

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.

Tenue à :

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

Wednesday, January 19, 2011

le mercredi 19 janvier 2011

APPEARANCES / COMPARUTIONS

Wendy Baker, Q.C. Maia Tsurumi Line Christensen	Associate Commission Counsel Junior Commission Counsel Articled Student
Hugh MacAulay Jonah Spiegelman	Government of Canada
D. Clifton Prowse, Q.C.	Province of British Columbia
Brent Johnston	Pacific Salmon Commission
Chris Buchanan	B.C. Public Service Alliance of Canada Union of Environment Workers B.C. ("BCPSAC")
No appearance	Rio Tinto Alcan Inc. ("RTAI")
Shane Hopkins-Utter	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.

Anila Srivastava	Southern Area E Gillnetters Assn. B.C. Fisheries Survival Coalition ("SGAHC")
Chris Watson	West Coast Trollers Area G Association; United Fishermen and Allied Workers' Union ("TWCTUFA")
Keith Lowes	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")
Brenda Gaertner Leah Pence	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)
No appearance	Adams Lake Indian Band
No appearance	Carrier Sekani Tribal Council ("FNC")
No appearance	Council of Haida Nation

APPEARANCES / COMPARUTIONS, cont'd.

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

TABLE OF CONTENTS / TABLE DES MATIERES

	PAGE
MICHAEL LAPOINTE	
In chief by Ms. Baker (cont'd)	1
Cross-exam by Mr. MacAulay	20
Cross-exam by Mr. Leadem	24/31
Cross-exam by Ms. Srivastava	38/58
Cross-exam by Mr. Watson	74
Cross-exam by Mr. Lowes	79/89
Cross-exam by Ms. Gaertner	93

1
Michael Lapointe
In chief by Ms. Baker (cont'd)

1 Vancouver, B.C. /Vancouver (C.-B.)
2 January 19, 2011/le 19 janvier
3 2011
4

5 THE REGISTRAR: Order. The hearing is now resumed.
6 May I remind the witness that you are still under
7 oath.

8 MS. BAKER: Thank you
9

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

12 Q Mr. Lapointe, just to follow-up from yesterday's
13 session, I wanted to just clarify. When you
14 talked about -- when we were discussing over-
15 escapement and you talked about that you didn't
16 think that the word "over-escapement" was a good
17 terminology and you talked a little bit about
18 benchmarks, if you had agreement on different
19 benchmarks, that would help you to decide whether
20 there was the right escapement, that word
21 "benchmark" has some meaning in terms of Wild
22 Salmon Policy and in terms of the FRSSI model, and
23 I'm wondering, is the benchmark concept that you
24 were talking about one of those two types of
25 benchmarks, or is it something altogether
26 different?

27 A Sorry about that. I'd forgotten -- bad choice of
28 words. I'd forgotten how many days you actually
29 spent on the Wild Salmon Policy so let me try and
30 be a little bit more precise in that language, and
31 I appreciate the opportunity to clarify it.

32 What I was trying to get at was that if it
33 was possible, the concept, and it's a concept,
34 okay, it's not an answer, it's not a
35 recommendation, or anything, is that if we could
36 define, you know, use this word and if you need me
37 to help re-find the definition of the site, I can
38 try, but it's going to be a bit vague. If we
39 could define something akin to optical escapement
40 in the context of the various benefits that Fraser
41 sockeye or salmon in general provide, and by the
42 various benefits, I gave you examples yesterday,
43 but just to pick two, I guess, of the many that I
44 -- so if we could define what the optimal
45 escapement was with respect to something like
46 biodiversity, and I think that, probably, John
47 Reynolds, in one of his testimonies early on

1 provided the best definition, a better definition
2 than I could have, that versus the optical
3 escapement for something like sustainable yield,
4 and not only the optimum, but also how deviations
5 from the optimum would impact those two topics.
6 So more escapement or less escapement relative to
7 optimum in those two objectives, then I think it
8 would go a long way towards articulating, kind of,
9 the goalposts, if you like, about some of the
10 debate.

11 And right now, I think there's a bit of
12 ambiguity about those in some cases and it kind of
13 muddies the waters a bit in our ability to
14 communicate clearly about that topic. So you
15 know, I'm not saying that it's a trivial exercise
16 to do that in any way, and I'm not even
17 necessarily saying it has to be measured in some
18 sort of a number type of a thing because that's
19 always something that can create some problems,
20 but just a very careful even verbal description
21 would improve our ability to communicate and along
22 the issues of over-escapement, in my view. So
23 that's really where I was coming from.

24 Q All right. And not -- the use of the word
25 "benchmarks" was not intended to reference either
26 of the other benchmarks?

27 A No, absolutely not.

28 Q Okay. Thank you. Now, the only things I wanted
29 to cover with you this morning are two. One, I
30 wanted to talk a little bit about Alaska, and I
31 wanted to talk about the impacts, if any, of the
32 ITQ fisheries on management of Fraser River
33 sockeye. So I think I'll start with that one,
34 actually.

35 A That's a good idea, actually, I think.

36 Q We talked a little bit about ITQ fisheries when we
37 looked at the fisheries planning model, and you
38 described how this is a type of fishery that sets
39 a quota for a period, rather than just opening it
40 up for a period of time.

41 A Sure.

42 Q And that contrasts with the derby fishery. And I
43 take it that the ITQ fishery was tried this year?
44 This was the -- in 2010, that was the first year
45 that's actually been implemented as a trial?

46 A Yes, that's correct.

47 Q Okay. Does that -- and it hasn't -- it wasn't

3
Michael Lapointe
In chief by Ms. Baker (cont'd)

1 implemented for all fisheries, just some?

2 A Yeah, there were only agreements for Area B, which
3 is seine, and Area H, which is troll. I believe
4 that, actually, there were some pilot studies in a
5 couple of those instances, very small scale ones
6 prior to last year, but the first full-scale
7 implementation -- well, full-scale, I guess,
8 season-wide, fleet-wide was last year.

9 Q Okay. Does that move, if it's to be continued to
10 an ITQ fishery, does that impact how the Fraser
11 River Panel can manage the fisheries, or does it
12 impact the Salmon Commission staff work in terms
13 of the information they gather and how they
14 actually make decisions?

15 A So I spoke yesterday about the stock ID
16 implication so I won't repeat that because that's
17 already in the record, but I would talk about two,
18 I think, other aspects. One is the manageability
19 of the fishery, and by that, it's mostly about the
20 risk. And I've got to be a little bit careful
21 about how I word this just because ITQ has a bunch
22 of economic implications about the sharing of
23 quotas and the ability of folks to buy them, and
24 some folks have some sensitivities about what the
25 implications might be for the, you know,
26 independent operator versus the licences that are
27 owned by companies and so forth. So I don't know
28 that my comments are really about that part of it.
29 That's really outside --

30 Q And I'm not asking you about that. That will be
31 in your --

32 A But it's important for me to clarify because
33 people might think if I'm proponent of that, that
34 I somehow am a proponent of the economic parts,
35 and I really -- that's outside my expertise. So I
36 just wanted to be clear about that.

37 But on the manageability side, the important
38 aspect of it that may not necessarily be a
39 function of the ITQ in a literal sense is that the
40 fishermen are able to fish in a pool towards a
41 catch target. In other words, there is a defined
42 catch target which, in contrast to the derby
43 style, it's a defined fishing time with an unknown
44 catch outcome that relates in part to the
45 abundance of the fish, and the success of the
46 fishermen, and how good the weather is and all
47 those kinds of things. So by having it be a catch

1 target, then, it provides two things, one, some
2 certainty about the risk in relation to the
3 magnitude of the catch, and it also provides some
4 capacity to access available harvests of different
5 magnitudes. In other words, if there is a
6 situation where the available harvest is
7 relatively small, in the past, with only the
8 ability to regulate effort, it might have been
9 impossible to structure an opening short enough to
10 have some assurance that the catch would be within
11 the target. I mean, you know, we have had, I
12 think, two or three-hour Area E openings and I
13 suppose one could contemplate a one-hour seine
14 opening, but it's not practical.

15 Whereas now, because the catch is shared and
16 pooled, if the target is 30,000 fish, you don't
17 have to put a seine fleet of 170 boats out there
18 to catch that 30,000 fish, you can send 10 boats
19 out, they are fishing to a target. When they get
20 their 30,000 and the benefits are shared through
21 the ITQ. So that's the primary -- those two
22 benefits, the idea that even on a big, big quota
23 situation, you have a focussed harvest that
24 reduces the risk, and on a small harvest, you can
25 access that. It's kind of like a finer volume
26 knob on the stereo. You know, if -- before, it
27 was kind of like full on or full off, and I expect
28 if you ask some of the industry guys about this,
29 they would say, you know, "Why didn't we get to go
30 fishing," it's because they didn't have enough
31 graduations on the knob to allow them to allow
32 them to go fishing under the derby style so, in
33 fact, they didn't go fishing because you couldn't
34 take the risk. You know, the policy members, the
35 policy folks couldn't take that risk. So those
36 are the fundamental things from a fisheries
37 management side I'd bring up on the ITQ issue.

38 Q Thanks. And then the other area I wanted to cover
39 with you was Alaska. There's been comparisons
40 made between the Fraser River system and Bristol
41 Bay, in particular. Are there -- first of all, do
42 you have any knowledge of what the fisheries
43 regime is in Alaska, and can you draw any
44 comparisons with the B.C. Fraser River system?

45 A Sure. So first of all, the shortest answer to
46 your question is that the information about
47 Bristol Bay is widely known, freely available and

1 fairly well understood, in my view, okay? And
2 part of that relates to, and this may be, you
3 know, a bad word, but I suspect you guys have
4 experienced this and part of your process here is
5 that the fisheries world is pretty incestuous.
6 You know, I mean, we all know each other. We all
7 have come from different places and it's pretty
8 hard to meet someone who hasn't -- that you don't
9 know, or who doesn't know someone you know in the
10 fisheries world. I mean, it's very much that way.

11 And in my own personal experience, and I have
12 to say, Mr. Commissioner, that when I answer this,
13 I'm afraid that it may sound too good to be true
14 and you may question the objectivity of my
15 previous testimony, my personal experience, my
16 connections to Bristol Bay are kind of -- I don't
17 know if they're unusual, probably typical, but
18 just to give you an example of how small the world
19 is, I originally started a Masters program at the
20 University of Alaska in 1982, at the University of
21 Alaska, in Fairbanks. So I actually lived in
22 Alaska for a short period. And in the course of
23 my fieldwork for that program, I did fieldwork
24 with a gentleman named Doug Mecum. And excuse me
25 if this sounds like a bunch of name dropping, I'm
26 not trying to build up my expertise in Bristol Bay
27 by any stretch, but just to kind of give you an
28 idea of how small the world is. Well, I'm not
29 going to go through Doug's career for you, but
30 Doug retired about six or seven years ago from the
31 Alaska Department of Fish and Game as the Director
32 of the Alaska Department of Fish and Game. And I
33 actually made a reconnection with him because he's
34 now a member of the Northern Boundary Restoration
35 Enhancement Fund, the Pacific Salmon Commission.
36 I hadn't seen him for over 20 years, although we
37 did have some interactions over the course of his
38 career. So I mean, that's kind of a happenstance.

39 The reason I left Alaska, and I'm not going
40 to go into detail on this, but I got a phone call
41 from a guy named Ray Hilborn, and Ray wanted me to
42 come down to UBC to do a Masters program there.
43 Well, Ray, as I'm sure many of you know, is now on
44 the faculty of the University of Washington and he
45 is the main scientist involved with a lot of the
46 Bristol Bay research on Bristol Bay sockeye.

47 Fast forward through a lot of tough years of

6
Michael Lapointe
In chief by Ms. Baker (cont'd)

1 trying to finish my degree and I end up at Simon
2 Fraser University, working for Randall Peterman,
3 and you have my CV that was entered into the
4 record yesterday, and you'll see a couple of
5 publications on there from that four-year stint,
6 working with Randall, and some of them relate to
7 comparisons between the productivities of Bristol
8 Bay sockeye and Fraser River sockeye. I think the
9 text probably says, you know, British Columbia and
10 Alaska, because you always try to be a bit more
11 general in your academic titles, and so forth, on
12 these papers, but you know, my recollection of
13 that, and please don't embarrass me and ask me
14 about the details of those papers. I think they
15 were published in 1990 sometime, early '90s. I
16 won't remember, but things I do remember about
17 that is in dealing with the data sets for Bristol
18 Bay, the one thing that really strikes me when I
19 first saw them was I looked at the columns. There
20 were columns for the number of spawners and the
21 number of returns, and the number of returns were
22 split up by age class. And I looked at the
23 Bristol Bay file and went, "Where did all these
24 ages come from." I mean, there were ages I'd
25 never seen before and it was like this frustration
26 of doing that work. And I'd like to come back to
27 the age issue later on when I talk more generally
28 about the issue. And then -- so I worked with
29 Randall and, you know, it just kind of -- right
30 now, in the current, obviously, Alaska is a party
31 to the Treaty. There are seine fishermen that
32 fish in Bristol Bay and come down and fish in the
33 Fraser that are part of the Fraser Panel process.
34 They fish in both places because the Bristol Bay
35 season is earlier. We've had members of the
36 Fraser Panel that also were part of the Alaska
37 Department of Fish and Game. There's this
38 tendency on the U.S. side for -- because Alaska
39 had a 20-year retirement deal where if you worked
40 20 years, you could retire with full pension. And
41 many of those folks actually finished their 20
42 years and got hired by the federal government and
43 ended up connected to the Fraser panel process
44 and, actually, Doug is one of those folks. He's
45 now working for the federal government, kind of
46 double dipping, as it were, but good for them.
47 So that's my personal connection to those.

1 And the only reason I bring it up is not so much
2 to, as I said, establish that I'm an expert,
3 that's not the point, but the point is that my
4 take is that if there was something that I was
5 fundamentally missing, or we were fundamentally
6 missing on the Fraser, one of those folks would
7 probably, you know, call me up and kind of grab me
8 by the shoulders and give my head a shake, sort of
9 say, "Hello," you know, "Are you paying attention?
10 You were my student," you know? And it's not like
11 Fraser sockeye issues have not been in the public
12 domain, right? So there's been lots -- you know,
13 they read newspapers, they see stuff. So that's
14 the kind of interconnectedness, an example of
15 interconnectedness of all of us that work on
16 salmon.

17 Now, I do want to speak more generally about
18 the Bristol Bay and provide you some -- not to
19 convince you of my knowledge, but to provide some
20 high-level observations, I guess I would say, from
21 what I would know. And I want to speak about
22 three main themes. The first one relates to
23 geography. The second one relates to fisheries
24 management, and the third one relates to biology.
25 So those three themes.

26 Now, I'll start with geography, and of the
27 three themes, I think that the geography and the
28 biology are the drivers, and the fisheries
29 management's kind of a reaction, I guess, to those
30 two things, as it should be.

31 On the geography side, first, does everyone
32 know where Bristol Bay is? Like, you know, the
33 map of Alaska, if my arm is kind of the Aleutian
34 Islands, and the Alaska Peninsula is here, and
35 Bristol Bay is kind of where my neck is, here.
36 All right. So it's above the Aleutians, north of
37 the Alaska Peninsula, right near the -- you know,
38 almost part of the Bering Sea, basically. Above
39 the Alaska Peninsula is the Bering Sea, below is
40 the Gulf of Alaska. So that's where Bristol Bay
41 is.

42 One of the most fundamental differences
43 between Fraser sockeye and Bristol Bay with
44 respect to geography is that in Bristol Bay it's
45 multiple stocks and a number of those stocks have
46 different points of ocean entry with respect to
47 where those stocks migrate out to sea and where

1 they come back and enter into the rivers to return
2 home to spawn.

3 There's about six or eight major entry points
4 across the -- so Bristol Bay is not a river, it's
5 a geographic location with a whole bunch of
6 streams. The Fraser has a whole bunch of streams,
7 but the important distinction is that the streams
8 in Bristol Bay spill out about eight different
9 major spots over an area of about 200 kilometres.
10 And just for a point of reference, 200 kilometres
11 is about the distance between Vancouver and
12 Seattle, 220, something like that. Okay. So the
13 Fraser, of course, has one main stem stream that
14 spills out in one location. It may have the same
15 number of individual streams that contributed to
16 it, but it doesn't have the advantage of that, or
17 the difference, and I think it's an advantage, but
18 of the multiple points of ocean entry from all the
19 streams that contribute to Bristol Bay. So
20 clearly that geography is a fact of nature. It's
21 not something you can change, but it does
22 influence the kinds of things you can do in a
23 fisheries management sense.

24 A few minor things on the geography just
25 because sometimes people think this is kind of a
26 cause as opposed to just an effect. I think the
27 driver in the geography is the stream entry point.

28 Bristol Bay is very remote. I suspect the
29 largest city on any of these streams in Bristol
30 Bay would probably be Dillingham, and it's a
31 population as of the 2008 Census, of about 2,500
32 people. Now, I suspect it's significantly larger
33 than that during the fishing season, but you know,
34 it's a lot smaller than Vancouver. It's only
35 located around one of those entry points. I'm not
36 that familiar with how much forestry is done up
37 there, but I would suspect that the ecosystems
38 would be relatively pristine relative to many
39 parts of British Columbia, certainly, the Fraser
40 Valley and some parts of the interior. So that's
41 an issue.

42 There's also the issue of warm water, okay?
43 Bristol Bay streams have not experienced the
44 warming trend that has occurred in the Fraser
45 River, okay? It just hasn't gotten that far north
46 yet and that obviously is a big player in the
47 Fraser.

1 On the jurisdictional side, and I think this
2 is a bit of a red herring, but it is simpler up
3 there. There is just the State of Alaska with
4 some interactions with the federal government, and
5 one of the things I learned when I was in Alaska
6 was that those -- something about those
7 interactions, and I'll just say that I think the
8 state kind of drives the show up there and the
9 feds are kind of potentially viewed a little bit
10 as a nuisance, if I could use that word, but I
11 might get myself in trouble with my Alaskan
12 colleagues by making that remark, but that would
13 not be an unfair characterization, in my view, of
14 what both I personally observed and what I
15 understand to be the case. But some folks have
16 tried to draw the conclusion in the Fraser that
17 maybe if the jurisdiction was simpler, everything
18 would be solved, and I guess I would say the
19 jurisdiction is definitely more complex and it's a
20 challenge, but it's really not, in my view, the
21 issue, but it has -- there has been some folks
22 that feel that way so I'm happy to be challenged.
23 So that's all I have to say about the geography.

24 Turning to the fish management, first of all,
25 escapement policy. I'll try not to get too
26 technical about this, but there's two major basic
27 strategies that one can use to determine the
28 number of fish that you'd like to have escape.
29 One of them is a fixed escaping policy, and the
30 concept behind that one is that no matter what the
31 run size is, the escapement is a number, period.
32 It is whatever the escapement target is.

33 The other one is a fixed exploitation rate
34 strategy and the concept there is that the
35 escapement will vary as a fixed fraction of the
36 total run, so a fixed proportion of the total run
37 instead of a fixed number. There's lots of
38 theoretical papers on this. I'm not going to go
39 into great detail on it, and my knowledge is a
40 little bit foggy, but two comments I will make
41 relate to the fact that the fixed escapement
42 policy has theoretically been shown to result in
43 higher, long-term yield, but greater variation
44 between years. Whereas the fixed exploitation
45 rate strategy results in lower long-term yield,
46 but more stable yields over time, two really
47 categorical differences between those that have

1 fairly well-accepted concepts.

2 So what happens in Bristol Bay? Well, in
3 Bristol Bay, they have a fixed escapement policy.
4 Basically, it's a fixed number. And I can talk
5 about how the fisheries relates to that shortly,
6 but in the Fraser, I think there's a -- you know,
7 because, and you're going to get a whole day or
8 two more than you want, probably, on FRSSI so I
9 don't want to pre-empt that all, but from what I
10 know about the FRSSI process, and I do implement
11 it on a daily basis in the summer, at some ranges
12 of run size below what's called the cut-off point,
13 the upper cut-off point, it's a fixed escapement
14 policy. It doesn't look like one because there's
15 this shape drawn, but it is indeed, algebraically,
16 mathematically, however you want to define it, a
17 fixed escapement policy. So where they differ is
18 at big run sizes. At big run sizes the policy of
19 the FRSSI model says there's a cap on the
20 exploitation rate, or on the total mortality rate.
21 It's a 60-percent cap, I think, right now.

22 So what that means is that beyond some
23 abundance level defined by the cut-off point,
24 you're in a fixed escapement rate strategy mode,
25 or a fixed exploitation rate, sorry, strategy
26 mode. So it's kind of a hybrid between the two.

27 There's an interaction here between the
28 geography and these strategies, in my view. In
29 other words, I believe that the reason, one reason
30 why they may be different is the fact that the
31 geographies are different. What would be the
32 implications for the Fraser of a fixed escapement
33 policy at all run sizes? It's the same
34 implication it would be anywhere else, as the run
35 size goes up, the exploitation rate goes up
36 because the escapement target is fixed and what
37 goes to catch is the balance so the catch goes up,
38 right? The catch part of that -- it's a zero sum
39 game here. So if the exploitation -- if the
40 escapement is a fixed number and the catch goes
41 up, I mean, the abundance goes up, then the catch
42 part of that has to increase because they add to
43 the total run, right? So that means that at high
44 abundance levels, if you -- the literal
45 interpretation of a fixed escapement plan would be
46 you would increase the exploitation rates to
47 represent whatever the balance of the catch is

1 left from subtracting that catch from the total
2 run.

3 If you apply that kind of a strategy in the
4 Fraser, and I'm not going to -- as you know, I try
5 to be careful about making value judgments, but
6 one of the concerns that's been expressed in the
7 Fraser consequence, or context, as a consequence
8 of the geography is that because 99.9 percent of
9 Fraser sockeye are currently harvested in a mixed
10 stock way, in other words, I'm defining it very
11 strictly. In other words, there's very few
12 fisheries directed at single stocks, okay? Is
13 that you need to be concerned about, or people
14 have expressed concern about the fact that the
15 exploitation rates that can be sustained by
16 different stocks may be different. And so that's
17 one of the reasons why I believe there is a cap on
18 the total mortality rate for Fraser sockeye.

19 If you turn that over to Bristol Bay and look
20 at Bristol Bay's geography, they have more or less
21 some capability, and in fact, this is the last
22 part of the fisheries management thing I'll
23 describe to you, they take advantage of the
24 geography. Their fisheries are located pretty
25 close to the mouths of the six or eight streams
26 that empty into Bristol Bay and so they have a
27 capability, as a function of the geography, that
28 allows them to be a little bit more stock specific
29 in the way that they harvest these fish, and
30 that's what they do. So the risk to Bristol Bay
31 sockeye of having, say, a fixed escapement
32 strategy is mitigated by the geography that allows
33 them to be a little bit more selective in their
34 harvest, okay?

35 So the only other thing I'll say on the
36 fisheries management side, and then I'll end with
37 the biology, is that the in-season tactics are
38 somewhat similar to what we do in the Fraser, but
39 somewhat different because of the geography. So
40 they fished in terminal areas near the stream
41 mouths and they can control the effort in each of
42 these areas depending upon whether certain
43 component stocks are weak and those drainages are
44 strong. And they have these counting towers,
45 visual towers on the streams where they get the
46 index of abundance and they can -- and they're
47 only about a three days' distance swim from where

1 the fishing takes place. So they have a very
2 immediately in-season feedback about how they're
3 going and how they're tracking relative to their
4 escapement targets. So that's pretty similar to
5 the hydroacoustic station at Mission, except
6 there's more than one of them. The difference is
7 that our fisheries, under the current allocation,
8 are much more seaward, right, they're six to eight
9 days seaward. In the case of the marine
10 commercial fisheries, the allocations are more
11 seaward. So the in-season tactics are similar.

12 I would actually suggest, because we have to
13 be this way, and interaction I've had more
14 recently with Ray is consistent with this, that
15 we're probably a bit more sophisticated in our in-
16 season assessments because we have to be because
17 we have more seaward fisheries. We have to have
18 more developed test fisheries. They're just
19 starting to develop their genetics right now for
20 their one test fishery, the Port Moller test
21 fishery. So we've had some interaction with them.
22 I was kind of telling them our experience, and
23 them telling us their experience. So that's all
24 in the fisheries mandate.

25 Now, the biology, if I had to pick one of
26 these three that is the fundamental driver, it
27 would be the biology. And it relates back to my
28 little comment about my dilemma when I was working
29 for Randall way back when and it's the age.

30 There's a very excellent paper, I don't know
31 if you guys have it in Ringtail, written by Dan
32 Schindler. I have it with me and I'm happy to
33 provide it. It's published in 2002, in the nature
34 of Schindler, you know, Hilborn and Tom Quinn.
35 There's a whole bunch of authors, I don't remember
36 them all. And it has to do with the portfolio
37 effect in Bristol Bay sockeye. It's a really good
38 overview, actually, on paper. That paper does a
39 great job of documenting the importance of age
40 variation to the robustness of the biology of
41 Bristol Bay sockeye.

