corporately it's my  
9 understanding that we're -- we haven't been as  
10 engaged over the last three or four, possibly five  
11 years with the province. although we do have  
12 representation on, as Ian mentioned, the joint  
13 management steering committees. Our engagement  
14 hasn't been as proactive, nor have we been as  
15 involved on the research side and the monitoring  
16 side.

17 I think the Commission has been informed  
18 about the habitat monitoring, the federal Habitat  
19 Monitoring Program, and likely is aware that there  
20 are initiatives that are being undertaken now to  
21 increase that, the monitoring, and ideally working  
22 with the province in those areas there.

23 Q You described that there's a number of reasons for  
24 the federal government, or at least DFO not being  
25 involved the same way as before. Could you help  
26 us understand that? Does that tie to things like  
27 on the provincial level **FRPA** and on the federal  
28 level the EPMP, the Environmental Process  
29 Modernization Plan?

30 MR. DELANEY: Yes. There's a number of reasons, and  
31 **FRPA** operates differently than -- it's a results  
32 based, professional reliance and there is much  
33 more reliance upon the industry to undertake their  
34 role out there in forest harvesting. So there's  
35 not as much information coming to DFO to review  
36 referrals as there was in the past. The  
37 Environmental Process Modernization that again I  
38 think has been presented to the Commission is one  
39 of streamlining our regulatory reviews, risk  
40 management, more partnerships, engaging others in  
41 the activities that we're undertaking.

42 So both of these, the implementation of **FRPA**  
43 and likewise the implementation of EPMP were  
44 coming along at the same time. There have been  
45 reduction in staff also during that time period.  
46 And an increased number of other development  
47 activities occurring. So a number of initiatives

- 1 coming together out there that have changed the  
2 dynamics and how our field staff are doing work.
- 3 Q You say you haven't been in the position of doing  
4 this work actively, and you can correct me, is it  
5 the last -- since 2007, is that...
- 6 MR. DELANEY: Yes.
- 7 Q To your knowledge, has someone notionally worn the  
8 hat that you used to wear, or is that hat sitting  
9 on a...
- 10 MR. DELANEY: Well, that's another issue - thanks for  
11 reminding me - that corporately in Vancouver there  
12 was a strong role being played to coordinate the  
13 federal-provincial interaction, and we also had --  
14 I had some staff working on the more technical  
15 nature of things, on some of the field studies and  
16 developing guidebooks. That position we lost back  
17 in the early 2000s, and by the mid-2005/'06, I  
18 would say, the priority placed on our corporate  
19 role in the fish-forestry file was being reduced.  
20 And since I left the position, there have been --  
21 one or two people have stepped in and been  
22 participating on the joint management committee,  
23 some of the calls, but we haven't had the degree  
24 of priority placed on that file.
- 25 Q Is there one person who is the point person or the  
26 lead on these matters, to your knowledge?
- 27 MR. DELANEY: Not -- well, I suspect it's the Regional  
28 Manager, the Habitat Protection Unit, Habitat  
29 Protection and Sustainable Development Unit, but  
30 it's one of many, many tasks that person has, and  
31 so it's not a focussed effort that it has been in  
32 the past.
- 33 Q How has the change to the model under **FRPA**, the  
34 results-based approach, has that changed the  
35 extent to which DFO receives referrals, whether  
36 from the province or industry, and I suppose the  
37 more pertinent question, does DFO get referrals?
- 38 MR. DELANEY: It's changed significantly that we're not  
39 getting referrals on the -- as far as the cutting  
40 plans, et cetera, out in the field itself. Stream  
41 crossings is another area that was mentioned  
42 earlier. And in the Stream Crossing Guidebook it  
43 does note that the notifications are to be sent to  
44 Fisheries and Oceans, but in many cases our field  
45 staff are not receiving those, either.
- 46 Q Mr. Miller, I have some documents I'd like to  
47 introduce at highway speed, and I'll have Mr.

1 Lunn, starting with number 11, and we'll move  
2 through sequentially to number 16, but I'll  
3 preface this by saying that there were several  
4 guidebooks - you can correct me if I have this  
5 right or wrong - there were several guidebooks  
6 that were developed under the **Code**, at a general  
7 level they were not legally binding, although I  
8 understand that some of them were considered to be  
9 cited guidebooks, that they had some legal effect,  
10 and so perhaps you can first of all just clarify  
11 that. Were there some of these that were cited  
12 and had a legal effect under the **Code**, but not now  
13 under **FRPA**?

14 MR. MILLER: That is correct. And the list, the number  
15 of cited guidebooks I do not have with me. There  
16 were a handful.

17 Q Okay.

18 MR. MILLER: I know as part of this proceedings we've  
19 captured four guidebooks that are most pertinent  
20 to the business area we're discussing here.

21 Q Mm-hmm.

22 MR. MILLER: Of those four, two were cited guidebooks,  
23 two were not.

24 Q Okay. And why don't I move through these and as  
25 we go, if you can, I'll ask the question and  
26 introduce the document, but if it's a cited --

27 MR. MILLER: Yes.

28 Q -- report or as a cited guidebook --

29 MR. MILLER: Yes.

30 Q -- that would be helpful. Number 11 you'll see  
31 from 1995, the Riparian Management Area Guidebook.

32 MR. MILLER: Yes.

33 MR. MARTLAND: If that might be marked as the next  
34 exhibit, please.

35 THE REGISTRAR: Exhibit 1110.

36

37 EXHIBIT 1110: Riparian Management Area  
38 Guidebook, December 1995 [BC Ministry of  
39 Forests]  
40

41 MR. MARTLAND:

42 Q Number 12 on the list of documents, it's a bit  
43 hard to see with the white font, the Fish-stream  
44 Crossing Guidebook, I'm trying to find a date, but  
45 in any event...

46 MR. MILLER: I think that was a 2002 publication.

47 THE REGISTRAR: Yes, March 2002.

1 MR. MARTLAND: Thank you. All right. If that might be  
2 marked as the next exhibit, please.  
3 THE REGISTRAR: Exhibit 1011.

4  
5 EXHIBIT 1111: Fish-stream Crossing  
6 Guidebook, March 2002, **Forest Practices Code**  
7

8 MR. MARTLAND:

9 Q Number 13 on the list, I think this may be a cited  
10 guidebook, but you can tell me if that's right.  
11 The Coastal Watershed and Interior Watershed  
12 Assessment Procedure Guidebook.

13 MR. MILLER: Yes. This was a cited guidebook, and just  
14 for everybody's knowledge, I mean, "cited" means  
15 cited in regulation and therefore at least certain  
16 elements of the content of the guidebook would  
17 then carry the weight of regulation.

18 Q And what we're referring to now as this being a  
19 cited guidebook was true under the **Code** but is not  
20 true under the **FRPA**, is that correct?

21 MR. MILLER: That is absolutely correct.

22 Q Thank you. These still, nonetheless, continue to  
23 have relevance and to give important guidance?

24 MR. MILLER: They continue to provide useful guidance  
25 for resource practitioners and professionals in  
26 the province, yes.

27 MR. MARTLAND: I'll move to number 14 and preface it by  
28 saying this -- I'm sorry, if that might be marked  
29 as the next...,

30 THE REGISTRAR: Yes, number 13 is 1112.

31  
32 EXHIBIT 1112: Coastal Watershed Assessment  
33 Procedure Guidebook (CWAP) and Interior  
34 Watershed Assessment Procedure Guidebook  
35 (IWAP), April 1999, **Forest Practices Code**  
36

37 MR. MARTLAND: Thank you.

38 Q Number 14 on the list of documents, what we have  
39 here is a link which we don't have on screen, but  
40 if you can trust us that that will take us to, and  
41 we're about to browse the Web together, but we  
42 will ensure that our record reflects the proper  
43 document, the Coastal Watershed Assessment  
44 Procedure Guidebook. Now, as I -- I'll preface  
45 this by saying, Mr. Commissioner, this is a little  
46 bit like a judge who prefers to reach to the first  
47 edition of Driedger's book on statutes rather than

1 the more recent updates. It's a bit of a purist  
2 version.

3 Dr. Tschaplinski, I understand from  
4 discussing with you that this 1995 Coastal  
5 Watershed Assessment Procedure Guidebook, from a  
6 purist's point of view, is considered indeed to  
7 offer more and in some respects more helpful  
8 guidance.

9 DR. TSCHAPLINSKI: It does in a certain sense, sir.  
10 What the main differences are between the first  
11 editions of both the Coastal and the Interior  
12 Watershed Assessment Procedures and the subsequent  
13 one, is that the early procedures contained some  
14 quantifiable targets. For example, that  
15 practitioners should be able to identify vis-à-vis  
16 potential watershed scale issues around  
17 disturbances and potential issues for hydrology,  
18 and the stream channel network. These thresholds  
19 were developed on the basis of professional  
20 opinion largely. And between the two editions of  
21 the guidebook, from the 1995 one to the one that  
22 the -- I believe it was 1998, or the ones that  
23 came out in 1998, a large base of information was  
24 coming out of the research community that would  
25 inform decision-making on thresholds, for example,  
26 equivalent clear-cut area, road density on  
27 unstable slopes, road density in areas of erodible  
28 soil, road density in general, rate of cut, and  
29 other factors. New information was coming forth,  
30 so there was some question about the veracity of  
31 the original thresholds.

32 However, I do understand from some  
33 practitioners out there, including government  
34 agencies looking to develop indicators over broad  
35 spatial scales, is that the usefulness of some of  
36 these thresholds are -- they're still there,  
37 they're still useful.

38 Q That's helpful.

39 DR. TSCHAPLINSKI: Yeah. So the second guidebook, I  
40 think, went more in the direction of what really  
41 happened overall in forestry management, from a  
42 more prescriptive basis to a more open one, where  
43 professional alliance played a bigger role of  
44 obtaining all the latest information guidance  
45 materials from whatever source to inform planning  
46 and practices. So that's kind of the spirit, in  
47 my interpretation, of what guided the changes from



1           the original watershed assessment procedures to  
2           the second edition.  
3 MR. MARTLAND: All right. And if I didn't do so, Mr.  
4           Giles, maybe you can assist me, but number 14 on  
5           our list of documents on the screen, if that might  
6           be marked as the next exhibit.  
7 THE REGISTRAR: Exhibit 1113.

8  
9                   EXHIBIT 1113: Coastal Watershed Assessment  
10                   Procedure Guidebook (CWAP), August 1995,  
11                   **Forest Practices Code**

12  
13 MR. MARTLAND:  
14 Q       To round out the picture, I have two more which I  
15       can deal with quickly. Number 15, I expect will  
16       now take us to the equivalent 1995 document, but  
17       the Interior document, Mr. Miller, is that  
18       correct?

19 MR. MILLER: I believe so. I'm just -- yes, there we  
20       are. That would be the Interior one, yes, thank  
21       you.

22 Q       Thank you. And finally, on this part, number 16  
23       should be the Fish Stream Identification Guidebook  
24       from 1998.

25 MR. MILLER: Right. And that was of the guidebooks  
26       we've looked at here, the second of the cited  
27       guidebooks.

28 MR. MARTLAND: It was the second cited one. I'll just  
29       wait, Mr. Lunn, that's number 16 on the list of  
30       exhibits, if that might be brought up, and if I  
31       could ask that be marked as the next exhibit,  
32       please.

33 THE REGISTRAR: Do you want to do 15 first?

34 MR. MARTLAND: Yes, I do. Number 15 I neglected to  
35       have marked as an exhibit. If I could ask that be  
36       marked first.

37 THE REGISTRAR: That will be 1114.

38 MR. MARTLAND: And --

39 THE REGISTRAR: Number 16 will be 1115.

40  
41                   EXHIBIT 1114: Interior Watershed Assessment  
42                   Procedure Guidebook (IWAP), September 1995,  
43                   **Forest Practices Code**

44  
45                   EXHIBIT 1115: Fish-stream Identification  
46                   Guidebook, August 1998, **Forest Practices Code**

47

1 MR. MARTLAND: Mr. Commissioner, I had set out my own  
2 time allocation of one hour. I'm close to it.  
3 I've had two donations. I haven't had that happen  
4 yet, but I appreciate that assistance from other  
5 counsel in the room. So I'm going a bit long, but  
6 I'm doing so mindful that I expect we're still in  
7 the position to run on schedule today.

8 Q Mr. Miller, I'd like to take you to really a  
9 critique, and you've heard this critique, I'm sure  
10 you've heard it phrased better than I'll try and  
11 do now. But one of the critiques under the **FRPA**  
12 results-based approach focuses on this  
13 professional reliance model. In brief, some  
14 people express the concern that that sort of  
15 approach gives the keys to the wrong people, so to  
16 speak, that it hands to industry the  
17 responsibility for ensuring that things are being  
18 done properly, and perhaps puts consultants,  
19 foresters or people in a position where the model  
20 only works if there's the utmost ethical  
21 integrity, in the sense that their retainer or  
22 account may be paid by someone who has an interest  
23 in being profitable and presumably taking as many  
24 trees or as much wood as feasible to do. So that  
25 one of the concerns raised with respect to the  
26 professional reliance approach is that that's a  
27 flawed model, it should be government doing that  
28 work as opposed to relying on professionals.

29 I'd like to ask, I know you're knowledgeable  
30 on this professional reliance model, I would like  
31 to put that critique to you and ask for your  
32 comments or response.

33 MR. MILLER: All right. Thank you. First of all, the  
34 professional reliance model is nothing new in  
35 British Columbia and it's certainly nothing new in  
36 the context of forestry and forest management.  
37 Resource professionals, and I'll use the term  
38 resource professionals generally and in the  
39 context of forestry and forest management use that  
40 term to refer to registered professional foresters  
41 and forest technicians who are all part of the  
42 Association of B.C. Forest Professionals,  
43 professional engineers and geoscientists who are  
44 members of the Association of Professional  
45 Engineers and Geoscientists of British Columbia,  
46 professional biologists and professional  
47 agrologists who are members of the respective

1 professions governing those two bodies. And we,  
2 you know, I will, for the sake of my discussion  
3 lump them.

4 Those, you know, entities, those professions,  
5 those individuals have been in place and  
6 practicing in British Columbia for decades,  
7 certainly in the context of forestry and  
8 registered professional foresters since 1947. So  
9 professional reliance, generally speaking, is the  
10 reliance on professionals for advice and input to  
11 management decisions, policy decisions, because of  
12 the nature of the qualifications of those  
13 individuals the requirements for becoming  
14 registered, the requirements for remaining  
15 registered, the requirements of our codes of  
16 ethics, which are legally binding and the  
17 profession of forestry is governed by a statute in  
18 British Columbia. The code of ethics carries the  
19 weight of law and requires that we practice in  
20 areas that we are competent to, that there are  
21 discipline and -- you know, discipline procedures  
22 if we run afoul of our limitations around  
23 professional practice. So all of that, like I  
24 say, has been in place for quite awhile.

25 Under the **Forest Practices Code** and with the,  
26 you know, mechanisms like cited guidebooks with  
27 the very detailed set of Act and Regulations and  
28 guidebooks and decision-making procedures and all  
29 of the linkages that those created, I think it  
30 fair to say under the **Forest Practices Code**, which  
31 compared to **FRPA** could be seen as a prescriptive  
32 model as opposed to a results-based model, and  
33 recognize that is very much a continuum and, you  
34 know, at one side of the continuum would be the  
35 Code and prescriptive and another side would be  
36 **FRPA**, a more results-based approach. But where  
37 they are on the continuum is moot.

38 But suffice it to say that significant  
39 difference does exist. Under the **Forest Practices**  
40 **Code** very detailed, very prescriptive. The  
41 guidebooks, other than cited guidebooks, were, you  
42 know, to guide the mechanics of putting a plan  
43 together or doing a -- not so much a watershed  
44 assessment, but putting together a mechanism for  
45 riparian area management, for example.

46 What wound up happening under the ten years  
47 we managed under the **Forest Practices Code** is

1 often those guidebooks became the shortest way to  
2 get approval and time is money, as it most often  
3 is in business. We often defaulted to accepting  
4 what was in the guidebook as a way, you know, to  
5 move through to the approval process, guidebooks  
6 having been written by large teams of experts  
7 generally seen to be acceptable practice. The  
8 problems we were having is because of the linkages  
9 of the many operational plans under the Code and  
10 the requirement for all of those to be consistent,  
11 it really tied us in knots and, you know, forced a  
12 lot of detail out of transactions back and forth,  
13 a lot of plan amendments all over the place.

14 So we essentially, by way of that mechanism,  
15 created an environment within which professionals  
16 were somewhat hampered in their ability to put  
17 their best advice forward. It became -- or if  
18 they did put their best advice forward, tenure-  
19 holders may have been -- well, you know, we need  
20 to get an approval. We need to go harvest. We  
21 need to keep wood flowing to our mills. Let's  
22 default to the guidebook practices which everybody  
23 recognizes are appropriate for British Columbia  
24 and move forward on that basis.

25 Moving in the **FRPA** world and thinking about  
26 professional reliance in a more results-based  
27 context, it's about guidebooks being seen as  
28 guidance to professionals but not the only piece  
29 of guidance that professionals are expected to be  
30 using. In other words, it's but one of many and  
31 bring your best information forward. So in that  
32 regard, it's -- like I say, the professional  
33 statutes and all of the practices have been there  
34 for forever.

35 The **Forest Practices Code** wound up  
36 convoluting that to some degree and we've tried to  
37 create the mechanism under **FRPA** so that we rely on  
38 professionals to the extent that the legislation  
39 has provided society rely on them since 1947.

40 Q I'd like to, Mr. Delaney, I'll move next to number  
41 19 on the list of exhibits or documents. And the  
42 context for this is -- first of all this is a  
43 letter. We see on the very last page the date of  
44 the letter is June 30, 2005. Mr. Delaney, this is  
45 a signed version. It's from the Chief of the B.C.  
46 Interior area of OHEB, Jason Hwang, and you're one  
47 of the number of people cc'd. It's a faint

1 printout, this one, but in any event, you'll see  
2 your name as being one of the people that was cc'd  
3 on the letter.

4 In a nutshell, if I have it, but I'd ask for  
5 your comment and see if I have this right, that  
6 this letter sets out the -- at least the B.C.  
7 Interior area's transition strategy for **FRPA** and I  
8 understand this to be a letter that went out to  
9 licence-holders requesting that they provide, for  
10 instance, notification of stream crossing work,  
11 but it also sets out on page 4, Mr. Lunn, please,  
12 sets out DFO standards for S4, S5 and S6 streams;  
13 is that correct?

14 MR. DELANEY: Yes, as far as the riparian management  
15 side of things, or the letter itself?

16 Q Well, I asked a long -- probably a few parts to my  
17 question. Was there anything you heard there that  
18 you thought was wrong?

19 MR. DELANEY: The only addition to that would have -- I  
20 think it's laid out in the first paragraph, if I  
21 recall from this. It's -- it, as I mentioned in  
22 some of my opening -- or my comments a few minutes  
23 ago, that there were two things happening here.  
24 You had the implementation of **FRPA**, so our staff  
25 were trying to get the -- trying to understand it  
26 themselves, get the information out to industry.  
27 At the same time, we had the environmental process  
28 modernization coming in so trying to link the two  
29 so that people understood within EPMP there were  
30 -- the risk management approach and information  
31 that -- the industry and provincial ministries saw  
32 that information, so we were trying to see how the  
33 two linked together. So that was part of it. So  
34 that's the first.

35 And then secondly, as far as the riparian  
36 standards that was highlighted a few minutes ago,  
37 that, yes, trying to get that information out to  
38 the licence-holders.

39 MR. MARCHAND: Before I forget to do so, if I could ask  
40 this document be marked as the next exhibit,  
41 please?

42 THE REGISTRAR: Exhibit 1116.  
43  
44  
45  
46  
47

1 EXHIBIT 1116: Letter to Forest Licence  
2 Holders - Fisheries and Oceans Canada's  
3 Transition Strategy Related to Correct own  
4 Land Forestry Activities and Planning - June  
5 30, 2005  
6

7 MR. MARCHAND:

8 Q Mr. Lunn, on page 4 of that letter, about halfway  
9 down there's a paragraph that begins:

10  
11 Given...

12  
13 And it refers to the fact that since the year 2000  
14 that the following standards that are set out  
15 there are considered acceptable for the DFO fish  
16 habitat management objectives. Now, I appreciate  
17 that this -- I'm really compressing many years of  
18 back and forth between the DFO and the province  
19 and no doubt many more letters. Other counsel may  
20 take you to other materials on it, but at a  
21 general level is it fair to say that the DFO's  
22 reaction to the riparian setback standards that  
23 the province was using for DFO was considered  
24 lacking?

25 MR. DELANEY: Well, as the letter states, this  
26 paragraph that specifically for the S4 to 6  
27 streams, the concern has been one that's  
28 outstanding going back to 2000, year 2000. And so  
29 it still is an issue that we raise.

30 Q If I might go to one other document on this very  
31 topic, number 18 on the list of exhibits, you  
32 mentioned -- we mentioned 2000. This letter is  
33 February 28, 2000 is the stamp from the Director  
34 General Pacific Region, Ms. Petrachenko to Mr.  
35 Doney the Deputy Minister at Forests in B.C. and  
36 you'll see the last paragraph of the first --  
37 sorry, the last sentence of the first paragraph:

38  
39 My staff inform me that the current logging  
40 practices in this province rarely provide  
41 riparian leaves strips or setbacks that  
42 adequately protect these streams.  
43

44 Talking about S4, S5 and S6 streams. It then, in  
45 the third paragraph there says that there's an  
46 attached letter that will go from Regional staff  
47 of Fisheries to the District Managers of the

1 Ministry of Forests outlining the interim  
2 standards.

3 If we then flip on to the second page, you'll  
4 see that those interim standards for S4, S5, S6  
5 streams are set out in the numbered paragraphs; is  
6 that correct?

7 MR. DELANEY: Yes.

8 MR. MARCHAND: If I could ask this be marked as the  
9 next exhibit, please?

10 THE REGISTRAR: Exhibit 1117.

11

12 EXHIBIT 1117: Letter to Lee Doney from Ms.  
13 Petrachenko with attachment dated February  
14 28, 2000  
15

16

16 MR. MARCHAND:

17 Q Has this -- thematically, this back and forth over  
18 setbacks and also over riparian management  
19 guidelines, has that been the source of much of  
20 the back and forth between DFO and the province,  
21 Mr. Delaney?

22 MR. DELANEY: On the fish forestry file, there are two  
23 main issues: one is the riparian standards; and  
24 the other has been the fish stream crossing. So  
25 this has been definitely one.

26 Q And --

27 MR. DELANEY: Now -- oh, sorry.

28 Q Go ahead.

29 MR. DELANEY: I was just going to add that the sentence  
30 you referred to, the last sentence in the first  
31 paragraph:

32

33 Staff inform me that current logging  
34 practices...

35

36 So a lot of it was anecdotal information, concerns  
37 being expressed by the field staff. In the mid --  
38 I guess it would be the late 1990s the auditor  
39 general's review of the habitat program pointed  
40 out a number of shortcomings and concerns that we  
41 weren't adequately protecting fish habitat. So  
42 there were a number of areas our staff were saying  
43 that are problematic. And this had been a  
44 longstanding concern, as I've noted, and -- but  
45 there was no rigorous monitoring or data  
46 collection to inform us that how extreme this was,  
47 if it was extreme. I think the information that

1 my colleague, Peter, had presented on his most  
2 recent study, is moving along in that direction of  
3 finally presenting information, is there an impact  
4 or not.

5 Q And I don't want to anticipate too quickly what  
6 Mr. -- Dr. Tschaplinski's answer may be, but  
7 presumably that FREP look in the range of 2005 to  
8 2008 is a detailed picture, assuming that may be  
9 the sort of answer he'd give, is that -- is that a  
10 complete answer to the concerns that the DFO had?  
11 Is it a partial answer? Does it leave matters  
12 outstanding, Mr. Delaney?

13 MR. DELANEY: Sorry? Is that a question to me?

14 Q I'm sorry. Yes, it was. I added your name at the  
15 end.

16 MR. DELANEY: I was looking at Peter.

17 Q No. It was prefaced on what I thought he might  
18 say.

19 MR. DELANEY: Oh, I'm sorry.

20 Q But I'm anticipating that that is one view of it.  
21 Is the FREP report an answer or does it leave  
22 concerns outstanding?

23 MR. DELANEY: I think it's a good direction to be  
24 going. It's very useful information. I am  
25 unaware - I could be corrected on this - of any  
26 structured review within the department of that  
27 report. Some of the recommendations coming out of  
28 it of the ten-metre leave strip and the reserve  
29 zone is part of the message that we've been trying  
30 to get it implemented. And so if those  
31 recommendations are carried forward, one of the  
32 other areas that we've been trying to work on is a  
33 revamping of the riparian area management  
34 guidebook and hopefully, those recommendations  
35 would be included in the guidebook at that point  
36 so that fish-bearing streams or those leading into  
37 fish-bearing streams would have a stronger  
38 protection on them.

39 MR. MARCHAND: I'd like to bring up number 10 on the  
40 list of -- I'm sorry, I keep forgetting whether  
41 I've had that document marked as an exhibit, the  
42 letter from February 28, 2000. I have, Ms. Grant  
43 advises me. Thank you.

44 Q I'll move then to number 10 on the list of  
45 exhibits, Mr. Delaney, and you can tell me if this  
46 is a joint report from 2001, a joint assessment.

47 MR. DELANEY: Yes, it is.



1 Q And I won't move into that in any detail. I'll  
2 ask that please be marked as the next exhibit.  
3 THE REGISTRAR: It's Exhibit 1118.

4  
5 EXHIBIT 1118: Assessment of the Condition of  
6 Small Fish-bearing Streams in the Central  
7 Interior Plateau of British Columbia in  
8 Response to Riparian Practices Implemented  
9 under the **Forest Practices Code**

10  
11 MR. MARCHAND:

12 Q What I'll now do in the time looking to try and  
13 hold to the schedule we have, I'm going to move  
14 into some questions about the Policy and Practice  
15 Report that the commission has prepared that's now  
16 in evidence in these proceedings and then I'll ask  
17 a rather general question, so that if you have  
18 particular points, you're certainly welcome to add  
19 to them.

20 I appreciate to some extent Mr. Miller and  
21 Dr. Tschaplinski, you may have had comments in  
22 response to Mr. Delaney's recent remark, so I'll  
23 give you that chance when we wrap up, if you will.  
24 Let me move then into questions that address the  
25 Policy and Practice Report with a view to doing  
26 this as efficiently as possible. I'll have the  
27 Policy and Practice Report on screen. I plan to  
28 lead, unless counsel raise any concerns with me  
29 doing that in order to do this as quickly as  
30 possible.

31 I'll begin at page 6 of the report and Dr.  
32 Tschaplinski, I'll begin with you, sir and move  
33 through these questions. Sorry, page 6 paragraph  
34 6, there's a description of large woody debris and  
35 I won't read out the first few sentences, but I  
36 take it that you have a -- you raised the point  
37 that not all streams are fish-bearing streams  
38 require wood for channel morphology, that some  
39 streams and especially steeper gradient streams or  
40 non-alluvial channels are boulder or bedrock-  
41 controlled?

42 DR. TSCHAPLINSKI: That is correct, sir.

43 Q Page 11 and paragraph 17, this is a small matter,  
44 but there's reference to -- you'll see about four  
45 -- three lines down on page 11, "now Weyerhaeuser  
46 Company" perhaps more accurately "later  
47 Weyerhaeuser", I understand Weyerhaeuser isn't

1           presently in operation in this province, or at  
2           least that doesn't accurately describe the  
3           company; is that correct?

4 DR. TSCHAPLINSKI: That is correct.

5 Q       You'll see in that same paragraph about -- a few  
6       lines down that there's reference to the Carnation  
7       Creek Project, a very important project that  
8       indeed I understand you worked on, Dr. Hartman, as  
9       well, was very involved in that project, that it  
10       was over a 35 years. Indeed, it's over 40 years;  
11       is that correct?

12 DR. TSCHAPLINSKI: That is correct, sir. It was  
13       initiated in 1970 and here we are in 2011.

14 Q       Page 15, paragraph 28, the second sentence we're  
15       talking about the transition from the **FPC Act** to  
16       **FRPA** significantly reducing requirements on  
17       industry instead of six plans under the Code, and  
18       it goes on to discuss, you make the point that  
19       watershed assessments were not mandatory for all  
20       watersheds.

21 DR. TSCHAPLINSKI: That is correct, sir. They were in  
22       general mandatory for community watersheds. In  
23       other watersheds that were not community  
24       watersheds, the delegated decision-maker or  
25       usually the district manager could ask for an  
26       assessment to be done if the district manager had  
27       certain concerns about the level of development in  
28       that watershed and what the implications of  
29       additional development might be.

30 Q       Page 17 paragraph 37 the first sentence:

31  
32           The forest development plan ("FDP") was the  
33           main operational plan.  
34

35           You offered the comment on that to the effect that  
36           it's not accurate to say the FDP was the main  
37           operational plan; it may be a plan that covers a  
38           wide operating area. The silviculture  
39           prescription was the site level operational plan  
40           that in fact specified and laid out in detail  
41           exactly what would happen on the ground.

42 DR. TSCHAPLINSKI: That is correct, sir. The Forest  
43       Development Plan was an overarching plan that  
44       covered a bigger operating area. The site plans,  
45       including the -- then the main one of those was  
46       the silviculture prescription, really had all the  
47       details of what would be carried out, where the

1 cutblocks would be, the approximate location, or  
2 more accurate location of all roads, the presence  
3 of streams, all classified as per fish-bearing or  
4 non-fish-bearing status, and so forth.

5 Q Page 22, paragraph 50, there's a table that's set  
6 out at page 22 there in the middle. The first one  
7 on S1, I take it it's the correct or the more  
8 detailed point is that it's to be a hundred metres  
9 wide for the minimum stream length of one  
10 kilometre?

11 DR. TSCHAPLINSKI: That is correct, sir.

12 Q Page 23 paragraph 53, second sentence:

13  
14 The class of a wetland or lake is based on  
15 the size (ha) and the presence of different  
16 species of trees.

17  
18 You make the point that wetland and lake classes  
19 are not really determined by the tree species so  
20 much as the biogeoclimactic ecological zone or BEC  
21 zone?

22 DR. TSCHAPLINSKI: That is correct, sir. It depends on  
23 what we call the BEC zones, in short, and it's  
24 essentially the aquatic community as influenced by  
25 the moisture regimes in each of these forested  
26 zones.

27 Q Page 26, moving towards the typo, but an important  
28 typo correction, I suppose, paragraph 60, second  
29 line, Ministry of Water, Land and Air Pollution  
30 should be protection?

31 DR. TSCHAPLINSKI: It would be preferred, if that was  
32 the designation, yes.

33 Q Well, it is a typo, but I did think we should get  
34 to it. Page 33, paragraph 78, you make the point,  
35 just to clarify what's set out there, that the  
36 class S1-A under the **FRPA** is, in fact, the same as  
37 the class S1 large under --

38 DR. TSCHAPLINSKI: That is correct.

39 Q Thank you.

40 DR. TSCHAPLINSKI: It's the update on classification.

41 Q Under the Code. Thank you. And my last point for  
42 you, sir, page 53 of this report, paragraph 121,  
43 this makes reference to the joint steering  
44 committee and the joint management committee. I  
45 think indeed we touched on this earlier today, but  
46 those indeed date back to the implementation of  
47 the **Forest Practices Code** in the mid-'90s, 1995 in

1 particular?

2 DR. TSCHAPLINSKI: That is correct, sir.

3 Q Thank you. And they're continued then under **FRPA**?

4 DR. TSCHAPLINSKI: Indeed.

5 Q All right. I'll be quicker with the next two  
6 witnesses on these PPR points. I appreciate it  
7 may be a little tedious, but it's important that  
8 we address it on the record this way.

9 Page 9, Mr. Miller, I'll direct questions to  
10 you next. I have just a few. Page 9 paragraph  
11 13, the last sentence, indeed adding clarification  
12 to that.

13 MR. MILLER: Right. This -- the second-last sentence  
14 in this paragraph reads:

15  
16 ...the Ministry is the government agency  
17 responsible for the management of forest  
18 harvesting and the forest industry.

19  
20 And then this last sentence goes on to say:

21  
22 The Ministry exercises this authority mainly  
23 through the provincial Forest and Range  
24 Practices Act.

25  
26 That is one of the two primary statutes we use --  
27 well, actually one of three. The second would be  
28 the **Forest Act**, which deals with mostly tenuring  
29 issues, whereas the **Forest and Range Practices Act**  
30 is somewhat self-explanatory, deals with forest  
31 and range practices. And the **Wildfire Act** itself,  
32 which deals with all aspects of fire management in  
33 the province, so...

34 In the context though of management of  
35 harvesting and the forest industry, I think the  
36 two acts, **FRPA**, as referenced, and the **Forest Act**  
37 would be probably the most germane.

38 Q I'll jump to page 30 paragraph 68. The last  
39 sentence there reads:

40  
41 In an FSP or WLP, a licensee must describe  
42 its strategies to achieve the objectives set  
43 out in the FPRA and its regulations.

44  
45 I take it you would offer a suggestion to that  
46 that the licensee must describe at least one  
47 result or strategy for each of the objectives set

1 out in the **FRPA** and its regulations and indeed,  
2 would suggest a further sentence to the effect  
3 that each result or strategy must be consistent  
4 with the objective for which it was written?

5 MR. MILLER: Correct. With one small caveat. The --  
6 there are other sources of objectives set by  
7 government other than just the Act and its  
8 Regulations. **FRPA**, the act, has another  
9 regulation called the **Government Actions**  
10 **Regulation** which sets out authorities for  
11 statutory decision-makers to craft objectives for  
12 things like wildlife habitat areas, ungulate  
13 winter ranges, scenic areas. There's a host.  
14 Those objectives, when put in place, also obligate  
15 tenure-holders, so they are not set out in the  
16 regulation, but they are created as a creature of  
17 regulation.

18 Q I'm going to move next, Mr. Delaney, to just a few  
19 questions. Paragraph -- or page 10, rather,  
20 paragraph 15, there's reference in the second-last  
21 sentence:

22  
23 The federal government (DFO) is responsible  
24 for ensuring that forestry activities are  
25 carried out in a manner that does not harm  
26 fish or fish habitat.

27  
28 You would offer the observation that the **Fisheries**  
29 **Act** is results-based, it's reactive to harm to  
30 fish and fish habitat and that there could -- that  
31 could be misleading.

32 MR. DELANEY: Yes.

33 Q Page -- I'm sorry, paragraph 108. I'll find a  
34 page number, which I don't have at hand.

35 MR. DELANEY: Page 46.

36 Q Page 46.

37  
38 The habitat protection provisions do not  
39 create a mandatory obligation for licensees  
40 to seek advice or authorization from DFO.  
41 However, failure to do so may expose a  
42 licensee to charges and prosecutions under  
43 the Act.

44  
45 The comment with respect to that is that that  
46 could again leave the wrong impression. The lack  
47 of participation on the referral process doesn't

1 necessarily expose -- that fact doesn't  
2 necessarily expose a licensee to charges or  
3 prosecution; instead it would be the non-  
4 compliance with habitat protection provisions?

5 MR. DELANEY: That's correct.

6 Q Paragraph 141, page 64:

7  
8 The Technical Working Group has developed a  
9 strategic approach --

10  
11 It says at the top of that page, outlining the  
12 approach to address the fish passage issue.  
13 Estimates \$4 million a year in order to implement  
14 key elements of a strategic plan. I take it to  
15 just to put that in a context, your comment would  
16 be that it would require hundreds of millions of  
17 dollars to fully rectify the fish passage issue in  
18 the province based on what's gone on, for  
19 instance, in Washington State?

20 MR. DELANEY: Yes.

21 Q And on the first bullet there, prioritization,  
22 you'll see reference to that and I take it that  
23 the DFO has previously indicated concerns with the  
24 provincial prioritization protocol, that in fact  
25 the concern being that the prioritization tool  
26 underestimates fisheries values for some -- or for  
27 specific watersheds where stock assessment data is  
28 limited.

29 MR. DELANEY: Yes, that's the comment that has been  
30 supplied.

31 Q Paragraph 158 page 72, there's reference to Baker  
32 Creek, a study that was done there in 2007, a  
33 tributary of the Fraser at Quesnel containing high  
34 value salmon habitat. The clarification there is  
35 that's not sockeye spawning or rearing habitat,  
36 rather chinook and rainbow.

37 MR. DELANEY: Yes.

38 Q And that because of its pine-dominant forests and  
39 watershed characteristics, Baker Creek has been  
40 considered a worst case scenario for pine beetle  
41 impacts on hydrology?

42 MR. DELANEY: Yes.

43 Q You'll be happy to hear that my last question goes  
44 just a few pages on to paragraph 164, page 74.  
45 And really, the comment is, to summarize it  
46 quickly, is read what Erland MacIsaac says in his  
47 email, but that it may be overstated in the

1 introduction which says -- the comment to the  
2 effect that he is saying Fraser River natal  
3 watersheds are not threatened by mountain pine  
4 beetle. You simply caution that that may  
5 overstate what, indeed, he says there.

6 MR. DELANEY: Yes, that's true.

7 Q The point being that in some Fraser River sockeye  
8 natal watersheds, in particular the Nechako River  
9 drainage, there may -- there are significant  
10 amounts of pine in the catchments.

11 MR. DELANEY: Yes.

12 MR. MARCHAND: Thank you. Rather than using more time  
13 for a general question, Mr. Commissioner, I'm  
14 minded to simply move on to participants'  
15 questions. Counsel for these witnesses, of  
16 course, may look to take them to particular  
17 points. If I might just take a moment to check  
18 with Mr. Prowse if he wishes to take a break.

19 Mr. Prowse for the province next. Thank you.

20 MR. PROWSE: So, Mr. Commissioner, Cliff Prowse on  
21 behalf of the Province of British Columbia. It's  
22 always amazing how fast things seem to go, at  
23 least from counsel's point of view, on some of  
24 these days. I think I'll take the time -- sorry,  
25 and I believe I have 30 minutes.