42 It says the portfolio effect, and there is an
43 element related to stock, and I don't want to say
44 there's not an element related to stock, but what
45 I will say from some conversations I have had with
46 some folks is that I think if you read the paper
47 carefully, I think you'll see most of the

1 robustness is coming from age, not from stock.
2 There's one figure in that paper, Figure 1C, and
3 it describes the variation and abundance if you
4 just looked at the variation of a single stock,
5 the variation of multiple stocks, and similarly,
6 the variation of a single age class across the
7 stocks or the variation of all the age classes in
8 all the stocks combined.

9 And what it shows, if you just look at the
10 stock effect and account for the reduction and the
11 variation in total return that's associated with
12 that, it ends up giving you a CU of about 100
13 percent. Now, can I describe this to you in a way
14 that you'll understand? And I'm not trying to be
15 negative about your capacity, it's just that I
16 realize it's a big of jargon, okay?

17 A CU of 100 percent would be analogous to
18 having the median run size be one value and say
19 the 75p value being half, and the 25p value being
20 double, just to give you an idea of the concept of
21 that. As soon as you incorporate the age
22 variation and the stock variation component, it
23 drops to 30 percent, from 100 percent to 30
24 percent.

25 Fraser sockeye, just to remind you of what I
26 talked to you about back in October, have one
27 primary age class in the freshwater, one prominent
28 age class that enters freshwater. The smolts
29 enter -- most of them enter, almost all of them
30 enter the sea after one year in a lake, right?
31 And one primary adult return age class age four.
32 The offspring come back four years later. Some
33 come back as fives. I don't want to -- it's not a
34 100 percent, okay, but it's mostly four.

35 Bristol Bay has at least two primary
36 freshwater age classes. A fair fraction of the
37 fish spend two -- one year in the lake and a fair
38 fraction spend two years in the lake. They have
39 about, well, threes, fours, fives and sixes, and
40 occasionally the odd seven on the adult return
41 side. That was my kind of dilemma, working for
42 Reynolds, like, "Holy smokes, I set up this file
43 to work this way and there's all these extra ages,
44 what do I do?" You know, and I really remember
45 vividly encountering that challenge. So the
46 portfolio effect is absolutely real. I mean, you
47 can think of it in the context of 2009. What

1 would a 2009 return been like if the 2009 causes
2 are related to something in the ocean, and I don't
3 want to prejudge that conclusion, and I know
4 that's part of what you're going to look at a
5 little later on, and you've got some reports to
6 read, and so forth. And we had returns in 2009
7 that resulted from not just ocean entry in '07,
8 but another year of ocean entry, and that year
9 wasn't quite as bad. Well, then I suspect that we
10 would have had a little bit of a buffer from that
11 whatever it was that affected that 2007 ocean
12 entry year, right?

13 Similarly, on the adult return side -- now,
14 Bristol Bay doesn't have these temperature things
15 that we have on the Fraser, but if something
16 impacts one spawning group returning, say, the
17 2004 group, that adult age class, and they hit hot
18 water or something, then four years from now you
19 can pretty well predict, and I'm warning the
20 Fraser Panel about 2012, and stuff, in this
21 context, that you're not going to get a good
22 return because it's all in one basket. You know,
23 the eggs are one basket so to speak.

24 Bristol Bay, some of those fish are going to
25 spawn in one year, some are going to spawn in
26 another year so that the offspring come from a
27 whole bunch of environmental experiences, if you
28 like, both in the marine and in the spawning
29 areas. It's much more buffered. And so that's my
30 summary, I guess, of the principal issues with
31 respect to Bristol Bay, and I think those are the
32 ones I focus on. And I think that the key one, to
33 me, is the age. The geography obviously feeds
34 into the management, it's an important player, but
35 the reason that Bristol Bay are then sort of more
36 robust is that their resource has been granted a
37 bit more evolutionary tool so to speak than the
38 Fraser sockeye and we can't -- we've got to live
39 with what we've got, you know? I'd like to say
40 that, you know, we could make Fraser sockeye more
41 diverse in age, but that's kind of outside of
42 anyone's power, I think.

43 Q Well, thank you. And there was one last local
44 other management option I wanted to review with
45 you and there's been some talk about increasing
46 the fisheries in-river in recent years. If there
47 was a move to more in-river fisheries, would that

1 change any management impacts from your
2 perspective, working with the Fraser -- or,
3 exhibit, the Pacific Salmon Commission?

4 A You like to ask me difficult questions, don't you?
5 This is -- it's not that difficult, but it's just
6 -- I really would prefer not to get into kind of a
7 speculation situation in terms of the future
8 because then you have to pull out a scenario and
9 ask what if in any scenario you pull off. But I
10 will answer, I just want to be careful about
11 getting too far out in front.

12 I think the way I'd prefer to answer it is to
13 just simply say that we've already had some
14 changes in in-river fisheries that have occurred
15 since '92. I think you've had discussions about
16 those and so far, the Fraser Panel has coped with
17 those. I mean, it's not like the process has
18 grinded to a screaming halt because of the changes
19 that have occurred, okay? So I think that we just
20 have to acknowledge the fact that there have been
21 some decisions made and, you know, we have -- the
22 Fraser Panel has coped with implementing those
23 policies and I think, you know, so far, we've done
24 okay.

25 Now, I'm sure that some would take some
26 exception about the impacts to them, okay, but I
27 don't really want to get into the impacts to the
28 different groups.

29 The only point that I raised yesterday that I
30 would perhaps flag and just because it is in the
31 record already and it's not about any particular
32 group in the river is this gear temperature
33 interaction. It doesn't matter who is fishing,
34 like if it's a sport fishery, if it's the Area E,
35 or the aboriginal groups, it's the potential of
36 the gear fishery interaction that, and associated
37 with temperature, that will simply, in my view,
38 cause us to think about the manner in which we
39 harvest these fish. It's not about the geography.
40 Geography is like one of the biggest complications
41 in this whole thing. It's just about the biology
42 of a fish encountering -- anything that makes the
43 fish's life more difficult in a warm environment
44 creates a challenge. It might be, heaven forbid,
45 a dam, or something like that, but it's what -- so
46 that's the only thing I'd say. And in the context
47 of your question, then, in thinking about the

1 future, we're just going to have to deal with
2 that. It's going to be a challenge to think about
3 how to meld whatever the future is in that
4 context.

5 MS. BAKER: Those are my questions, thank you. The
6 first --

7 A Excuse me?

8 MS. BAKER: Oh, sorry.

9 A Yeah, I just wondered, I don't know, Mr.

10 Commissioner, if this is appropriate, but there
11 are a couple of things that -- on the over-
12 escapement issue that I didn't get to yesterday
13 and I wondered if it would be okay if I would just
14 make a few more comments, but I'm okay with just
15 going to cross. I don't want to take any more
16 time in the testimony than has been taken already.

17 MS. BAKER: I'm fine if that is --

18 THE COMMISSIONER: Yes, that's fine.

19 A Okay. There's only two and there's no graphs, I
20 promise. The first one relates to a report that's
21 out on this issue, and I think the title of the
22 report is called, "Does over-escapement cause
23 stock collapse." It's often referenced in regards
24 to this issue. And I actually don't take any
25 particular issues with the report, okay, I want to
26 be clear about that, or the authors, and the
27 authors are, you know, Carl Walters and Brian
28 Riddell, both of whom are going to be here before
29 you. And so it's not about the report per se.
30 What it's about is the context in which that
31 report has sometimes been referred to. Like, I
32 think that report does a pretty good job of
33 addressing one very specific issue, the issue of
34 stock collapse in the context of over-escapement,
35 okay? But it's only one and I think that in my
36 experience in seeing references to this report, I
37 quite often see a reference to the effect of,
38 "There are no issues associated with over-
39 escapement," and then parentheses, you know,
40 "(PFRCC 2004)." People have over-generalized the
41 conclusions from that report. And I flag it
42 because there are lots of other issues, and I'm
43 not -- I don't want to really get into the issues,
44 but just to bring this point home a little bit, I
45 would offer you this example. Let's say you come
46 home from work and one of your children comes to
47 you and says, "Hey, mom, or dad, you know, I saw

1 this really cool report on the Internet and the
2 title of the report is, "Children who don't do
3 their homework don't fail." And I think, you
4 know, we'd all react to that differently,
5 depending upon our parenting skills and so forth,
6 but I think one way we probably would react is
7 that we would probably say to our child that we
8 think there's a higher goal than not failing
9 associated with not, you know, doing our homework.
10 I don't think many of us would say, "Don't do your
11 homework."

12 So the analogy I would draw to this report,
13 and it's not a negative on the report, but it's a
14 negative on how it's been used, in my view, by
15 some and it's not -- maybe they haven't read the
16 report, I don't know. I mean, you Google search
17 "over-escapement," you get a hit and you go, "Ah,
18 there's a report on over-escapement." We're kind
19 of lazy that way these days. Is that I think that
20 no one would accept management of Fraser sockeye
21 with only the objective to avoid stock collapse.
22 We ask more of folks like me in terms of what our
23 objectives are.

24 So that does not mean the report is
25 irrelevant, it does not mean it's not germane, it
26 is very germane, but it doesn't help. It's not
27 specific enough towards whatever the objectives
28 are for management of Fraser sockeye. It doesn't
29 address all of those objectives and so it's just a
30 cautionary note. I suspect it will come up in
31 your discussions. There is other things that we
32 want to -- and it doesn't -- and it's clear in the
33 report, if you read the report, it specifically
34 says, "We didn't address A, B, C, D, we addressed
35 this one." So that's just that one on that
36 report.

37 The other one relates to the statement I made
38 yesterday about issuing some sort of a challenge
39 to kind of help understand the context of the
40 over-escapement debate with respect to all the
41 benefits. We need to understand this.

42 Well, I want to be clear that I'm not trying
43 to add to the list of things that DFO was being
44 asked to do. I'm sure that in the Wild Salmon
45 Policy testimony there's a lot of things on their
46 list. Certainly, part of the responsibility falls
47 with DFO. But I personally think it's a little

1 bit hypocritical to be a proponent of that kind of
2 -- those diverse views and not, you know, roll up
3 your sleeves and grab a shovel and pitch in. You
4 know, there are things to be offered by people
5 outside of DFO and both academically and idea-wise
6 that we shouldn't all dump on DFO. I think that's
7 a mistake. I think it's a hindrance of the
8 progress. I think better outcomes would come from
9 broader participation. And I think that -- so you
10 know, along those lines, I guess I just finish by
11 saying one of my best mentors, I guess, when I was
12 a graduate student was a guy named Norman
13 Wilimovski. And Norman was a theologian, but he
14 taught a course in fisheries management. He had a
15 lot of peculiar personality traits, including his
16 classes were always with the door open and it got
17 pretty cold in there. There was one year we had
18 two students from Bangladesh and, boy, I felt bad
19 for them. They had toques on, and mitts, and wool
20 jackets, and everything. But one of the things
21 that Norm said which I've carried with me
22 throughout my career and it has to be at least
23 close to 30 years ago now when I heard this first,
24 is he said there's no limit to what you can do if
25 you're not concerned about who gets the credit.
26 And maybe I would turn that around a little bit
27 and paraphrase it slightly to say something to the
28 effect of, you know, focus on self interests
29 limits our capacity to make progress on issues of
30 neutral concern.

31 Now, I know this isn't a, you know, Fraser
32 sockeye focus group. Clearly, it's not. But I do
33 think part of the essence of the -- you know, if
34 we feel like we're stuck in the mud, part of the
35 issue is that there aren't enough of us pushing
36 the vehicle here. And there's only -- and not
37 only that, the folks that are pushing the vehicle
38 are getting told to push the vehicle in about 15
39 different directions.

40 Now, that may be a little bit philosophical,
41 it may be naive, it may be, you know, kind of --
42 sound a bit like a sermon, I'm not sure, but it's
43 an observation I would make from what I observe.
44 And yet, I'm kind of on the outside, looking in to
45 some extent. I'm not really on the outside,
46 looking in, but I'm not really on the inside. But
47 if you go back and read some of the remarks that

1 Paul Sprout made when he came and he talked about
2 the context of making decisions in the context of
3 environment of the Fraser, Paul is definitely
4 someone who is making those decisions. He was
5 responsible for those decisions. I think of him
6 as Commissioner Sprout because he was a
7 commissioner, but obviously, he was the Regional
8 Director General. If you read that, just those
9 few comments, and I think it was in the context of
10 the gravel issue, I think you'll see some very
11 common themes from someone who is on the inside of
12 that, very much involved, more involved than I am.
13 And so, you know, in the process of knowing that I
14 was going to be here and thinking about this for
15 quite some time, I've had these thoughts kind of
16 swirling in my head, if you like, on my bike rides
17 home and so forth, and I just thought -- I doubt
18 that I'm telling you something that you don't
19 know, sir. I'm sure you've intuited it from the
20 proceedings thus far, but I really think that
21 that's one of those fundamental things. You know,
22 when I look at this group, you know, maybe I have
23 to squint a little bit sometimes, I see a team,
24 you know, but I don't see a group of people acting
25 like a team. I see a group of people that maybe
26 are acting like a team that's on a losing streak
27 and, you know, it's like the hockey team where,
28 you know, the centreman's telling -- you know, the
29 ringers are complaining the centreman's not
30 passing the puck and centreman's complaining that
31 the defenceman can't make a breakout pass, and the
32 goalie's saying the defencemen can't clear the
33 puck. I mean, it's like -- that's what happens to
34 teams when they go through change and that's
35 what's happened to this team so the challenge,
36 then, is to get us, "us," in the royal us sense,
37 thinking about each other as team mates, kind of
38 not looking for mortar to reinforce the bricks in
39 our silo, but, in fact, try to figure out a way to
40 get rid of those silos and start working together.
41 And I don't think anyone can expect you or
42 DFO, or anyone else to -- or any coach to get you
43 to play together. It's going to have to be a
44 decision that you want to play together and you
45 want to work together, and you believe that that's
46 a path towards a better solution. So I'm going to
47 stop now. I've said enough and I'm going to

Michael Lapointe

In chief by Ms. Baker (cont'd)

Cross-exam by Mr. MacAulay (CAN)

1 answer cross-examination questions.

2 MS. BAKER: Okay. Thank you. The first counsel whose
3 entitled to cross-examine Mr. Lapointe is counsel
4 for the Salmon Commission.

5 MR. JOHNSTON: Mr. Commissioner, I'm Brent Johnston, I
6 appear for the Pacific Salmon Commission. I'm
7 here in place of John Hunter this week. I have no
8 questions for Mr. Lapointe.

9 MS. BAKER: Thank you. And then the next counsel would
10 be the Department of Fisheries and Oceans.

11 MR. MacAULAY: Mr. Commissioner, for the record, Hugh
12 MacAulay for the Government of Canada.

13

14 CROSS-EXAMINATION BY MR. MacAULAY:

15

16 Q Mr. Lapointe, I just have a few questions. One of
17 them arises from a response that you offered
18 yesterday morning, I think it was, to Ms. Baker
19 with respect to management adjustments. I'll come
20 to that in a minute.

21 A Okay.

22 Q Just a clarification issue.

23 A Sure.

24 Q And then I wanted to ask you some general
25 questions about some of the concepts that is then
26 spoken to in some of the testimony to date,
27 concepts like biodiversity, which you, yourself,
28 have spoken to in part yesterday afternoon, and
29 ecosystem-based management. I'll come back to
30 those.

31 A Okay. Sure.

32 Q In response to a question from Ms. Baker yesterday
33 morning, you indicated that the use of management
34 adjustments is unique to the Fraser system.
35 First, I just wanted to make sure I understood
36 your testimony on that. Is that correct?

37 A I am not aware of another salmon situation in the
38 world where there is the removal of fish from
39 available harvest in reaction to potential
40 mortality in the way that it's done on the Fraser.

41 Q I guess what I'm getting at is in terms of seeking
42 some clarification, here, is this because of the
43 enroute loss issue that you've spoken to or is
44 this because of data being available in the Fraser
45 system through the Mission hydroacoustic
46 operation, et cetera, that allows for the
47 difference between estimates calculations to be

1 made?

2 A I would say both. I would actually say both.

3 Q Okay. Thank you, that's helpful. Turning then
4 to, just again, some concepts that Mr.
5 Commissioner has heard about from other witnesses
6 and with respect to biodiversity, as I say you've
7 spoken to it yourself, how is the protection of
8 biodiversity for Fraser sockeye reflected in the
9 work of the Pacific Salmon Commission?

10 A Strictly in our work, I would say it would be in
11 the nature of the way that decisions are made.
12 Decisions are made in a very sequential form so
13 fisheries decisions early in the season are --
14 there's a fair amount of precaution made in terms
15 of getting fisheries started. And then I guess
16 the broader context, I guess, would be in the
17 context of the objectives that we're asked to
18 manage to. And so to the extent that the
19 escapement policies that were provided to us by
20 Canada respond to biodiversity, and I'll talk
21 about two of those, and I know you're going to
22 spend some days on this so I suspect you'll learn
23 more about this than I can provide you. Within
24 the context of the escapement policy, there's two
25 things, one of which I just mentioned, which was
26 the maximum total mortality rate that applies at
27 larger run sizes. That's clearly a reflection of
28 the need to protect the differential
29 productivities of stocks. Some maximum beyond
30 which there could be certain stocks that would be
31 adversely impacted.

32 The second way is a little bit more subtle,
33 and I'm not sure I'm going to be able to explain
34 it very well, but there are benchmarks within the
35 spawning initiative model for the 19 populations
36 and, clearly, part of the evaluation of which
37 alternative total allowed mortality rule would be
38 selected includes performance measures that relate
39 to the probabilities of individual stocks. In
40 some cases, there are actually subsets of CUs.
41 What the probability -- what is the impact of a
42 particular option on the probability of those
43 populations being above some benchmark where
44 benchmark is more in the Wild Salmon Policy
45 context that you guys heard about before. Those
46 would be the sort of comments I would offer.

47 Q You spoke yesterday about alignment, I think was

1 the word that you used, with respect to CUs and
2 the Wild Salmon Policy. Is that an example of the
3 work of the Pacific Salmon Commission in
4 conjunction with DFO reflecting a protection of
5 biodiversity?

6 A Yeah, I would think so. That would be a fair
7 characterization.

8 Q Thank you. I appreciate that the mandate of the
9 Pacific Salmon Commission is about salmon. Isn't
10 the concept of eco-based management reflected in
11 the work of the PSC?

12 A There are at the PSC level, outside the PSC staff,
13 discussions ongoing about habitat and other
14 factors. There's some habitat papers. The
15 restoration funds habitat, a range of projects
16 that include habitat. Yeah, I think there's lots
17 of aspects of what we do that implicitly, perhaps,
18 but not explicitly include aspects of the
19 ecosystem in them. It's not very well
20 articulated, perhaps, and that's one of the things
21 that I think we all could do a better job. And
22 I'm not sure I'm going to be able to help you out
23 immediately right now, but yeah, I do think it is
24 part of it and the only other comment I'd say
25 about ecosystem-based management is that
26 sometimes, I think, and I'm not saying this is a
27 good thing or a bad thing, but sometimes I think
28 we have a tendency to think of the ecosystem from
29 the window of an Apollo-orbiting spaceship in
30 looking down at the earth and trying to remove
31 ourselves from it. In other words, we kind of
32 don't acknowledge the fact that, you know, part of
33 the ecosystem is us and we have a big impact on
34 it. Now, that's not to say that the ecosystem
35 should be managed for us, necessarily, although
36 perhaps there are cases where it is, it's just to
37 say that we are part of the ecosystem and so I
38 think that sometimes is lost sometimes when I hear
39 discussions on this topic.

40 Q Thank you. Another concept that this Commission
41 has heard testimony about is a precautionary
42 approach to fisheries management. Again, how is
43 the precautionary approach reflected in the work
44 of the Pacific Salmon Commission?

45 A I'm not an expert on that topic. I actually have
46 a paper with me that discusses some of the
47 elements of the precautionary approach, and I

1 couldn't recite them all for you, but again, I
2 think in the harvest management policies that are
3 developed, there's an element of precaution
4 associated with those. In our approach to the
5 sequence of fisheries that we plan in the Fraser
6 River Panel and the way that they are triggered,
7 or not, depending upon the in-season data flow,
8 there's an element of precaution.

9 There isn't as yet, and I'm not saying there
10 should be, any formal quantitative risk-based
11 management use of uncertainty, in other words,
12 uses of probabilities in any explicit way in the
13 management context. As I said yesterday, I've
14 been trying to build the tools within the PSC
15 staff to provide and quantify as best we can those
16 uncertainties, but as yet, it's not. It's more
17 intuitive. It's more based on experience and to
18 me, 2009 is probably a very good example of an
19 outcome that happens as a result of an escapement
20 policy and a very poor run. You know, I've kind
21 of tried to wipe 2009 from my brain to some extent
22 because it's not necessarily happy memories in
23 terms of the resource, but what happened in 2009?
24 We had a small run. We detected it early. There
25 was about an eight percent of the run that was
26 harvested and that went to test fisheries that
27 were designed to detect whether we had a problem
28 in the first place in FSC fisheries. And 92
29 percent of the run was made available for
30 escapement.

31 I don't remember in detail, but I don't
32 recall -- so my experience in Fraser sockeye
33 management the 20 years I've been involved is that
34 when fish are really in trouble, people do the
35 right thing. When they're really in trouble, they
36 do. I mean, there were no nets wrapped around
37 Burrard Street office last summer. There weren't
38 people on the Fraser River saying -- you know,
39 having protest fisheries. And it's easy for me to
40 say because all I did was deliver bad news. Some
41 of those folks didn't get the amount of food that
42 they would otherwise have wanted to have. Some of
43 those folks didn't make the payments on their debt
44 because they didn't have any income. So it's
45 partly a management strategy, but the most
46 important thing is, I think, people give a darn
47 about these fish and they act appropriately when

Michael Lapointe

Cross-exam by Mr. MacAulay (CAN)

Cross-exam by Mr. Leadem (CONSER)

1 they're asked to do so. And I think 2009 was a
2 100-percent excellent example, the most recent
3 one, but there are many others I could point to in
4 the past of that ethic that's here on this coast.

5 Q In response to many of Ms. Baker's questions, you
6 referred to a great deal of contact and
7 information sharing between the Pacific Salmon
8 Commission and Department of Fisheries and Oceans.
9 Could you describe in general terms the working
10 relationship between the PSC and DFO?

11 A Well, I would describe it as excellent. I would
12 describe it as collaborative, cooperative,
13 excellent, probably at the most -- the best it's
14 been since I've been a member of the Pacific
15 Salmon Commission. It's been that way for about
16 six, seven, eight years now.

17 MR. MACAULAY: Thank you, those are my questions.

18 MS. BAKER: Thank you. The next counsel is Mr.
19 Buchanan, who is not here. Rio Tinto, David
20 Burse. I don't think he's here. Pacific Salmon
21 Farmers Association?

22 MR. HOPKINS-UTTER: Sorry, B.C. Salmon Farmers
23 Association and we have no questions.

24 MS. BAKER: Oh, sorry, what did I say? Did I say
25 something else? Sorry. Seafood Producers
26 Association of B.C., Mr. Walden? No. Aquaculture
27 Coalition, Mr. McDade? Mr. Leadem for the
28 Conservation Coalition?

29 MR. LEADEM: For the record, Leadem, initial T.,
30 appearing as counsel for the conservation
31 coalition.

32
33 CROSS-EXAMINATION BY MR. LEADEM:

34
35 Q I'd like to have a discussion with you, Mr.
36 Lapointe, rather than a cross-examination. I'm
37 mindful of your last words that you gave in direct
38 about pushing the truck out of the mud and I like
39 to be one of those that's helping to push the
40 truck out, rather than digging it in deeper.

41 I want to start by looking at Exhibit 330,
42 which is the fairly lengthy one, and I want to
43 start by pulling up pages 379 and 380 of that
44 particular exhibit. And if you can look at the
45 bottom of the page, Mr. Lapointe, the context of
46 this is that this appears to be part of a draft
47 that was dated September 17th, 2009, and it

1 appears to be the Pacific Salmon Commission's work
2 plan for 2009/2010.

3 A That's correct.

4 Q And at the bottom of page 379, I find "Outline of
5 Other Activities of the Fraser River Panel for the
6 2009/2010 Cycle."

7 A Yes.

8 Q And the first one is "Fraser Sockeye Forecast
9 Performance Issues." And I find these words:

10

11 The poor performance of the Fraser sockeye
12 return forecast in 2009 will likely trigger
13 scientific efforts to identify the causes for
14 the poor performance and the developments of
15 ways to improve the forecasts.

16

17 So I want to just stop there because I think those
18 are two important concepts. If you take it that
19 2009 is an instructive year because we learn from
20 poor returns perhaps much more than we learn from
21 good returns, then obviously one focus of trying
22 to learn as much as we can about what caused that
23 poor return in 2009 will discern whether there's
24 any scientific rationale for that. Would you
25 agree with it?

26 A Yeah. What happened?

27 Q Yeah.

28 A Sure.

29 Q And to that end, one would hope that there would
30 be a lot of scientific thought and study that
31 would go into trying to focus upon the causes for
32 the poor return?