26

27 CROSS-EXAMINATION BY MR. PROWSE:

28

29 Q So I think I'll start with the question that my  
30 friend, Mr. Martland, didn't have time to ask,  
31 which is first of all, Mr. Miller, do you have any  
32 comments to any of the concerns that have been  
33 expressed to you in the last few minutes that you  
34 want to make?

35 MR. MILLER: No, thank you.

36 Q And Dr. Tschaplinski?

37 DR. TSCHAPLINSKI: Just a couple of comments, sir, if I  
38 could. I'd like to comment specifically on FREP  
39 report number 27 and just enter the comment that  
40 that report is an internationally peer-reviewed  
41 publication, blind peer-reviewed at one level and  
42 internationally in the Pacific Northwest. Leading  
43 riparian stream scientists from both the federal  
44 government and from the forest industry did  
45 contribute to peer-reviewing that. Peer reviews  
46 were received from the U.S. National Riparian team  
47 which essentially represent the gold standard of

1 monitoring in the United States, as well as the  
2 United States Forest Service, Oregon State  
3 University, senior scientists from Weyerhaeuser  
4 Company and the Pacific Redwood Company in  
5 California.

6 I just wanted to illustrate that this report  
7 is not simply a routine ministry un-peer-reviewed  
8 document. It is founded in science. It was  
9 developed cooperatively, federally, provincially  
10 and by academia and passed rigorous peer review by  
11 eight researchers.

12 Q Thank you. Any other points you want to make?  
13 DR. TSCHAPLINSKI: I would like to comment on the Baker  
14 Creek matter touched on a moment ago by counsel  
15 and Mr. Delaney. My hydrology colleagues in the  
16 provincial government do have some concerns with  
17 this, with the Baker Creek study. That was done  
18 by Dr. Younes Alila of the University of British  
19 Columbia. The study which identified potential  
20 hydrologic impacts at Baker Creek were -- that  
21 study was based on modelling and according to some  
22 of my colleagues, they are concerned with some of  
23 the assumptions in that model.

24 The Baker Creek watershed contains enormous  
25 coverage by wetlands. Wetlands are a very  
26 important hydrological sink and source of water  
27 and that component was not included as part of the  
28 model's parameterization, so the model, in fact,  
29 can over-estimate the hydrologic effects, not  
30 accounting for the buffering effects of the  
31 wetlands and ground water.

32 I just wanted to enter that as a comment.

33 Q Thank you. Mr. Miller, if you could look at the  
34 book which I hope you have of the B.C. Provincial  
35 documents? I want to get you -- or ask you to  
36 make some comments on professional reliance and  
37 what you have done about that, so first of all, I  
38 believe at Tab 5 is a discussion document, Mr.  
39 Lunn.

40 MR. MILLER: That's correct. A discussion document  
41 produced by the Association of B.C. Forest  
42 Professionals last year.

43 Q And can you tell the commissioner what your  
44 involvement has been over the years with that  
45 association?

46 MR. MILLER: With the association on the matter of  
47 professional reliance specifically, I was a



1 participant, representative of the provincial  
2 government on the professional reliance task  
3 force, that was a group of the four professional  
4 associations I referenced earlier, the provincial  
5 government and representatives from the forest  
6 industry associations of the day and I believe  
7 COFI, Counsel of Forest Industries and Coast  
8 Forest Products Association. Their names have  
9 changed and their memberships have changed, but  
10 it's those, you know, that level of organization.

11 So I participated in that group. That was  
12 the development of -- led to the development of  
13 what remains the working definition of  
14 professional reliance in the Province of British  
15 Columbia.

16 I'm also engaged as a -- within the ministry  
17 advisor for staff on matters relative to  
18 professional accountability. I've also worked as  
19 a volunteer to the association in preparing  
20 portions of the annually produced document that is  
21 a kind of legislation and policy compendium  
22 produced primarily for students studying for their  
23 policy exam, one of the last steps in becoming a  
24 registered professional forester, but also used as  
25 a reference material by practising professionals  
26 across the province.

27 Q And your purpose in working with this group, both  
28 as a volunteer and in your employed capacity, what  
29 are you trying to do when you do that?

30 MR. MILLER: Provide the best guidance and the most  
31 current guidance that we can to resource  
32 professionals about how to carry out their  
33 activities, understanding the notion and concept  
34 of professional reliance and the obligations and  
35 responsibilities that brings.

36 MR. PROWSE: Thank you. Mr. Lunn, might that be marked  
37 as the next exhibit?

38 THE REGISTRAR: Be Exhibit 1119.

39  
40 EXHIBIT 1119: Discussion document -  
41 Assessing Professional Reliance in the Forest  
42 Sector: Improving Professional Reliance -  
43 January 2010  
44

45 MR. PROWSE: And Mr. Lunn, if you could turn to Tab 7  
46 of the provincial documents.

47 Q So this is notes of a presentation that you made

1           this year to SISCO and can you explain who SISCO  
2           is and --

3       MR. MILLER: Right.

4       Q       -- so who the attendees were?

5       MR. MILLER: Sure. CISCO is an acronym for the  
6           Southern Interior Silviculture Committee. It's a  
7           longstanding group, essentially ad hoc. It's not  
8           a government committee. It's not an industry  
9           committee. It's not a professional association  
10          committee. It's, you know, a group of practicing  
11          professionals, most of whom work in the field of  
12          silviculture and the associated fields, largely as  
13          I understand it brought together to provide a  
14          forum for, you know, collaboration, discussion and  
15          they do have, I think, in the case of SISCO, at  
16          least a couple of annual workshops where they  
17          bring practising professionals together to, you  
18          know, discuss matters of collective interest. So  
19          the SISCO meeting, the winter workshop in April in  
20          Naramata consisted of, I think, two full days of  
21          presentations from, like I say, on various topics  
22          from various professionals and other  
23          practitioners. I was there to speak as one of, I  
24          think, seven speakers on professional reliance in  
25          the first day morning panel and this slide deck  
26          you have in front of you is the gist of my  
27          presentation to SISCO at that time.

28       Q       Yes. And Mr. Lunn, if on the fifth page, there's  
29           a -- if you can turn to that. It's actually the  
30           one that says Sources, although it's hard to  
31           resist reading the first line on the one you did  
32           show. But the next page after that, Sources, yes.  
33           So one of the sources you refer there is R.  
34           Reader's discussion paper on "Expectations".

35       MR. MILLER: Yes.

36       Q       Who's Roberta Reader, first of all?

37       MR. MILLER: Roberta Reader has -- is now -- is a  
38           retired civil servant. She was -- she carried --  
39           has carried a number of portfolios relative to  
40           forestry and forest management in the Code and  
41           **FRPA** in particular, and I'll try and go through  
42           them. I'll try and be complete and chronological.

43       Q       I think you should try to be quick.

44       MR. MILLER: Try to be quick. Roberta was formerly  
45           Director of Compliance and Enforcement in our  
46           ministry. She has been legislative counsel. She  
47           has been -- she's worked as a practising lawyer

1 for the Province of British Columbia, as a  
2 legislative drafter and legislative counsel. She  
3 worked with us in doing some of the legislative  
4 drafting for the **FRPA**. She produced some  
5 preliminary kind of internal discussion papers  
6 around results-based and what legal principles for  
7 results-based. She most latterly, having retired  
8 from the provincial government, came back to us on  
9 contract and wrote the discussion paper that's  
10 referred to here, and I know it's one of the  
11 documents in play here. The full title is --  
12 Q Yes, Mr. Lunn, if you could turn to Tab 12 of the  
13 province's documents.  
14 MR. MILLER: This is, you know, a 300-some-odd-page  
15 discussion paper, The Expectations That Affect the  
16 Management of the Public Forests and Range Lands  
17 in British Columbia Looking Outside the  
18 Legislation, and the whole purpose and point of  
19 the paper is to explain clearly that legislation  
20 and natural resource-related legislation, for  
21 example, **FRPA**, is but one small piece and perhaps  
22 the topmost of the visible part of an iceberg,  
23 much of which lies below the perhaps immediately  
24 recognized surface.  
25 Q And --  
26 MR. MILLER: So that's the pieces outside the  
27 legislation.  
28 Q And what's the importance of expectations and  
29 things outside of the legislation?  
30 MR. MILLER: Well, I think the best example I can use  
31 is we all recognize there's laws in the province  
32 and we have to follow the laws. There are a  
33 number of other societal expectations, some of  
34 which are informed by science, some of which not,  
35 that are important in our society and are  
36 important in resource management.  
37 The best example, and the one that perhaps  
38 everybody in the room here can relate to is  
39 raising children. There are statutes in British  
40 Columbia that relate to raising children. How  
41 many have read them? I suspect very few. How  
42 many people in the room are parents? How many  
43 people think they're doing a good job as a parent?  
44 Why do you think you're doing a good job is  
45 because you're very well tuned into societal  
46 expectations around that.  
47 Natural resource management has a number of

1 analogies. There are statutes in British Columbia  
2 that govern the work we do, **FRPA** notable among  
3 them, the **Foresters Act** would be another example.  
4 There are issues around liability and negligence  
5 that are, you know, based in case law. They're  
6 important for resource practitioners to consider.  
7 There's a large body of science, things that  
8 people like my two colleagues on the panel today  
9 and there's a whole host of social expectations  
10 that drive the work we do, as individuals, as  
11 resource practitioners, as companies, as  
12 government. And they all have a role to play.  
13 And Roberta spent 300 pages discussing those  
14 various expectations and how they might play out.  
15 MR. PROWSE: All right. And just for the record, so  
16 I've included in the extract the executive  
17 summary, the table of contents and the -- part of  
18 the chapter on professional reliance from that 300  
19 pages. So, Mr. Lunn, if -- I think we haven't  
20 marked the presentation, so the next two exhibits,  
21 if they can be the presentation and the extract.  
22 THE REGISTRAR: The presentation at Tab 7 will be  
23 marked as 1120.

24  
25 EXHIBIT 1120: The **FRPA** and Professional  
26 Reliance Intention versus Reality - April 5,  
27 2011  
28

29 THE REGISTRAR: And your document at Tab 12 will be  
30 marked 1121.

31  
32 EXHIBIT 1121: Extract from The Expectations  
33 that Affect the Management of Public Forest  
34 and Range Lands in British Columbia: Looking  
35 Outside the Legislation - February 2006  
36

37 MR. MILLER: And if I may just to round out the answer  
38 -- the rest of the answer to the question why I  
39 was at SISCO, recognizing that it's certainly  
40 within our ministry, I'm one of the few remaining  
41 staff, many of the others of whom have now since  
42 retired or moved on in one way, shape or form,  
43 that was -- participated through most of, if not  
44 all, the policy discussions that led up to **FRPA**  
45 and much of the legislative drafting around **FRPA**,  
46 to help the audience understand kind of what was  
47 the thinking in the background, what were we

1           trying to do, what were we trying to create, help  
2           the reader and those that have to implement **FRPA**  
3           kind of understand a bit of the back story, so I  
4           was asked to deliver that presentation and  
5           recognize that while, you know, a discussion of  
6           intent and what were we trying to accomplish is  
7           perhaps interesting, it doesn't necessarily help  
8           people interpret the law for themselves in terms  
9           of carrying it out.

10           So I was there as a professional forester  
11           representing my own views.

12 MR. PROWSE: Thank you. If you can pass the binder of  
13           provincial documents and the index over to Dr.  
14           Tschaplinski.

15 Q       So Dr. Tschaplinski, I want to mark with you, if  
16           you can -- yes, at Tab 2, Mr. Lunn, provincial  
17           documents. What does this document tell us, Dr.  
18           Tschaplinski?

19 DR. TSCHAPLINSKI: The document under Tab 2 is a  
20           Streamline Watershed Management issue and it  
21           summarizes the outcomes from a symposium and  
22           workshop held at the University of British  
23           Columbia in February 2007. That symposium was all  
24           about small stream science and management and all  
25           about the latest science and what about that  
26           latest science that might be used to inform better  
27           management of small streams.

28 Q       And Erland MacIsaac, who's referred to on the  
29           first page, is a DFO scientist that you worked  
30           with, I think, closely through the years?

31 DR. TSCHAPLINSKI: That is correct, sir. I've worked  
32           with Erland and his colleagues extensively for  
33           nearly 20 years.

34 MR. PROWSE: All right. Mr. Lunn, might that be the  
35           next exhibit?

36 THE REGISTRAR: Exhibit 1120.

37 MR. PROWSE: And then I think --

38 THE REGISTRAR: I'm sorry, I gave you the wrong number.  
39           That should be 1122.

40  
41                   EXHIBIT 1122: Streamline Watershed  
42                   Management Bulletin - Fall 2007  
43

44 MR. PROWSE:

45 Q       So looking at the index, Dr. Tschaplinski, the  
46           next -- documents at Tabs 8, 9, 10 and 11, can you  
47           tell us in a sentence or two what they're about?

1 DR. TSCHAPLINSKI: The three documents that you refer  
2 to, Mr. Prowse, are research related initiatives  
3 linked to the mountain pine beetle epidemic and  
4 the salvage harvest program.

5 The first document at Tab 8 was a research  
6 project that I helped put together. It was about  
7 the long-term effects were of a similar kind of  
8 infestation that occurred back in the late 1970s  
9 and 1980s. It was the spruce bark beetle  
10 infestation and a lot of salvage harvest activity  
11 occurred in the 1980s in response to that. And  
12 this activity was widespread in the Bowron, large  
13 clearcuts, some riparian areas cut completely and  
14 more than 20 years later, we were interested in  
15 the long-term impacts to that salvage harvest  
16 program.

17 And so the short story is that yes, we did  
18 find impacts, impacts where riparian harvesting  
19 was complete, fewer impacts and more levels of  
20 recovery where riparian areas were largely left  
21 alone.

22 Q All right.

23 DR. TSCHAPLINSKI: The next item under Tab 9, it's  
24 about mountain pine beetle and salvage harvesting  
25 impacts for small streams. In this case,  
26 primarily small fish-bearing streams and the  
27 outcome of this is that when riparian areas are  
28 left that are ten metres wide or wider, the stream  
29 functions remain intact. For riparian buffers  
30 that are smaller, such as five metres wide or  
31 less, there are more measurable impacts. So  
32 properly functioning condition is the typical  
33 outcome for the streams buffered ten metres or  
34 better, and there are more impacts associated with  
35 lesser levels of retention.

36 The report does recommend that a ten-metre  
37 buffer be applied at minimum to these small  
38 streams, consistent with the findings in the FREP  
39 report and some other reports that have been  
40 generated lately.

41 The final document is about channel  
42 structural changes that may occur as a consequence  
43 of the mountain pine beetle infestation. This  
44 report was by Dr. Marwan Hassan of the University  
45 of British Columbia, Dan Hogan, who was part of my  
46 Watershed Research Program until that program was  
47 -- and the research branch of the Ministry of

1 Forests was dissolved recently. Dan is now with  
2 the Ministry of Environment. Steve Bird is a  
3 senior consultant as channel -- river scientist,  
4 fluvial geomorphologist as they say.

5 This report looked at the consequences of  
6 beetle-killed trees and riparian areas, the  
7 consequences for channel impacts, and the  
8 conclusion was that in most riparian areas, even  
9 when all the pine dies, pine's not a leading  
10 species in these areas, so that the amount of  
11 impact on the channel is limited by that factor;  
12 that even if all the pine died and fell into the  
13 channel, the additional volume of debris that  
14 might result in log jams and channel-related  
15 impacts was within the natural range of  
16 variability that has been historically seen in  
17 this kind of -- in this region and in these  
18 streams over a relatively long period of time.  
19 And the base of that information for comparison  
20 was part of Dan Hogan's nearly 20 years of work in  
21 all the major forested BEC zones of the province.

22 MR. PROWSE: All right. So if those three documents  
23 might be named -- marked as the next three  
24 exhibits.

25 THE REGISTRAR: Number 8 will be 1123; number 9 will be  
26 1124; number 10 will be 1125.

27  
28 EXHIBIT 1123: Extension Note - The Bowron  
29 River Watershed: A Synoptic Assessment of  
30 Stream and Riparian Condition 20-30 Years  
31 after Salvage Logging - March 2008  
32

33 EXHIBIT 1124: Extension Note - Mountain Pine  
34 Beetle and Salvage Harvesting: Small Stream  
35 and Riparian Zone Response in the Sub-Boreal  
36 Spruce Zone - March 2009  
37

38 EXHIBIT 1125: forest.forward - Mountain Pine  
39 Beetle Impacts on Channel Morphology and  
40 Woody Debris in Forested Landscapes  
41

42 MR. PROWSE:

43 Q And I'm not sure, is it Mr. Miller or Dr.  
44 Tschaplinski, Mr. Lunn, if you could just show Tab  
45 11. And is this, Mr. Miller, something you should  
46 comment on or can?

47 MR. MILLER: I'll speak to it first and if Pete needs

1 to wade in, I'm sure he will.

2 Q All right. So what is this and what's the bottom  
3 line as to what --

4 MR. MILLER: Okay. This is, and we spoke earlier of  
5 the role of guidance and how guidance, you know,  
6 helps resource professionals do their job. This  
7 is a piece of guidance, thank you, produced by the  
8 Forest Service or by the Ministry of Forests and  
9 Lands, I guess, at the time. Actually, it might  
10 have just been the Ministry of Forests in 2005.  
11 Lost a bit of track of our various name changes  
12 over the years. But this is part of our, you  
13 know, looking in 2005, the early days of the  
14 mountain pine beetle infestation, considering the  
15 increase in salvage logging programs, the increase  
16 in directed harvest into mountain pine beetle  
17 infected stands by existing timber tenure-holders,  
18 and looking at the impact of perhaps concentrating  
19 harvest on that land base and producing some  
20 guidance for structural retention, that's, you  
21 know, the large, you know, tracts of forest land  
22 essentially undisturbed with the structural  
23 characteristics, even though the trees themselves  
24 may be dead, they do carry a number of wildlife  
25 habitat and hydrologic function capabilities in  
26 the forest. So it's about as we produce -- as we  
27 harvest more on a finite land base, those  
28 harvested areas tend to run together. You have  
29 the potential to create extensive clear-cut or  
30 harvested areas and the guidance is there for  
31 professionals to both acknowledge that possibility  
32 and to plan for specific retention levels and  
33 increasing levels of retention as functional  
34 openings, large aggregated openings are created to  
35 create over and above the levels of retention that  
36 would normally have been left to add increasing  
37 levels in recognition that we are creating  
38 increasingly large openings on the land base.

39 Q Sorry, I think you may have just told me that  
40 there's ongoing work to be -- to update this  
41 document?

42 MR. MILLER: And yes, there is. This is a 2005  
43 document. We've since been tracking, monitoring,  
44 not only salvage harvest but other harvest  
45 operations and the extent and location of the  
46 mountain pine beetle infestation itself. I think  
47 sufficient to say -- and not only has the



1 provincial government been doing this for the  
2 Forest Practices Board, among others, released a  
3 study around this. We've been following up and  
4 one of the follow-up actions to come from this is  
5 an updating of this particular piece of guidance.  
6 And the one thing in particular, when you look  
7 near the bottom of this particular piece of  
8 guidance - and my apologies, Mr. Lunn, I'm not  
9 sure if that's on exactly which page - let me find  
10 it for you - that would be the second-to-last  
11 page, to page 6, please, there's a Table 1 at the  
12 bottom of that.

13 The table contemplates opening sizes above  
14 1,000 hectares, but we're now seeing aggregated  
15 openings of at least one order of magnitude larger  
16 than that. We're seeing, you know, aggregated  
17 openings in the tens of thousands of hectares  
18 range and one of the particular pieces of update  
19 to this guidance will be to produce -- you know,  
20 replicate this table, but for increasingly large  
21 openings.

22 Q Thank you. And Dr. Tschaplinski, reference has  
23 been made this morning to Carnation Creek and the  
24 commission in the context of the Wild Salmon  
25 Policy has heard reference to Barkley Sound and  
26 has heard evidence from Dr. Kim Hyatt and Dr. Kim  
27 Hyatt is a DFO colleague that you collaborated  
28 with over the years?

29 DR. TSCHAPLINSKI: That is correct, sir. I've  
30 collaborated with Dr. Hyatt extensively since  
31 1987, 1988 in various projects.

32 Q So it has -- I've heard it said that you are a  
33 person of heroic vision and courage in keeping  
34 Carnation Creek going for some large chunk of this  
35 40 years. Can you explain to the commissioner why  
36 Carnation Creek may be of importance to the Wild  
37 Salmon Policy going forward, very briefly, I'm  
38 afraid?

39 DR. TSCHAPLINSKI: Well, those are, indeed, some very  
40 kind words. They may reflect the difficulty in  
41 keeping long-term multi-agency watershed scale  
42 basic research projects going. They're expensive,  
43 but the information they generate is essential for  
44 so many things. Things that come up like mountain  
45 pine beetle often researchers and managers will  
46 say gosh, I wish we had a base of information upon  
47 which to compare where we might go to where we've

1           been.

2           Studies like Carnation Creek reveal a lot  
3           about how watersheds work. Carnation Creek is  
4           located in Barkley Sound. It has become an  
5           important addendum or adjunct to the Wild Salmon  
6           Policy. I'm in discussions at this moment with  
7           Fisheries and Oceans Canada stock assessment South  
8           Coast Area, and with Kim Hyatt from Science Branch  
9           on how to support the Wild Salmon Policy from  
10          information generated by Carnation Creek.  
11          Carnation Creek data was instrumental in part of  
12          the scientific foundation over the FREP indicators  
13          and methods and those indicators and methods are  
14          being welcomed by my DFO colleagues as a possible  
15          contribution to part of the Wild Salmon Policy  
16          that requires habitat assessments to determine the  
17          state of the habitat and identify where, for  
18          example, remediation might be applied.

19       MR. PROWSE: Mr. Commissioner, I'm almost finished my  
20          questions within the limited time. I'm wondering  
21          if it might be possible to take the break now and  
22          then I can conclude after the break.

23       THE COMMISSIONER: Absolutely, Mr. Prowse. Thank you.

24       MR. MARCHAND: Mr. Commissioner, because we're running  
25          a longer session, we had suggested a 20-minute  
26          break. I'm in your hands whether we do 15 or 20  
27          minutes.

28       THE COMMISSIONER: I'm content with 15 if that will  
29          help.

30       MR. MARCHAND: It may well. Indeed, I think we'll take  
31          every minute we can. So maybe the 15-minute  
32          break? Thank you.

33       THE COMMISSIONER: Thank you.

34       THE REGISTRAR: Prior to breaking, did Mr. Prowse wish  
35          to file Tab 11?

36       MR. PROWSE: Thank you very much, Mr. Giles. Please.

37       THE REGISTRAR: Yes. That will be 1126.

38  
39                   EXHIBIT 1126: Guidance on Landscape and  
40                   Standard-level Structural Retention in Large-  
41                   Scale Mountain Pine Beetle Salvage Operations  
42                   - December 2005  
43

44       THE REGISTRAR: Hearing will now recess for 15 minutes.

45  
46                   (PROCEEDINGS ADJOURNED FOR MORNING RECESS)  
47                   (PROCEEDINGS RECONVENED)

1 THE REGISTRAR: The hearing is now resumed.

2 MR. PROWSE: Yes, Mr. Commissioner, there's one area  
3 that I wanted to cover with Dr. Tschaplinski, and  
4 the exhibit is on the screen.  
5

6 CROSS-EXAMINATION BY MR. PROWSE, continuing:  
7

8 Q And Dr. Tschaplinski, I think you told us that  
9 there's a table at Roman numeral VII and Roman  
10 numeral IX?

11 DR. TSCHAPLINSKI: That's correct, Mr. Prowse.

12 MR. LUNN: Microphone, please? Can you turn on the --

13 DR. TSCHAPLINSKI: Oh. My apologies. That is correct,  
14 sir.

15 Q Yes. And so can you just tell the Commissioner  
16 the importance of this research about forest  
17 practices, in effect, after the implementation of  
18 the **Forest Practices Code** as in conjunction with  
19 the timing of that, in conjunction with the  
20 Commission's concern about the 20-year decline of  
21 Fraser River sockeye salmon?

22 DR. TSCHAPLINSKI: Yes, sir. Of course, the Commission  
23 is concerned with the inter-annual variation in  
24 sockeye numbers over the past 20 years. And  
25 during this period of record, as far as forest  
26 practices are concerned, page 7 of the item listed  
27 shows the difference in performance under the  
28 **Forest Practice Code**, 1999 and afterwards,  
29 compared to prior. And the FREP results have to  
30 be taken in the greater context of improvement in  
31 practices over this 20-year period of record.

32 The pre-Code data that is presented in the  
33 report, those are data collected in the late  
34 1980s, primarily, some in the very early 1990s.  
35 And although assessments were not province wide,  
36 it was nevertheless a large sample. And by stream  
37 class, there have been enormous improvements in  
38 outcomes of streams in the riparian areas that  
39 were the consequence of implementing the **Code** in  
40 1995. The Forest Practices Board concluded this  
41 in their early audit of **Code** performance in the  
42 late 1990s, and we confirmed it with a very large  
43 sample of streams recently.

44 For example, prior to the **Code**, 76 percent of  
45 non-fish bearing small tributaries were at a state  
46 that are equivalent to our FREP not-properly-  
47 functioning condition. 60 percent of small fish-

1 bearing S4s. And perhaps more importantly, the  
2 large fish-bearing streams, classes S2s and S3s,  
3 now, these are streams that are prime sockeye  
4 habitat. In the 1980s, 41 percent of the S3s and  
5 20 percent of the S2s were in bad shape.

6 Since the **Code**, overall, we've had an  
7 enormous improvement in outcomes, say, by a factor  
8 of 10 overall, sometimes more. For the S2s, we've  
9 got, basically, one percent of streams that are  
10 essentially problematic. Five percent of S3s and  
11 S5s. And for that matter, for the S5s, these are  
12 big, non-fish-bearing streams that can have a  
13 dramatic impact on fish resources down slope.

14 Now, these streams are managed very  
15 conservatively. We found, under FREP, that these  
16 streams receive buffers that, on average, are 28  
17 metres wide. Now, these are wider than the  
18 buffers given for fish-bearing S3s, roughly,  
19 equivalent to the S2s. 84 percent of these  
20 streams are buffered.

21 So the performance that has resulted from the  
22 implementation of the **Code** is marked, the increase  
23 in performance vis-à-vis streams of all classes.  
24 And I think, you know, this -- during the period  
25 of record, when sockeye have shown a general  
26 pattern of decline and otherwise have varied  
27 significantly among years, practices on the  
28 ground, on the land base as far as forestry are  
29 concerned, have shown a steady, if not marked  
30 improvement. And I think the table in the report  
31 shows the improvement is marked. It was concluded  
32 so by the **Code** in the early audit, and we've  
33 confirmed that.

34 One other factor I'd like to bring to the  
35 fore is a little more context to the outcomes.  
36 I've talked about the outcomes very generally,  
37 what's properly functioning, what's not, and  
38 what's functioning with some impacts. I'd like to  
39 say that in our assessment of cut blocks and  
40 streams, we also do assess the contribution that  
41 roads make to the condition of these streams. And  
42 fully, two-thirds of the impacts that we have  
43 assessed are road related, the generation and  
44 transport of fine sediments from surfaces and from  
45 ditch lines.

46 Low RNA tree retention and other factors,  
47 such as wind throw in the riparian reserve,

1 felling and yarding across small streams, they  
2 also contribute. And in, particularly, the  
3 interior machine disturbance during harvesting.  
4 Livestock trampling, 24 percent of the impacts  
5 were that, but these are all secondary to roads.

6 So just to put it into context, riparian  
7 management does have its adverse affects under  
8 certain conditions, but we also have to pay  
9 attention to our roads and crossings as focal  
10 points for the introduction of fine sediments into  
11 channels.

12 MR. PROWSE: Thank you. So those are my questions, Mr.  
13 Commissioner.

14 THE COMMISSIONER: Okay. I'm sorry, Mr. Prowse, what  
15 exhibit is this on the screen?

16 MR. LUNN: 1107.

17 THE COMMISSIONER: I'm sorry?

18 MR. LUNN: 1107.

19 THE COMMISSIONER: 1107, thank you.

20 MR. PROWSE: Thank you, Mr. Commissioner, those are my  
21 questions.

22 THE COMMISSIONER: Thank you, Mr. Prowse.

23 MR. MARTLAND: Next, I have Mr. Fugère for Canada.

24 MR. FUGÈRE: Thank you, Mr. Martland, and good morning,  
25 Mr. Commissioner. Charles Fugère, F-u-g-è-r-e,  
26 counsel for the Government of Canada. I'm here  
27 with my colleague, Hugh MacAulay. I was allocated  
28 40 minutes. I will not need all this time.

29  
30 CROSS-EXAMINATION BY MR. FUGÈRE:

31  
32 Q My first question is for you, Mr. Delaney. You  
33 said that forestry activities were not a focus at  
34 DFO since EPMP was rolled up and since **FRPA** came  
35 in. Can you explain why it was not a focus?

36 MR. DELANEY: Well, the timing of it, a number of  
37 things were coming to play there. One was with  
38 the EPMP and the focus on risk management, and  
39 streamlining regulations, relying upon the guide  
40 books that are available. At the same time, **FRPA**,  
41 of course, was being implemented and it was a  
42 whole different regime of our field staff  
43 operating at that time. And also, it's also been  
44 mentioned that a lack of focus, corporately, being  
45 a connection with the Province, and overseeing the  
46 coordination of it regionally has been reduced.

47 At one time, we used to have a fish-forestry

1 working group. There are a number of working  
2 groups within the habitat program, and one was  
3 fish-forestry, and that started, that was back in  
4 1999, '98, and it carried through till about the  
5 mid-2000s and that had representation from all our  
6 area officers. So we had a forestry expert, fish-  
7 forestry expert from our area offices, and the  
8 corporate office in Vancouver. We had our science  
9 represented there, and quite often, if not most of  
10 our meetings, we also had provincial  
11 representation so it was a good opportunity to  
12 share research results, share concerns and look to  
13 the future of how we could improve things. That  
14 fell apart in about 2006, 2007.

15 Q Thank you. Well, you also mentioned that since  
16 you left your position on the forestry file around  
17 that same time, 2006, 2007, DFOs engagement with  
18 the Province had not been as intense or as  
19 proactive as it had been in the past, in the early  
20 2000s. Do you have any indication whether DFO is  
21 trying to reverse this trend and get back into  
22 working more with the Province on forestry issues?

23 MR. DELANEY: Well, it's my understanding that there  
24 are committees. The one that Mr. Miller on the  
25 stream crossing, we do have some representation on  
26 that. I don't know if it's been as active as it  
27 has been in the past. There has been a move, back  
28 in 2000, 1999, 2000, we created the Canada/B.C.  
29 Fish Habitat Management Agreement, which was  
30 where, federally, being led by DFO and the  
31 Provincial Minister of Environment to  
32 cooperatively work on a number of areas, referral  
33 reviews, monitoring research. That wasn't  
34 followed through. By about 2001 and 2002, the  
35 provincial government had changed and at that  
36 time, they had significant reductions in staff, up  
37 in the 30, 40-percent range. So the original  
38 impetus for that was going by the wayside. Now,  
39 my understanding is that they are trying to get  
40 back and work closer with the Province in a number  
41 of different areas, and one would be on the fish-  
42 forestry side of things.

43 As Dr. Tschaplinski has mentioned, there has  
44 been a close connection on our science side,  
45 Erland MacIsaac has been a close colleague of Dr.  
46 Tschaplinski and some of the other researchers so  
47 it's a mixed bag. On the monitoring side,

1 recently, our habitat monitoring staff have  
2 participated in taking the training that's offered  
3 on some of the monitoring elements, and they've  
4 undertaken some of their own monitoring related to  
5 stream crossing. So I think that's another area,  
6 is that program, and that was an important part of  
7 EPMP and the whole professional reliance. We can  
8 rely upon other people, but unless we're actually  
9 out there seeing what's going on, good, bad, ugly,  
10 that we really don't know. So those are areas  
11 that we would be improving the level of work that  
12 we're doing on those.

13 Q Okay. Thank you. And I have to ask about the  
14 Wild Salmon Policy, but will the implementation of  
15 the Wild Salmon Policy affect how DFO approaches  
16 issues of potential forestry and fish impacts in  
17 terms of setting work priorities?

18 MR. DELANEY: Well, the Wild Salmon Policy has, within  
19 the policy, and I think that's already been  
20 brought forward to the Commission, but habitat,  
21 ecosystem management and elements of that are an  
22 integral part of the Wild Salmon Policy so  
23 collecting more information about watersheds and  
24 the salmon resources in those watersheds so that  
25 information can be accessed by the industry and  
26 governments is going to be critical and important.  
27 The Wild Salmon Policy also speaks to partnerships  
28 and engagement of others, whether it's other  
29 levels of government and community groups,  
30 organizations. One would hope that in some way or  
31 other that those organizations would also be  
32 engaged in elements of the fish-forestry file,  
33 possibly, more in the monitoring side of things.

34 Q Thank you. Mr. Lunn, I wonder, can we have  
35 document 4 on Canada's list of documents, please?  
36 Mr. Delaney, are you familiar with this document?

37 MR. DELANEY: Yes, I am.

38 Q I understand it's --

39 MR. FUGÈRE: Oh, sorry, I think I should mark it as an  
40 exhibit, please.

41 THE REGISTRAR: Exhibit 1127.

42 MR. FUGÈRE: Thank you.

43  
44 EXHIBIT 1127: "Concerns and issues regarding  
45 the Forest and Range Practices Act and  
46 Regulations," document, presented by DFO  
47 Fish/Forestry Working Group

1 MR. FUGÈRE:

2 Q I understand it's a deck that was prepared around  
3 2004, identifying some DFO concerns over **FRPA**. I  
4 won't take you through the document bullet by  
5 bullet. Perhaps we could just go to the next  
6 page, and the one after that. There's some  
7 references here to overarching or philosophical  
8 concerns. Could you highlight for the  
9 Commissioner what were the key concerns that DFO  
10 had at the time with **FRPA**.

11 MR. DELANEY: Yes, this was produced -- we were very  
12 involved with participating and the development of  
13 **FRPA** on the various committees, at least I was on  
14 as the representative on the Joint Management  
15 Committee, and also on the Joint Steering  
16 Committee, taking the **FRPA** back to our  
17 organization to review. This document was  
18 produced by one of our habitat biologists and  
19 presented to one of our fish-forestry working  
20 group sessions that I think one or two of my  
21 colleagues here were attending.

22 Recognizing some of these overarching  
23 philosophical concerns, we were going from a  
24 period of the **Code** to a new regime of results-  
25 based and unknown areas. So some of these were --  
26 it's hard to say how -- if they stand the test of  
27 time, but the objectives and other parts of **FRPA**  
28 were of concern, given the more rigorous code,  
29 where you were getting more information via plans,  
30 and it just was an easier way for people to get  
31 referral information and participate in the field,  
32 knowing what's going on.

33 If you don't mind me suggesting to move on a  
34 few slides --

35 Q Sure.

36 MR. DELANEY: -- really points to the -- keep going.  
37 Keep going. Sorry. Yeah, right here, these were  
38 the main areas that we identified as the key  
39 concerns, which some of them are the same that we  
40 had during the **Code**, the riparian management  
41 issues, especially the S4, S6s, issues around the  
42 stream crossings, the Stream Crossing Guidebook,  
43 which also then related to fish passage. And  
44 then, to a certain extent, some of the other,  
45 what, five bullets. The first three bullets are  
46 the key ones that were carrying through from the  
47 **Code** and into the **FRPA** regime.



1 Q And so I understand this deck to be now about six  
2 or seven years old and currently, looking at these  
3 now, have some of these key concerns been  
4 resolved, and are they still key concerns at DFO  
5 with **FRPA**?

6 MR. DELANEY: Well, I would say from DFO's perspective  
7 that there really isn't a solid answer for that.  
8 There's no one that has sort of gone back bullet  
9 by bullet within the Department and said that  
10 those either philosophical concerns, or these more  
11 specific concerns have been addressed and they're  
12 comfortable with. The work that Dr. Tschaplinski  
13 has presented on the riparian management is an  
14 example of moving forward, that riparian concerns  
15 may not be as extreme or as concerned, especially  
16 on the small streams, given that some of the work  
17 that he has just shown us and the recommendations  
18 that they've been putting forward on the riparian  
19 reserve zones.

20 Q Thank you. Perhaps I'll invite Mr. Miller to  
21 comment on these concerns, with your experience on  
22 the **FRPA** regime. Do you have any comments on  
23 these?

24 MR. MILLER: Well, first of all, the first comment I'd  
25 make is none of these are a surprise, they have  
26 been identified as concerns, both from the DFO  
27 side, as well as from other stakeholders, and, I  
28 think, from staff internal to our Ministry. As  
29 people had said, stream crossings continue to be a  
30 focal point of much of our, you know, time and  
31 energy and concern around, you know, managing  
32 forestry-related impacts on other resources and in  
33 the context of fish resources in particular. Yes,  
34 stream crossings continue to be of concern and a  
35 focal point for us, as does fish passage, a  
36 continual focal point of our compliance  
37 enforcement activities, for example.

38 Q Thank you. I guess I'll move on to the theme of  
39 science. My next question for Dr. Tschaplinski,  
40 is there some critical science that is needed at  
41 the moment to better comprehend the link between  
42 forestry activities and the decline of sockeye  
43 salmon, and what would you recommend as research  
44 priorities?

45 DR. TSCHAPLINSKI: Sir, some of those priorities, I  
46 think, would also serve linked issues around  
47 Mountain Pine Beetle, infestations and impact.