33 A That's correct, and there has been already.

34 Q Right. And I'm mindful of the fact that Simon
35 Fraser University sponsored several workshops on
36 the decline, both last year in December 2009 and
37 March 2010; is that right?

38 A That's correct.

39 Q And then I think your own Commission sponsored a
40 workshop in June of 2010?

41 A That's correct. And the report is available on
42 our website and probably among your exhibits here,
43 or among your Ringtail documents, I should say.

44 Q Right. Now, the other aspect that's in that
45 commentary is improving the forecasts.

46 A Mm-hmm.

47 Q And that's what I want to get at. You've been

1 associated with the Pacific Salmon Commission for
2 a number of years. Are the forecasts always this
3 wonky, or are they always so off?

4 A Well, that's a -- my answer to that may be a
5 little bit longer and perhaps provide some
6 context, and some of it actually relates to some
7 of the comments I made yesterday, in fact. Prior
8 to about '85, and this relates to the signing of
9 the treaty in '85, forecasts were done by the
10 International Pacific Salmon Fisheries Commission,
11 which was the predecessor to the PSC.

12 I actually, as part of the think tank work,
13 and I don't know if it was provided at the
14 workshop that the PSC had, looked at the
15 historical performance of Fraser River sockeye
16 forecasts and what I found was a pattern that I
17 thought was really peculiar in that it seemed like
18 there were very few years prior -- and I won't get
19 this date exactly right, but prior to around 1985,
20 when there was -- where the actual return was much
21 less than the forecast. And since I know some of
22 the individuals who were making those forecasts,
23 some people like Jim Woodey, for example, I kind
24 of looked and it and went -- whereas -- just to
25 complete the story, whereas since '85, there is a
26 fairly pronounced tendency for the returns to be
27 less than forecast. Okay? More than half the
28 time, I don't know the exact percentage. And I
29 looked at it and went, "Well, how could that be?
30 Like, that doesn't make any scientific sense to
31 me." So I did what I usually do, I got out the
32 bat phone and called Dr. Woodey and talked to him
33 about the history. And what I said to Jim, and I
34 felt a little bad asking this, because it wasn't --
35 -- you know, "Jim, you guys didn't, like, pick a
36 conservative number, did you, to -- for some
37 reason in those years," and he kind of, you know,
38 you'll get to hear him speak here next week, or
39 so, kind of cleared his throat as he usually does,
40 and in his very deliberate manner said, "Well,
41 yes." You know, why is the critical thing.

42 The reason I think why, and it goes back to a
43 comment I made last -- yesterday. In the IPSFC
44 days, the fishing plan was announced at the
45 beginning of the year and in order to alter the
46 plan, you had to have an extraordinary meeting.
47 So those IPSFC guys, they were pretty smart. They

1 said, "Well, jeez, you know, if the run's a lot
2 smaller, we're going to have to trigger an
3 extraordinary meeting and that's going to create a
4 whole bunch of problems here." So in other words,
5 what I'm saying is that the -- even though there
6 were statistical methods used, and you maybe could
7 argue the ones we are using now are much more
8 sophisticated and so forth, it wasn't a strict
9 application of a statistical model. There was
10 some judgment used. There would be three or four
11 pieces of information and they'd kind of average
12 and rationalize, and maybe tend to be a little bit
13 on the low side because of the management context
14 in which they were operating.

15 Now, fast forward to post-'85 and there are
16 two kinds of changes. One is we have a closed and
17 less open situation with respect to the fisheries
18 that I had talked about yesterday. The second
19 thing is there was a move to make sure that there
20 was a scientific consensus about the methodology
21 for forecast through Canada's PSARC process,
22 Canada assumed responsibility for the forecasts.
23 Science is allotted for its objectivity and
24 transparency and so the ability for at least the
25 scientists, the biologists to influence judgment
26 in making the recommendations for forecast as was
27 done in the IPSFC years was greatly diminished. I
28 mean, it would look like you were picking a number
29 for some reason and think about also picking that
30 number in the political environment that is Fraser
31 sockeye, as well. So the idea was it was going to
32 apply the same statistical model, every year the
33 best model as defined by model performance
34 criteria. So on average, that model should be,
35 because of the way it's evaluated, be high half
36 the time and low half the time. Statistics,
37 right? That's what it's supposed to be. What
38 have we observed? What has a lot of the analysis
39 shown about what's happened, and 2009 being the
40 most recent example? We've been in a period of
41 declining productivity. The productivity hasn't
42 been average, it's been declining. So if I was to
43 describe to you why forecasts have tended to be
44 higher in more recent years than they were before,
45 it's those two things. The reason they're higher
46 now is because the models fundamentally assume
47 average productivity and there's a tendency for it

1 to have been lower. It's not because anyone was
2 picking higher numbers, they were trying to pick
3 to the statistically best model, but that best was
4 defined by the long-term average performance.

5 And so in the 2010 forecast, if you look at
6 that document, you know, it wasn't a surprise to
7 -- this is something that -- I've been reviewing
8 forecasts now for a number of years within the
9 Department and I don't claim to, you know, have
10 been the, you know, messenger on this way back
11 when, but there was a recognition that that's an
12 assumption. The assumption of average
13 productivity is an assumption. And that one ought
14 to develop forecasts with different scenarios in
15 mind and so the 2010 forecast reflects that.

16 There's three scenarios. One is average
17 productivity, the same way a forecast has been
18 done for the last 15 years. Another one is
19 declining productivity and the other one was if
20 it's as bad as 2005, brood year, 2009 return, this
21 is what it is. And so I think that that now
22 there's a clear understanding of the fact about
23 the uncertainty about productivity was not
24 necessarily being explicitly included in the past
25 forecasts. It was a bit difficult for some of the
26 folks in the science community to accept that
27 because they felt like there was a judgment being
28 made. In other words, there was a -- you know,
29 what basis do we have -- you know, this is the
30 debate. I was in the room, right? What basis do
31 we have to say that 2010 will be more like 2009
32 than 1982? If we don't, then we should err on the
33 side of it could be either one of those and that's
34 the scientific argument against using judgment, I
35 think.

36 Q Well, these are all just best guesstimates, aren't
37 they? When we get to the -- we're talking about
38 paper fish until such time as we actually get
39 numbers derived from test fishing --

40 A Yeah, so --

41 Q -- we're really talking about fish on paper?

42 A -- I think the forecasts are important for
43 providing context, for providing the range of
44 scenarios used in the contingency planning. I can
45 tell you also in the context of the Bristol Bay
46 question that there's nothing unusually different
47 or better about the forecast methodologies used at

1 Fraser sockeye than Bristol Bay. There's a very
2 large insert grant program that was run by Reynold
3 Peterman, you can read his papers. There's no
4 magic bullet out there for forecasting. You're
5 right, it's a number on paper, it provides a
6 context. It does, you know, for some folks
7 probably more than others set some sort of
8 expectation. There's some element of that, but as
9 I hope we made clear yesterday when we talked,
10 it's that it's closed unless open. Fisheries are
11 not opened based on forecasts, they're opened
12 based on what the in-season data tell us.

13 Q All right. I take some comfort from that. The
14 next item down under the list of things that
15 you're going to do in 2009/2010, and I'm at page
16 380 now of the report, is "Continue the
17 Development of an Improved Fraser Fishery Model."
18 Is that done every year? Do we take the data that
19 we've learned from the year before then
20 incorporate it into a new model? Is that how it
21 works?

22 A The specific reference to this Fraser Fishery
23 Model is the preseason planning model that I
24 described in some detail yesterday.

25 Q Okay.

26 A And as I said yesterday, we -- I've just got a new
27 hire and we want to kind of modernize that and so
28 that's the reference that's being referred to
29 here. It's more of a -- improving the tool than
30 reactions to particular data flow issues.

31 Q Okay. Dropping down, I want to focus on something
32 that you spent a lot of time on yesterday in your
33 direct examination. The Late run, Early entry,
34 about mid-page, and I find these words:

35
36 The Fraser River Panel will receive a report
37 on the information available regarding the
38 2009 upstream migration behaviour of Late run
39 sockeye.

40
41 Have you received that report as of today's date?
42 A It's not a document, it's an annual evaluation of
43 what the Late run did in each year, how early did
44 they come up and, in fact, so I guess I would have
45 generated that report because I process those
46 data. So it's probably a couple of slides in a
47 presentation I would have given to the Fraser

1 Panel.

2 The 2009 situation was kind of interesting.
3 We had a very small Late run which in most past
4 years would have meant that we would have had most
5 of the fish come up early. That's sort of the
6 2000/2001 scenario. We actually had, for the
7 first time I can remember, a portion of this very
8 small run delay and we don't know why. We
9 actually were able to catch some in the Gulf troll
10 delaying so we knew they were there and we saw a
11 bump of fish come up more -- in September, more
12 normally timed and so it may signal a change.
13 Most of the times in past years, we've seen more
14 evidence of delay in the big Late run years, like
15 the Adams years, like last year, but in 2009, we
16 actually had a little kind of glimmer of light, if
17 you like and maybe some of these fish have figured
18 out that that's not the good thing to do, to come
19 up early so it was a really positive sign.

20 Q So you did not see the expected early entry?

21 A Well, we saw most of the run come up early.

22 Q Oh, okay.

23 A But what was unique was we saw a portion of the
24 run delay, a larger portion than we would have
25 expected. I don't remember the exact upstream
26 date, but I could certainly find it for you.

27 Q So there were still some early entry of that late
28 run with consequential --

29 A Yes.

30 Q -- pre-spawn mortality and enroute mortality?

31 A Yeah, it was a glimmer of hope, but the behaviour
32 was still there and it's still a concern.

33 MR. LEADEM: I'm going to be some length with other
34 areas, Mr. Commissioner, if this is an appropriate
35 time to take a break?

36 THE COMMISSIONER: Thank you, Mr. Leadem.

37 THE REGISTRAR: The hearing will now recess for 15
38 minutes.

39

40 (PROCEEDINGS ADJOURNED FOR MORNING RECESS)

41 (PROCEEDINGS RECONVENED)

42

43 THE REGISTRAR: The hearing is now resumed.

44

45 CROSS-EXAMINATION BY MR. LEADEM, continuing:

46

47 Q Before the break, Mr. Lapointe, we had been

1 discussing this phenomenon of early entry at the
2 late run sockeye into the Fraser system. Are you
3 familiar with the work of Dr. Kristi Miller from
4 Department of Fisheries and Oceans, who's done
5 significant work in trying to determine what the
6 triggering mechanism may be for this early run?

7 A In a relative sense, yes. Kristi has been funded
8 by the Pacific Southern Endowment Fund of the
9 Pacific Salmon Commission for some of her work.
10 And I'm actually on part of her team for the
11 current large grant that she has through Genome
12 BC. I basically have been liaison with Kristi and
13 with Genome BC on the Fisheries Management aspects
14 of this problem so it helps -- so on the science
15 side, this micro stuff, it's -- it's been over-
16 the-top sophistication for me in terms of the
17 detailed science. But I am loosely familiar with
18 the work and have a lot of respect for Kristi and
19 the progress she's been making up until this
20 point.

21 Q All right. She's been determining or trying to
22 determine a genomic signature for the fish that
23 are actually returning earlier to try to determine
24 where the in gene sequence this triggering could
25 occur; is that right?

26 A Yeah, I think the gist of it is there's two lines
27 of study that she's pursuing. One relates to the
28 signal that relates to the likelihood that the
29 fish will survive. Okay? So same concept that
30 you presented but more designed not so much on
31 predicting the behaviour but asking is there
32 something different about the fish that eventually
33 end up making it to the spawning grounds and those
34 that don't.

35 On the behaviour side, she also has been
36 involved and I would characterize the work more --
37 and I don't think this is a disagreement -- it may
38 just be a semantics-type thing -- but from my
39 perspective, I look at Kristi's work as trying to
40 find a genetic marker that might be able to be
41 used to tell us in a marine sample what a fish is
42 going to do.

43 Q Okay. And are you aware of her hypothesis that
44 the -- this genomic signature or this genomic
45 signal is associated with elevated mortality in
46 response to a virus?

47 A Yes, I am aware of that hypothesis.

1 MR. LEADEM: And I'll just throw that out, Mr.
2 Commissioner, as a marker more or less because
3 it's something that I would like to see us discuss
4 at some stage in these proceedings. And I'll be
5 in discussions with your counsel about that.

6 Q I want to now turn to page 22 of Exhibit 330. And
7 the reason I'm going to turn to it, it's actually
8 a focus on Cultus Lake sockeye and late run, Mr.
9 Lapointe.

10 A Okay.

11 Q And the reason I want to focus upon it, because I
12 think it points out some of the challenges that we
13 face when we deal with a four-cycle management
14 group. And the Cultus Lake is just one of those
15 that somehow gets lost in the shuffle. Let me
16 begin by this. I understand that there are the
17 four management groups, the Early Stuart, the
18 Summer, Late Summer, et cetera. And that's a
19 human construct. I mean obviously that's
20 something that we, as humans, determined rather
21 than the fish determined for themselves. That's
22 obvious, right?

23 A Yes, I mean, there's a loose relationship, as you
24 know, between the arrival timings of those stocks
25 and what groups they're in. But the choice of
26 those four groups, and I said it yesterday and
27 I'll repeat it again now, in the context of the
28 treaty, was all about how the United States should
29 or should not, to the extent practical, take its
30 share. That's the only context that that -- comes
31 into the treaty. The fact that it's trickled into
32 other aspects of the management is certainly a
33 fact. I'm not saying that's not true but I'm just
34 saying the reason it came up in the first place
35 was not about dictating anything related to that.

36 Q But the problem with managing, when you start
37 managing those, what are called mixed stocks, is
38 that some conservation units get caught up in
39 those stocks and can be overfished and -- and
40 fished to their detriment. Is that not correct?

41 A So -- yeah, so each stock, if you measured it
42 separately, would have an optimum exploitation
43 rate. And so it's possible that if the optimal
44 exploitation rate of that mixed stock fishery is
45 higher than some of the stocks that have lower
46 sustainable ones, that they would be held at an
47 abundance level that would theoretically be

- 1 sustainable in the sense that there are
2 sustainable yields at all abundance levels but it
3 could be a low enough level that when something
4 else comes along, and early upstream migration is
5 the one I would throw out for you in the Cultus,
6 it puts in that greater risk of that extra stress,
7 if you like, associated with something else,
8 which, clearly, the Cultus case it would be early
9 upstream migration and the predator situation
10 within Cultus Lake that are both two significant
11 bottle -- bottlenecks.
- 12 Q So the conundrum, if I can put it this way, is
13 essentially it comes down to this, is that if you
14 are trying to preserve biodiversity by defining
15 conservation units and defining benchmarks for
16 conservation units and working towards achieving
17 that biodiversity aim but you also are then
18 encompassing that same conservation unit within a
19 mixed stock fishery, the conundrum and the real
20 challenge is how do you isolate that stock so that
21 you can keep it preserved? Is that fair to say?
- 22 A When you say "isolate", do you mean respond to the
23 particular needs of that individual stock
24 separately from the other stocks? Is that -- I'm
25 just trying to understand if...
- 26 Q When I say "isolate", I mean for the purposes of
27 fishing because when the fish come up the river,
28 they don't unfortunately have flags saying, "I'm a
29 Cultus Lake sockeye."
- 30 A Mm-hmm.
- 31 Q There's no -- no discernible way when a fisher
32 goes and catches that fish that they know that
33 they're catching a Cultus Lake sockeye, as opposed
34 to an Adams -- Adams Lake sockeye; isn't that
35 right?
- 36 A That's correct.
- 37 Q And so the real problem, as I see it, is that if
38 you're -- if you're going to try to preserve these
39 conservation units that we learn so much about in
40 the Wild Salmon Policy, the only way that you can
41 possibly do so in the context of commercial
42 fishing is to actually move towards a fishing
43 that's much more deterministic and must more
44 segregating of those conservation units. And what
45 I have in mind is moving towards a fishery -- a
46 terminal fishery, more or less.
- 47 A So I will both agree and disagree with those

1 remarks and I'll try to explain why. The issue of
2 mixed stock fishing challenges folks to consider
3 the manner in which they fish. I would not
4 suggest -- and I think in my responses to cross-
5 examination last time I was here -- that it
6 necessarily prescribes a geography. And the
7 reason I would say that is when you say the word
8 "terminal" and maybe this is where we need to have
9 a dialogue, so let's explore that further,
10 certainly above the Vedder confluence of the --
11 Vedder to the Fraser, because the Vedder is the
12 stream that the Cultus swim out to get into the
13 Fraser to make it down to the mouth.

14 If you fish upstream of there, you would be
15 unlikely to harvest many Cultus sockeye. There
16 may be the odd one that may overshoot, you know,
17 or -- but other than that -- so if terminal is the
18 mouth of the Fraser, I would say that there's no
19 really fundamental difference between the mixed
20 stock nature at the bottom of the Fraser River
21 than there is the top of Johnstone Strait. I mean
22 they're pretty much all there. So -- so there's
23 an opportunity that relates to geography. But you
24 could think of alternate ways.

25 For example, if you knew what the sustainable
26 exploitation rate was of Cultus sockeye, you could
27 still harvest Cultus sockeye in a mixed stock
28 fishery but you would have to harvest them at a
29 much lower rate. In other words, you could
30 dictate the rate of harvest based on the least
31 productive stock and still have a sustainable
32 fishery, if you wanted to have a fishery, in a
33 mixed stock fishery but you would just lower the
34 rate. So the reason I'm being careful about my
35 answer here, other than your already general
36 knowledge that I will be careful in my answers, is
37 that I believe to think about it from a
38 geographically-specific way throws that idea into
39 all of the other things that are attached to
40 geography that challenge us in our -- in our
41 thinking of solutions. So I prefer to think of it
42 much more generally.

43 If there was a manner of fishing -- and
44 Kristi's work you brought up -- if someone told me
45 15 years ago that I could take a fish in Johnstone
46 Strait, take a little piece of tissue from it, put
47 a radio tag down its throat, identify within 12

1 hours of when I caught it where I think that fish
2 would spawn and detect it three weeks later on the
3 place that I said it would go, you know, I would
4 have said, you know, what are you smoking and
5 where can I get some? You know, thank you very
6 much. I mean it would be something -- I mean --
7 sorry, sir, that was an inappropriate comment. It
8 would be -- I wouldn't have guessed it could
9 happen. So why would we preclude a possibility
10 such as that in the future by having people focus
11 on geography? Why would we do that?

12 I think we have to be open-minded to the
13 possibilities that maybe 20 years from now it'll
14 cost 15 cents to take a sample of a fish that you
15 catch, you hold it in a live bin, you take a
16 sample of that fish and you say that is a Cultus
17 sockeye. I'm going to let that one go. Now, that
18 may be, you know, a bit pie-in-the-sky speculation
19 but I think that the point is that all the options
20 to accomplish the objective that you defined of
21 trying to protect the least productive stocks
22 should be on the table and we shouldn't pretend to
23 think that we know now what all those are.

24 Q All right. And I appreciate your response because
25 my response is dictated by trying to find a
26 solution. And to my limited way of thinking, not
27 being a fish person such as yourself it strikes me
28 that if you can solve this from a geographic
29 perspective that might be a possible solution.
30 Your solution that you're proposing is -- is every
31 much as -- good as a solution, which is limit the
32 catchability or limit -- limit your take and your
33 catch down to the level of the -- the least --
34 most vulnerable of the conservation units in that
35 particular segment of the fishery.

36 A Yeah, each could accomplish a similar objective
37 and each would have costs and benefits and maybe
38 the solution is some combination of the two or
39 something like that. But I think to think of it
40 in any prescriptive way, I think, kind of throws
41 it into the controversy that is Fraser sockeye
42 with respect to the geography of where these
43 animals are harvested.

44 Q I just have a couple more questions and they
45 relate to over-escapement. I can't resist that
46 aspect of -- of trying to -- to prod you a little
47 bit with respect to over-escapement. My clients

1 being conservation biologists by and large don't
2 see that there's a problem with over-escapement at
3 all because they like to see this from the aspect
4 of an ecosystem approach so that a fish on the
5 spawning grounds is not necessarily a wasted fish
6 because there are other species that can take from
7 that fish and nutrient levels and so forth at that
8 ecosystem approach. Do you agree with that
9 concept, that basically, theoretically, there is
10 no such thing as over-escapement from an ecosystem
11 perspective?

12 A No, I don't. And it isn't because I believe that
13 the fish are wasted and I think I had responded
14 directly to this concept previously in my
15 testimony. I believe there are impacts, and this
16 is -- you know, don't think about salmon for a
17 minute. Just think about general ecological
18 knowledge. I know you have some biological
19 training. And ask yourself whether any part of
20 the ecological training that we have, and I can
21 speak on my part, would suggest that we shouldn't
22 anticipate impacts on an ecosystem at the
23 extremes. Okay? I'm talking about really, really
24 low, say, abundance of fish or really, really high
25 abundance of fish. I think we do anticipate that
26 if we put a really, really large number of
27 predators, which is what the sockeye -- the
28 sockeye are when they're in their lakes, the
29 juveniles, in that ecosystem it's going to have an
30 impact on that ecosystem.

31 Quesnel sockeye is a perfect example.
32 Quesnel sockeye impacts of that -- of this build-
33 up of the Quesnel run have not just impacted the
34 number of fish that came back in 2006. The
35 Kokanee population in Quesnel Lake has collapsed.
36 The large trout population in Quesnel Lake has
37 also been impacted. That ecosystem is
38 fundamentally different, not better or worse, you
39 know, than it was before. Its capacity to produce
40 Fraser River sockeye may be different now. So
41 what I'm trying to suggest to you not -- it's not
42 about the benefits here, okay? It's not about the
43 distribution of the surplus or whether there is a
44 surplus. It's about the potential risks and
45 consequences not just to the folks that might want
46 to catch some of these fish but to the ecosystem
47 at large. And to think that there is no risk, no

1 consequence to the ecosystem of a very large
2 escapement, I think, is not consistent with all of
3 our training.

4 And in the case of Quesnel, we have very
5 strong empirical evidence. So whether you're a
6 bear in the Quesnel ecosystem that wants to eat
7 those sockeye or whether you're some other part of
8 the ecosystem like the trees that might benefit
9 from the nitrogen and the phosphorous that those
10 carcasses deliver, extremes have a consequence to
11 all parts of the ecosystem. So that's where --
12 that's where I'm coming from.

13 Q Okay. I understand that. My last question
14 relates to the Wild Salmon Policy. We learned
15 about it at length. How often is that subject to
16 discourse at the bilateral talks or at the Fraser
17 River Panel? Does it enter into the fray at all
18 in discussions?

19 A Not in a -- well, in an explicit way in the
20 bilateral, so this is the thing that I experience.
21 I don't experience the caucuses. We've had about,
22 I would say, four or five presentations informing
23 the Fraser River Panel about the ongoing
24 developments of that policy, okay? So that's one
25 area that it's entered into the -- into the
26 bilateral realm. In the course of those
27 discussions, I can tell you that there is some
28 cross-border sharing of the United States'
29 experience with endangered species and ESU's and
30 so forth.

31 There is some dialogue that I think benefits
32 the -- the -- you know, discussion in terms of the
33 -- in terms of the explicit accounting for how the
34 Wild Salmon Policy would be implemented. The
35 explicit way that we, you know -- what I believe
36 I'm implementing that is Canada's response to that
37 is the escapement plan, okay? That's -- that's
38 the kind of nuts and bolts of the way it enters
39 into our process beyond what I've said. And there
40 hasn't been any other broader sort of debate-type
41 things related to that.

42 MR. LEADEM: Thank you. Those are my questions.

43 MS. BAKER: Thank you. Next would be Area D and B, but
44 I don't think they're here. So the next would be
45 Southern Area E Gillnetters and B.C. Fisheries
46 Survival Coalition.

47 MS. SRIVASTAVA: Mr. Commissioner, I'm Anila

1 Srivastava. I'll just spell that in case the
2 reporter's trying to deal with it. Last name is
3 S-r-i-v-a-s-t-a-v-a, first initial A., appearing
4 for the B.C. Fisheries Survival Coalition and
5 Southern Area E Gillnetters. Mr. Butcher is away
6 this week and next week.

7
8 CROSS-EXAMINATION BY MS. SRIVASTAVA:
9

10 Q Mr. Lapointe, you answered a lot of my questions
11 just in your last bit of testimony today and your
12 cross-examination. So thankfully, I'm sure my
13 cross-examination will be much shorter than it was
14 going to be. I do want to take you back, though,
15 to some really basic notions about science and
16 management.

17 A Sure.

18 Q You're trained as a zoologist?

19 A That's my Master's degree. That's correct.

20 Q As a scientist, when you are considering the
21 usefulness of a model, would it be fair to say
22 that a model is useful to you if it has either
23 explanatory power or predictive power or both?

24 A It would be both.

25 Q So the best model is one that both explains and
26 predicts?

27 A That's correct.

28 Q And prediction is just another word for
29 forecasting?

30 A That's correct.

31 Q So the word used by -- by PSC and DFO is
32 "forecasting" but essentially that is what
33 scientists and other contexts would simply call
34 predictive capability of that model?

35 A Yeah, that's correct.

36 Q Is that correct?

37 A Sure.

38 Q If a scientific model shows that it's inaccurate
39 at predicting over a long period of time, is it
40 possible that something is wrong with the model
41 itself, scientifically?

42 A Yes, and Fisheries has got a long history of that
43 kind of experience. It usually means that there's
44 something that wasn't considered in the model
45 that's driving the process you're trying to
46 predict.

47 Q And one of the solutions to an inaccurate model is

- 1 tweaking? By that, I mean, not rejecting the
2 model outright and searching for an entirely new
3 paradigm but trying to add new information?
- 4 A That's correct.
- 5 Q If the model has shown itself to be wildly
6 inaccurate over a long period of time, is it
7 likely that tweaking will work or does it call for
8 a wholesale change in the model?
- 9 A It calls for more the latter, more of a
10 reconsideration of the assumptions to think of a
11 model that would incorporate more of the
12 assumptions.
- 13 Q In your view, are we at that point with the
14 current Pacific Salmon Fisheries model, that
15 tweaking is not what's called for but a wholesale
16 reconsideration?
- 17 A When you say a "Pacific Salmon Commission
18 Fisheries model", which model exactly are you
19 referring to?
- 20 Q Well, that's a good question. And so let me go on
21 from that. You testified yesterday that the model
22 that's currently used by Pacific -- by PSC has
23 celebrated its 25th birthday?
- 24 A That's correct. That's the Pre-season Planning
25 Model.
- 26 Q The Pre-season Planning Model?
- 27 A Yeah.
- 28 Q That Pre-season Planning Model has built-in
29 probability components; is that correct? In other
30 words, this 25, 50 and 75 P --
- 31 A No, there's a confusion about which model we're
32 talking about. The Pre-season Forecast Models are
33 done by the Department of Fisheries and Oceans by
34 the Government of Canada and those are the models
35 that are used to predict the returns four years
36 out from a spawning escapement four years prior.
37 We are involved in that process in terms of
38 providing scientific input but those are not our
39 models. The Pre-season Planning Model just moves
40 fish and space and time and predicts what the
41 outcomes of potential fisheries might be given
42 that schedule. So maybe we have a bit of a
43 disconnect on which -- which model it is so maybe
44 that'll help you in your further questions.
- 45 Q That absolutely helps because certainly I think
46 I'm -- I'm not the only one who sometimes is a
47 little unclear on precisely who's contributing

1 what. So the Pre-Season Forecast Model is the one
2 that's developed by DFO, correct?

3 A That's correct.

4 Q Is that model one of the models that's been wildly
5 inaccurate since 1985?

6 A Well, I don't know if I would agree with the
7 "wildly inaccurate" assertion but there certainly
8 have been deviations, significant deviations and
9 2009 is the most recent one from what the forecast
10 was. But I think there's a little -- not a little
11 -- a significant misunderstanding in the public
12 about what the model is trying to do. The model
13 predicts a distribution. It doesn't predict a
14 number. What gets released to the public because
15 the public has a hard time grasping what a
16 distribution is, is a number. So in the case of
17 2009, that return was certainly a very low
18 probability event relative to the distribution of
19 -- of returns that would have been expected based
20 on the model. In some of these past years, while
21 they've been below and unexpected, they've
22 actually been within the range of probabilities, a
23 maybe one-in-four chance in some cases that you
24 could have had a return that small given the
25 uncertainty of the data. So as I said in response
26 to -- to Mr. Leadem's questions, there has been
27 already a paradigm shift with respect to the Pre-
28 season Forecast Model, the recognition that
29 considering alternative scenarios of productivity
30 is now part of the forecast. It was last year and
31 I expect it will be when I see the forecast on the
32 4th of February, which will be when this is
33 reviewed for 2011.

34 Q Do I have it right then is saying that in your
35 view as a scientist the Pre-season Forecast Model
36 was inaccurate enough that it justified a paradigm
37 shift and that that paradigm shift is far beyond
38 tweaking -- it's categorically beyond tweaking a
39 model and it has now started?

40 A Yeah, I mean it's not sort of in an implementation
41 sense a hard thing to do. You know, it's not like
42 there is a whole new set of equations and
43 statistics and computers and all that stuff
44 involved. It's just thinking about where the
45 sources of uncertainty are and admitting that
46 maybe not all of the data in the data set are
47 relevant to the year you're trying to forecast.

1 Maybe it's the most recent data that's most
2 relevant to the current situation. So that's the
3 nature -- so I wouldn't call it tweaking for sure.
4 But I don't know if it's throwing out all the
5 concepts in starting from scratch, I guess is the
6 way I would respond.

7 Q And because we're here, you've -- you've used some
8 great metaphors like the hockey team metaphor Mr.
9 Leadem said he wished to discuss with you rather
10 than cross-examine. And I'd like to continue on
11 that way. For the -- for the purpose of Mr.
12 Commissioner, who has to provide recommendations,
13 we're now looking at a transitional period, a new
14 paradigm. From your perspective as a scientist,
15 is it best to leave that paradigm to sort itself
16 out? Or is there some recommendation the
17 Commissioner could make that would either help
18 that paradigm shift to happen or would help to
19 assess how that paradigm shift is working over the
20 next few years?

21 A So are we talking about the model now or are we
22 talking about some other kind of paradigm? I'm
23 just not sure --

24 Q The -- the shift to a new forecasting model that
25 you've described.

26 A I think that it's already happening. Perhaps some
27 encouragement to continue would be beneficial.
28 But to me, I think it's -- I don't see it -- us
29 going back. It seems kind of like that's where we
30 are. It took a little bit to get there but it has
31 some strong support from people like Randall
32 Peterman, who's intimately involved with
33 forecasting. I think there's a clear
34 understanding that we have to be admitting the
35 possibility that, you know, take into account of
36 what you've seen in the most recent situation in
37 terms of what to expect in the -- in the near
38 term. And so I think -- I think the decision's
39 been made so I'm not sure that there is a need for
40 something but it certainly wouldn't hurt to
41 encourage continued, you know, development in
42 reinforcing the -- the path, if there is an
43 agreement that this is the correct path.

44 Q Thank you. Now, this morning you testified about
45 the pre-1985 Forecasting and Management System --

46 A Mm-hmm.

47 Q -- IPSFC. And you had observed yourself and --

1 and I wish I'd had your testimony because I spent
2 a long time with a calculator last night.

3 A Oh, I should have -- I have slides --

4 Q That's all right.

5 A -- I could have shared with you.

6 Q But I was grateful to know that I had done it
7 correctly. Your observation was that prior to
8 1985, where there was inaccurate forecasting, it
9 almost always was that the forecast was
10 conservative and had underestimated the --

11 A Yes, that's correct.

12 Q -- post-season return?

13 A That's correct.

14 Q You then took the extra step and spoke to Mr.
15 Woodey and said, you know, tell me up front, was
16 there an element of judgment and conservative
17 forecasting involved here? And he was up front
18 and said, yes, there was. My question to you is,
19 how bad would it be to return to a conservative
20 forecasting model and management model if it had
21 the same results as the pre-1985 results? What --
22 what could be bad about that?

23 A What could be bad about that? I guess I would say
24 that it would depend upon the objectives. And
25 from our perspective -- from my perspective, I
26 guess I would say that the decision to be
27 precautionary or not, and so if using a
28 conservative forecast would be cast in the
29 precautionary, as an aspect of precautionary
30 behaviour, is a policy decision. And so the
31 person that's going to make that judgment is going
32 to have to be aware of the consequences of being
33 precautionary or not.

34 And so from the example of marine area
35 fisheries, for example, given that the current
36 allocation, all of the United States' allocation
37 clearly, about 80 percent of the commercial
38 allocation in Canada, is allocated to fisheries
39 that are a six-to-eight-day swim for a fish away
40 from the Fraser River. What I hear from my Fraser
41 Panel members in those areas is that they're
42 concerned about the timeliness of our in-season
43 assessments, in other words, the ability for us to
44 update the run in a positive or negative direction
45 relative to where those fish would ideally like to
46 be caught, if we're going to catch them where the
47 areas are licensed to fish.

1 So one of the consequences, and I'm not going
2 to say it's positive or negative of starting with
3 a low forecast, would be in those years where the
4 run is larger, you might not detect that in a
5 timely way, which might result in folks who are
6 trying to catch those fish sooner rather than
7 later not having access to those fish. I'm not
8 saying that's a negative thing.

9 On the flipside, you could say conservation
10 is the highest priority. Being conservative might
11 cause you to, more often and otherwise, meet those
12 conservation objectives. But there is clearly
13 that trade-off and that is why I would leave that
14 decision to a policymaker because of the value
15 judgments associated with once you make that
16 choice, there are consequences that influence
17 folks that have interest in these fish.

18 Q But as a scientist, biologically or ecologically
19 to the sockeye, and just leaving aside the over-
20 escapement theory for now, because I know we'll --
21 there will be lots of discussion about that, a
22 forecasting and management model that tends to
23 underestimate is not harmful; is that correct/

24 A To the fish?

25 Q To the fish.

26 A No.

27 Q Okay. You also testified this morning that -- it
28 was actually in answer to Mr. Leadem that part of
29 that reason for the early and conservative
30 reporting was the regulatory structure?

31 A That's correct.

32 Q So they had to come up with estimates very early
33 in the year. I believe you may have said as early
34 as January.

35 A I don't remember exactly when the forecasts were
36 released but the context is that the regulations
37 -- and you can go back to any of the IPSFC end
38 reports -- I'm sure you have some -- were
39 actually, rather than no person shall fish
40 anywhere between these dates, they were actually
41 specifically specifying dates when the fishery was
42 open. And that -- those schedules were released
43 in January or February and there was no ability to
44 change those except by extraordinary meeting.

45 Q And you also just mentioned in answer to me that
46 there has been a concern expressed about
47 timeliness of adjustments with early in-season

1 data. I'm going to go back to my question about
2 what would be wrong with going back to the pre-
3 1985 forecasting and management model? And I'm
4 going to change that a little bit and say, with
5 the addition of timeliness? Because you're no
6 longer constrained -- the system's no longer
7 constrained by the regulatory structure.

8 If you had a combination of conservative
9 forecasting and management that tended to
10 underestimate with timely, and I would assume with
11 some advances in technology and science more
12 detailed information available more frequently in
13 the season itself is there anything wrong with
14 that model, from your point of view, as a
15 biologist, with respect to the fish themselves?

16 A If you had accurate enough in-season assessments,
17 and this is a -- I'm sure a discussion that you're
18 going to have later on -- it could probably work
19 but it would have to be very, very accurate
20 assessments because the nature of the decision-
21 making now is somewhat different in relation to
22 the magnitude of the total return that needs to be
23 provided into the Fraser River for the combination
24 of escapement management adjustment and FSA needs.
25 So in the past, 70 to 85 to -- 75 percent of the
26 run was -- was harvested.

27 Now -- or -- and it was harvested almost
28 always in the marine areas with the exception of
29 commercial fisheries in the lower Fraser, now,
30 that's different. So it's both the consequences
31 of that decision and the need for accuracy in that
32 decision is at a much higher level now than where
33 it would have been in the years when the IPSFC
34 regulatory structure was in place? But if the
35 models were accurate enough, the fish could --
36 could come out okay in that kind of a regime but
37 require a very high premium on the accuracy.

38 Q I'm going to suggest to you that the current pre-
39 season forecast model is of no use to anybody
40 involved in the fishery trying to make decisions
41 in the early part of the year. Would it have done
42 -- specifically 2009, would it have done any
43 fisher, commercial, recreational, First Nations,
44 First Nations economic or FSC any good to rely on
45 the 2009 pre-season forecast?

46 A Maybe I'll answer it in a different way and you
47 can come back at me if I haven't answered your

1 question. The pre-season forecast had minimal
2 impacts on the decisions that were made early on
3 in the -- in the fishery season of 2009 but there
4 were some impacts. And it may relate to the way
5 that that forecast is used. So for example, we
6 compare on those little plots that we showed
7 yesterday, which compare the run to the smooth
8 normal curves, how the run is tracking. And so
9 those -- there were some fisheries that would have
10 initially been on a scenario plan for earlier on
11 that would have been opened if the in-season data
12 showed -- based on the pre-season forecast -- if
13 the in-season data was consistent with the
14 forecast. So in other words, the fact that the
15 forecast was used as a reference and the in-season
16 data was inconsistent was used to decide that
17 those fisheries should not occur. So I think
18 that's probably not widely understood but that's
19 the way those early decisions are made. In other
20 words, if it's not tracking close to the forecast,
21 you do something different. In this case, it was
22 not tracking close to the forecast. We did not
23 open fisheries, okay? Clearly.

24 The other area that the pre-season forecasts
25 are used, and it's not really the number but the
26 distribution, and this is going to get into
27 perhaps too much technical detail but I'll try to
28 describe it as plainly as I can. We used the pre-
29 season forecast as priors in our models. And what
30 those do is affect the bounds of the early in-
31 season estimates. When we only have a few days of
32 data, like three or four days of test-fishing
33 data, there -- what we're doing when we're doing
34 in-season assessments is we're saying, which
35 normal curve with a run size and timing
36 possibility best fits this four days of data that
37 we have, right? So you can guess with only four
38 days of data the possibilities are all over the
39 map, right, and there could be -- because there's
40 a bunch of lines you can draw through there that
41 are equally consistent. By having the pre-season
42 prior, it constrains those values. It improves --
43 you know, so for example, there's no way that
44 early in the -- in the -- early in the season, you
45 could have, conceivably, a model that would say,
46 you know, this data are equally consistent with a
47 30 million run and a peak two days from now. Or

1 they could also be consistent with a two -- you
2 know, a 200,000 run and a peak that's earlier.
3 The pre-season forecast rejects those. By using
4 the pre-season forecast in the prior year says,
5 no, there's no way you're going to get that.
6 That's outside your forecast distribution. So
7 there's a technical way that the forecast is used.

8 So in a general sense, I understand where
9 you're -- where you're coming from. But in
10 reality, while they're not used in a sense of
11 triggering those really big fisheries, they are
12 part of our assessments and they're part of the
13 decisions early on about, do we get started. And
14 that, do you get started part is a pretty
15 important one because it kind of sets a tone, you
16 know. If you start going, people start to have
17 expectations that it's not going to stop so there
18 is a definite use of them. And so I wouldn't --
19 I'm not ready to throw those forecasts away. I
20 think there's some real value to them. But it's
21 admittedly perhaps subtle.

22 Q Quite subtle. But your explanation was -- was
23 helpful. Commission counsel asked the earlier
24 panel, the Monday panel, in response to some of
25 their questions, why do the pre-season at all?

26 A Mm-hmm.

27 Q You've -- I think you've answered part of that
28 quite well but you've used the words "subtle" and
29 "marginal". Perhaps I'll ask you then, what would
30 happen to your science -- what would you have to
31 do to your science and what would happen to some
32 of the management decisions or what would you have
33 to do to those decisions if there was no pre-
34 season forecast?

35 A We would -- we would do a forecast on our own. So
36 I mean I think part of the issue here is related
37 to the public perception of the inaccuracies in
38 the forecast and how people react to it. I think
39 that my view is that we need the pre-season
40 forecast for the reasons I described. On a
41 technical basis, they're fundamental to improving
42 our assessments. The alternative that we could
43 use is just simply judgment. So we could -- in
44 the -- in the case of that subtly about run size
45 assessment, we could just say, well, those aren't
46 realistic and that's actually not that far off
47 from what we've done, if we go back in time prior

1 to some of our new methods. But that's not very
2 transparent. So I think it's better to use the
3 forecast. But I think what we have to do is
4 improve our communication about it. Make it clear
5 to folks that don't understand that we don't open
6 up large-scale fisheries based on the pre-season
7 forecast. Make it clear that it isn't a number,
8 it's a range, it's an uncertainty. And I think
9 that will go a long way. I think we're, you know,
10 our own worst enemies in this regard. We tend to
11 give folks things that they can understand most
12 easily and we give them a set of single numbers.
13 And then when it comes out different, they go, why
14 did you tell us that? You know, and in fact, the
15 reality is, in most of these years, 2009 is
16 actually an exceptional one so it's not really
17 appropriate for 2009. It's within the range.
18 It's within the one-in-four chance of -- of what's
19 happened. It's just happened to have been
20 directional because we had this flaw in our
21 forecasting that didn't account for this declining
22 productivity. So I'm not a fan, and you can tell
23 I'm not from the way I've been talking, of
24 throwing these out. I think we just have to do a
25 better job of explaining. I mean, again, you
26 probably know better than I do because you work
27 with Area E, what the fishermen's take on this.
28 And I don't know whether there's a general
29 consensus among all fishermen that we don't need -
30 - we don't want to ever see any Fraser sockeye
31 forecasts. I'm not sure what that consensus is
32 but from my perspective I think there is some
33 value.

34 Q Thank you. Your point about judgment -- and
35 yesterday you used the word "intuition" as well
36 for some of these more senior or scientists
37 associated with PSC. And it's a fascinating point
38 you've just made that the former system used
39 judgment and was quite successful but there's a
40 difficulty with transparency.

41 A Mm-hmm.

42 Q This is a bit tangential and you may find it a
43 little too esoteric to answer and if so it's not
44 necessary for you to answer. But if you culled
45 judgment and intuition, if you were able to
46 articulate those inputs as the precautionary
47 principle, do you think it would be more congruent

1 with the current models, approaches and policies?
2 In other words, is there a way to reinsert
3 judgment and intuition, which isn't, frankly --
4 it's not casting bones -- these are scientists.

5 A Mm-hmm.

6 Q But it's scientifically-informed judgment and
7 intuition. Is there a way --

8 A So --

9 Q -- to re-infuse that into the current approach?

10 A Yeah, and just on the first part of your question
11 in terms of whether you need to leverage some
12 precautionary principle or something against that,
13 I don't think that's really needed, although it
14 might be helpful for some folks and not others. I
15 think there is an issue about trying to be -- a
16 debate, I'll say, about trying to be too
17 scientifically pure, for lack of a better word,
18 you know, hanging onto the statistics and -- and
19 maybe we've moved a little bit that way in the
20 scientific community more towards doing that, you
21 know, hanging onto the -- it's kind of a safe
22 place sometimes for -- for scientists to sort of
23 say, well, you know, the statistics could go this
24 way, it could go that way.

25 And so it's not outside of human nature
26 either. So -- but no, I think that as long as one
27 (a) describes what the judgment is, and (b)
28 describes what the rationale for that judgment is,
29 then it is transparent. It is not like anyone is
30 hiding anything. You're just saying, this is what
31 I believe and this is why and -- and I think the
32 only thing I would say is that -- and as a
33 scientist, is that it's important to -- when you
34 provide that judgment to provide both why you
35 believe it's correct but also how you believe it
36 could be wrong. And unfortunately, the nature of
37 science, particularly on the publication side of
38 things, is it tends to select -- and I'm not being
39 critical of folks that write papers or anything --
40 for folks that don't actually show all of the
41 weaknesses because if they do then their paper
42 will get rejected. So to say it in another way,
43 the scientist is in the best position to expose
44 and understand his weaknesses. And so if he's
45 going to provide judgment, he should provide it in
46 a way that does expose those weaknesses. In other
47 words, it isn't about making sure that your

- 1 judgment is followed; it's making sure that your
2 judgment is understood.
- 3 Q I'm just going to shift gears a little bit to talk
4 about relationships, overlaps perhaps, and the
5 transition from PSC to DFO science. I know you
6 joined PSC in 1992; is that correct?
- 7 A That's correct.
- 8 Q That shift had started in 1985. Do you know of
9 any scientific reason why science could not have
10 stayed at the PSC?
- 11 A No, no scientific reason. It's still at the PSC.
12 The duties have been split.
- 13 Q Right.
- 14 A We do different things now than we did.
- 15 Q Right. Does PSC, your staff right now, currently
16 have the capacity to do all of the science that's
17 being done by DFO?
- 18 A No, not in the broadest sense. I mean we don't
19 have a molecular genetics lab. We don't -- I mean
20 the breadth of DFO science goes way beyond salmon.
21 In terms of the duties that the IPSFC did and used
22 to do that the PSC is not currently doing, we
23 would certainly need more personnel and we'd
24 probably need certain specific personnel, you
25 know, the expertise with respect to upstream
26 programs, for example, and program delivery is no
27 -- you know, we don't really have those folks in
28 our shop right now. But you know, we could -- we
29 would need -- we would need specific personnel and
30 different skill sets than we currently have
31 because obviously we don't have those folks
32 because those folks actually physically and, in
33 some cases, individuals actually now work for DFO.
- 34 Q And that was one of my questions. You've
35 confirmed that -- my understanding that the
36 transition from PSC to DFO took about 75 percent
37 of the scientific staff?
- 38 A Well, I believe that number sounds correct but it
39 was before my time. But it sounds about right.
- 40 Q And it wasn't just staff positions but physically
41 took some of the scientists?
- 42 A Yes, absolutely.
- 43 Q Now --
- 44 A Yes.
- 45 Q And obviously, that was 25 years ago so there
46 would have been turnover and attrition anyway.
- 47 A Sure.

1 Q If going forward the specific salmon-related
2 science duties were transferred back to PSC, do I
3 understand you correctly that you would need some
4 increase in scientific expertise in specific areas
5 but you would also need a return to probably
6 original capacity or a concomitant increase in
7 capacity?

8 A Yes.

9 Q Is that right?

10 A Yes.

11 Q As far as fisheries management tasks, if the PSC
12 were to be tasked with fisheries management beyond
13 the panel areas, does it have the expertise to do
14 that?

15 A No. It does in some aspects but not in others.
16 There are -- the membership on the Fraser River
17 Panel is -- includes the broad representation of
18 the commercial sector for the non-panel area
19 waters, as I think was discussed under cross-
20 examination last time I was here and I think it
21 might have been Ms. Gaertner that raised this
22 question. The representation on the Aboriginal
23 side is -- how do I say this in a way without
24 discrediting the folks that are there? It's not
25 sufficient because there's only two folks and they
26 can't speak -- not only can they not speak and
27 this is what they've told me so maybe for their --
28 initially for their own groups but they certainly
29 can't speak for the groups that aren't there.

30 So to contrast that, for example, with the
31 representation on the United States side on the
32 tribal side they are empowered to make decisions
33 the appropriate decisions that they have to make
34 with regard to the tribal fisheries in the United
35 States, which do occur. That -- that
36 representation does not exist current -- in the
37 current structure of the Fraser River Panel. And
38 so if what you mean, and I don't know that you do,
39 so maybe I've drawn a conclusion that's incorrect,
40 by non-panel waters, the Fraser River Watershed
41 and, in fact, technically that is actually part of
42 panel waters, in terms of the definition. But if
43 you mean that the Fraser Panel would have
44 jurisdiction over that part, there isn't adequate
45 representation or structure in place right now to
46 -- to make those decisions in the current
47 structure of the Fraser River Panel.

1 Q No, that's exactly what I'm asking and you've --
2 you've said that actually on the U.S. side, there
3 is that capacity. That suggests to me that if
4 there was a recommendation for a single authority
5 over Fraser River sockeye that it would be
6 possible for the Canadian side to -- to gain that
7 capacity and expertise, if needed. If it -- if it
8 was assigned to the PSC, it would be doable and
9 you already have a model in the United States
10 side. Is that fair to say?

11 A Theoretically, I think it's a fair statement.
12 Pragmatically, it would be a long haul.

13 Q Long haul in terms of years, do you think, or
14 decades?

15 A Well, I guess if someone can ask me when -- or
16 answer for me when the treaties will be settled, I
17 would probably be able to provide a context for
18 that comment. And I don't mean that to be
19 flippant but the reason that the United States can
20 do this is that their allocations between, first,
21 international, between U.S. and Canada, but second
22 between Aboriginal groups and non-Aboriginal
23 groups have long since been solved. So starting
24 in 1976, I think, or '79. Perhaps one of you will
25 know the date better than me, the **Boldt** decision.
26 So they've had, you know, 30 years of kind of
27 evolution, if you like, for the process to mature
28 to the point that it's gotten right now. And I
29 would respectfully suggest that Canada, not for
30 better or for worse, is probably about, you know,
31 I don't know, you tell me, 20 years from that
32 point? I hope it's less but there's some process
33 that's under negotiation. In the case of the
34 U.S., as you know, if you don't know, a judge made
35 a decision so one day people woke up and 50
36 percent of the catch was allocated to the tribal
37 groups, the so-called Treaty Indians, as they're
38 referred to in the United States, and 50 percent
39 to non-Indians.