1 The Province considered where the major data gaps,  
2 information gaps would be on the Mountain Pine  
3 Beetle front, and the three general areas, there  
4 are a number of things that relate to hydrology,  
5 stream channel form, the geomorphology and the  
6 fish habitat. And overarching the changes in the  
7 forest that impact the hydrologic cycle, the  
8 implication for water tables, peak flows, flow  
9 timing, channel stability, channel form, and all  
10 the implications for fish habitat. More research,  
11 I think, a process-based research and perhaps an  
12 optic research looking at watersheds at different  
13 levels of infestation and physical and biological  
14 response would be important to carry on with.

15 Now, some of that is ongoing now internal to  
16 government, and some from academia, and some as  
17 part of an association between the two, but I  
18 think more can be done. In the stream channels,  
19 itself, more research focussed at cause and effect  
20 relationships between alterations to the land  
21 base, both by forestry and other things like the  
22 beetle infestation on channel form, physical  
23 habitat structure, large woody debris dynamics,  
24 and fish habitat. First of all, I'm sorry, I'll  
25 divide that. First of all, on the physical  
26 processes and the same kind of research as far as  
27 the biological processes and fish production is  
28 concerned.

29 MR. FUGÈRE: Thank you. And moving on to what is being  
30 done currently, I think there were some comments  
31 by Mr. Miller about the collaboration between DFO  
32 and B.C. on the science sphere. There's been  
33 also, I think, yourself, Dr. Tschaplinski, have  
34 mentioned the work with Kim Hyatt in the context  
35 of WSP. Could you highlight for us other ongoing  
36 science work that B.C. and DFO are carrying  
37 together on forestry activities and the impacts on  
38 fish?

39 DR. TSCHAPLINSKI: There's been a pretty long history  
40 of this association, it dates back a couple of  
41 decades, at least. Even further, the Carnation  
42 Creek project has been mentioned. It's ongoing.  
43 DFO's participation isn't at the level that it  
44 once was. This project was initiated by DFO in  
45 1970. Officially, they withdrew from it in 1990.  
46 Other agencies carried on with it, with still some  
47 DFO participation from their Science group. And

1 that participation continues to this day at a  
2 certain level. Our association with the federal  
3 department has been ramped up. Given the issues  
4 around the Wild Salmon Policy and how we can, at  
5 Carnation Creek, provincially support that policy,  
6 and specifically, the Barkley Sound pilot is part  
7 of it.

8 We have talked about DFOs concerns and issues  
9 with small stream management and those concerns  
10 were made very well known to the Province and to  
11 the forest industry in 1999/2000, with the interim  
12 policy of 30-metre buffers around small streams,  
13 fish-bearing and their direct non-fish-bearing  
14 tributaries.

15 This set into motion a great deal of  
16 interaction between the Province and DFO, and I  
17 was involved with most of that having to do with  
18 research issues. Up to that point, we have been  
19 close collaborators in the Stuart-Takla Fish-  
20 Forestry Interaction Project. I was involved in  
21 the period of 1992 when the Forest Investment  
22 Account funding was lost in 2001, with my DFO  
23 colleague, Steve Macdonald, Herb Herunter, Erland  
24 MacIsaac, and others.

25 That was a program that got, basically,  
26 together, nearly 10 years of pre-harvest baseline  
27 data collection, very important stuff. And today,  
28 that pre-baseline data collection, that baseline  
29 data collection is also pre-Mountain Pine Beetle  
30 baseline data. So if there's ever a way to return  
31 to that site to look at how the beetle infestation  
32 has changed things as far as watershed processes  
33 and sockeye salmon habitat is concerned, it would  
34 be a benefit.

35 The DFO concerns at the turn of the century  
36 generated a lot of cooperative research. The  
37 Prince George Small Stream S4 Adaptive Management  
38 Study, with local Forest Service people, such as  
39 John Rex, and Dave Maloney, Erland MacIsaac, local  
40 contractors, that study went for several years and  
41 came up with some recommendations in recent years  
42 that the District Manager's policy for S4 was not  
43 adequate to provide enough shade to small streams  
44 and recommendations were made to improve the level  
45 of riparian management and for the purpose of  
46 getting better outcomes. That was a multi-agency  
47 cooperative piece between the Province and DFO.

1           Also, there was the Variable Retention and  
2 Conservation of Small Streams Project, UBC, the  
3 Forest Service, and the Canadian Forest Service,  
4 and Fisheries and Oceans Canada, as well as some  
5 senior Weyerhaeuser scientists, Bill Beese, in  
6 Canada, Bob Bilby in the United States. That was  
7 a program that ran for, unfortunately, only a few  
8 years because funding was lost. It initiated in  
9 2001, not long after the DFO concerns were tabled,  
10 and ended at the end of 2003. So what I'm  
11 actually going through is quite the history of  
12 research that we did do, but we can't do any more  
13 because we lost funding.

14           Carnation Creek continues and otherwise, on a  
15 research front, we don't have any large projects  
16 that we're cooperating on at this moment.

17 Q       Thank you very much. Perhaps to close the loop on  
18 science, Mr. Delaney, do you have anything to add?  
19 Are you aware if DFO Science is doing work right  
20 now on the interaction between forestry activities  
21 and sockeye salmon?

22 MR. DELANEY: Well, I think Peter's last comment sums  
23 it up. We have no active research underway at the  
24 present time. Research funds have, as I say,  
25 dried up, and Erl MacIsaac, who's the lead of that  
26 within DFO, they're not undertaking any field  
27 fish-forestry research.

28 Q       Thank you. I'd like to move to the issue of  
29 compliance now.

30 MR. FUGÈRE: I wonder, Mr. Lunn, if we could have the  
31 PPR, PPR17 at page 68, paragraph 150?

32 Q       My question will be for Mr. Miller. Just reading  
33 the first sentence of that paragraph, the 2010  
34 report, I understand this is the state of British  
35 Columbia's forest, also considers the Ministry  
36 assessment of compliance, reporting as follows,  
37 first bullet:

38  
39           Between 15,000 to 16,000 inspections are  
40 conducted each year ...

41  
42           Could you clarify for us, please, Mr. Miller, what  
43 are you inspecting for, what compliance are we  
44 talking about here?

45 MR. MILLER: Thank you. This would generally be  
46 compliance with any of the requirements of the  
47 **Forest and Range Practices Act** specifically.

1 Without flipping through the State of the Forest  
2 and digging into it, our compliance and  
3 enforcement work focuses not only on forest  
4 practices and the effect of those practices on  
5 other forest resources, it can also include things  
6 like revenue inspection, you know, is the proper  
7 timber mark being affixed to every load of logs as  
8 appropriate, and is the Province collecting  
9 stumpage revenue? But generally speaking, in the  
10 context of forest practice, it could be any and  
11 all of Regulation requirements, it could be plan  
12 obligations or prohibitions based on, you know,  
13 approved plan content. You know, and inspection  
14 would generally be, you know, a single inspection,  
15 you know, may well be on one cut block, but  
16 looking at one particular aspect, or it may be a  
17 number of particular aspects so it's a bit of a  
18 mish-mash.

19 MR. MARTLAND: Just for the record, I'll just point out  
20 paragraph 150 is referring to the report that's  
21 now in evidence as Exhibit 1109.

22 MR. FUGÈRE: Right. Thank you, Mr. Martland.

23 Q Yeah, thank you, Mr. Miller. To follow up on  
24 that, are you noticing any trends in the industry  
25 in terms of compliance? Is it improving?

26 MR. MILLER: First of all, let me give the overall  
27 remark. I don't work in the Compliance and  
28 Enforcement Program, never have. I'm familiar  
29 with some of the people that do. I do not and  
30 have not received any information from on-the-  
31 ground compliance and enforcement officers. The  
32 information I do have is largely gleaned from  
33 those people that work in the program at the  
34 headquarters level who are involved in policy and  
35 legislation, and to a certain extent,  
36 implementation. And my remarks are also informed  
37 by various mostly *ad hoc* conversations with  
38 district managers and other field staff.

39 So having said all that, overall, the  
40 compliance rates that we see, you know, range, it  
41 depends on the topic area, and the year, and  
42 everything, but overall, the trend has been fairly  
43 consistent under the **Forest Practices Code** and  
44 into the **FRPA** world of compliance rates in excess  
45 of 90 percent, 90 to 95 percent.

46 As I understand it, we have not seen  
47 significant changes with, you know, just comparing

1           **Forest Practices Code** to **FRPA** related, although,  
2           in Dr. Tschaplinski's earlier remarks, it must be  
3           noted that we are just now having a significant  
4           enough population of harvested cut blocks that  
5           started their life planning under the **FRPA** and all  
6           the way through, the approval process is in two  
7           implementations. So it's taken a number of years  
8           as forestry planning takes a number of years to  
9           play out on the ground, but the nub of the answer  
10          to your question is no, we're not seeing  
11          significant changes in those trends.

12          Q     Thank you.

13          MR. FUGÈRE: Mr. Lunn, could we have document 5 on  
14          Canada's list of documents?

15          Q     And my question is for Mr. Delaney. Do you  
16          recognize this document?

17          MR. DELANEY: Yes, I do.

18          MR. FUGÈRE: Could that be marked as the next exhibit,  
19          please?

20          THE REGISTRAR: Exhibit 1128.

21  
22                   EXHIBIT 1128: Letter dated August 9, 2004,  
23                   from Fisheries and Oceans to Mr. Larry  
24                   Pedersen, "Expedited Timber Supply Review for  
25                   the Lakes, Prince George and Quesnel Timber  
26                   Supply Areas: Public Discussion Paper, June  
27                   2004"

28  
29          MR. FUGÈRE:

30          Q     Mr. Delaney, just briefly, could you comment on  
31          what was the purpose for this document?

32          MR. DELANEY: Well, my recollection at the time, and  
33          more than likely, Mr. Miller can comment in more  
34          detail on it, but there was a discussion paper  
35          that had gone out on the timber supply review in  
36          that area of the province, the Lakes, Prince  
37          George, Quesnel timber supply areas, and asking  
38          for comments back on the proposals. I don't  
39          recall the original document now. I remember  
40          seeing it at the time.

41          Q     Thank you. Mr. Miller, do you have anything to  
42          add?

43          MR. MILLER: Not specifically on this letter, just to  
44          add the comment that timber supply review is a  
45          largely numbers-based, model-driven exercise based  
46          on forest inventory projecting growth over time,  
47          accounting for various reserves and other

1 restrictions to timber harvesting, with the end  
2 report, you know, the end product being a report  
3 about, you know, 200 years into the future, the  
4 potential supply of timber, based on some  
5 assumptions about harvesting rates that is used  
6 primarily as a tool by the Chief Forester of the  
7 Province as a statutory decision maker in setting  
8 allowable annual cut levels for each of the  
9 management units in our province. So we do not  
10 calculate those numbers, but the numbers produced  
11 by way of a Timber Supply Analysis Report are a  
12 significant factor in that decision.

13 Q Thank you. I'll finish by moving onto the topic  
14 of partnerships. We've heard a lot about what DFO  
15 and B.C. are doing together, and we've heard a bit  
16 about the industry. My question for you, Mr.  
17 Delaney, is what work is DFO currently doing with  
18 other partners just as First Nations or ENGOs on  
19 forestry activities and the link with the  
20 protection of fish habitat?

21 MR. DELANEY: It's my understanding that very little,  
22 if anything, is being done at a broad scale level.  
23 At the field level, there may be interactions with  
24 a local aboriginal group or an ENGO to deal with  
25 certain matters. If an authorization under the  
26 **Fisheries Act** is required for a crossing, for  
27 example, there may be some consultation in the  
28 local area, but as a program element, there is  
29 nothing that I'm aware of.

30 Under EPMP, when it was being implemented in  
31 the mid-2000, 2006, or so, one of the elements of  
32 the EPMP is partnerships and we've had one or two  
33 workshops with the ENGO community, and one of the  
34 steps was to consider workshops with the  
35 aboriginal groups, First Nations, but I don't know  
36 if anything has moved on from those workshops at  
37 that time, looking at recommendations to partner.  
38 It's a challenging area of how you partner and who  
39 you partner with in some of these, say, in the  
40 fish-forestry area. We're not even reviewing the  
41 plan so it would be almost more of a partnership  
42 with the local communities with the forest  
43 companies. Now, I'm unaware of what consultation  
44 or partnering goes on at that level.

45 With monitoring, there is an area and  
46 opportunity for local groups to participate in  
47 that, and there are some examples where we do have

1 some partnering going on, again, at the local  
2 level. Peter or Ian may be aware of some other  
3 partnerships, but, again, it hasn't been a broad-  
4 scale initiative for us.

5 Q I guess my follow-up question would be if that  
6 were to change, what kind of work could First  
7 Nations or environmental NGOs do that would be  
8 helpful to DFO in protecting fish habitat from  
9 forestry activities?

10 MR. DELANEY: Well, as I mentioned a minute ago, one of  
11 them could possibly be the monitoring side of  
12 things. With the work the Province has been doing  
13 with input from the Federal Government in  
14 developing standards, and techniques, and  
15 procedures that you could engage groups. There  
16 are shore keepers and others who are already  
17 undertaking some monitoring so that's one area.  
18 More eyes and ears out in the field, identifying  
19 potential problem areas is another part to it that  
20 could be engaged.

21 MR. FUGÈRE: Thank you. Thank you, Mr. Commissioner,  
22 those are all my questions.

23 THE COMMISSIONER: Thank you very much.

24 MR. MARTLAND: Mr. Commissioner, I have the  
25 Conservation Coalition next.

26 MR. LEADEM: Leadem, initial T., for the record. I  
27 appear as counsel for the Conservation Coalition.  
28 For your edification, gentlemen, that's a group of  
29 environmental organizations that have banded  
30 together for the purposes of this particular  
31 hearing.

32

33 CROSS-EXAMINATION BY MR. LEADEM:

34

35 Q I'm going to focus on a couple of key areas, and  
36 I'm going to tell you where I'm going to go first,  
37 and then I'm hoping to get some feedback and some  
38 discourse going between us. The first area that  
39 I'd like to discuss with you is the collaboration  
40 and the agreement that you have with your  
41 respective agencies, with DFO, and the Ministry of  
42 Forests, as it was known, and it's known by  
43 something else now, we know that. And then I'd  
44 like to move into talking about something that I  
45 don't think we've discussed very much so far,  
46 which is fish passages. You mentioned it a bit,  
47 Dr. Tschaplinski, but I think I want to go into it



1 in a little bit more detail. And then I want to  
2 finalize my discussion with you by examining some  
3 issues that relate to the size of hectares and  
4 Mountain Pine Beetle, and also global climate  
5 change, because I think there's some linkages that  
6 I want to explore with you with global climate  
7 change, Mountain Pine Beetle infestation, and the  
8 changes that are coming in the future.

9 So let me begin by examining with you,  
10 Commission Counsel document number 20. This is a  
11 document I don't think has been marked yet by  
12 Commission Counsel. I know that Mr. Martland was  
13 compressed so I'm perhaps, hopefully, doing some  
14 of his work, here. I found this document to be  
15 quite interesting, it's entitled, "The Cooperation  
16 Agreement respecting fish-forestry interactions."  
17 And this is an open question to the panel. Was  
18 this agreement ever entered into, to your  
19 knowledge?

20 MR. DELANEY: No, it wasn't. It was generated  
21 following -- we had a number of fish-forestry  
22 Federal/Provincial meetings in 2004, 2005, where  
23 we were setting out some action plans for the  
24 future, some of the areas we had to focus  
25 attention on, and then we had a session in early  
26 2006, I think it was, an EPMP presentation with  
27 the Province and the forest industry. And in  
28 those sessions, the key there was we needed more  
29 cooperation, more interaction. And given that I  
30 had drafted the Canada/B.C. Fish Habitat Agreement  
31 in 2000, I decided to draft this agreement, and I  
32 shared it with my colleagues in the Department for  
33 feedback and, nationally, given that our program  
34 is a national program, there was concern about  
35 national consistency, we had to factor that in.

36 And when it was shared with the Province,  
37 Ministry of Environment was pretty keen on it.  
38 Ministry of Forest was maybe a little less so.  
39 Part of the problem was who actually represents  
40 the forest industry. And I'd have to scroll down  
41 through here. At one point, we had COFI and --

42 Q If you could scroll down to the signature block  
43 and --

44 MR. DELANEY: Right. Sorry, I just forget.

45 Q There you go.

46 MR. DELANEY: Yes, the Coast Forest and COFI, but  
47 rightly so, Ralph Archibald, who was, I guess,

1 your predecessor there, and he --

2 MR. MILLER: My director.

3 MR. DELANEY: Your director. He had pointed out that  
4 those two groups were not representing everybody  
5 so where was this going to get this? Anyways,  
6 with **FRPA** being implemented at the time, there  
7 were significant issues, other issues that kind of  
8 put this on the back burner.

9 Q Okay. I thank you for that explanation.

10 MR. LEADEM: Might this be marked as the next exhibit,  
11 please?

12 THE REGISTRAR: Exhibit 1129.

13

14 EXHIBIT 1129: Cooperation Agreement  
15 Respecting Fish/Forestry Interactions

16

17 MR. LEADEM:

18 Q I want to take all of you gentlemen to, firstly,  
19 the purpose, and then some of the deliverables  
20 under this proposed agreement. And the purpose,  
21 as you defined it, back then, Mr. Delaney, was:

22

23 ... to establish a cooperative working  
24 relationship to ensure that matters of common  
25 interest are undertaken or addressed in an  
26 effective, efficient, transparent, timely,  
27 coherent and coordinated manner.

28

29 I don't think any of you gentlemen would quarrel  
30 with those concepts, would you?

31 MR. MILLER: No.

32 Q No, of course not, they're basically motherhood  
33 issues. And some of the deliverables I found  
34 might be quite interesting and quite useful in the  
35 context of fish-forestry interactions. For  
36 example, under (a):

37

38 An annual work plan and annual report on  
39 activities will be prepared.

40

41 I would think that that would be useful to both of  
42 your organizations; is that not correct?

43 MR. DELANEY: From my perspective, it would.

44 Q Yes.

45 DR. TSCHAPLINSKI: I would agree.

46 MR. MILLER: Yeah.

47 Q Okay. And then under (c), "each party is provided

1 full and timely information about the conduct and  
2 findings of the initiatives;" that may be  
3 undertaken by one another. So I guess my question  
4 is this, is that, you know, if we can eliminate  
5 maybe the private sector, COFI and some of those  
6 organizations, do you sense, Mr. Delaney, that  
7 there might be an appetite to actually go back to  
8 the drafting board and to see if we can, or you  
9 can craft some relationships such as this that's  
10 embodied in an agreement between Department of  
11 Fisheries and Oceans and the Ministry of Forests?  
12 I'm sorry, I keep on calling you guys Ministry of  
13 Forests, and I know that you're known by a  
14 different name now and you'll have to forgive me  
15 because I'm not used to the new terminology.

16 MR. MILLER: That's quite all right.

17 MR. DELANEY: Well, as I noted earlier, I'm not in this  
18 area of work now.

19 Q Yes, I understand that.

20 MR. DELANEY: But my understanding is that there is  
21 encouragement or a move to try to enhance our  
22 corporate relationship with the Province, again,  
23 given, as you're noting, that the number of  
24 changes of who's doing what to whom over there.  
25 Whether it would be just with Ministry of  
26 Environment, or Ministry of Forests, our original  
27 2000 agreement was directed to the Ministry of  
28 Environment representing the province, and they  
29 were through mechanisms like the Joint Management  
30 and Joint Steering Committee, to bring in the  
31 Forest Service. So personally, as given that I  
32 liked it in 2006, I haven't lost it.