40 In Canada, clearly, there's a different
41 approach. It's a negotiation. There's bilateral
42 negotiations. We have how many treaties now, one
43 or two, so far in the Fraser? So the dynamic of
44 that is quite different in Canada and I think --
45 so again, theoretically, I agree with you but
46 pragmatically to ask the Fraser Panel to be
47 involved with that during this transition phase, I

- 1 think -- I don't know -- it would be pretty
2 challenging for them, I think.
- 3 Q I'm going to switch gears over to management
4 adjustment. It's a phrase that I -- I know I'm
5 not the only counsel really struggling to
6 understand. When you arrived at the Pacific
7 Salmon Commission in 1992, was management
8 adjustment already part of the forecasting on the
9 PSC side?
- 10 A So management adjustments aren't part of the pre-
11 season forecast in any way; they're part of the
12 in-season adjustments that we make to escapement
13 targets, okay? So there are some pre-season
14 adjustments that are made but they're not part of
15 the abundance forecast just so that we're not
16 speaking at cross purposes here. The history of
17 the management adjustments is documented, I think,
18 pretty well in the PPR. But I believe it was 1995
19 when the historical average difference was started
20 to be implemented in some of the pre-season
21 planning. So in 1992, I don't believe we had yet
22 had any management adjustments in play.
- 23 Q I have had a look at that PPR.
- 24 MS. SRIVASTAVA: And Mr. Lunn, it may be helpful to
25 pull up that PPR, to page 49. Sorry, page 51.
26 Just a couple pages ahead. And paragraph 131.
- 27 Q And this may be what you're referring to, Mr.
28 Lapointe, the management adjustment models
29 currently used are a response to recommendations
30 from public reviews in '92 and '94. So -- so that
31 means arising from the Pierce Larkin reports.
- 32 A Yeah, and the John Fraser one. Yeah, exactly.
- 33 Q But you had also said in your earlier testimony in
34 the fall that the responsibility for management
35 adjustments got added into the treaty in 1999,
36 which --
- 37 A Yeah, so --
- 38 Q Sorry, go ahead.
- 39 A -- there -- the treaty -- the initial treaty
40 signed in 1985 with respect to the Fraser, chapter
41 4, specified a sharing arrangement that ended in
42 1992, I believe. I'll have to -- then during the
43 period from 1993 to 1999, there were sort of
44 ongoing negotiations and a series of some years.
45 If you look in the Fraser Panel report, you'll see
46 there was a one-year agreement. Some years there
47 will be -- in the achievement of objections, it

1 will be one sentence -- achievement of objectives,
2 sorry, and it'll say there was no agreement in
3 that year and, therefore, we can't evaluate
4 objectives. So it wasn't until 1999 that there
5 was a renewed chapter 4 as part of a treaty. So
6 that's maybe the disconnect between the years.
7 And so in the language of the 1999 treaty, I
8 believe the -- the management adjustment -- I
9 don't even know if the word management adjustment
10 is actually in there. Something like extra
11 factors to account for natural causes and stock
12 assessment factors that may be added to the
13 escapement as -- I think it might even -- as
14 agreed to by the parties. I don't remember the
15 exact language but you're right, it's '99 that the
16 -- that the term appears. But the reason for the
17 lag is that we didn't have it -- we operated for
18 four or five years without actually a treaty in
19 the sense of, you know, a renewed agreement. It
20 was one -- sorry, it was one year or no deals for
21 a period of time there.

22 Q And I'm still trying to drill down to how that
23 labour in coming up with the management adjustment
24 figures in pre-season forecasting is divided
25 between PSC and DFO.

26 MS. SRIVASTAVA: And if we can move ahead, Mr. Lunn, to
27 page 108 of the PPR, Table 2, which -- well, if we
28 just look at pre-season, which is on this page.

29 Q I may not be seeing very well but I don't see that
30 anyone is responsible for coming up with either
31 the -- the data to come up with the M.A. or
32 determining the M.A. in the pre-season.

33 A So I think it might be under Item 3, where it
34 says:

35
36 Pre-season assessment and forecast of in-
37 river environmental migration conditions.
38

39 So there's the DFO responsibility. So the
40 division of responsibility in a general sense is
41 that DFO does the environmental side, so the river
42 condition side. PSC uses that environmental data
43 in models, which we developed with DFO. I mean
44 there are a few publications on these out now.
45 But we implement the models and take the forecasts
46 of the conditions and come up with the management
47 adjustment number, if you like. So Item 3 refers

- 1 to the DFO side and Item 4 refers to the PSC
2 responsibility. On the -- on the first two
3 columns I'm referring to here.
- 4 Q Yes, I do see that. Item 3 for DFO. So the --
5 the actual data, the inputs for the management
6 adjustment figure would be under that --
- 7 A Right.
- 8 Q -- section for DFO's responsibility?
- 9 A Right.
- 10 Q And then PSC formulates the recommendations. That
11 is the actual number for pre-season --
- 12 A That's correct.
- 13 Q -- to the FRP?
- 14 A That's correct.
- 15 Q Okay. And you -- I think you answered the
16 question this morning. You said Fraser River
17 sockeye management is the only fishery that you
18 know of that actually includes this management
19 adjustment; is that correct?
- 20 A It's the only one that I am aware of. Now, I have
21 to admit that I'm not enveloped in the literature
22 to the extent I was when I was a graduate student
23 so there could be something there. But I'm not
24 aware of another -- another system -- another
25 management system that has this kind of a
26 mechanism.
- 27 Q And yesterday, you used the phrase, "mission
28 impossible" a couple of times when talking about
29 management adjustment. Is management adjustment,
30 the term, a euphemism for margin of error?
- 31 A No, I wouldn't characterize it that way, although
32 that's part of what the management adjustment is,
33 as I testified yesterday. All the components
34 associated with deviations are part of management
35 errors but there's also a significant en route
36 loss component that I was referring to. But the
37 term "mission impossible" did not refer to the
38 M.A. *per se*. It referred specifically to the case
39 where the spawning escapement target is the entire
40 run and there could be an en route loss or some
41 source of the management adjustment to come, which
42 means that there's almost no way to get that
43 target because there's going to be fewer fish that
44 will arrive based on the fact that some will be
45 lost from the combination of all of those factors,
46 primarily en route loss. So the reason I used
47 that was just to say that sometimes even if there

1 are no fisheries, it can be hard to achieve these
2 spawning escapement targets because there may be
3 some evaluation of these things in the future.
4 And if there is, there has to be a context to that
5 evaluation in terms of why because presumably one
6 reason to ask whether there's a deviation is to
7 determine what you could do differently to
8 decrease the deviation.

9 MS. SRIVASTAVA: To go back, Mr. Lunn, perhaps we could
10 go back to page 49 of this same report. And at
11 paragraph 123 and 124, there's a general
12 description of management adjustments.

13 Q And it appears to me that historically, the
14 management adjustment used to be called the
15 environmental adjustment; is that right?

16 A Yeah, I believe that's true.

17 Q And that when it was called the environmental
18 adjustment, the two things it took into account
19 were high flow and high water flow events and high
20 water temperatures; is that right?

21 A Yeah, and it still includes those but there may
22 have been a change in the way we worded it --
23 worded the term to explicitly recognize the fact
24 that there were aspects of the management
25 adjustment that were related to assessment errors.
26 So I think that's the reason that the words
27 changed. It just -- some of it's related to
28 environment, some significant part of it but
29 clearly there's an assessment error component,
30 which I talked about yesterday.

31 Q That's right. Basically, bias at the various
32 points of measurement.

33 A That's right, that's right.

34 Q And I believe you also testified, and it's
35 probably covered off in his PPR, that there are
36 other components that have, over time, been added
37 to the management assessment. Am I right -- and
38 let me know if I've missed anything -- that those
39 components include parasites and disease, fishing-
40 induced mortality above Mission, possible non-
41 reported catch and unexpectedly early entries,
42 especially in the late run. Is there anything
43 else?

44 A So -- so the way I would characterize those
45 phrases would be sources or causal mechanisms that
46 could cause the estimates to -- admission and
47 upstream to be different from each other. They're

1 not necessarily explicitly incorporated in the
2 modelling sense. They're just recognized as
3 causal factors potentially.

4 Q As a layperson, when I look at all of those
5 sources, they fall into some categories. One is
6 statistical bias or assessment bias.

7 A Mm-hmm.

8 Q The second category is environmental mechanisms.
9 I would include parasites, disease and the water
10 flow and water temperature issues. And the third
11 set of causal mechanisms would be fishing-induced
12 mortality. Do you think of all of those -- of all
13 of those causal mechanisms as equally going into
14 the mix or are you -- when you think of management
15 assessment do you, yourself, break down those
16 components into those that are more influential
17 than others? Can you rank them, in other words?

18 A So I agree with the kind of categorical
19 characterization in the sense that they all are
20 contributing causal mechanisms and I agree with
21 the parasite thing and so forth as potential
22 contributors. We've had quite a bit of debate,
23 and this relates to some of the framework issues
24 that we're discussing right now about trying to
25 partition out those things. Like it's a very good
26 insight on your part and it's one that has come up
27 repeatedly in the -- in the Fraser Technical
28 Committee about, gee, wouldn't we like to be able
29 to partition these things? So a couple good
30 reasons to partition them. One of them, primarily
31 is that if we could partition the stock assessment
32 errors, for example, from the others and we could
33 improve our stock -- you know, decrease our
34 errors, then we could reduce the management
35 adjustment by just improving what we do. Right?
36 So a very logical kind of approach. The
37 difficulty becomes in having the independent
38 estimates of the components that you mentioned,
39 the stock assessment errors, the fishing-induced
40 mortality, the -- help me out here. The other one
41 was environmental factors.

42 Q All of the environmental factors, yeah.

43 A Yeah. Having the data to help us intelligently
44 partition those out is the challenge, okay? So
45 it's not that we don't recognize the value of
46 partitioning it, it's -- it's that we haven't been
47 able to figure out a way in the -- in the data

1 that we use and just so it's obvious to everyone -
2 - the data that we have in most years is an
3 estimate at one spot and an estimate at another
4 spot. And so it's hard -- you know, we do have
5 some years where we have tagging and stuff and can
6 draw an inference but we don't have much
7 independent information of the things we're using
8 to estimate the difference to help us partition
9 it. And so that's the technical challenge that's
10 been kind of thrown out way, which we have not yet
11 solved.

12 Q And can that technical challenge, from your
13 perspective, be answered by an increase in
14 resources whether that's just an increase in
15 resources from the outside or a reallocation of
16 resources perhaps from the pre-season forecasting
17 efforts into gathering this data? Or is the
18 science just not there on how to gather it?

19 A Theoretically, I think it could be addressed but
20 it would require some fairly large-scale work in-
21 river expanded relative to some of the work that's
22 ongoing. And critical in that work is kind of the
23 understanding and sort of -- I don't know if buy-
24 in is the right word -- just so some concerns I
25 would have, okay? So one solution might be
26 suggested and perhaps we'll talk about this next
27 week when Brian's here is, let's do a bunch of
28 tagging, for example, like the radio tagging
29 that's been done in the past. And that is the
30 method that could be used. But the scientific
31 consideration has to be to make sure, like any
32 piece of science, that what you're doing is not
33 kind of confounding your interpretation of the
34 results. And so the big concern that has been
35 expressed by some, not all, about radio tagging is
36 whether or not there is an incremental effect of
37 the radio tag. So is it providing an independent
38 assessment or is it providing something else? So
39 there's lots of sort of scientific uncertainties
40 that need to be carefully considered. So what I'm
41 saying is I think theoretically it can be done but
42 I'm not sure that if I -- if you ask me to give me
43 -- give you an experimental design and gave me
44 three months that I could come up with a design
45 that everyone would agree, given some of these
46 tough scientific issues, tagging being one of
47 them, would be -- provide a defensible set of

1 answers for you. So you know, it's sort of a yes
2 and no to that question, I think.

3 MS. SRIVASTAVA: Thank you. Mr. Commissioner, I note
4 that it's coming up to 12:30. I'm not at a very
5 natural breakpoint but I do have quite a bit more
6 just in this section so perhaps we can start again
7 after 2:00?

8 THE COMMISSIONER: Thank you.

9 THE REGISTRAR: The hearing is now adjourned until 2:00
10 p.m.

11
12 (PROCEEDINGS ADJOURNED FOR NOON RECESS)
13 (PROCEEDINGS RECONVENED)

14
15 THE REGISTRAR: The hearing is now resumed.

16 MS. SRIVASTAVA: Mr. Commissioner, Anila Srivastava for
17 the B.C. Fisheries Survival Coalition, Southern
18 Area E Gillnetters Association.

19
20 CROSS-EXAMINATION BY MS. SRIVASTAVA, continuing:

21
22 Q Mr. Lapointe, we stopped rather in the middle of
23 management adjustments, so I'm just going to back
24 up a little and make sure that we have everything
25 covered that I wanted to so far.

26 We had been talking about the various causal
27 mechanisms that are all aggregated into the
28 management adjustment.

29 A Yeah, I recall.

30 Q And you had mentioned that there is a current
31 debate about doing some partitioning and you
32 talked about the difficulty in having independent
33 assessments. We did talk briefly about whether it
34 was a matter of resources to put into data
35 gathering or whether it's the actual science of
36 how to gather data that's needed.

37 So my next question, then, is have you put
38 your mind, or has either of the organizations, PSC
39 or DFO, to your knowledge, put their mind to
40 having a look at each causal mechanism and saying,
41 "This is a causal mechanism we can analyze, even
42 if we can't analyze the others"?

43 A I think that most components could be addressed
44 with some form of analysis. There certainly are
45 perhaps some differences in terms of, you know,
46 roles and responsibilities of who might do some of
47 those analyses relative to who conducts the

1 various programs, but in terms of any that are
2 just sort of impossible to address technically, I
3 wouldn't say that there are any that are
4 impossible. So I think they all, you know, could
5 be subject to some work that would shed some light
6 on them.

7 Q On the whole, do you think it would be a good idea
8 to do that?

9 A Yes, although we'll probably get into this
10 discussion next week. It would depend upon the
11 objectives of that exercise. I wouldn't -- and
12 the reason I thought about this next week is I
13 know Brian Riddell is going to be here and one of
14 the programs that he championed was this "Count on
15 Salmon" program which is actually designed to
16 address some of these issues.

17 The caution I would provide is that there is
18 some work to be done on the science, but the
19 science is only part of the issue that relates to
20 this problem. In other words, the science is
21 being done in a fairly significant political
22 environment, as I'm sure you're aware, which puts
23 a very high onus on the science because it's being
24 conducted in an environment of some controversy.
25 So I guess the take-home message I would say is
26 that I would not suggest that the science, by
27 itself, will solve the political controversy that
28 surrounds some of this issue. Some of that
29 politics is outside the science.

30 So there's only so much science can bring to
31 bear on this. It can bring us understanding, and
32 that's great. But there still may be -- there
33 will always be some uncertainties, as we all know,
34 about science and so it has limited capacity to
35 solve some of these issues surrounding this
36 particular question.

37 Q And you're quite acute, Mr. Lapointe, at
38 clarifying for us when something is a science
39 issue and when it's more of a policy issue, and
40 perhaps I should have clarified for you. I'm
41 asking you, as a scientist does it not stick in
42 your craw, to use a cliché, to have a figure going
43 into the forecast, that then dictates a policy,
44 that can end up being as much as 50 percent of the
45 initial estimate?

46 So we looked briefly at management adjustment
47 figures. Sometimes it's as low as, say, 13

1 percent, but sometimes it is as high as 50.

2 A Mm-hmm.

3 Q As a scientist, would you not prefer to have a
4 better parsing out of those causal mechanisms?

5 A Yes, I would. I would prefer, as a scientist, to
6 have a better parsing out if I could.

7 Q And as a scientist who then has to make
8 recommendations that are turned into policy
9 decisions, would it not be more transparent to
10 have those causal mechanisms that are all going
11 into a hopper and may result in a 50 percent
12 management adjustment figure, would it not be more
13 transparent to have those separated out where they
14 can be?

15 A Again, transparency would be somewhat in the eyes
16 of the people viewing that, but I would agree that
17 it would be more transparent if we could be clear
18 about partitioning those different mechanisms.

19 Q I'm going to go back again to this question of can
20 we parse out the causal mechanisms not necessarily
21 by science as I asked you before, but if it's not
22 possible right now, whether because of science or
23 resources, to study each mechanism, can you assess
24 the mechanisms in terms of what is within human
25 control and what is not within human control?

26 A In terms of the list of the four mechanisms, so
27 biases admission, biases in upstream, en route
28 loss and catch estimation bias, three of the four
29 are clearly within human control. The fourth one
30 is within human control to the extent -- the
31 fourth one being en route loss, let's be clear.
32 The en route loss is the one that I'm suggesting
33 might have a bit of a nuance associated with it.

34 The en route loss could be mitigated to the
35 extent that there's any component of that en route
36 loss that is related to, say, an interaction
37 between fishing gear and the fish in a warm water
38 environment, so selective fishing methods, methods
39 that would have -- be used to lower that.

40 So all four of them have an element that is
41 some ability to control, but there's more elements
42 in the en route loss category that are out of our
43 control, like how warm the Fraser might happen to
44 be or whether there's diseases, parasites and so
45 forth.

46 Q Right. And that's consistent, I think, with a lay
47 person's understanding that the snow pack, snow

1 melt, high-water flow, high temperatures are
2 currently beyond control, but things like use of
3 fishing gear is. It's a human interaction with
4 the fish and therefore it can be controlled by
5 humans; is that fair to say?

6 A Yes, that's fair to say.

7 Q And you spoke yesterday about something that I'd
8 like you to talk a little bit more about. I
9 believe what you said - and correct me if I'm
10 wrong - yesterday was you're not concerned with
11 the intensity of in-river fishing itself. You are
12 concerned about gear fish interactions, especially
13 in warm water years, warm water temperature years.
14 Is that correct?

15 A I think the -- I'm not sure if I said the first
16 part of your preface. I think what I was trying
17 to say is that it's not the catch part of that
18 intensity that's of concern. If that's
19 measureable and there's a mortality and it's
20 quantified, then it's part of the equation and so
21 it's accounted for in the calculation.

22 It's the induced part, the second part that
23 you mentioned that I think is something that we
24 need to keep a watch on in terms of climate
25 change, and any interaction in the river, like I
26 said, that makes it harder for the fish is going
27 to be exacerbated under warm water conditions.

28 Q And can you illustrate for me -- I don't fish. I
29 grew up in Ontario. What kinds of interactions
30 with gear cause mortality short of just catching a
31 fish which causes mortality?

32 A So examples would be something that would be
33 referred to as "net dropout". So there are cases
34 where a fish will become entangled, say, in a net,
35 a gillnet or a set net and will escape and perhaps
36 be injured. Another good example is that we have
37 a fairly significant sport fishery in the Fraser
38 River that's set on a bag limit.

39 There are cases where there may be as many
40 fish released that are actually kept in that sport
41 fishery, and those fish that are released will
42 have been subject to some sort of length of fight
43 on the end of the rod and released, and they've
44 been -- they all have been hooked. Some will
45 break off and so forth. So those are kind of the
46 direct gear interactions.

47 The indirect ones come from observations

1 going back to the mid-'90s at the Qualark program.
2 The reason they'd been able to be made is that the
3 way we do acoustics observations has changed a bit
4 over the years, and our shore-based systems -- so
5 these are systems that look out from the shore out
6 into the river -- can detect things like how far
7 away from shore the fish are, whereas before, at
8 least at Mission, we were always looking down from
9 a boat. So you know where the boat was, but --
10 it's very obvious from those data going back to
11 Qualark when it first was in existence in the mid-
12 '90s, 1996, '98 -- '97, '98. Now, both at
13 Qualark, at Mission -- 'cause now at Mission we
14 also have an outward-looking system, and we're
15 going to go into this next week, Mr. Commissioner,
16 so I won't spend a lot of time on it.

17 It's very obvious that when there are
18 fisheries - and not pointing at any particular
19 fisheries - but when there are in-river fisheries,
20 the fish tend to move offshore. Again, the flows
21 offshore are more intense, so all else being
22 equal, if the fish is swimming up the middle of
23 the river, he's going to do a bit more work than
24 if he's swimming up the banks. Both of those,
25 both indirect and direct gear situations, you
26 know, are occurring, and again, may require more
27 -- may increase in concern just from the fact that
28 the river appears to be getting warmer. The
29 Fraser River appears to be getting warmer.

30 Q And I think you said yesterday that that
31 difficulty for the fish can also increase because
32 of the geography, so that once they get to the
33 Fraser Canyon, environmental effects such as high
34 flow and high -- water temperature are magnified
35 because of the geography.

36 A Yeah, I'm not sure if I spoke directly to that,
37 but I think in the example I provided about the
38 Early Stuart and the high flow, certainly there
39 are well-defined points of difficult passage,
40 Hell's Gate being the most renowned one. Bridge
41 River Rapids is another one, Siwash Rock. They
42 vary depending upon the water level. So some
43 parts of the river are more difficult in high
44 water, some are more difficult in low water, but
45 certainly, yes, the geography of the Fraser
46 creates difficulties for these fish.

47 Q Are you aware whether that geography has been

1 analyzed in terms of percentage of fish mortality?
2 My question is do we know if fish mortality from
3 the open ocean, once they enter the mouth of the
4 Fraser all the way to their spawning grounds, is
5 linear? So there's just a certain percent of fish
6 that keep dropping out. And I'm talking about
7 aside from human interaction, catch. Or does
8 mortality increase exponentially so that as they
9 get north of -- past Mission and up into the
10 Canyon, mortality increases at a much greater rate
11 than it did below?

12 A I actually don't know the answer to that. I think
13 there could be some information in some of the
14 radio-tagging studies where there would be
15 particular spots where there would be a higher
16 proportion than normal of radio tags not
17 proceeding beyond that spot. The one point that
18 comes to mind is an area above Bridge River Rapids
19 where I believe there's been sort of a
20 disproportionate number of radio tags in the five,
21 six, seven years that this radio-tagging program
22 has been done, have not been observed in receiver
23 stations upstream of that point.

24 But in terms of the shape of that mortality
25 relationship, you know, is it linear or
26 exponential, I don't know the answer to that.

27 Q If you had an answer to that question, would that
28 help you to recommend policies to reduce
29 additional mortality in the form of gear/fish
30 interactions? For example, if you knew that a
31 particular area of the river had a high
32 environmental mortality, high geographical
33 mortality, you could say specifically this area
34 should not have as much or as intense in-river
35 fishery?

36 A It would be important to take into consideration
37 the geographic elements in trying to determine
38 whatever the response would be to mitigating that
39 impact so, yes, it would be important to take into
40 account that geography. It's going to be probably
41 a greater issue at some locations than others.
42 There's some spots where fish rest, some spots
43 where fish are moving. So, sure, knowing that
44 would be helpful.

45 Q I do just have a couple of questions about
46 difference between estimates and a couple of
47 questions about test fisheries. I won't be too

1 much longer.

2 One of my questions about DBE's, that I
3 understand from what you said yesterday, that in
4 some years you add the DBE back into the total
5 fish catch at the end of the year and sometimes
6 you don't; is that right?

7 A That's correct.

8 Q How do you draw that distinction?

9 A Maybe I should have gone through the last couple
10 of slides of my visuals there, but it's a
11 framework that we're under discussion right now.
12 The concept is that if we believe that we can rule
13 out, for example, a lower river estimation bias,
14 say, at Mission -- so, in other words, if Mission
15 is over-estimating and we have evidence that it's
16 over-estimating, then clearly those fish are in
17 error in the estimate, and those shouldn't be
18 added to the total run, okay?

19 But if we think that the Mission estimate is
20 firm and we think that the upstream estimates are
21 firm and the catch estimates are good, then
22 clearly there's a number there that represents
23 some real loss.

24 Now, the reality is, as my testimony
25 explained yesterday, is that we don't know how
26 perfect each of those are, so we're forced to make
27 a judgment that's kind of like an on/off switch,
28 you know? Either you put it all in, or you don't
29 include it at all. That's the imperfection which
30 is part of the motivation for me to attach a
31 little bit more discipline to this decision
32 process 'cause maybe it's not an on/off switch and
33 some of your questioning is along the lines of,
34 well, is there a way to say how much of that is
35 due to something that's really a loss. The
36 partitioning issue that you mentioned is part of
37 our discussion, as you said.

38 Q That makes me ask, then, whether there isn't a
39 risk of tautological reasoning in your -- in what
40 you do with the DBE's at the end of this season,
41 and that is that, if I understand correctly, there
42 should be some relationship -- or one at least
43 should scrutinize the relationship between your
44 pre-season and particularly the in-season
45 management adjustment figures and the post-season
46 DBE's, because the DBE tells you what actually
47 happened. The management adjustment is what you

1 thought was happening during the season. Is that
2 -- I know that's sort of shorthand, but is that
3 fair to say?

4 A Yeah, that's a fair characterization.

5 Q That management adjustment includes in it a notion
6 that there is some assessment bias.

7 A Yes.

8 Q But then if you, at the end of that year, say,
9 well, all it was, was assessment bias so we're not
10 going to correct for that, is there not a risk
11 that you're not doing as much as you could to
12 self-correct the management adjustment figures
13 which --

14 A I think I --

15 Q -- are a real bear, frankly, for you guys to work
16 with?

17 A Well, I think I understand where you're coming
18 from. Maybe there's a little bit of a
19 misunderstanding, but there probably is an element
20 that perhaps we can discuss further.

21 So because we use the same words, DBE, for
22 the part of it that's related to what gets added
23 to the total run, which sometimes gets added and
24 sometimes does not - so that's one use of this DBE
25 - there's some confusion about whether or not,
26 then, we assume that the management adjustment
27 dataset has no difference between estimates in
28 those years. We don't. Whatever the difference
29 between estimates is, at the end of the year, for
30 all of the years, whether it's positive, negative
31 or zero, becomes part of the dataset. So the
32 dataset is best -- in terms of DBE's is best
33 exemplified by the summer run plot that I showed
34 you with all of the years on it. Those DBE's, or
35 whatever they were, sometimes there was more fish
36 upstream. Sometimes there was less than what we
37 predicted. That dataset doesn't change. It's not
38 affected at all by this other process that's this
39 on/off switch that I describe that determines
40 whether you add something to the total run or not.

41 Now, if we were able to partition the
42 different sources, we could do a more refined job
43 and perhaps better direct changes to the things
44 that we can control to reduce the magnitude of
45 those differences.

46 The other area, and I don't know if this is
47 where it's going -- maybe I'll stop there and see

1 whether that helps you answer your question, and
2 if you need clarification, I'll try to fill it in.
3 Q No, that is very helpful. Have you found, over
4 the years, that reviewing that year's management
5 adjustments in light of the DBE's has helped to
6 increase the accuracy of the management adjustment
7 figures?

8 A We have not changed the dataset, so there are
9 circumstances -- the one that would come to mind
10 would be the one in 2005 which related to the
11 species composition issue that was discussed when
12 I was here, I think, in November, where we clearly
13 identified, probably as a result of the
14 discrepancy in that year, that we had an issue
15 with our species composition at Mission, and we
16 have taken steps to address and improve the
17 species composition estimates at Mission in
18 response to that.

19 The DBE dataset, whether that -- you alter
20 that dataset is a logical question about whether
21 you think this is going to happen again in the
22 future. So if we address that species composition
23 issue and we think we've got it solved, then we
24 might use the corrected Mission estimates in that
25 DBE dataset because we think we've solved that
26 part of the DBE. If we don't think we've solved
27 that, then we have to live with the possibility it
28 would occur again, then we would keep the dataset
29 unmodified.

30 So there have been a very few instances of
31 that. The 2006 data point is actually not in the
32 model because we actually saw far more fish
33 upstream than we did, and we have a hydroacoustics
34 -- we think we have an issue with hydroacoustics
35 that we've not yet been able to solve with respect
36 to 2006. So I can't -- you know, I can't be sure
37 what will happen there.

38 Q I'm wondering about unintended consequences of the
39 management adjustment. If I understand it
40 correctly, when you do the analysis of the DBE
41 years, and you were confident that a majority of
42 them are clearly related to extremes of flow or
43 temperature -- am I right so far?

44 A Yeah, I think so.

45 Q When you forecasted those years, part of the pre-
46 season forecast, and possibly the in-season
47 management adjustment, was responsive to the

- 1 environmental information that you were getting.
- 2 A Yes.
- 3 Q So you might increase the management adjustment
4 because that high-water flow or high temperature
5 was even more than expected. Is that fair?
- 6 A Yeah, so it starts with a base case historic
7 average, and then there are points and times
8 starting with a long-range forecast based on snow
9 pack, and then 10-day forecasts as the season
10 proceeds that modify the management adjustment
11 just as you suggested.
- 12 Q Does that not mean, though, that if a higher
13 management adjustment number means that more fish
14 will arrive, plunk, at Mission, then they'll go
15 into the Canyon more fish than usual, perhaps?
16 Won't those sets of high flow or high temperature
17 be exacerbated simply by the presence of more
18 fish?
- 19 A So...
- 20 Q I'm asking if that could be an unintended
21 consequence of using that method of adjusting the
22 management adjustment?
- 23 A So I think the question you're driving at is, is
24 the Fraser sockeye freeway got a limited number of
25 lanes, and does the traffic jam get more intense
26 when there's more cars on the freeway. Is that
27 kind of what you're trying to ask?
- 28 Q You should be standing where I'm standing. Thank
29 you.
- 30 A I think that that's a topic that's not well
31 understood. My intuition would suggest that as -
32 and similar to the comments I made to Mr. Leadem -
33 that at some level of extreme, one would expect
34 the freeway to get a bit crowded. And so I think
35 that's a good insight that, you know, perhaps
36 there's an issue here about exacerbation related
37 to clogging the migration paths, particularly in
38 the context of the fact that there are some spots
39 that are difficult, and so you get these line-ups.
40 So the length of the line-up may be related to how
41 many people are trying to get through the line.
42 So it's a very good insight on your part.
- 43 Q Thanks. And lastly, just a couple of questions
44 about test fisheries. Are you satisfied with the
45 current state of the test fisheries, where they
46 are, how many there are?
- 47 A We do the best we can with the tools we have, and

1 I guess, you know, this is again one of these
2 value judgments, adequacy judgments which puts me
3 in a little bit of a difficult spot. So the way I
4 can answer this is that adequacy is clearly in the
5 eyes of the beholder, so I have to share with you
6 information that's provided to me by people who
7 are telling me what they feel about the test
8 fisheries, not necessarily whether I personally
9 think they're adequate or not.

10 What I hear from some Fraser River Panel
11 members - and these would be particularly folks
12 that tend to have interest in the marine areas -
13 that we tend to wait for the peak of the run to
14 hit Mission before we can make a run size upgrade,
15 and as I was showing in my little migration
16 diagram yesterday, it takes about six days for the
17 fish to make it from some of these marine areas
18 where, on paper and in an ideal world, you know,
19 80 percent of the commercial allocation in Canada
20 would ideally be caught if there's enough fish for
21 a commercial surplus.

22 What that means, and I think it's a fair
23 criticism, a fair observation by those folks, is
24 that if the run that goes up -- okay, so that's an
25 "if". If the run is going up, by the time we
26 identify that there might be a bigger surplus,
27 those fish have already passed the areas where, in
28 an ideal world, they should have been caught based
29 on the allocation.

30 So there probably are inadequacies related --
31 in perception related to the accuracy of the
32 estimates, but I'd say the primary one that I hear
33 about is the timeliness one, the one that says --
34 in other words, in an ideal world, I think some
35 folks would like to have us have our test
36 fisheries be about, you know, a week farther in
37 advance and be really accurate so that by the time
38 they got to the first fishing areas, the decisions
39 about fishing could be made. Hence that's the
40 primary point I would make about it from my
41 perspective. Again, it comes from observations
42 that Fraser Panel members have shared with us over
43 the last several years.

44 Q And that does explain, I think, part of my next
45 question, which is does the -- do you recommend
46 to the Fraser River Panel that the fishery open
47 earlier than the peak part of the run? If not,

1 why not? It sounds to me like what you're saying
2 is that you cannot make that recommendation if you
3 don't have the information until close to the
4 peak; is that correct?

5 A No. Because the staff power to make
6 recommendations was taken away before we ever --
7 before I ever became the Chief Biologist. We
8 don't make the recommendations anymore; the
9 countries do. So it might very well be that
10 Canada doesn't come forward with a recommendation
11 for those fisheries for the reason that you
12 suggest, but we don't have any recommendation
13 authority anymore. It changed in 2002, so I've
14 never actually had an opportunity to ever consider
15 making a recommendation about fisheries.

16 Q In your tenure between 1992 and 2002, was that
17 recommendation made by your staff?

18 A It was made by our staff, yeah, and I don't know
19 if I can recall a circumstance about whether or
20 not there was a reluctance to make a
21 recommendation. My suspicion would be --
22 recollection would be that it probably may have
23 been made but may not have been accepted at that
24 time under that decision process. There was a
25 requirement of bilateral agreement of the parties.

26 Again, back then, I was doing stock ID and I
27 wasn't quite -- I was pretty in tune with trying
28 to figure what was going on with the stock ID, so
29 my recollection isn't great, I'm sorry.

30 Q Oh, fair enough. As far as timeliness goes,
31 historically were you aware of it being helpful to
32 have a fairly active Johnstone Strait seine
33 fishery to include in the test fishing data --

34 A Yeah, it was --

35 Q -- just because of the timing and location?

36 A Yes, more than that. Timing and location, sure.
37 The timing and location of the commercial fishery
38 isn't actually that much different than the timing
39 and location of the test fisheries as you probably
40 know.

41 The timeliness came from the fraction of the
42 fish that are being sampled. So the Johnstone
43 Strait seine fleet, when it was operating on a
44 weekly basis, two things about that. One is
45 because it was operating every week, there was a
46 good chance that one of those fisheries would
47 occur within about three-and-a-half days of the

1 peak of the run, right, 'cause it's a seven-day
2 week. The second thing -- so there was always a
3 fishery close to the peak of the run, and that's
4 an important -- so it's consistent relative to the
5 timing profile that I showed you yesterday.

6 The second reason why they were valuable is
7 that they caught a very significant of the (sic)
8 fraction of the run that was there. So something
9 like 60 to 80 percent of the fish available in the
10 six days that -- six days of migration that that
11 Johnstone Strait fishery used to operate in, was
12 part of the catch. So it should be pretty
13 intuitive, I hope, that if you've got 60 percent
14 of the fish in a catch that represents somewhere
15 near the peak of the run, you're going to see a
16 very good relationship between the size of that
17 catch and the total run size.

18 Current test fisheries catch on the order of
19 maybe half a percent of one day's migration that's
20 passing. Not six days; one day. So great
21 difference in the certainty part of the --
22 uncertainty, I should say, with the commercial
23 fishery data providing a much more certain, a much
24 better prediction than the test fishing data, just
25 from a standard sampling type of an idea, concept.

26 Q And between those two figures, because one-half of
27 one percent of one day's catch is quite extremely
28 low --

29 A Mm-hmm.

30 Q -- you might be able to have a number that's still
31 statistically very helpful, increases your
32 certainty, that's short of 60 to 80 percent of six
33 days worth of catch.

34 A Yes, and that has been a topic of considerable
35 discussion over the last 10 or 15 years. We've
36 tried a number of different ways to try to finesse
37 this. It's a very significant challenge.

38 I know there's going to be a test fishing
39 group, and I don't know how much you want me to
40 discuss it. I would be prepared to spend time on
41 it if you need it, but I don't want to -- you
42 know, I know we got time here, so let me know how
43 much you want because I might give you more than
44 you need.

45 Q I think I do want to give some other counsel a
46 turn here today, but it may be -- 'cause I know
47 you are back for a different topic next week, and

1 it may be that we slot it in then. But I
2 appreciate the offer that there's a lot more
3 information there.

4 Just to confirm my understanding, then, of
5 the practice, let's say, of fishing prior to the
6 peak of the run, biologically is it true that the
7 effect of that is the fish that are earlier in
8 pre-peak are more likely to die anyway pre-
9 spawning? Is that generally true?

10 A Well, let me try to clarify a little bit. Late
11 runs, for sure. Late runs, definitely very strong
12 dramatic pattern of early entry fish being, you
13 know, more susceptible to dying for all the
14 reasons that we discussed previously. Now, when
15 you're talking about an early fish in the marine
16 area, and you're talking about late runs, some of
17 those early fish may actually delay, some of them
18 may not, so that's an uncertainty about what those
19 fish are going to do.

20 It is also true in a general sense that the
21 earliest arriving fish on the spawning grounds
22 tend to show the highest pre-spawn mortality, so
23 there isn't, to my knowledge, a dataset that says
24 the earliest arriving populations of Early Stuart,
25 Early Summer, and Summer run are less likely to
26 reach the spawning grounds necessarily, although
27 there may be some tagging data on this, but there
28 is definitely a well-understood phenomenon. When
29 you go and sample fish on the spawning grounds,
30 the earliest sampled females tend -- you tend to
31 find more females early on which have their eggs
32 intact and have died and have not spawned.

33 I would suggest, though, that the dramatic
34 difference between the early and the middle and
35 the late migrants that's seen in the Late run is
36 not seeing -- it's not as dramatic of effect in
37 those other stocks, but there is that tendency.

38 Q Is it fair to say, then, that it's at least a
39 viable proposition that fishing earlier in the run
40 may cause less risk to the run overall with the
41 caveat that that's going to vary between runs?

42 A It would be a little bit -- a little bit splitting
43 hairs for the earlier groups. I would say in
44 general if one could distribute the harvest evenly
45 throughout the run, that would probably be more
46 desirable than taking particular components
47 because there may be biodiversity across the run

1 timing that would be desirable to maintain. So if
2 you take it all from one spot, you may be
3 negatively affecting sort of the -- you know, the
4 variation that's available in the fish. I mean
5 run timing is a veritable trait, and so there's
6 some variation that could be associated with run
7 timing that might be desirable to protect.

8 Q My last question isn't really about timing of
9 fisheries, it's more the relationship between DFO
10 and PSC as far as actual management. If the Panel
11 determines that they want to open a commercial
12 fishery for five days starting on a Monday, let's
13 say, and then Canada, through DFO, recommends
14 opening a First Nations fishery, the same area,
15 the same week, starting on a Thursday, how is that
16 dealt with? How does the knowledge get to you and
17 is there some consultation or coordination or what
18 happens?

19 A So, again, I think it's kind of -- the process has
20 changed. There is no Panel discussion about when
21 a fishery would take place, bilateral discussion
22 in either Canada or the United States anymore
23 that's separate from the proposals that come out
24 of each of the two countries. In other words,
25 what happens now is we go to a meeting, we provide
26 the biological information. The two sides split
27 into national caucuses, they come back and tell us
28 what they'd like to do. So there isn't any kind
29 of competition or -- where staff or something say,
30 "We think you should do this," and the parties say
31 they want to do something different. That all
32 gets decided in the caucus and I never see -- if
33 there is a debate about when the commercial
34 fishery should occur in Canada and when another
35 fishery should, I never see that. That happens in
36 the caucus and I'm not party to those discussions
37 at all.

38 There was a time, prior to 2002, when we
39 would make recommendations for fisheries in panel
40 waters, and there could be -- we would never be
41 informed about the nature of the decision or the
42 debate, but one of the countries might come back
43 to us and say, "Well, that's a nice proposal but
44 we'd like you to modify that." But we don't know
45 why they wanted to modify it, we just know that
46 the proposal we made was not acceptable to them
47 and they came back and said, "Not acceptable. How

1 about doing this?"

2 So I'm not part of that dynamic that you're
3 trying to ask me about, so I can't answer the
4 question.

5 Q But -- and prior to 2002 - I think you answered
6 this in response to an earlier question - even
7 though theoretically the recommendation lay with
8 PSC, in practice it wasn't happening, or you just
9 weren't privy to it because you were doing
10 different work at the time.

11 A It's clear there was some interaction between what
12 we -- how to say this? I'm certain that the
13 recommendations that came from staff were not made
14 in a complete vacuum. They were definitely
15 designed, from an unbiased PSC staff perspective,
16 to provide the best advice we could for how the
17 panel could achieve its objectives. But there
18 were cases where there was dialogue, either
19 bilaterally or outside the bilateral where there
20 might be someone saying, "Well, you know, could
21 you schedule it a little bit differently and would
22 that affect things?" And so we were open to that.
23 It wasn't like it was kind of a blind interaction.
24 It was an open interaction, but sometimes we
25 weren't involved with all those nuances with why
26 the countries would want to change things. We
27 wouldn't know.

28 MS. SRIVASTAVA: Thank you. Those are all my
29 questions.

30 MS. BAKER: Before my friend sits down, I just want to
31 make sure that her decision on the test fishing
32 questions is informed by what's actually going to
33 happen next week. Mr. Lapointe is coming back to
34 talk about hydroacoustics with Mr. -- with Dr.
35 Riddell. We are having a test fishing panel, but
36 Mr. Lapointe will not be on that panel. So I'm
37 not advising you what you should do one way or the
38 other, I just want to make sure you know who's
39 going to be here for those topics. So there will
40 be somebody from the PSC on test fishing, just not
41 Mr. Lapointe.

42 All right. The next participant is the West
43 Coast Trollers Area G, and United Fishermen and
44 Allied Workers' Union, which is Mr. Watson.

45 MR. WATSON: Mr. Commissioner, it's Chris Watson for
46 the West Coast Vancouver Island Area G Trollers
47 and the UFAWU.

1 CROSS-EXAMINATION BY MR. WATSON:
2

3 Q I just -- I have reduced my set of questions to
4 just two. They deal generally with escapement. I
5 understand that this is going to be a special
6 topic later in early February, but I also
7 understand that Mr. Lapointe will not be here for
8 that part. So I would just like your perspective
9 on these two things.

10 A Sure.

11 Q Ms. Baker asked -- well, one of her questions was
12 whether the Salmon Commission had been approached
13 regarding the right number of spawners, vis-à-vis
14 productivity and, in part, the answer was that the
15 PSC has been involved in workshops on the issue of
16 escapement. So, in that context, I'm wondering
17 what, Mr. Lapointe, you have to say on the content
18 of what happened in those workshops.

19 Firstly, under the rebuilding -- the so-
20 called rebuilding strategy, as it's called, which
21 began in about 1987, I understand - correct me if
22 I'm wrong - that harvesting went down, the
23 escapement targets went up, but the bottom line of
24 it all is that the returns that were expected or
25 hoped for didn't come. I've seen in the
26 literature on a couple of occasions that there
27 were "shortcomings" of the rebuilding strategy.
28 I'm not going to ask that it be pulled up, but for
29 the record, the Exhibit 330, the Record of
30 Management Strategies, page 2, and the PPR on
31 Harvest Management at paragraph 74 refer to
32 shortcomings in the rebuilding strategy but I
33 didn't see any explanation. I may have missed it,
34 but I didn't see any explanation of what those
35 shortcomings were.

36 My first question, Mr. Lapointe, is what, if
37 anything, can you say about shortcomings from --
38 or in the rebuilding strategy to escapement?

39 A I'm just thinking for a few minutes. Just give me
40 a couple of minutes.

41 The rebuilding strategy discussions evolved
42 over a period of time, and I know a little bit
43 about the history but I was definitely not
44 involved with those. There are a number of
45 actually refereed publications on this, and there
46 are a number of internal reports, some of which I
47 may have seen and some of which I haven't. So I'm

1 a little bit uninformed in my ability to respond
2 to you about -- on this question, and I honestly
3 don't know what the words "shortcomings" are
4 referring to in any of these documents.

5 The extent of my recent history - and it is
6 primarily recent involvement - with this in any
7 direct way is in the participation in the FRSSI,
8 Fraser River Sockeye Spawning Initiative
9 workshops. The primary role that we would have
10 fulfilled in that would be kind of facilitating
11 the information, you know, being able to help --
12 explain and understand in an informal sense with
13 panel members and others some of the complexity
14 that is associated with that process.

15 So I'm not aware of any substantive
16 discussions where we have been approached in any
17 substantive way in my tenure as Chief Biologist,
18 asking us for substantive opinion about policy
19 issues related to escapement. I am aware that
20 those discussions did occur prior to my tenure,
21 and I suspect that Dr. Woodey, if he's part of
22 that panel, and Dr. Walters, who was one of the
23 co-authors of some of those reports, would be in a
24 better position to help you on this.

25 I believe, in terms of the current policy,
26 that the discussion paper that was -- is written
27 by Mr. Staley, which I believe was contracted out
28 for the Cohen Commission, is an excellent,
29 excellent description of that model, I think. It
30 captures all the primary elements. I emailed Mike
31 after I finished it to let him know that I really
32 thought he'd done a good job.

33 That said, I think the biggest challenge with
34 that whole process is the complexity of it. It
35 relates to the fact that it's hard to understand
36 and it's hard to explain, which varies the
37 accessibility of it to people who are affected by
38 those decisions.

39 The one element that I do know about in
40 relation to that, that is a policy choice that's
41 not an outcome of the statistical modelling, is
42 the cap. The 60 percent cap is actually a
43 decision that was made that that would be a cap on
44 -- if the models were let to run on their own and
45 define optimal, however it's defined in the model
46 -- and I'm not going to try to explain it to you
47 'cause I don't know if I could and that's part of

1 the issue -- the cap would be higher than the
2 arbitrary cap that's been set. Now, whether
3 that's a good thing or a bad thing is clearly a
4 policy debate that I would not care to wade into.
5 I think we've already discussed, prior to today,
6 you know, why some sort of a cap -- the logic
7 behind some sort of a cap in terms of the mixed
8 stock impacts.

9 So that's about as far as I can go because my
10 knowledge is really not -- I haven't been
11 approached, quite frankly, by anyone saying, "Oh,
12 is this a good thing or a bad thing?" I've just
13 been kind of on the fringes of this big process
14 that FRSSI is that you're going to spend more time
15 on, I think, in the next week or so.

16 Q Okay. And I do understand that Dr. Woodey is
17 attending the harvest management component
18 specifically on escapement.

19 You may have answered my second question in
20 the context of your comment about recent
21 participation in FRSSI workshops, but we heard Mr.
22 Grout - I think it was on Monday - say that there
23 were initial shortcomings with the Fraser River
24 Sockeye Spawning Initiative, and I didn't hear him
25 explain what those were.

26 So my second question is in your
27 participation in the FRSSI workshops, what, if
28 anything, have you heard about the shortcomings in
29 the current model, and what -- and if you can
30 offer anything, what can you say about solutions?

31 A Okay. So there have been a number of specific --
32 I don't know if complaint is the word -- but
33 concerns expressed about some aspects of the FRSSI
34 model processes. I can think of a couple right
35 off the top of my head.

36 One relates to how the model asks the
37 question, given a number of different alternative
38 harvest rules, what are the implications of those
39 alternatives for performance measures? And the
40 performance measures would include things like the
41 probability of a stock falling below a benchmark,
42 they would include the probability of meeting some
43 minimum catch, and so forth, to allow people to
44 understand what it means if you choose one or the
45 other. So that's the idea of the performance
46 measures, to provide some context for choosing one
47 alternative over another.

1 In the calculation of the performance measure
2 related to catch, the assumption was made that
3 each of the management groups could be harvested
4 separately. So clearly we know that they can't be
5 harvested separately and so there was some concern
6 expressed by the industry folks about whether or
7 not that catch metric was being accurately
8 estimated in the FRSSI modelling.

9 There has been a bit of a solution kind of
10 finessed for that which I did actually help -- not
11 implement, but I made a suggestion to some of the
12 folks that are really doing this work about
13 possibilities for them, because, you know, if I
14 could help, I would try to help, to just -- to try
15 to recognize that there's going to be overlaps and
16 subtract some of the harvest that wouldn't be
17 accessible because of a constraint on a weak stock
18 associated with the harvest, let's say, of a
19 strong stock like Summer run.

20 So I was involved with kind of -- and so what
21 I'd say is that now it's much better than it was,
22 but it's still a model. You know, models are not
23 reality and we shouldn't pretend that they are.
24 There's going to be -- it's a tool, okay?

25 I'll try and think of the second one that was
26 in my brain. Oh, the second one is coming from
27 another set of folks and it relates to the
28 assumption about the productivity parameters that
29 are used in the FRSSI model and it relates to the
30 idea that if the FRSSI model was assuming long-
31 term average productivity along a very similar
32 theme to what we talked about with the
33 forecasting. What does that mean if the
34 productivity is going down or up? Is it capturing
35 that variation accurately? This assumption is
36 sometimes referred to in our jargon as the
37 "stationarity assumption" and there is a number of
38 folks that have expressed a very significant
39 concern about why would you assume the
40 stationarity, this kind of consistent long-term
41 average productivity in the context of the FRSSI
42 model, and I think actually Mike's report, Mike
43 Staley's report, actually might touch on this, and
44 so there's probably some information in there.

45 The FRSSI model has the flexibility to
46 consider different alternative assumptions about
47 the future, so even though the base situation

1 might be constant productivity, it does have the
2 capacity to ask what the implications would be of
3 a proceeding with a policy in the long run if
4 productivity is going up or down. So, to me, it's
5 a flexible enough tool to do that.

6 The question becomes what's the best
7 assumption about the future and that's where --
8 you know, so one has to just consider alternative
9 futures and understand what the implications are.
10 And the model has the capacity to do that, so
11 those are two that I'm aware of that have been
12 under discussion in the workshops I've
13 participated in, in the last four or five years,
14 and my view is that both of those have been
15 addressed to a certain extent in the ongoing
16 evolution of that model.

17 Q Was there discussion in these FRSSI workshops
18 about abandoning the notion of higher escapements
19 in light of the declining trend in returns?

20 A I have not heard those discussions in my
21 participation. I think the last time I
22 participated in one of those workshops is probably
23 going to be at least three years ago. So if it's
24 happened since then, it's possible that that's the
25 case. But in the times that I've participated, I
26 did not hear that concern expressed.

27 Q And in what time period did you participate in
28 those workshops? The last one was three years
29 ago.

30 A Well, FRSSI has gone -- started when? The history
31 of this is going to be -- this is the fifth year,
32 I think, of that. So, you know, probably I was
33 involved in 2003 or '04, and then had a couple of
34 years in a row of workshops. I don't actually
35 even recall last year if there even was a
36 bilateral -- or a workshop in which I was able to
37 attend. So it's been at least two years since I
38 participated in the last one.

39 The only other comment I'll add on this is --
40 and you'll find out more -- is that there was a
41 notion that there'd be a four-year pilot, or a
42 five-year pilot, and then they were going through
43 one set of cycles of the Fraser sockeye runs, and
44 then a review. I'm not sure where that's at.
45 This is the year actually scheduled for the
46 review, and I don't know whether that's happening
47 or not.