33 Q You still like forests, okay.

34 MR. DELANEY: So I think it's a positive step and one  
35 would hope that we could move forward. You know,  
36 obviously, some elements may change, and annual  
37 work plans, things like that, may be more  
38 cumbersome now than it was then, I'm not too sure,  
39 but those are details.

40 Q And I seem to be seeing some nods from you, Dr.  
41 Tschaplinski, so I'm going to talk to you. Do you  
42 think that this is a good thing, to actually put  
43 into practice and to move forward on?

44 DR. TSCHAPLINSKI: Broadly, I would have to agree with  
45 that. These are all noble objectives and, you  
46 know, the intent, I think, is, you know, very  
47 appropriate to foster better interaction, more

1 interaction. The interaction could only, I think,  
2 generate and foster increased levels of trust  
3 because people, as they interact more, become  
4 familiar with each other. It's one of the ways  
5 trust is built.

6 Q Yes.

7 DR. TSCHAPLINSKI: When this came out, you have to  
8 understand, though, sir, that I think both the  
9 Federal Department and the provincial ministries  
10 were under a period of great change, and that  
11 change wasn't the kind of change that meant more  
12 staff and more dollars, it was the other way  
13 around. At the same time, a whole new management  
14 regime was being implemented that we, in the  
15 provincial government, weren't familiar with. We  
16 didn't really know what a full results based  
17 management regime would be, and we shared some of  
18 the concerns with our other counterparts. We were  
19 very much engaged in this, and at the time, I was  
20 with the Ministry of Forest and Range as the only  
21 Fisheries scientist in an organization of,  
22 roughly, 4,000 individuals. There were only so  
23 many things from the Fisheries file that I could  
24 become engaged on. And at that time, I was  
25 heavily engaged with my DFO counterparts in  
26 developing the FREP indicators and sampling  
27 protocols, as well as the cooperative research we  
28 were being engaged with. Other things, touching  
29 more on policy and Ministry structure and  
30 interactions are a whole other envelope.

31 Q Right.

32 DR. TSCHAPLINSKI: So there's the capacity issue. So I  
33 think, although well intentioned and well meaning,  
34 with lots of potential improvements to our  
35 relationship, and outputs, and resource  
36 management, it was poorly timed when it came out  
37 because we just couldn't pick up the ball and run  
38 with it.

39 Q But the capacity issues are still there, aren't  
40 they?

41 DR. TSCHAPLINSKI: The capacity issues are still there.  
42 I'm no longer with the Ministry, I'm with another  
43 organization.

44 Q All right. The research branch, which was a great  
45 branch with the Ministry of Forests for a number  
46 of years --

47 DR. TSCHAPLINSKI: Was disbanded in 2010.

1 Q All right.  
2 DR. TSCHAPLINSKI: And its biophysical researchers from  
3 Victoria largely ended up in the Ministry of  
4 Environment. That's where I ended up, and most of  
5 my colleagues.

6 Q All right. I'm going to move to another topic, if  
7 I could, and that's the fish passage issue.

8 MR. LEADEM: And I want to see if we can pull up  
9 document number 25 from the Commission's list of  
10 documents. I don't believe this one, Mr.  
11 Martland, has been marked, as well. Unless you  
12 have any objection, I'm going to go through this  
13 document with the witnesses.

14 Q So this is a report from the Forest Practices  
15 Board, which I understand is more or less an  
16 independent agency that gives advice from time to  
17 time concerning forestry practices, specifically,  
18 to the Province and to the various stakeholders  
19 within the forest industry; is that correct?

20 MR. MILLER: Essentially correct. The Forest Practices  
21 Board reports out to the public and to the  
22 legislature. You know, they are, essentially, a  
23 you know, an arm's-length, third party audit.

24 Q Right.

25 MR. MILLER: Audit and complaint investigation body.

26 Q So this particular report is entitled, "Fish  
27 Passage at Stream Crossings." Are you familiar  
28 with this report, Mr. Miller?

29 MR. MILLER: Yes, I am.

30 MR. LEADEM: Might this be marked as the next exhibit,  
31 please?

32 THE REGISTRAR: Exhibit 1130.

33  
34 EXHIBIT 1130: Forestry Practices Board  
35 document, "Fish Passage at Stream Crossings"  
36

37 MR. LEADEM:

38 Q I'm going to take you, for the lack of time that I  
39 have available to you, or with you, to the  
40 conclusions and recommendations, and I think if we  
41 could go, together, to page 20, I think we should  
42 find them there. I'm afraid rather than pointing  
43 you, in the direction of the conclusions, I'm  
44 going to have to rely upon your knowledge of the  
45 document, and the Board makes the following  
46 recommendation. I see that under right at the  
47 end, there:

1                   The Board recommends that government take the  
2                   necessary actions to ensure fish access to  
3                   valuable habitat is maintained and restored.

4  
5                   Do both of you from the Province support that  
6                   conclusion, and if so, what steps, if any, is the  
7                   Province doing to implement this particular  
8                   recommendation?

9                   MR. MILLER: Well, I'll have a go at this one first,  
10                   and then let Dr. Tschaplinski fill in, as he feels  
11                   he needs to. Yes, I support the recommendation,  
12                   to answer the first part of your question. To  
13                   answer the first part of the second part of your  
14                   question and to focus on valuable habitat  
15                   maintained, recognize that the maintenance of fish  
16                   passages is an obligation that falls largely to  
17                   tenure holders in the context of their harvesting  
18                   and road building operations, and those  
19                   obligations maintain for as long as the tenure  
20                   holder is operating on a particular piece of land  
21                   base. So we ensure, you know, access to habitat  
22                   is maintained through our legislated requirements,  
23                   through compliance and enforcement actions with  
24                   respect to those obligations, and we typically  
25                   find very high rates of success, as I mentioned  
26                   earlier in the initial provision of fish habitat  
27                   and the maintenance throughout the life of tenure  
28                   holders' obligations.

29                   Where we do start to see problems, and what  
30                   the Board specifically looked at and commented on  
31                   is the maintenance over time and the restoration  
32                   where fish passage is blocked.

33                   So now to list some of, say, the actions  
34                   we're taking on that, as we mentioned earlier, the  
35                   Province and Federal Department of Fisheries and  
36                   Oceans, sorry, Fisheries and Oceans Canada, as  
37                   they're now called, collaborate on a Fish Passage  
38                   Technical Working Group. It's a subcommittee of  
39                   the Joint Management Committee that we spoke about  
40                   earlier. That group has an annual work plan. We  
41                   have been dealing, in years past, and the current  
42                   year we're in, with a couple of different funding  
43                   programs, first, the Forest Investment Account,  
44                   most lately, the Land Base Investment Program,  
45                   which does provide funding for the various  
46                   programs associated with fish passage, and I'll  
47                   get into the specifics of those in just a minute.

1 But over the last three years, not including the  
2 fiscal year we're in, we've allocated \$14 million  
3 to that, allocated and/or spent. I think there  
4 was some targeted funding, and there was some  
5 optional funding at licensees' discretion so I  
6 think the sum total of that funding has been \$14  
7 million over the previous three years. The fiscal  
8 year we're in right now, we're allocated a million  
9 and a half dollars. So we're looking at, you  
10 know, \$15-and-a-half million over the past four  
11 years.

12 The bulk of the funding every year goes to  
13 collection of assessment data, so you know, going  
14 out and collecting information at each culvert and  
15 stream crossing in a strategic approach  
16 perspective, focussing on the watersheds of  
17 highest Fisheries priority.

18 We currently have, approximately, 24,000 data  
19 points. We're currently building a database to  
20 house all those data points so that we can do a  
21 better job of analyzing the data that we have in  
22 hand.

23 Every year, we remediate, you know, somewhere  
24 between 10, 20 crossings so in other words, go and  
25 fix the most egregious problems and the ones that  
26 are going to give us back access to the best and  
27 most habitat that we can.

28 Q Does that also encompass decommissioned forestry  
29 growths?

30 MR. MILLER: Hmm.

31 Q Does that get factored into all of this? Because  
32 my understanding is that, you know, culverts are  
33 installed in the construction of roads --

34 MR. MILLER: Yes.

35 Q -- and after the forestry road is no longer  
36 needed, there is an undertaking on the part of the  
37 proponent, the actual logging industry or the  
38 person who's used that road, to decommission it  
39 and to restore it.

40 MR. MILLER: So it would depend on the nature of the  
41 decommissioning. If the round pipe culvert were  
42 left in place --

43 Q Yes.

44 MR. MILLER: -- then yes, we would be interested in  
45 collecting information about that. You know, the  
46 decommissioning of roads can include the removal  
47 of culverts and, basically, the creation of a

1 replication of overland flow of the water. In  
2 that case, we don't go and collect information  
3 about fish passage. We're concerned in our  
4 program about fish passage through culverts, for  
5 the most part.  
6 Q All right. So essentially, you agree with the  
7 conclusions from this study which led the Board to  
8 conclude that road crossings constituted a  
9 widespread risk to fish passage, and you're doing  
10 something about it?  
11 MR. MILLER: Yes.  
12 Q Okay. I wanted to -- sorry, Mr. Miller, but in  
13 the interest of time --  
14 MR. MILLER: Go ahead.  
15 Q -- I just want to move on to another topic because  
16 I think I've got the evidence I wanted from you.  
17 I seem to hear your evidence, Mr. Delaney, when  
18 you were talking about referrals, that in times  
19 past, for example, as I understand it, the cut  
20 permit is actually the legislative tool by which a  
21 logging company is authorized to actually go onto  
22 Crown land and to actually cut timber; is that  
23 right, Mr. Miller?  
24 MR. MILLER: Yes, that is correct.  
25 Q All right. And in times past, the cut permit was  
26 something that DFO scientists or habitat  
27 protection officers would actually sit down with  
28 their counterparts, or there would actually be a  
29 referral to DFO to examine the provisions of that  
30 cut permit; is that right?  
31 MR. DELANEY: Yes, in the past, there was much more  
32 interaction with the -- you would have the  
33 material in hand to actually look at where the cut  
34 blocks were going to go and you would meet with  
35 the -- depending, in the province, there was  
36 various scenarios played out. In some areas up in  
37 the Interior, there was the Interagency Management  
38 Committee, or something like that, where you'd  
39 have a group of representatives from the various  
40 provincial departments and DFO would meet and they  
41 could go through the referrals, whether it was  
42 forestry, urban, whatever it would be, and then  
43 provide comments at the table. Another scenario  
44 would be where you'd just submit written comments,  
45 or you might actually go walk the block with the  
46 proponents so various models.  
47 Q And in terms of -- there was also an internal



1 referral. Sorry, I'll get back to you, Mr.  
2 Miller, I'm not going to ignore you, trust me on  
3 this. There also was an internal process, Mr.  
4 Miller, in terms of not only was the referral out  
5 to DFO, but there was also a referral to Ministry  
6 of the Environment for feedback on proposals, cut  
7 block proposals, is that not right?

8 MR. MILLER: Yes, routinely to Minister of Environment,  
9 occasionally to other agencies of the Crown as in  
10 where their interests might be impacted, but  
11 primarily to DFO and MOE.

12 Q Okay. Now, you had a comment that you wanted to  
13 weigh in on?

14 MR. MILLER: I did. And I just wanted to clarify that  
15 the referral process, while it may have included  
16 cutting permit referrals, you know, at that level  
17 of detail and at that kind of last interaction  
18 between government and the proponent before  
19 somebody could actually go put a piece of  
20 machinery on the ground. Most often, in my  
21 experience, at least, referrals also happen at  
22 earlier stages in the planning process.

23 Q Right, the silviculture plan, for example?

24 MR. MILLER: Silviculture plans, forest development  
25 plans, now forest stewardship plans under **FRPA**,  
26 potentially, logging plans under the **Code**. There  
27 were a number of iterative steps in the planning  
28 process and most often, in my experience, those  
29 are the mechanisms for referral so that we can  
30 capture those comments to, you know, address  
31 whatever concerns there were before we actually  
32 gave an authorization to go harvest.

33 Q Yes. Now, do I understand your evidence  
34 correctly, Mr. Delaney, that those referrals are  
35 no longer taking place?

36 MR. DELANEY: Well, my understanding, talking to the  
37 field staff, is that that referral mechanism is  
38 not happening. They're just either not receiving  
39 the material, or it's not a priority. I think  
40 there was one submission in one of the binders  
41 that had a table, it was in the B.C. Interior,  
42 where they went through a prioritization exercise  
43 of all the activities that they undertake up  
44 there, from the foreshore, the urban, forestry and  
45 many of the forestry referrals were of a lower  
46 priority, given the way that the **FRPA** has  
47 unfolded.

- 1 Q And my understanding of those sit-down or the  
2 referral process was that they would cover such  
3 things as the leave strips around riparian  
4 management areas, riparian management zones,  
5 stream crossings, road constructions, where they  
6 were going to cross streams, how the stream  
7 crossing would be affected, when the roads would  
8 be built, for example, to minimize fish-forestry  
9 interactions; is that correct?
- 10 MR. MILLER: That's in the past, in the previous, yes.
- 11 Q Yes.
- 12 MR. MILLER: Yes, as Ian was mentioning, that the  
13 forest development plans, or five-year plans,  
14 where you could actually look down the road at  
15 where cut blocks were coming, you could identify  
16 some key sensitive watersheds, and maybe point in  
17 different directions where there's not as much of  
18 a concern, those would be some of the activities  
19 that had occurred before.
- 20 Q And essentially, there was a referral process, Mr.  
21 Miller, not just to other agencies, but also First  
22 Nations were also consulted in that referral  
23 process, in terms of cut block layouts and FTPs,  
24 and things of that nature?
- 25 MR. MILLER: Yes.
- 26 Q Now, I want to move on to talk about global  
27 climate change, and I think I'm going to mostly  
28 focus upon you, Dr. Tschapliniski, because you've  
29 done some work or at least have some knowledge of  
30 MPB, Mountain Pine Beetle infestation. And before  
31 I go there, do I have it correctly, Mr. Miller,  
32 that under the salvage logging operation for the  
33 MPB, we're going to be seeing larger and larger  
34 clear-cuts, is that fair to say?
- 35 MR. MILLER: Well, certainly, the evidence we have in  
36 hand to date would indicate that. Looking into  
37 the future, a bit difficult to speculate. I don't  
38 work in Operations, you know, I'm not a field  
39 forester, I don't work in that.
- 40 Q Yes, I understand that.
- 41 MR. MILLER: I think it reasonable to expect.
- 42 Q All right. And so that concerns me from the  
43 aspect of a fish-forestry interaction, and  
44 obviously, it concerns you, as well, Dr.  
45 Tschapliniski, does it not?
- 46 DR. TSCHAPLINSKI: Yes, it does.
- 47 Q Because obviously, if we're getting to a world

1           where there's larger and larger cut blocks, we're  
2           not really sure what the geomorphology and the  
3           topography and the hydrology of those cut blocks  
4           are going to do to streams. We're not exactly  
5           sure, are we?

6       DR. TSCHAPLINSKI: We're not exactly sure. We know  
7           some of the principles, and those principles have  
8           been touched on --

9       Q     Yes.

10      DR. TSCHAPLINSKI: -- in the hearings today. In  
11           addition, also mentioned today is the huge extent  
12           of the Mountain Pine Beetle infestation. There's  
13           enormous volumes of dead forest out there, if we  
14           just look at the timber alone.

15      Q     And most of it's located within the Fraser River  
16           basin?

17      DR. TSCHAPLINSKI: That is correct. But it's also a  
18           situation that no matter how fast the forest  
19           industry can try to salvage what is still  
20           marketable, the amount salvageable to this point  
21           and into the near future will be a tiny fraction  
22           of the forest that has been killed and will be  
23           killed simply because we couldn't possibly salvage  
24           at a rate to make a significant dent in the total  
25           amount of forest that's been affected.

26           A colleague of mine, my former supervisor,  
27           Steve Chatwin, made a presentation once that  
28           showed a bar graph with the amount of forest that  
29           is anticipated to die, be affected, and the amount  
30           that will be harvested before the wood isn't worth  
31           harvesting any more, and the differences are  
32           enormous. The important part is not the amount  
33           harvested, but where the distribution of the  
34           harvest will be. And the distribution of harvest  
35           will not be throughout the range of the killed  
36           pine, but it will be in certain locations where  
37           the infrastructure exists so that the wood can be  
38           accessed as cheaply as possible. So in places,  
39           there could be very large amounts of harvest, but  
40           not much in others so it will be unequally  
41           distributed. Where that harvest is going to be  
42           and will be in the future is important to know  
43           because of all the hydrologic implications, the  
44           drainage implications, the implications to the  
45           channel network and fish.