Michael Lapointe

Cross-exam by Mr. Lowes (WFFDF)

1 MR. WATSON: All right. Thank you, Mr. Lapointe.

2 MS. BAKER: Thank you. Next it is the B.C. Wildlife
3 Federation and B.C. Federation of Drift Fishers.

4 MR. LOWES: Thank you. J.K. Lowes for the B.C.
5 Wildlife Federation and the B.C. Federation of
6 Drift Fishers.

7

8 CROSS-EXAMINATION BY MR. LOWES:

9

10 Q I'm sure you're getting tired, Mr. Lapointe, and I
11 will actually like to take advantage of your
12 teaching skills and revisit what generally we
13 could call the subject of over-escapement or that
14 debate, that issue. What I'd like to do is get
15 back to the fundamental questions that arise
16 within that complex of issues, so that when we
17 have other witnesses that may or may not take a
18 position -- or may take a position on that set of
19 issues, we'll understand what the issues are,
20 understand -- and in asking my questions, I
21 understand that you prefer not to take a position
22 on the value judgment issues. So I won't ask you
23 to, except for one.

24 What I'd like to do is perhaps use, as my
25 entry point, a phrase that you used actually when
26 you talked about changing the paradigm with
27 respect to the model. You talked about
28 productivity variation and implications, and I
29 have sort of written that down as "productivity:
30 variations and implications." That's kind of how
31 I'd like to take you through it.

32 Without being long-winded, maybe I could
33 describe my methodology and I'm going to take you
34 through it in a -- or have you take me through it
35 in a kind of layered number of questions.

36 First of all, I'd like you to give us your
37 view of the basic issue, that is, the basic
38 principle that's being looked at with respect to,
39 let's say, a particular stock in a particular
40 year. Then I'd like you to add in the factor of
41 time, and I'm thinking there of delayed density
42 dependence.

43 A Okay.

44 Q And then I'd like you to factor in the fact that
45 we're not talking about one stock, we're talking
46 about multiple stocks and the principle may vary
47 among the stocks -- or not the principle, but the

1 application of the principle.

2 Then fourthly, perhaps, and the most
3 complicating factor, that those various stocks are
4 mixed in a fishery, and that's where the
5 management implications come in.

6 So perhaps I can start off by getting to the
7 basic question, and perhaps I can ask it this way:
8 Is the proposition that's being tested, the
9 proposition that at some point on the curve that
10 describes the productivity as a function of
11 escapement, is the proposition that at some point
12 there's a law of diminishing returns, that the
13 productivity goes down as the number of spawners
14 goes up.

15 A Yes. So if one defines productivity as the number
16 of adult returns from a given parental number of
17 spawners, there's actually a continuous decline in
18 productivity start - if you believe in stock
19 recruitment theory as defined by Dr. Ricker -
20 across the whole range. So every Fraser sockeye
21 stock, if you try to fit a line between returns
22 per spawner and spawner, it has a negative slope
23 which shows a continuous decline across the range
24 of spawners. There's many mechanisms that have
25 been described to identify why that happens, but
26 the notion of it kind of flattening out would be
27 in a different context. Where we're talking about
28 the number of recruits, not the productivity, and
29 how that changes with the number of spawners and
30 that relates directly right back to the slides
31 that I provided in October where I plotted the
32 number of juveniles in relation to the number of
33 spawners, kind of parsing out the life history
34 part of it, if you like.

35 Most of the mechanisms that would be
36 consistent with that mathematical kind of
37 calculation, if you like, relate to things like
38 habitat limitation, so, you know, the lakes are a
39 certain size. And when I came and spoke in
40 October, I talked about the fact that it looks
41 like the place where these juvenile productions
42 versus spawners flattens out as related to the
43 size of the lakes, you know, clearly related to
44 the size of the lake. And that's not my work.
45 It's the work of, you know, DFO lake group
46 scientists.

47 So, yes, that initial notion is consistent

1 with the accepted theory that would apply to
2 individual stocks in this case.

3 Q So -- and that example that you gave about the
4 lakes' capacity, is that an example of what's
5 called "density dependant factors" or "density" --

6 A Yeah, that would be -- that would be density
7 dependence for sure. There's only a limited
8 amount of space and food and so forth for the
9 juveniles to rear.

10 Q Okay. So what -- if you add the factor of time,
11 is -- what is delayed density dependant factors or
12 issues? My understanding is that what that means
13 is that the impact of the density of the -- let's
14 call it the generation. One doesn't show up until
15 generation two or three, in terms of the cycles.

16 A Well, it would be -- actually, you're almost
17 right. That's good, you're close.

18 Q Good.

19 A So that means that everyone else is similar. So
20 there's clearly an immediate effect of density on
21 the subsequent generation, so within a generation,
22 the abundance of juveniles in the lake affects
23 their productivity and their size. If they're
24 competing for food, there's going to be an effect
25 on how big they're going to be, right? Okay, so
26 that's immediate. So it's not -- doesn't appear
27 until the next generation, and it appears in that
28 generation right away.

29 The delayed part means maybe there's another
30 affect that carries over into the next generation.
31 In other words, it's not just the immediate one,
32 it's the one -- so an example would be, and I keep
33 coming to this one, and maybe I can be accused of
34 cherry-picking, 'cause it's always the one I come
35 to so feel free to criticize me if you feel that
36 way.

37 Q Heaven forbid.

38 A Part of the problem with that 2002 Quesnel
39 situation that I keep bringing up was not just
40 that the escapement in that its generation was
41 large, it's that the escapement in the prior
42 generation was also large. So even coming into --
43 when those juveniles got into the lake -- this is
44 the concept here. I'm not going to be able to
45 give you all the details on the data support --

46 Q That's what I want. I want the concept.

47 A Okay, so it's the concept. Maybe those juveniles

1 already came into an environment in that lake that
2 already was food deficient. And then, over and
3 above, they had to compete with their brethren for
4 the food that was left. That's kind of the
5 essence of an example of a mechanism in this
6 delayed density dependence.

7 So it wasn't just the fact that there were a
8 lot of them in that year. It's the fact that when
9 they got there, the habitat was already limited by
10 whatever happened before them by their previous --
11 by the previous generation.

12 Q Okay. And to further complicate the complexity of
13 issues, then, is it true that the function --
14 first of all, the function between escapement and
15 production, and secondly, the implications for
16 density dependant -- or density dependant
17 implications, whether current or delayed, is not
18 the same for every stock. It varies among stocks.

19 A Absolutely. In the kind of -- and this can get
20 you into the debates about things called "cyclic
21 dominance" and I'm not going to open that because
22 it would take us the rest of the afternoon. But
23 what I will say is that clearly some stocks are
24 much more highly cyclical and therefore your
25 pattern of abundance than others (sic).

26 The Adams River sockeye, which had the large
27 run last year, you're talking about, on big years,
28 spawning escapements in the 4, 5, 6, 7, 8 million
29 in the maximum range. You know, 2, 3 would be more
30 normal historically, to, in the smallest years,
31 less than 10,000, that kind of -- but there are
32 other stocks where it's much more even.

33 So to the extent that one would believe --
34 and this is hypothesis, this is not a tested
35 hypothesis -- that the reason why they're
36 different is because, in their cyclical pattern,
37 in the difference between the extremes in their
38 abundance, the reason that they're different, if
39 that's because of differences in this delayed
40 dependence, that's one potential hypothesis that
41 would explain that, the variation among stocks
42 that you suggested.

43 Q Yes. And then to further complicate the
44 complicated situation, of course those various
45 stocks, for the most part, travel together in
46 timing groups and so the management challenge is
47 to account for the escapement and production

- 1 ratio, over time and over variation in accordance
2 with -- variation over stocks in a mixed-stock
3 fishery. Is that kind of the challenge?
- 4 A Yeah. So think about that challenge in two ways,
5 and I'm going to throw another layer of complexity
6 at you because I think it's easier to -- think of
7 it in terms of any single objective first, okay?
8 So let's think of it in single objective that is
9 the one that, you know, maybe is most familiar to
10 some folks, but not necessarily the best one in
11 the general sense, MSY, okay? So they're all
12 going to have different MSY's. They're on
13 different productivities and you're trying to
14 figure out a way to balance those things.
15 The extra layer, though, is that what if you
16 think about other objectives? And this is kind of
17 what I was getting to in similar remarks this
18 morning about this idea of there are -- there's an
19 MSY for a whole bunch of different objectives and
20 they're competing with each other. So that's just
21 another -- not that I really want to make it more
22 complicated, but I suggest that is an important
23 layer that's part of the debate here.
- 24 Q Well, we've discussed the model on the assumption
25 that we agreed on the objective, or the optimum
26 ratio of production. And, of course, the
27 escapement is a function of exploitation, among
28 other things, isn't it?
- 29 A What ends up on the spawning grounds --
- 30 Q Yes.
- 31 A -- you know, it comes back to my notion earlier
32 that, you know, we're part of the ecosystem, so
33 it's within our control or not to influence that.
- 34 Q But what I'm getting at -- yes, so that's what I'm
35 getting at. If you want to change the escapement
36 for whatever reason, the way you do that is by
37 changing the exploitation rate.
- 38 A That's one way. It would vary naturally as well,
39 but if you want to deliberately manipulate it,
40 then --
- 41 Q Well, from a fish manager's point of view.
- 42 A Yeah, for sure.
- 43 Q Okay. So the discussion that we've had about the
44 complexity of the issue holds true on the
45 assumption that we're *ad idem* on the objective.
- 46 A Yeah, I think that clearly it's in the context of
47 what the objective is for sure.

- 1 Q And maximum sustainable yield was the objective
2 for a long time, was it?
- 3 A Yeah, I think it would be fair to say that that's
4 what the focus was of the IPFSC over most of its
5 history.
- 6 Q And maximum sustainable yield was designed, or it
7 was the exploitation -- let's put it this way: It
8 was the system that was designed to produce a one-
9 to-one spawning-to-recruit ratio? To make sure
10 that the same number of spawners got back in four
11 years to produce the same number of spawner -- of
12 recruits that their parents did; is that...?
- 13 A Kind of.
- 14 Q Yeah.
- 15 A So the idea would be that if there is a surplus
16 beyond the parental generation - so this is where
17 your kind of one-to-one comes from - that that
18 surplus could be harvested and the number of
19 spawners would be sufficient to replace itself in
20 terms of the next generation.
- 21 Q Yeah.
- 22 A That's the concept that I think you're talking
23 about.
- 24 Q Yeah. And so someone -- someone talking about the
25 problem or the issue in that paradigm would define
26 over-escapement as -- in terms of foregone catch,
27 because virtually all of the overage over the
28 escapement requirement was harvested; is that...?
- 29 A That would be a fair characterization.
- 30 Q Right. And when you're talking about different
31 objectives, you're talking about perhaps a
32 different -- in that case, the optimum sustainable
33 yield would be the maximum sustainable yield in
34 that historical situation; is that fair enough?
- 35 A Yeah, so that would be --
- 36 Q Right.
- 37 A -- defined on where the difference between the
38 return and the replacement is the maximum.
- 39 Q Right. And the trade-off, in that context, the
40 trade-off between -- in changing the exploitation
41 rate and thus the escapement would be primarily
42 between economic values and conservation values;
43 is that right?
- 44 A Okay. So --
- 45 Q Do you want to maximize the harvest or --
- 46 A It depends --
- 47 Q -- do you want to maximize the --

1 A I think I agree sort of in a general sense, but
2 what I would say is that part of the debate about
3 the appropriate model, or where the optimum should
4 be with respect to different objectives, relates
5 to different interpretations of the word
6 "conservation", I think.

7 Q Okay.

8 A So when I was trained in wildlife management
9 school and we were talking about the word
10 "conservation", the way I learned that concept was
11 in the words of -- I think it was Gifford Pinchot.
12 It was a "wise use" type of a definition. That
13 definition is significantly different if -- that
14 the definition -- well, I've actually argued that
15 it's not that different but it was interpreted
16 differently than the definition that John Reynolds
17 provided to you guys when he was here that
18 involves the phrase related to the, you know,
19 insurance of -- I think the word biodiversity -- I
20 really won't be able to repeat it, but it's not
21 wise use.

22 Q Well, perhaps I --

23 A When I learned wise use, just to carry on with
24 this, it didn't imply extractive use, in fact, it
25 didn't imply use at all. In the way I learned it,
26 it was like sometimes the best use was to actually
27 put all the fish on the spawning grounds.

28 But in the interest of being really
29 articulate about the definition, the definition
30 has changed. So when you say conservation now, I
31 think the conservation context for that paradigm
32 was different than the conservation context that
33 I'm hearing being used now. And so that's the
34 only caveat. I'm sorry to split hairs, but I
35 think it's important to acknowledge that there's a
36 different view of what -- the conservation
37 sustainable use trade-off is framed differently
38 now.

39 Q All right. To get back to the basic model that
40 you and I were discussing, and in that basic model
41 let's assume for a moment there was an optimum --
42 there was an optimum target --

43 A Mm-hmm.

44 Q -- for escapement that related to production.

45 A Sure.

46 Q All right? And we'll -- and is it so that if you
47 make that assumption, then we could call -- you

- 1 and I could call, in the course of our discussion,
2 we could call -- the escapement that was over that
3 optimum, we could call that over-escapement.
- 4 A Yes, that would be a fair contextual
5 interpretation of the stuff --
- 6 Q Right.
- 7 A -- they've outlined.
- 8 Q That's what over-escapement means. It means
9 escapement at a number above the number that you
10 need to meet your production goal.
- 11 A That's what it has meant in the context that
12 you've described.
- 13 Q Yeah. Now -- and I wanted to bring you back to a
14 phrase that you used, and I think you started to
15 explain it, but I would like you to flesh it out a
16 bit. When you said there's an ambiguity about the
17 optimum, so perhaps you could expand on that. Do
18 I take it from that there is at least not
19 agreement, and possibly controversy, over what
20 that optimum escapement figure conceptually ought
21 to be?
- 22 A Yes, I think that's kind of what I had in mind,
23 and because I think that the context - which is
24 kind of what I was speaking to just a few seconds
25 ago - has changed, it's changed.
- 26 Q Yes.
- 27 A It's different views. And so I think that's
28 exactly what I mean. There's a -- it's fairly
29 logical and I hope fairly easy, and this
30 discussion is a very good example of that, to say
31 if we knew what the objective is, all of us would
32 agree what's above it and what's below it. That
33 was the example that I provided. You know, if the
34 objective is five, ten is bigger and three is
35 lower.
- 36 Q Yes.
- 37 A The discussion is about how is that -- is that
38 objective the only objective, and how would other
39 objectives change the perception of over and
40 under?
- 41 Q Absolutely. And what I wanted to get from you
42 today, is there any, well, first of all,
43 scientific consensus to the answer to that
44 question? And then the broader question is
45 outside the scientific community, is there any
46 consensus in what you might call the British
47 Columbia people "who are interested in the salmon

1 community" about that question?

2 A My --

3 Q I took it from your -- your term "ambiguity" that
4 the answer to that question is no. That there
5 is --

6 A That is my impression, that there is a
7 considerable uncertainty about that aspect of it.

8 Q Yeah.

9 A And disagreements and sometimes heated debates and
10 all kinds of things related to that.

11 And that's kind of what I was trying to
12 convey to the Commissioner where I think the work
13 needs to be done.

14 Q Yeah.

15 A Is attacking that ambiguity.

16 Q And that perhaps another word for those
17 objectives, or another terminology that we've
18 heard in these hearings would be the trade-offs.
19 What are the trade-offs and what's the objective
20 of trading off? Is that a fair --

21 A Yeah, I didn't use that -- I didn't use that word
22 specifically.

23 Q No, I know you didn't.

24 A Because it becomes, you know -- for whatever
25 reason in this environment that we operate in, you
26 know, you can't use the word "compromise" or
27 "trade-off" without having someone use the word
28 "sell out" and all these other things, and you end
29 up in this quagmire of debate. So I specifically
30 avoid the use of that word, but I understand what
31 you're saying.

32 Q You understand what I'm saying. But what I wanted
33 -- I guess what I wanted to say is that you gave
34 an example of what you might call an ecological
35 trade-off, and the point that I simply wanted to
36 make is the trade-off is not simply social or
37 economic on the one hand and biological or
38 ecological on the other. There are some trade-
39 offs that may have to be made within the
40 biological or ecological field itself.

41 A Yeah, I mean, as I said to Mr. Leadem in my
42 remarks, I think -- and I'm not intending this to
43 be critical of particular perspectives, okay. I
44 think it's naïve to think that we can manipulate a
45 very important part of the ecosystem and not have
46 an impact on the ecosystem, okay? It affects the
47 ecosystem. We're doing things to it whether --

1 not fishing does something to it. Fishing clearly
2 does something to it. All of those things impact
3 the ecosystem. So you can't -- you can't separate
4 it as much as we might like to, to get clarity
5 here. There's interactions here, and as a
6 biologist, I just feel like it's obvious to me.
7 You're going to have effects here.

8 Q Yeah. And you used, in a little different
9 context, the example of the fine-tuning knob on
10 the stereo set. In the context that we're talking
11 about, about the function between escapement and
12 production and the variability amongst stocks and
13 the fact of mixed stocks and the fact that you
14 have implications over time, that, to me, argues
15 for fine-tuning on the exploitation rate and the
16 escapement goals. Is that --

17 A Yeah, I don't know --

18 Q Do you think I'm fair there? It argues against a
19 blunt instrument.

20 A I think what it -- I don't know about the fine-
21 tuning analogy. I guess before we know what the
22 heck we're going to do with the stereo dial, if
23 you like, we kind of have to know what all the
24 channels are that are available that might impact
25 this discussion. There's a kind of a framing --
26 there's a framing issue related to this question
27 that sort of lays out the lay of the land in terms
28 of all these different benefits.

29 So once those are well defined, then it --
30 then you can start talking about what you want to
31 do with the knob, if you like.

32 MR. LOWES: All right. I note the time, My Lord, but
33 maybe I could ask one more question.

34 Q Is that -- before the break. Is that framing
35 issue part of the debate or is --

36 A It is the debate as far as I'm concerned.

37 MR. LOWES: All right. Thank you. If we might break
38 now, then?

39 THE REGISTRAR: The hearing will now recess for ten
40 minutes.

41
42 (PROCEEDINGS ADJOURNED FOR AFTERNOON RECESS)

43 (PROCEEDINGS RECONVENED)

44 THE REGISTRAR: Order. The hearing is now resumed.

45
46
47

1 CROSS-EXAMINATION BY MR. LOWES, continuing:
2

3 Q Mr. Lapointe, when we broke off we were talking
4 about a debate over issues, both factual, I
5 suppose, and in terms of values over the whole
6 notion of escapement, escapement targets, and the
7 costs and benefits, I suppose, of different
8 escapement levels.

9 A Sure.

10 Q And, consequently, different exploitation rates.
11 Do I take it from what you said about the paper by
12 Dr. Walters in another -- that that paper did not
13 purport to be the final word on the issues that
14 we've been talking about for the last half hour,
15 that it answered a single question, i.e. Does
16 over-escapement cause stock collapse?

17 A That's exactly the point that I was trying to
18 make.

19 Q And it shouldn't be taken as addressing, let alone
20 answering, the more subtle and complicated
21 questions: What are the implications of
22 escapement for production?

23 A Yes, exactly.

24 Q I want to, while we're on the -- just on the
25 question of vocabulary and meaning of terms, my
26 understanding of the term "overfished" is a term
27 that means fished to a point below the optimum
28 production level; is that a fair way of putting
29 it?

30 A That's the way that I understand the term as well,
31 so it doesn't necessarily mean anything about the
32 fate of the stock in terms of whether or not it
33 would be on a downward trajectory or anything;
34 it's in relation to, in the context I've heard it
35 used, the abundance of the stock relative to where
36 it would be relative to the optimum.

37 Q Right. So a stock, for example -- a stock can be,
38 using the term accurately, a stock can be
39 sustainably overfished?

40 A Each of the abundance levels in a theoretical
41 sense would be sustainable if the only impact on
42 the stock was fishing, where there becomes a
43 little bit of a subtlety as if there's other
44 things that are going on that are outside of
45 fishing that's clearly a stock at a high level or
46 low level would have different vulnerabilities,
47 too.

1 Q Yes. But it can be overfished and stable at the
2 same time?

3 A Yes, that's true.

4 Q Just one question on data collection. My friend
5 for the Area E Fishers was asking you the
6 difference between the old Johnstone Strait seine
7 fishery and the current regime in terms of data
8 collection, and I think you essentially said that
9 the big fishery in the Johnstone Strait, in the
10 old days, was, from a data collection point of
11 view, better than what you've got now; is that --

12 A From a data collection point of view, that's
13 correct.

14 Q Yeah. And that's because it took a big bite?

15 A That's exactly right.

16 Q You, in the course of your -- I think your answer
17 to Mr. Leadem, you stated that when the fish are
18 in trouble, people generally do the right thing,
19 and you used the word "ethic". Would you agree
20 that the British Columbia Commission -- the
21 fishing community and the people interested in the
22 British Columbia fishery, that you've run into in
23 your career, by and large have a conservation
24 ethic?

25 A Yes.

26 Q So would you disagree, or would you agree, with a
27 characterization of fisheries management in the
28 20th century, up until the 1990s, as a
29 catastrophic 19th century management culture?

30 A Not with reference to the management of Fraser
31 River sockeye I certainly would not.

32 Q Thank you. You would not agree?

33 A I would not agree that that's a fair
34 characterization of the management of Fraser River
35 sockeye.

36 MR. LOWES: Thank you. Those are my questions.

37 MS. BAKER: Mr. Commissioner, I think the only two
38 counsel who are here and who have expressed an
39 interest in cross-examining Mr. Lapointe, are
40 counsel for the First Nations Coalition, and
41 counsel for Sto:lo Tribal Council and Cheam Indian
42 Band, and I believe the First Nations Coalition is
43 next up.

44 MS. GAERTNER: Mr. Commissioner, Brenda Gaertner, and
45 with me, Leah Pence, for the First Nations
46 Coalition. I want to, again -- I left this room
47 before the holiday season wishing all of you a

1 good holiday season. I want to wish you all an
2 abundant and sustainable New Year. And I say that
3 somewhat tongue-in-cheek but, you know, over the
4 years I've thought as sustainability as a
5 practice, not a philosophy, and I think that if we
6 can't work together in a sustainable way, we're
7 unlikely to be able to encourage the
8 sustainability of the salmon. So I actually do
9 apply that principle as best I can in my work, and
10 so it sounds a bit tongue-in-cheek, but I truly
11 mean it.

12 And I also wanted to start with some opening
13 comments, perhaps to the, not in defence, I don't
14 think, but in response to the comment that Mr.
15 Lapointe made about the team that's here and his
16 observations of the team, and I wanted to give him
17 some encouragement, like I want to encourage
18 everybody that works hard in the salmon fisheries,
19 that these are daunting tasks. They're very
20 difficult tasks. You throw it out into a new
21 process like this, after many, many years of
22 working very hard at the dialogue process in which
23 it's very difficult to dialogue these issues, and
24 then you ask the same types of groups to come into
25 a courtroom and do the work that you've been
26 charged to do and assist you in that, Mr.
27 Commissioner, and it is a daunting task. There's
28 daunting complexities associated with that, and I
29 want to express my gratitude for the seriousness
30 in which you've taken your work to come here and
31 do the education you have, but I also want you to
32 encourage, in your observations here and in the
33 work that you're doing here, that this team is
34 forming - I believe it is forming - and we're
35 looking for ways to be helpful to the
36 Commissioner's work and helpful to the - in the
37 way that we ask our questions and dialogue with
38 those that come, and we all do, I'm sure, look
39 forward to having this commission help in the
40 daunting task of trying to ensure the
41 sustainability of the salmon.

42 One of the things that I asked us to
43 consider, when we started this, Mr. Commissioner,
44 was this notion of the four-fold way and being
45 able to show up, and listen and be careful in how
46 we listen, but also not to be attached to outcome,
47 and I still am having a hard time with that,

1 because I keep wanting to get to the outcome,
2 because it is such a daunting task.

3 But one of the things I reflected on over the
4 holiday seasons and one of the ways that I wanted
5 to start with Mr. Lapointe is that as a person who
6 doesn't typically litigate, I was given that rule
7 of thumb, never ask a question that I don't know
8 the answer to, and I actually find that rule of
9 thumb to be slightly dangerous in this setting,
10 because I don't think it's an inquiry, then, I
11 don't think I'm inquiring. And so I'm going to
12 try, today and tomorrow to begin a slightly new
13 approach, which is on certain occasions I am
14 definitely going to ask questions I don't know the
15 answer to and hope that it will be useful and
16 continue to hope that it will be useful, because I
17 think there are places where we don't have the
18 answers to the questions, and I definitely have a
19 lot of them when it comes to the complexities that
20 we're dealing with here.