46      Q     Yes, and that's what I want to focus on, is the  
47           potential interactions with fish. As I understand

1           it, if we're moving into this world where there's  
2           going to be a lot of salvage harvesting and a lot  
3           of large-scale clear-cutting, we're probably going  
4           to be looking at a world where there's a lot more  
5           sedimentation going into our streams and our fish-  
6           bearing streams, is that fair to say?  
7   DR. TSCHAPLINSKI: Potentially, that is the situation.  
8           It doesn't necessarily follow, but I think the  
9           risk increases. The risk can be ameliorated by a  
10          number of practices, such as maintaining riparian  
11          areas and staying away from sensitive terrain,  
12          being mindful of water table effects in different  
13          drainages, but the risk will always be there.  
14   Q       And we're also looking at vast hydrological  
15          changes because with the larger clear-cut areas,  
16          we're going to be looking at snow melt on a much  
17          quicker scale because we don't have the retention  
18          of the upper storey to hold onto snow for long  
19          periods of time, as we would have with a mature  
20          forest, for example; is that right?  
21   DR. TSCHAPLINSKI: That is correct.  
22   Q       And so in that kind of a world where things are  
23          changing, it's best, in terms of fish forestry  
24          interactions, to be precautionary, that we've got to  
25          exert some precaution into this to make sure that  
26          we're not devastating some of the fishery values;  
27          is that fair to say?  
28   DR. TSCHAPLINSKI: I think it is fair to say and I do  
29          think the Chief Forester alluded to those issues  
30          in his recommendations.  
31   Q       Right. This is Jim Snetsinger's --  
32   DR. TSCHAPLINSKI: Snetsinger, that is correct.  
33   Q       -- recommendations on MPB, and his recommendations  
34          to the industry and to his Ministry; is that  
35          right?  
36   DR. TSCHAPLINSKI: That is correct, and it was one of  
37          the exhibits that was discussed earlier in today's  
38          proceedings.  
39   Q       All right. Now, in terms of research, and I know  
40          my learned colleague from the Federal Government  
41          touched upon this, but certainly in terms of  
42          fishery values as it might be impacted by these  
43          large-scale clear-cuts, that's an area that would  
44          be well worth researching and well worth spending  
45          some effort and some time and money in doing; is  
46          that fair to say?  
47   DR. TSCHAPLINSKI: It is fair to say, and in fact,

- 1 consistent with the recommendations in the  
2 Provincial Mountain Pine Beetle research strategy  
3 that was developed a number of years ago.
- 4 Q So where's the money going to come from for that  
5 in an era where there's a lot of significant  
6 cutbacks to your staff, where Ministry of Forests  
7 has lost its research branch, where DFO is saying  
8 they don't have the funding, how is that research  
9 going to be conducted? Who's going to do it?  
10 Where will we look to have that necessary research  
11 be performed?
- 12 DR. TSCHAPLINSKI: Well, there are some very keen  
13 researchers in the province that would only be too  
14 happy to take up the torch and carry this on.  
15 Research funding is an issue and it has been  
16 reduced, substantially reduced. There is some  
17 Mountain Pine Beetle work ongoing. Of course,  
18 researchers will always call for more money, and I  
19 think that in this situation, there's a strong  
20 rationale to be made that given Mountain Pine  
21 Beetle-related issues and the advancing issues,  
22 potentially, around climate change, which can have  
23 different effects in different regions of the  
24 province, more knowledge is better than less. And  
25 the more we can learn about watershed processes in  
26 the Interior, the more that we can manage  
27 prudently in the long term.
- 28 MR. LEADEM: Mr. Commissioner, I was assigned 30  
29 minutes and, unfortunately, I usually make a note  
30 of the time that I started, and I failed to do so,  
31 so I'm really in Commission --
- 32 MR. MARTLAND: Perhaps Mr. Leadem can simply carry on  
33 and I'm trying to get a gauge on where we stand on  
34 the time.
- 35 MR. LEADEM: All right. Thank you.
- 36 THE REGISTRAR: You started at 11:42.
- 37 MR. LEADEM: All right. Thank you. That's why we have  
38 Mr. Registrar here, he's the stalwart person in  
39 the room.
- 40 Q I want to move on, then, to a couple of other  
41 areas, and the retention areas for riparian -- are  
42 they called riparian management areas, or riparian  
43 management zones now? The terminology.
- 44 DR. TSCHAPLINSKI: Well, every stream has a riparian  
45 management area.
- 46 Q Yes.
- 47 DR. TSCHAPLINSKI: But in some streams, they're divided

- 1 into an inner reserve and an outer management  
2 zone. There are some streams that don't have  
3 reserves in regulation so the riparian area, in  
4 that case, is also a riparian management zone. So  
5 they can sometimes be used synonymously.
- 6 Q Okay. I understood from examining, and I don't  
7 have the exhibit number, but it was the FREP  
8 report, and I think it was the Chief Forester's  
9 analysis of the FREP report, that he was  
10 recommending that the current retention areas be  
11 increased; is that right? Do I have that right?
- 12 DR. TSCHAPLINSKI: He was recommending that the levels  
13 of retention be increased in order to obtain  
14 better results overall for small streams.
- 15 Q Right. And is that being done, to your knowledge,  
16 Dr. Tschaplinski?
- 17 DR. TSCHAPLINSKI: Well, at this point, what's actually  
18 happening on the land base is unequally  
19 distributed, but where the retention is occurring,  
20 it's actually more than these minimum  
21 requirements. So for S6s, there's 11 metres of  
22 buffer, for S4s, 17, for S5s, 28, but there are  
23 places, also, where there's much less. And the  
24 Chief Forester's recommendation comes with a  
25 caveat that, you know, to distribute retention  
26 intelligently over a landscape and from site to  
27 site, the functions and roles of the different  
28 channels have to be taken into account and that  
29 without, you know, appreciably increasing the  
30 impact on timber supply, which is always important  
31 to the forest industry, the retention that's  
32 currently happening now, which is way in excess of  
33 minimum standards, might be distributed in a way  
34 that provides us the best possible outcomes for  
35 streams and fish populations, fish habitat, in  
36 specific.
- 37 Q And I take it, and I heard with interest, I think  
38 it was FREP report number 27 --
- 39 DR. TSCHAPLINSKI: Yes.
- 40 Q -- which was the analysis, I'm going to turn to  
41 you, Mr. Delaney, does DFO actually go out and do  
42 its own analyses of streamside retention zones and  
43 oversee this concept, as well, from a Fisheries  
44 perspective?
- 45 MR. DELANEY: No, to the best of my knowledge, we have  
46 not undertaken a study similar to the level of  
47 detail that Dr. Tschaplinski has undertaken.

- 1 Q Now, in Conservation Coalition documents, I did  
2 find a study, and it's Conservation Coalition's  
3 document number 2, it's a report by Harper &  
4 Quigley, the year is 2000, and it actually deals  
5 with something that DFO did back at that year, "No  
6 Net Loss of Fish Habitat: An Audit of Forest Road  
7 Crossings of Fish-bearing streams of British  
8 Columbia, 1996-1999." Do you know if that has  
9 ever been updated, Mr. Delaney, in terms of  
10 bringing it up to 2010?
- 11 MR. DELANEY: Well, not an update of this study, here,  
12 at the sites that were reviewed in this study.  
13 There have been a number of other audits, if you  
14 will, throughout the province. There was another  
15 report in the package, here. I don't know if it  
16 was a technical report, and there have been a  
17 number of other ones that the Province has been  
18 involved in, as has DFO.
- 19 Q Okay.
- 20 MR. LEADEM: Might that be marked as the next exhibit,  
21 please, Mr. Registrar?
- 22 THE REGISTRAR: Exhibit 1131.
- 23
- 24 EXHIBIT 1131: Document entitled, "No Net  
25 Loss of Fish Habitat: An Audit of Forest  
26 Road Crossings of Fish-bearing streams of  
27 British Columbia, 1996-1999," by D.J. Harper  
28 and J.T. Quigley
- 29
- 30 MR. MARTLAND: I'm simply asking the question whether  
31 it may already be. I don't know that it is. I  
32 don't think it is from memory, but my memory's not  
33 always right.
- 34 MR. LEADEM: There was one marked, I think, by Harper &  
35 Quigley, I'm not sure whether this is the same  
36 one, or not.
- 37 MR. LUNN: This is Exhibit 667 on the screen.
- 38 MR. LEADEM: Yeah, I don't think that stream crossing  
39 is what I have today. Let's just go to the first  
40 page of text to see. There's an abstract. It's  
41 the other report, though, you want to look at, or  
42 this one, here?
- 43 MR. DELANEY: This is a different report.
- 44 MR. LEADEM: This is a different one?
- 45 MR. MARTLAND: Well, I think, in the circumstances, it  
46 makes sense to mark the document Mr. Leadem has  
47 put forward as a new exhibit.

1 MR. LEADEM: All right.

2 THE REGISTRAR: That will be marked as Exhibit 1131.

3 MR. LEADEM: I think, Mr. Commissioner, it's by the  
4 same authors, but it is a different study. Well,  
5 with that marking, I think I'm finished, and I  
6 thank you, gentlemen, for your time and your  
7 patience, and for answering my questions.

8 MR. MILLER: Thank you, sir.

9 MR. DELANEY: Thank you.

10 THE COMMISSIONER: Thank you very much, Mr. Leadem.

11 MR. MARTLAND: I have the First Nations Coalition.

12 Thank you.

13 MS. BROWN: Thank you, Mr. Commissioner. For the  
14 record, Anja Brown, and with me is Crystal Reeves.  
15 We're counsel for the First Nations Coalition, and  
16 we've been allotted 30 minutes, and I expect I'll  
17 probably be close to that.

18

19 CROSS-EXAMINATION BY MS. BROWN:

20

21 Q Gentlemen, the First Nations Coalition is made up  
22 of a number of First Nations from the Fraser  
23 River, the First Nations Fisheries Council, other  
24 Fraser River aboriginal fishing organizations, the  
25 Council of Haida Nation, and also some of the  
26 Douglas Treaty First Nations.

27 My first series of questions also have to do  
28 with the Mountain Pine Beetle that you've spoken  
29 about today.

30 MS. BROWN: I'd like to go, first of all, please, Mr.  
31 Lunn, to Exhibit 1124.

32 Q And Dr. Tschaplinski, as you know, this is your  
33 extension report from 2009, and I'm wondering if  
34 you could tell, please, what is an extension note?

35 DR. TSCHAPLINSKI: An extension note -- pardon me, my  
36 microphone's now on. An extension note is a short  
37 document written in as plain English as is  
38 possible for a technical matter to provide  
39 information and advice to resource managers and  
40 practitioners, as opposed to a more detailed  
41 document, for example, that would be in a primary  
42 scientific journal, or some other kind of more  
43 technically academically-oriented report.

44 Q And would the recommendations that you make in the  
45 extension note, and specifically, the  
46 recommendations that you've spoken about earlier  
47 with respect to the recommended buffer zone for



1 riparian streams, would that recommendation then  
2 have gone to the Chief Forester in the report that  
3 was prepared and that we've now got entered as an  
4 exhibit, the 2010 report?

5 DR. TSCHAPLINSKI: In the Ministry of Forests and  
6 Range, as the ministry was called at this time  
7 this note was produced, everything that has an  
8 implication for forest management normally is  
9 vetted through senior Ministry management. So the  
10 Chief Forester would be aware of it. And so the  
11 recommendations from this extension note, for  
12 example, are actually quite similar to the ones  
13 we're making in FREP and similar to ones that have  
14 been the outcomes of related research elsewhere in  
15 the Interior, such as the Prince George Small  
16 Streams Study. They're all recommending a minimum  
17 of 10-metre buffers around these small streams.  
18 The Chief Forester definitely would be aware of it  
19 and the extension note is put out there for  
20 practitioners to refer to.

21 Q Mr. Miller, are you able to tell us whether this  
22 recommendation that has been put forward with  
23 respect to the minimum 10-metre buffer zone, has  
24 that been formally implemented by the Ministry?

25 MR. MILLER: Let me be clear on the question you're  
26 asking. A 10-metre buffer on which?

27 Q The 10-metre --

28 MR. MILLER: Yes.

29 Q -- that we've heard Dr. Tschaplinski speak  
30 about --

31 MR. MILLER: Yes.

32 Q -- which has to do with a 10-metre buffer zone,  
33 along riparian areas in areas slated to be logged  
34 in Mountain Pine Beetle-infested areas.

35 MR. MILLER: Well, certainly, you know, the 10-metre  
36 buffer isn't the be all end all. We saw in an  
37 earlier exhibit, the table of S1 through S6  
38 classification of streams, and the respective  
39 riparian reserve zones, management zones, and the  
40 riparian area, the riparian management area  
41 requirements of legislation. We've also seen the  
42 FREP report about the actual on-the-ground results  
43 of that. No, I don't think anybody's  
44 contemplating 10 metres everywhere all the time,  
45 but for the purposes of answering your question,  
46 we're aware of the recommendations, we're aware of  
47 the current practices. I think safe to say

1 discussion is underway as to whether guidance  
2 should change, whether we should augment guidance,  
3 or whether, in fact, we have enough information  
4 and data in hand to change legislative baseline  
5 requirements. So to put the nub, you know, on the  
6 answer, no, we have not implemented that  
7 recommendation.

8 MS. BROWN: Mr. Lunn, could I have Exhibit 1003,  
9 please, which is at Tab 9 of the Coalition's  
10 documents?

11 Q This is a question directed at you, Mr. Delaney.  
12 This is a program review that was prepared by  
13 Michael Crowe, who's the Area Manager of OHEB B.C.  
14 Interior Region, and it was prepared in 2007. Do  
15 you know Mr. Crowe?

16 MR. DELANEY: Yes, I do.

17 Q And as you probably know, Mr. Crowe testified  
18 earlier in these proceedings?

19 MR. DELANEY: Yes.

20 MS. BROWN: If we could go to page 10, please, Mr.  
21 Lunn.

22 Q The third bullet down, there, is Mr. Crowe's  
23 observation that we're spending almost no time on  
24 beetle-kill-related riparian issues. Do you agree  
25 with that statement?

26 MR. DELANEY: Well, I would agree that it's factual and  
27 that if he provided that for this document at that  
28 time, 2007, I don't know what they're doing now,  
29 but at that time, it may have been the case.

30 Q All right. Because my next question was whether  
31 you know what's actually happening on the ground  
32 now?

33 MR. DELANEY: I suspect it's very similar to that, that  
34 from talking to field staff, that there's very  
35 little being done associated with the forest  
36 harvesting file, field time out there, looking at  
37 some of these issues.

38 Q And is that a concern of your Department's?

39 MR. DELANEY: Well, when you put everything out there  
40 that has to be done, I mean, anything that has the  
41 potential to impact fish and fish habitat is  
42 important. The field staff, as the Department,  
43 are making management decisions, prioritizing the  
44 work that they feel that needs to be done. I  
45 can't remember if it's in this document, or  
46 another one, where they were looking at the  
47 activities up in the Interior of B.C., and there

1           were a number of other issues that were of a  
2           higher priority that they were focussing on. And  
3           again, given, as we've mentioned before, the  
4           reliance upon the industry to do the job, that  
5           they haven't had the opportunity to get out and  
6           look at these areas.

7           Q    Do you think that that's affected the health of  
8           Fraser River sockeye salmon and Fraser River  
9           sockeye salmon habitat?

10          MR. DELANEY: I have no idea. There's no data. You  
11          know, if you go back to the work that Dr.  
12          Tschaplinski was showing us on the surveys, if you  
13          extrapolate that to a larger area than just the  
14          field sites that he was looking at, one could  
15          argue that riparian buffer areas have been  
16          reasonably protected. So if that's the case, if  
17          that has or has not translated into an impact to  
18          sockeye is up in the air. It leads to more  
19          research being required to go that next step.

20          Q    All right.

21          MS. BROWN: Mr. Lunn, could I have Tab 6, please, on  
22          our list of documents?

23          Q    Now, this is a report on a workshop that was held  
24          in Prince George in 2007 on Mountain Pine Beetle  
25          threats to salmon and Fisheries resources in B.C.  
26          And if we look at pages 2 and 3, we'll see that  
27          Dr. Mark Johannessen, who this Commission has  
28          heard from, was the workshop coordinator and  
29          facilitator. And page 3 also indicates that  
30          yourselves, Mr. Delaney and Dr. Tschaplinski were  
31          members of the workshop advisory committee; is  
32          that correct?

33          DR. TSCHAPLINSKI: I was a member of the advisory  
34          committee, but I did not participate in this  
35          workshop.

36          Q    All right. And did you participate in the  
37          workshop, Mr. Delaney?

38          MR. DELANEY: Yes, I was part of this large group,  
39          here, in the organization of it, and then also  
40          attended the workshop.

41          Q    Right, and members of the First Nations Coalition  
42          were there, as well.

43          MS. BROWN: If we could turn, please, to page 34 of  
44          that document?

45          Q    Now, under 5.2.2, we have some comments and  
46          recommendations that were put forth by Marcel  
47          Shepert of the Upper Fraser Fisheries Conservation

1 Alliance, and I'll read in excerpts of what he  
2 says there. He starts out by saying:

3  
4 Inlusiveness is a key issue from the  
5 perspective of First Nations. Federal and  
6 Provincial initiatives must include First  
7 Nations right from the beginning.

8  
9 He indicates that:

10  
11 The Upper Fraser Fisheries Conservation  
12 Alliance are building technical capacity and  
13 need to be involved, whether in science or  
14 management, from the very start. Cultural  
15 values must be included and we need to  
16 improve communications both ways.

17  
18 And then a little further down, he says:

19  
20 All watersheds need to be protected. Some of  
21 the highest temperatures ever recorded on the  
22 Fraser were last year. This is cause for  
23 alarm.

24  
25 And he talks about the scale of the challenges,  
26 that many groups need to be involved, and that  
27 there are many great minds and the challenge is  
28 coordination. And we heard a bit about that  
29 earlier, the need for collaboration and also the  
30 challenges in coordinating groups. So my question  
31 is whether you have any suggestions as to how  
32 First Nations and your agencies can collaborate on  
33 this issue? First of all, I suppose, do you agree  
34 that broader collaboration, including First  
35 Nations, would be a valuable thing for you in the  
36 work that you do, and I'll start with you, Dr.  
37 Tschaplinski?

38 DR. TSCHAPLINSKI: Yes, of course, I agree completely.  
39 Inlusiveness is very important, particularly  
40 inlusiveness that accommodates people with very  
41 direct local interest in their own environment and  
42 their own resources. I think the spirit of  
43 inlusiveness and cooperation has always been  
44 there. Although I didn't participate directly in  
45 the conference, itself, it followed a very arduous  
46 exercise internally in the provincial government  
47 that also looked at Mountain Pine Beetle, the

1 issues around hydrology, watershed management and  
2 fish, and there simply was a capacity issue to  
3 become directly involved in these proceedings,  
4 themselves. But I would support cooperation, I  
5 would support cooperative research. I think folks  
6 on the ground in the local area could be a key  
7 part of that in actually conducting some of the  
8 work on the ground and, therefore, taking  
9 ownership of it. All of these things are great in  
10 concept. I think the spirit is there. What also  
11 has to be there is the funding support.

12 Q Right.

13 DR. TSCHAPLINSKI: And without the funding support, the  
14 best intentions will go the way of many  
15 strategies, they just are not implemented or  
16 incompletely implemented. And implementation  
17 doesn't mean just for a few years while the topic  
18 is hot, it means over the long term, because these  
19 are long-term issues, not only around Mountain  
20 Pine Beetle, but the water temperature issue was  
21 mentioned in your presentation. To get to the  
22 bottom of the causes of that and tease out the  
23 inter-annual variation from the long-term trends,  
24 especially the long-term trends around climate  
25 change, funding support over the longer term is  
26 something that is needed to get to those issues.  
27 And long-term funding is something that is very  
28 difficult to obtain. I've had a real challenge to  
29 maintain my own long-term process-based watershed  
30 study so I know something of the challenges.

31 Q Mr. Miller, would you like to add to that?

32 MR. MILLER: I'm not sure if I can add anything to my  
33 erudite colleague. However, just my own personal  
34 view, I mean, the more collaboration we can do,  
35 First Nations interests, obviously, we are  
36 recognizing have far more significance in the  
37 province. I'm heartened by models as we're using  
38 in Haida Gwaii around joint management and joint  
39 decision making, I think those are useful pilots  
40 and can teach us a lot. I mean, I look forward to  
41 greater application across the province.

42 Q Mr. Delaney?

43 MR. DELANEY: Well, I totally agree with both my  
44 colleagues, here. I've been involved with  
45 aboriginal consultation for the last four-and-a-  
46 half years on major projects, coordinating our DFO  
47 involvement with that so it's been critical to

1 keep a high level of consultation and engagement  
2 up. The difficulty is how do you apply it in  
3 these situations? I'm not sure of the industry's  
4 role. As the harvesting has increased in these  
5 areas, is the industry focussing attention on  
6 aboriginal consultation, which they should be,  
7 special and significant cultural areas,  
8 watercourses of concern, things like that. And  
9 they may well be, I just don't know, but maybe my  
10 colleagues can respond to that.

11 MR. MILLER: It's highly variable.

12 DR. TSCHAPLINSKI: It does vary. There is consultation  
13 for different reasons on different initiatives,  
14 provincially, from my own personal experience.  
15 For example, in my Carnation Creek project, the  
16 Huu-ay-aht First Nation are part of the project,  
17 they're supporters of the project, they're part of  
18 the technical working group, and they provide  
19 input in the kinds of things we do. They're very  
20 strong supporters and without them, the project  
21 might not exist today.

22 In the Forest and Range Evaluation Program,  
23 the cultural heritage value is one of the values  
24 that we're looking at. First Nations have the key  
25 role in that value. I'm not directly related to  
26 that component. I don't have direct activity in  
27 that component of the FREP, but it's an important  
28 part of the 11 FREP values that the Forest and  
29 Range Evaluation Program wants to address to see  
30 if we're making headway on all of these matters.  
31 So it's kind of a case-by-case situation,  
32 systematically. I think we can do better to bring  
33 First Nations into various processes.

34 Q Just to follow-up on that point, Dr. Tschaplinski,  
35 the work that you've done with First Nations  
36 groups, has that also included elements of  
37 traditional ecological knowledge?

38 DR. TSCHAPLINSKI: Specifically, that's being worked  
39 on, but a part of the Huu-ay-aht interest in the  
40 Carnation Creek project is to pursue their  
41 interests in that regard, to look at the  
42 distribution and occurrence of certain plant  
43 species that are culturally very important. We  
44 are, hopefully, eventually going to be able to  
45 work some of that traditional ecological knowledge  
46 into the work plan more comprehensively, but much  
47 more has to be done on that.

1                   In the FREP program, our stuff is focussed at  
2                   the site level. We're moving broader than that at  
3                   this time, more to the watershed and the landscape  
4                   scale, and I think that could be a really good  
5                   opportunity for the very holistic viewpoint of the  
6                   First Nations to contribute to future monitoring  
7                   under FREP, with traditional ecological knowledge  
8                   as being an important component of it.

9                   Q     Right.

10                  DR. TSCHAPLINSKI: Now, that's giving it positive  
11                   comment, but it's also not so easy to implement,  
12                   with all those things we've talked about today,  
13                   capacity, and resources.

14                  Q     I understand. It sounds like a big impediment to  
15                   doing this sort of research is a funding one?

16                  DR. TSCHAPLINSKI: Well, and there's only a few of us  
17                   around across all the agencies. The research  
18                   community in B.C. is very small, and that includes  
19                   the academic community. So with more kinds of  
20                   things that we have to deal with simultaneously,  
21                   not only is it enough to throw money at the  
22                   situation, but staffing levels are critical. And  
23                   one of the critical levels of staffing we need to  
24                   address are the field tech people. Those are, you  
25                   know, the heart of any research program, not just  
26                   the senior scientist. So yeah, we have a number  
27                   of challenges.

28                  Q     Thank you.

29                  MS. BROWN: Mr. Lunn, could we just go to page 42 of  
30                   that document, please.

31                  Q     This is the Next Steps section, which summarizes  
32                   some of the recommendations that were developed in  
33                   the course of the workshop. So I'm looking at the  
34                   first bullet, which talks about the development of  
35                   a working committee to approach groups for  
36                   collaboration such as First Nations and industry.  
37                   The second bullet talks about the development of a  
38                   monitoring process for data collection and  
39                   protocol. Just skimming down that list, and  
40                   particularly you, Mr. Delaney, because you  
41                   attended the workshop, are you able to indicate  
42                   whether any of these next steps which were  
43                   suggested here were brought to the attention of  
44                   senior officials and if any of them have been  
45                   implemented?

46                  MR. DELANEY: Well, the report would have been brought  
47                   forward to a certain level of senior officials,

1 I'm not sure what level, but I would be limited in  
2 -- I don't know, I haven't heard of any. I'm  
3 sorry, I'm just trying to quickly skim through  
4 them, and there are certain elements that are  
5 underway through some of the work of the province  
6 and Dr. Tschaplinski's undertaking, as far as  
7 monitoring, some of the data collection, but I'm  
8 not too sure. Yeah, I really don't know, I'm  
9 sorry.

10 Q All right. Thank you.

11 MS. BROWN: Mr. Lunn, could we please go to Tab 10 of  
12 the Coalition's list of documents.

13 MR. MARTLAND: I may have missed that, I'm not sure if  
14 this document was marked, but perhaps it should  
15 be, if it wasn't.

16 MS. BROWN: Thank you, Mr. Martland. Yes, please.

17 THE REGISTRAR: That will be Exhibit 1132.

18  
19 EXHIBIT 1132: Report on Mountain Pine Beetle  
20 Threats to Salmon and Fisheries Resources in  
21 B.C.: Proceedings of the Pacific Salmon  
22 Foundation and Fraser Basin Council Workshop  
23 (January 30-31, 2007, Prince George)  
24

25 MS. BROWN: Thank you.

26 MR. DELANEY: If I could just add to that, if you don't  
27 mind, I just had a brief sidebar here on that in  
28 that the sense is that probably very little, if  
29 any of that's been done in an organized fashion.  
30 The bullets, there, would lead one to feel that  
31 the direction was to create a committee, a  
32 structure, and then go through all those, but I  
33 have not heard of anything like that ever being  
34 set up to carry forward.

35 MS. BROWN:

36 Q And would you say that the main reason why is  
37 because there was no one identified that would  
38 take the lead in following through on that  
39 suggestion and the others on the list?

40 MR. DELANEY: I think that's a big part of it. You  
41 know, many workshops, conferences we go to, and  
42 there's lot of enthusiasm to create organizations,  
43 undertake 10 to 20 different action items, but the  
44 reality is we go back to our desks and we've  
45 already got the 20 or 30 other things we're  
46 working on so if the PFRCC, the Conservation  
47 Council, or one of the leads in organizing that,



1           if, for example, they had taken the lead, there  
2           may have been input, but as Peter mentioned  
3           earlier, on some of the other initiatives that we  
4           were trying to get him involved with, it was just  
5           a no-go because there wasn't any time left for him  
6           to do things.

7           Q     And are you aware that the First Nations Forestry  
8           Council has created a Mountain Pine Beetle Action  
9           Plan?

10          MR. DELANEY:   That was shared -- sorry, are you asking  
11                           me?

12          Q     Yes.

13          MR. DELANEY:   That was shared with me, I think, first  
14                           of all, at one of our Environmental Process  
15                           Modernization public sessions, actually, it was  
16                           one just with First Nations, so I was aware of  
17                           that a number of years ago.

18          Q     And are you aware of that, as well, Mr. Miller?

19          MR. MILLER:   No, I'm not.

20          Q     All right. Thank you.

21          MS. BROWN:   Now, if we could go to Tab 10, please, Mr.  
22                           Lunn?

23          Q     This is a letter that was sent in 2009 to the  
24                           District Manager in Williams Lake, and as we see,  
25                           it's an application for a proposed amendment to a  
26                           forest stewardship plan to reduce the area of a  
27                           forest development unit considered to be  
28                           hydrologically sensitive. Mr. Miller, were you  
29                           aware of this proposed amendment?

30          MR. MILLER:   Not until the documents supporting our  
31                           session, here, today, were circulated.

32          Q     All right. I'm not going to ask you specific  
33                           questions about the amendment, my questions, then,  
34                           are more towards process. Is the proposed  
35                           amendment such as this within the discretion of  
36                           the District Manager to decide upon?

37          MR. MILLER:   I believe it is, yes.

38          Q     And mid-page, the letter points out that it's  
39                           notification to the District Manager and his staff  
40                           to engage in consultation with potentially  
41                           affected First Nations. So can you describe the  
42                           consultative process that would be triggered by  
43                           such an amendment complication?

44          MR. MILLER:   Never having been involved in such a  
45                           process, I can only answer to perhaps a  
46                           comparatively limited extent. Let me take a step  
47                           back and say when forest stewardship plans are

1           legally obligated to be shared with First Nations  
2           for review and comment before they are approved,  
3           that's an information sharing exercise. It's not  
4           seen to be consultation in the context of the  
5           Crown's legal obligation to consult with First  
6           Nations, primarily because there's not sufficient  
7           amount of detail about the proposed activities and  
8           where specifically they're going to be on the  
9           ground.

10           So consultation happens outside the context  
11           of forest stewardship plans, generally speaking,  
12           and needs to be extinguished by the Crown before  
13           we issue a cutting permit. So in the context of  
14           this specific request, I'm not sure that  
15           consultation is necessarily the right word, I  
16           think it's discussion, collaboration and  
17           information sharing in the context of forest  
18           stewardship plans. You know, that information  
19           sharing at forest stewardship plan level can  
20           happen and sometimes does driven by the tenure  
21           holder, the plan preparer, sometimes by  
22           government, it's a combination. And that would  
23           include referring the letter and any associated  
24           maps to the First Nations and, perhaps, sitting  
25           down and discussing, perhaps including field  
26           visits, depending upon the nature of the issue.

27           Q     Mr. Miller, are you able to say what the typical  
28           turnaround time would be from the time that a  
29           letter such as this goes to the District Manager  
30           and steps are taken to engage or consult with  
31           affected First Nations?

32           MR. MILLER: No, I'm afraid I don't have that level of  
33           detail about our operations.

34           Q     All right.

35           MS. BROWN: If that could be entered as the next  
36           exhibit, please, Mr. Lunn?

37           THE REGISTRAR: It will be marked as Exhibit 1133.

38  
39                   EXHIBIT 1133: Letter from Tolko Industries  
40                   Ltd. to District Manager, Central Cariboo  
41                   Forest District, dated December 14, 2009  
42

43           MS. BROWN:

44           Q     Just in terms of process, Mr. Delaney, as we know,  
45           since 2007, you've been the aboriginal  
46           consultation advisor in your department, and I'm  
47           wondering, is this the sort of proposal that would

1 be brought to your attention?

2 MR. DELANEY: No, it wouldn't. The area I've been  
3 focussing on are the major projects, it's the  
4 Environmental Assessment Major Project Review  
5 Group, which deals with pipelines, mines, anything  
6 that's going under an environmental assessment  
7 under **CEAA**. So these would not, these would be  
8 handled at the Area Office level by our field  
9 staff.

10 Q Can you give us an idea, Mr. Delaney, some idea of  
11 what the consultation that you engage in looks  
12 like on the ground?

13 MR. DELANEY: Well, it's a coordinated consultation  
14 process and it's recently changed because of  
15 amendments to the Canadian Environmental  
16 Assessment Act, where the Canadian Environmental  
17 Assessment Agency takes the lead as the Crown  
18 consultation coordinator. So it's through the --  
19 as projects are shared by the proponent to the  
20 various federal and provincial governments, the  
21 aboriginal groups in the area, and others, and  
22 depending on the type of project, there's  
23 sometimes working groups that the aboriginal  
24 groups will sit on, or will receive comments back.  
25 We correspond, we meet with aboriginal groups,  
26 hear their concerns and issues, try to address  
27 through mitigation, point out how issues are being  
28 addressed and concerns that they have raised that  
29 have not been addressed by the proponent are  
30 sometimes brought forward to the proponent. So  
31 it's a mixed bag of activities that we undertake  
32 with our federal colleagues. And in B.C., we have  
33 a harmonization, an agreement with the Province,  
34 where we do joint environmental assessments so  
35 sometimes the Province is taking the lead, it just  
36 depends on what type of project it is.

37 Q And does that ever happen in the context of  
38 forestry?

39 MR. DELANEY: Not to the degree that I've just tried to  
40 explain in a very loose way. A forestry operation  
41 like this, as I mentioned a minute ago, is handled  
42 by our area staff, and I'm not 100-percent sure  
43 how much they engage on a day-to-day basis on  
44 forestry files, but given that this the proponent  
45 and the Minister of Forest, it's a provincial  
46 issue, that would be, really, them taking the lead  
47 on any consultation that's required, rather than

1 Fisheries and Oceans.

2 Q On the remaining minutes that I have, I'd like to  
3 ask a few questions about the issue of biosolids,  
4 and it's one that we've not spoken about today,  
5 however, this Commission heard evidence from  
6 Donald MacDonald on May 9th and 10th, and he was  
7 qualified as an expert in environmental toxicology  
8 and he testified in respect of a report that he  
9 was lead author on that was entitled, "Effects of  
10 Contaminants on Fraser River Sockeye Salmon." Do  
11 any of you know of Mr. MacDonald and his work?

12 MR. PROWSE: Mr. Commissioner, I rise to object. I  
13 don't think there's been any notice of this  
14 question. I think it's unfair to the panel, all  
15 of whom who have done a lot of studying, but this  
16 wasn't included in the study requirements, that  
17 I'm aware of.

18 MS. BROWN: Well, I'm not taking them to the report, I  
19 simply have some questions about the issue of  
20 biosolids.

21 MR. PROWSE: Well, this may be a needless objection  
22 because I have no idea what the answer to the  
23 question is, but I don't think it's fair to the  
24 witnesses that they be asked so I maintain my  
25 objection.

26 MR. MARTLAND: I don't know if this is a solution or to  
27 use Bill Clinton's phrase, "Kicking the can down  
28 the street," but we should wait to hear the  
29 question and at that point, if it's premised on a  
30 document for which notice wasn't given, that may  
31 be a basis for objection or concern. If it's  
32 approached as a general matter that ties into the  
33 topic of logging and forestry practices, that may  
34 not present a concern.

35 MS. BROWN: What I had intended to do, or hoped to do  
36 was to refer to an element of Mr. MacDonald's  
37 evidence on May 9th and 10th, where he spoke about  
38 biosolids and their incorporation into fertilizers  
39 and his concern that the runoff from those  
40 biosolids, which he indicated were used routinely  
41 as fertilizers in the forestry industry, could  
42 cause potential impact to Fraser River sockeye  
43 salmon. It's not an issue that I see identified  
44 in the PPR, and my concern is that it may have  
45 perhaps been inadvertently overlooked.

46 MR. MARTLAND: The topic insofar as it ties to the  
47 forestry and logging topic area, I don't see that

1 as being outside the parameters of what these  
2 witnesses can be asked. I'm interested to hear if  
3 Canada or the Province rise to make an objection.  
4 If they're not, I'm not.

5 THE COMMISSIONER: You can ask your question, then, Ms.  
6 Brown.

7 MS. BROWN: Mr. Commissioner, may I take the witnesses  
8 to Mr. MacDonald's testimony?

9 MR. MARTLAND: The concern with this, I appreciate that  
10 it's testimony as opposed to a document and  
11 there's just perhaps a technical issue about  
12 notice of transcripts versus notice of exhibits,  
13 these witnesses, I don't know, but I expect they  
14 have not all read all of that evidence and/or the  
15 report that was with it so selecting one part of  
16 it, and I don't know the specifics here, but  
17 selecting one part of evidence in the absence of  
18 the context may put them at some disadvantage.  
19 Now, the question, at a topical level, strikes me  
20 as one that is appropriate, and perhaps that's a  
21 better way to pursue this.

22 MS. BROWN: I can ask my question in a more general  
23 way, Mr. Martland.

24 Q Is anyone on the panel familiar with the  
25 application of biosolids, like Nutrifor, in the  
26 forestry context as a fertilizer?

27 DR. TSCHAPLINSKI: No, ma'am.

28 MR. MILLER: No, I'm not.

29 MR. DELANEY: No, I am not, either.

30 MS. BROWN: All right. Thank you. Those are my  
31 questions, then, Mr. Commissioner.

32 THE COMMISSIONER: Thank you, Ms. Brown.

33 MR. MARTLAND: Mr. Commissioner, we're on or even a  
34 little ahead of schedule and I'm slow to be the  
35 one who runs us to the very last whistle, on the  
36 other hand, there are a few counsel who had  
37 expressed at least a sense that they wished to  
38 take a few more minutes for a question. I'm  
39 minded to ask if there is any counsel that wish to  
40 use, we have 10 minutes until we have to wrap up  
41 today. I don't know if other counsel, I haven't  
42 understood anyone has questions on redirect.  
43

44 CROSS-EXAMINATION BY MR. PROWSE, continuing:  
45

46 Q Mr. Miller --

47 MR. PROWSE: Mr. Lunn, could we have Exhibit 1133,

1 please?

2 Q Mr. Miller, with respect to this letter which came  
3 up in a different context, my understanding and,  
4 if you can't answer the question, the question  
5 really should be do you understand that nothing  
6 came of this particular letter, that it wasn't  
7 pursued in any way, or got anywhere?

8 MR. MILLER: I did follow-up on this matter, or tried  
9 to, at least, I tried to connect with Mr. Stolar,  
10 who is the acting District Manager to whom this  
11 letter was addressed. Unfortunately, I was  
12 unsuccessful in contacting Mr. Stolar, but in my  
13 communication with Peter Lishman, a colleague of  
14 mine who works in Kamloops, is familiar with the  
15 issue and did have personal contact with Mr.  
16 Stolar, specifically asking about the follow-up to  
17 this particular letter. So on somewhat third-hand  
18 information, but as I understand it, the matter  
19 was not decided upon one way or another, and that  
20 the request was ultimately dropped at Tolko's  
21 request.

22 MR. PROWSE: Thank you.

23 THE COMMISSIONER: Thank you.

24 MR. MARTLAND: Mr. Commissioner, I believe that  
25 concludes today's evidence and unless, of course,  
26 you have -- I shouldn't be so quick to say, unless  
27 you have questions for the panel?

28 THE COMMISSIONER: No, I don't. I just wanted to  
29 express my appreciation and gratitude to the  
30 members of the panel for being here today and  
31 providing us with your knowledge and for answering  
32 the questions of all the lawyers, and I also want  
33 to express my appreciation to the participants and  
34 to Commission counsel to arrange so that we could  
35 start at 9:00 and conclude by 1:00. I appreciate  
36 that very much.

37 MR. MARTLAND: Thank you. I believe we can be  
38 adjourned to Monday, June 27, for hearings on  
39 aboriginal fishing.

40 THE COMMISSIONER: I believe that's correct, Mr.  
41 Martland, and thank you to our hearing staff,  
42 again, for their excellent handling of documents  
43 and exhibits. Thank you, all, and for our  
44 reporter providing us with a transcript. Thank  
45 you so much.

46 THE REGISTRAR: The hearing is now adjourned to the  
47 date and time as stated by Mr. Martland.

1 (PROCEEDINGS ADJOURNED TO MONDAY, JUNE 27,  
2 2011, AT 10:00 A.M.)  
3  
4  
5

6 I HEREBY CERTIFY the foregoing to be a  
7 true and accurate transcript of the  
8 evidence recorded on a sound recording  
9 apparatus, transcribed to the best of my  
10 skill and ability, and in accordance  
11 with applicable standards.  
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15 \_\_\_\_\_  
16 Pat Neumann  
17

18 I HEREBY CERTIFY the foregoing to be a  
19 true and accurate transcript of the  
20 evidence recorded on a sound recording  
21 apparatus, transcribed to the best of my  
22 skill and ability, and in accordance  
23 with applicable standards.  
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28 Susan Osborne  
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31 true and accurate transcript of the  
32 evidence recorded on a sound recording  
33 apparatus, transcribed to the best of my  
34 skill and ability, and in accordance  
35 with applicable standards.  
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40 Irene Lim  
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