21 Then, one final observation, that I also
22 started some of my opening comments with you, Mr.
23 Commissioner, is that if we thought of the
24 migratory route of the salmon and if we think of
25 our work during this period of time together as
26 somewhat akin to that, I reflected that we might
27 want to start out at Bristol Bay or further, and
28 that we've been doing a lot of strategic things
29 and we're moving closer and closer, and definitely
30 as we take on the issues of harvest management
31 complexities in the system, we're getting into
32 more details, we're getting deeper into the
33 details. So I think we're about in panel waters.
34 I think we've done the migratory route at least to
35 the panel waters, and we've begun to pick up some
36 of the complexities that happen there, and we've
37 got another long, long swim ahead of us yet. And,
38 as you mentioned, they're almost a marathon a day,
39 so we'll continue to keep ourselves in training.

40 So thank you for that. But I do want to say
41 that I -- in my approach in the questions I'm
42 going to ask you, I want to do two things: I want
43 to stay with the more general, as Ms. Baker has
44 asked us to do at this front end of the
45 discussions around harvest management. I'm going
46 to ask some strategic questions in nature of Mr.
47 Lapointe around the work of the PSC, and then I

1 want to pursue some areas that we've identified on
2 behalf of our clients as relative to your work, as
3 the Commissioner, again, in the area of
4 recommendations, particularly two-fold; one, as it
5 relates to respecting conservation; and the other,
6 more particularly in the area of encouraging broad
7 cooperation amongst the stakeholders.

8 I think those are two important parts of the
9 work that you're being asked to do, and I'm going
10 to ask Mr. Lapointe to consider those in response
11 to the questions that I do have.
12

13 CROSS-EXAMINATION BY MS. GAERTNER:
14

15 Q So starting, first with some general questions,
16 Mr. Lapointe, through the work that I've done with
17 the Fraser River sockeye salmon, or fisheries in
18 general, I notice quite differently the
19 distinctions between technical teams and decision-
20 makers.

21 A Yes, absolutely.

22 Q And the responsibilities that technical teams have
23 to inform decision-makers to ensure that they have
24 the necessary information that they may need to
25 think broader than their perspectives sometimes,
26 and think further forward, but also as a technical
27 team to take steps, active steps that you can take
28 to ensure that you're thinking ahead, also, and
29 ensuring that your data, your information, all of
30 those things is helping and facilitating the
31 nature of the decisions that are going to be made;
32 would you agree with me on that distinction?

33 A Absolutely.

34 Q And that in your work as chief biologist for the
35 Pacific Salmon Commission, one of your most
36 strongest responsibilities is to work with the
37 technical team that advises both the commissioners
38 and the panel members; is that correct?

39 A That's correct.

40 Q And included in that would be responsibilities in
41 raising matters both at the technical team and in
42 the development of data and with the decision-
43 makers around various interest concerns, data
44 possibilities, data challenges, all those types of
45 things around Fraser River sockeye salmon; is that
46 correct?

47 A Yeah, we have a list that we add to, and lots of

1 other folks put things on our list as well.

2 Q And it's also kind of fair to say that you're
3 going to -- when you're looking at that and you're
4 doing your work, you're looking at both short,
5 medium and long-term issues around the
6 sustainability of Fraser River sockeye?

7 A Yeah, short, medium, and long-term tasks that, you
8 know, eventually, at the end of the day probably
9 feed into sustainability, but they aren't always
10 immediately, explicitly addressing that particular
11 broad topic.

12 Q And then I was just curious, because this where
13 your work is very active, and I haven't had an
14 opportunity to observe the Fraser Panel as many
15 times as I've heard about you, is I'm curious how
16 you see your job on matters of controversy between
17 the two parties. Is it your job not to raise the
18 controversy? Is it your job to identify the
19 controversy and provide the information? How do
20 you perceive your work at the PSC at the technical
21 level on those matters?

22 A The first responsibility is, of course, to not
23 weigh in on the controversy, so that's very clear,
24 that I don't take sides with respect to the
25 controversy. That's a very clear kind of frame of
26 reference that we have within the context of the
27 PSC, so that's a very clear -- I don't know that
28 we go out of our way to kind of raise
29 controversial issues, but if we have an issue,
30 even if we understand that it's controversial, it
31 doesn't deter us from raising it; it just may
32 affect the way in which it's raised, the way in
33 which it's conveyed.

34 So there's a clear need for sensitivity, as
35 you've observed today, in the words that we use,
36 so that it's informing, I guess I would say, that
37 is the most primary responsibility; informing the
38 controversy; informing the information, the
39 technical information about if there is a
40 controversy, to help it be understood.

41 Q So you don't necessarily have to wait till one or
42 other side of the two parties raises that matter?
43 It's if you're aware of it or that it's
44 potentially there, you can raise it in either the
45 work of the technical committee and/or at -- with
46 the Fraser Panel?

47 A Sure, if there's an issue that's of concern we

1 certainly can raise it.

2 Q Okay. So I'm going to just take you to a question
3 Commissioner Cohen asked you yesterday around the
4 relationship between the aggregates, the stocks
5 and the conservation units. And I appreciate how
6 the treaty has been framed and the way that the
7 aggregates are used at that level and for those
8 purposes --

9 A Mm-hmm.

10 Q -- but I want to go one step further with you,
11 which is, as I understand it, the work around
12 conservation units and the work that Canada has
13 done around conservation units and the Wild Salmon
14 Policy has been, with one of the primary goals, at
15 least, being the conserving or the encouraging -
16 it might be an even better word - or rebuilding a
17 biodiversity within the stocks for the purposes of
18 long-term sustainability, and that would seem to
19 be of interest to the work that the PSC staff does
20 when considering and reviewing and developing data
21 and information; would you agree with me on that?

22 A Certainly of interest, and the role I would
23 describe is one of trying to be able to facilitate
24 the information flow. So to the extent that there
25 are things that we could do or change that will
26 allow us to do a better job in accounting for a
27 conservation unit level of aggregation in terms of
28 whether it's stock ID or modelling or so forth, we
29 are trying to be engaged in that dialogue.

30 So how close could we come in changing things
31 that we do to allow a better accounting of -- in
32 relation to conservation units? Even things like
33 developing the forecast datasets; is there any way
34 we could go back and modify some of these things
35 and maybe get some data for conservations that
36 aren't currently part of those 19 forecasted
37 stocks.

38 So that's kind of the area on the policy side
39 of that area, it's more facilitating the policies
40 that Canada, largely, in the case of this Wild
41 Salmon Policy, is driving rather than being
42 actively involved in those discussions, if you
43 understand the distinction? We're not really
44 involved in the -- we were not involved, actively,
45 in the writing of the Wild Salmon Policy, all that
46 kind of thing. So it's facilitating, "Oh, well,
47 gee, surprise, surprise, if there's 30

1 conservation units, somebody may ask me if we can
2 quantify those. I better be prepared to
3 understand if I can or I can't and explain that to
4 someone." That's the nature of our involvement.
5 Q All right. So there's two things that follow from
6 that, in my mind. One is that, and this is --
7 bear with me if it's strategic --
8 A Okay.
9 Q -- in nature, but clearly having only one stock
10 within an aggregate is not going to assist, in the
11 long term, for either Canada or the U.S. in their
12 hopes. That's a very risky situation; is that
13 correct?
14 A It would make the mixed stock issue -- it would
15 exacerbate the mixed stock issue.
16 Q Yes. It would also make us -- potentially our
17 stocks much more vulnerable to disease and/or
18 events in the future that we can't predict, could
19 take out that entire stock, as distinct from
20 having stocks within that aggregate that could
21 handle that type of disease or that type of the
22 environmental situation?
23 A I'm not sure exactly where you're going with that
24 question. So if the concept is that if you
25 managed to -- one big aggregate instead of four,
26 would there be a greater likelihood that
27 individual stocks within that --
28 Q Well, if you only had four stocks, not if you
29 managed. If you continued to manage without
30 considering the break-up of that stock, and you
31 ended up with only one dominant stock --
32 A Oh, I -- okay.
33 Q -- only one stock.
34 A So I've misunderstood your question.
35 Q Yeah, that's --
36 A Okay.
37 Q Yeah.
38 A So is a one-stock population less resilient than a
39 multi-stock population? Yes.
40 Q Right. And so one of the goals of the
41 conservation units is to increase the portfolio
42 over time or to try to rebuild or develop that
43 portfolio, and that is of value and interest to
44 the Pacific Salmon Commission Technical Team when
45 giving advice to the Fraser Panel and/or the
46 commissioners; would you agree with me on that?
47 A Yes, in the sense, but not necessarily independent

1 of the value to the process at large.

2 Q No, I'm not saying either/or, please, I'm just --

3 A Yeah.

4 Q -- I'm looking for places for improvement.

5 A Sure.

6 Q I'm not taking --

7 A Sure.

8 Q -- away the hard work that we've done so far. And

9 so if that's a given, I'd be curious in -- I began

10 to see more of that in -- even in your

11 presentation yesterday, and I don't think we need

12 to take you to it, I think you'll recall it, but

13 there were a number of examples in which the

14 aggregates were being broken down and there were

15 unique --

16 A Mm-hmm.

17 Q -- components of them.

18 A Mm-hmm.

19 Q We saw places where Birkenheads and Cultus were

20 being -- those used to be simply part of an

21 aggregate, and we're seeing more of that.

22 Similarly, Chilko and Stellaco and the Harrison

23 are providing unique circumstances that are of

24 value, and we're seeing that.

25 So what ways could you suggest would be

26 helpful in assisting getting -- increasing

27 reliable and useful data to your decision-makers

28 around conservation units? What ways could we

29 begin to do the work? What ways that have you

30 observed? We've got some around 19 stocks. As

31 you know, that's not all of them.

32 A Mm-hmm.

33 Q What are ways that you suggest could be more

34 useful for making better decisions?

35 A So maybe in my approach to answering that I would

36 talk about where I see the limitations in the

37 current situations and how some of those could be

38 overcome. So with respect to the eight or nine

39 stocks that we try to model, in the planning

40 model, where we're trying to project the impacts

41 of potential fishing plans on those eight or nine

42 aggregates, the concept that comes to mind is the

43 concept of sort of index stock.

44 So even though we don't have detailed

45 knowledge of the timing of all of the, in some

46 cases, even the abundance of all of the

47 conservation units, maybe we could gather

1 information that would allow us to use some of the
2 stocks we do have information on as surrogates for
3 the stocks that we don't. Do some experiments,
4 tagging some of these stocks, perhaps, or
5 gathering information that would say, "Okay, we
6 don't have a dataset for something like
7 Nahatlatch, but we think, from the experiments
8 we've done, it has a timing more similar to one
9 that we do, so some aggregate we do.

10 So it's developing the toolkit that -- it's
11 going to be difficult to provide the kind of a
12 silver bullet or Holy Grail, if you will, of this,
13 because you can't -- we don't have the genetic
14 capability right now to distinguish all these,
15 right, so we have to look for imaginative ways.
16 Index stocks is one, an example I would provide,
17 that could be used to provide information
18 indirectly about a CU that might be of concern.

19 So I probably could think of some others, but
20 that's the one that comes to mind immediately.

21 Q And I'm wondering - this is one of those questions
22 that I don't know the answer to - I'm wondering,
23 would you agree, from your perspective, that when
24 you get to those places where you're doing the
25 comparisons between the data that you had and the
26 data that you don't have, the traditional
27 ecological knowledge could be useful in checking
28 out those assumptions and checking out whether or
29 not they would be accurate or appropriate?

30 A Yes, although I have to admit my ignorance about
31 traditional ecological knowledge. I just haven't
32 been exposed to it enough, personally, to
33 understand all that it could offer.

34 Q However, maybe I'll help on that front. You would
35 agree with me that if you could, when the
36 scientist is doing a comparison about Nechako and
37 another and they're wondering whether these --
38 this comparison of return and into what area and
39 all of those kinds of things you would have to
40 make assumptions around, if you had well-developed
41 local knowledge --

42 A Mm-hmm.

43 Q -- around those stocks to help you make the
44 decisions as distinct from and in addition to the
45 education --

46 A Sure.

47 Q -- that many of the biologists are bringing,

1 that's going to be a stronger outcome?

2 A Yeah, and I could give one example, and this is
3 maybe of one area where it has helped in a very
4 general sense, and that is this whole issue of
5 cyclical patterns and abundance. I mean, my
6 understanding, if you talk to elders - and this is
7 second-hand, so I want to make sure I say that -
8 that there were well-identified periods of feast
9 and famine associated with the history of
10 Aboriginal people that were probably related to
11 the abundance -- fluctuations of abundance of
12 salmon in the watershed. So there's some ability
13 to say, "Well, this doesn't just happen since we
14 started to keep track. Something was going on
15 before the traditional records that we might use."
16 So there's an example. Well, that's a clue.
17 That's a clue about something that might be
18 causing this that would be helpful.

19 Q Thank you. The next two questions are actually --
20 I think you answered them earlier today, but I
21 didn't fully understand your answers, so I have to
22 go back on it. I'm sorry, Mr. Commissioner, but I
23 think this is useful.

24 One of the things that I noticed, again, in
25 your overview yesterday, is that for things like
26 the Early Stuart and then the in-season
27 assessments in 2009, particularly, when we get to
28 places where we have known strong concerns around
29 the strength of the run, there seems to be two
30 very immediate responses that you do in your
31 assessments. One is the role of moving from the
32 50 percentile to the 75 percentile. I saw that
33 that happened fairly quickly in 2009 across all of
34 the runs, not just Early Stuarts.

35 A Mm-hmm.

36 Q You'll agree with me on that?

37 A Yeah, if we have a strong signal of a negative,
38 then we know that there is -- can be, particularly
39 when it's a very strong signal, like consistency
40 across stocks, even though we hadn't observed
41 those stocks as much as the later timed stocks, we
42 would say, "Look, this does not look good. Let's
43 just start from a lower base right away."

44 Q All right. Okay. And then the other one is the
45 minimum fixed escapement regardless of run size.
46 That's an approach that's been -- you went into
47 2009 with the Early Stuarts and it has been used

1 in other circumstances --
2 A It is part of the FRSSI framework that you'll
3 learn about later.
4 Q Exactly. So I just wanted to make sure I
5 understood your response to this question, which
6 was my question had been, "What would be the
7 implications of using both of those approaches on
8 a regular basis within the Fraser River sockeye?"
9 and as I understood, if we regularly applied the
10 minimum fixed escapement, we wouldn't take
11 advantage of additional returns for spawning
12 purposes on the bigger runs; they would actually
13 likely be fished out?
14 A I'm not sure I'm -- sorry, I --
15 Q SO if we had a mixed stock -- or if we had a fixed
16 -- it may be the end of the day, but I'll try it
17 again.
18 A That's okay. No, I think I can understand. We
19 just have to try one more time.
20 Q We'll try it again. If we had a minimum fixed
21 escapement on all runs --
22 A Yes?
23 Q -- and we had an abundant run --
24 A Right.
25 Q -- much more abundant than expected, then when you
26 got to the minimum fixed escapement, that
27 abundance would likely all be fished out, rather
28 than some of it returning to the spawning grounds?
29 A That -- that -- well, so that interpretation
30 applies -- if we literally apply the fixed
31 escapement strategy, which is currently done, as I
32 understand it, in Bristol Bay, that would be one
33 potential implication, that you wouldn't stop, you
34 would keep going until you got all the surplus
35 above that escapement target.
36 Q And so that's why we have the hybrid and FRSSI,
37 and we'll hear more about that?
38 A That's the rationale -- one of the rationales that
39 would support that for sure.
40 Q So I think I've got that right. What I don't
41 understand is, what's the implications of using a
42 75 percentile on a regular basis, as distinct from
43 the 50, going into the season?
44 A So the context of my comments somewhat relates to
45 the bilateral nature of my responsibility in that
46 within Canada, but in particularly in the United
47 States, there -- there are two sides to this

1 question, okay? There is the side related to the,
2 you know, it's three objectives within the treaty:
3 spawning escapement; international allocation; and
4 domestic allocation. There's a clear priority,
5 okay, understood.

6 From a spawning escapement objective, I don't
7 see any potential really negative implications as
8 long as you're not concerned about a larger than
9 desirable escapement target, and what I mean by
10 this that on the other side of it, if the knob, if
11 you like, that controls how many fish arrive on
12 the spawning grounds is the fishery, and by
13 starting off with a low number, like the 75p, and
14 finding out sometime later that the run is
15 significantly larger at a time when those fish
16 have already passed where most of the fish would
17 be caught, then your ability to turn that knob, if
18 you like, has been restricted. There's going to
19 be some fish that will escape that will limit your
20 ability to achieve the target, right, because --
21 Q I'm following you, yes.

22 A -- they've passed the fishery. So it's, in part,
23 the trade-off between those allocation goals and
24 the spawning escapement, but it's also, in part,
25 related to how you interpret the spawning
26 escapement targets.

27 So if the spawning escapement target is like
28 as long as you get the number, that's the goal,
29 then going to the 75p is not a significant issue,
30 because you'll probably get at least the number
31 most of the time. If you're concerned about
32 directional errors in both directions, the way the
33 current management strategy is, so it's predicated
34 on that, then the risk is that by the time you
35 know the run is later, in those years when it
36 might be larger than the 75p, your flexibility for
37 trying to get to the target has been reduced,
38 because part of the harvest constituency has not
39 got access to those fish. That's the only -- it
40 is that trade-off. This is why I was reluctant to
41 -- because there's a policy decision here that's
42 not a biological decision; it's a policy trade-
43 off.

44 Q So you would agree with me, then, from a
45 biological perspective, if the harvesting capacity
46 was more distributed so that you could still
47 harvest those abundance at a later time in the

1 run, that concern would be addressed?

2 A That's exactly right. That's where I was coming
3 from.

4 MS. GAERTNER: Thank you. I just have one more
5 question of clarification, and then it would be a
6 good opportunity to take the break, if I may, Mr.
7 Commissioner.

8 Q This is this whole issue -- I want to turn, now,
9 to another trend that I saw, again, yesterday in
10 your diagrams, and I have been learning about over
11 the last few years, and I just need you to see --
12 it's a rather humble observation, I think, but I
13 think it's accurate, is that we have these four
14 main aggregates that you -- we all -- we've seen
15 -- many of us have seen biologists create your
16 curves that shows at the expected returns.

17 A Mm-hmm.

18 Q They seem to be piling on top of each other a
19 little bit more than they did 10 years ago or 20
20 years ago. Like the trend, generally, between
21 that which we call the Early Summers, the Summers
22 and the Lates, is getting closer together and our
23 fishing season for those "aggregates" could
24 sometimes be considered the same fishing season.
25 There's one high -- high areas.

26 And so would you agree with me on that, that
27 the trend that we're beginning to see in the runs
28 is that the timing of those runs is getting closer
29 and closer together between the aggregates?

30 A It seems to be. I haven't actually done the
31 statistics, but I think that perception that
32 you've provided is consistent with what I would
33 say I'm observing as well. It seems like there's
34 more overlap amongst the groups, and that creates
35 a bigger challenge.

36 I would say, though, that I think we're far
37 more focused on the overlap than we used to be, so
38 it's almost like, you know, is it because we're --
39 is it real or is it because our -- you know, we're
40 listening to the TV more often and there's more
41 news stories on? So I think there's some work to
42 be done. But I -- because we're so much more
43 focused on it because we're so much more concerned
44 about the impacts of these different groups, and
45 so there's an element of the perception that may
46 be related to the fact that we're paying much
47 closer attention, but I do agree that the

1 perception of them becoming more overlapped is
2 something that seems to be consistent with what
3 I've observed over the last few years.

4 Q Again, another question that I don't know the
5 answer to. Is there any suggestion or research
6 that's being done that that may be in response to
7 global changes and climatic changes that the
8 salmon are actually taking evolutionary steps, as
9 they likely will, to respond to that and try to
10 ensure --

11 A I haven't seen anything about that. Run timing is
12 a -- is a heritable trait, and by that I mean that
13 when you have -- early time parents tend to
14 produce, more often than not, early-timed
15 offspring. So there is a -- certainly an
16 opportunity in documented literature,
17 historically, about fishing effects affecting the
18 potential timing of stocks.

19 Now, I'd have to think a little bit more
20 logically, and maybe I'll need to sleep on this in
21 order to answer it, about whether or not fishing
22 patterns, over time, could be generating the
23 patterns we're seeing. I suspect -- my intuition
24 would say it's probably not going in the right
25 direction, but I'd have to think about it.

26 Q Well, I'll just -- I'll feed this thought to you,
27 and this is just a story, which is that I've heard
28 from many elders over the years that there is
29 quite a relationship between how we fish salmon
30 and how they change over time, so that is
31 something that might be worth of observation.

32 One more comment on this issue around the
33 timing of the runs is, if I'm right in my
34 thinking, and that trend is beginning to show,
35 where we have them coming together, we've got
36 these aggregates that are now being divided into
37 stocks, which are now being divided into
38 conservation units, which are all coming together
39 in a shorter period of time. Is it fair to say -
40 and we're going to talk about this a little bit
41 more tomorrow - that distinguishing the peaks is
42 getting a little harder?

43 A It would depend upon the relative abundance of the
44 stocks. So if you have a very big stop being
45 overlapped with a very small stock and that
46 overlap is getting greater, definitely --

47 Q And we do have that in the --

1 A -- definitely the mechanism --

2 Q -- Fraser River sockeye.

3 A -- would be there.

4 Q Yes?

5 A And the only thing I'll say on this before I
6 forget, because tomorrow I'll probably forget, is
7 that another factor in our perceptions about the
8 overlap of these stocks relates to the
9 technologies used to distinguish them.

10 Q Yes.

11 A The genetics has allowed us to distinguish the
12 breadth of these runs much more accurately than
13 the scale patterns that were used prior to the
14 2000. So it could very well be that perhaps some
15 of these stocks were as overlapped as they are now
16 in the past, but our ability to detect it, because
17 we were not using the genetics, has been enhanced.

18 MS. GAERTNER: Right. This would be a convenient time
19 to stop in my questions, if it were -- thank you.

20 MS. BAKER: Mr. Commissioner, before we leave for the
21 day, I wonder if we might just talk for a few
22 minutes about timing.

23 THE COMMISSIONER: Yes.

24 MS. BAKER: Tomorrow, we'll be back, obviously, with
25 Mr. Lapointe. On Friday, there's been -- there's
26 a funeral that many counsel wanted to go to at two
27 o'clock, so we could -- and I -- I, at one point,
28 earlier this week, thought we might be able to
29 start our part two hearings on Tuesday, but we're
30 running into some difficulties in getting
31 witnesses readjusted, and in looking at timing
32 estimates today I've applied a timing management
33 adjustment to my initial estimates, so I think
34 maybe we better leave Tuesday on our original
35 schedule and not try and adjust those panels.

36 So that leaves us with Friday. Do you want
37 to stop at the noon break on Friday and allow
38 people to go to that funeral, or should we push
39 through or --

40 THE COMMISSIONER: Yes. I'm not sure if you have time
41 estimates, Ms. Baker, for, I believe it is, Mr.
42 Rosenberger and Mr. Grout, and so that would help
43 me.

44 MS. BAKER: Yes, I think we would probably finish our
45 questions with them by noon, maybe a little bit
46 before. And then I think my estimates from
47 counsel, right now, are about a day and a half, so

1 probably two days in reality.

2 THE COMMISSIONER: Which means...?

3 MS. BAKER: Which means if we stopped -- if we went
4 till, say 1:00 -- if we went through the lunch
5 hour on Friday, maybe till 1:30, we could probably
6 get an hour, an hour and a half, perhaps, of
7 cross-examination done, and that would leave us
8 with two full days next week to complete that.

9 THE COMMISSIONER: Well, I know there are a number of
10 counsel that were -- I don't know if you all are
11 aware that the Honourable H.A.D, Oliver passed
12 away earlier this week, and there is a service, a
13 memorial on Friday at 2:00 p.m. at a church, I
14 believe, on Cordova Street, the 300-block Cordova
15 Street, which isn't terribly far from this
16 location, I believe.

17 My suggestion would be that you consult with
18 your colleagues here, but we could try and adjust
19 Friday so that we could sit a bit later over the
20 lunch break and perhaps take our break around 1:30
21 or so, so that those who would like to attend the
22 service could do so. I would like to attend, but
23 I would certainly have to give priority to our
24 demands here, of course.

25 So if we can do that, that's certainly an
26 option. So you could discuss that with your
27 learned colleagues, and if there's a way of
28 dealing with it in that framework, we could
29 certainly do that.

30 MS. BAKER: Okay. And the other thing I have been
31 asked to -- just really for my friends, if there's
32 interest in having a counsel meeting Tuesday next
33 week, in the morning, before we start court, if
34 you could just indicate to me whether you're
35 interested in that and we'll set it up.

36 And I think that's all the timing questions.

37 THE COMMISSIONER: Yes, that would be great, thank you,
38 Ms. Baker. And thanks to all of you, and we'll
39 resume again, tomorrow morning, at ten o'clock.
40 And thank you, Mr. Lapointe, for your patience and
41 for making yourself available through this ordeal.

42 A You're welcome. I hope it wasn't too hard on you.

43 THE REGISTRAR: The hearing is now adjourned until ten
44 o'clock tomorrow morning.

45

46

47

1 (PROCEEDINGS ADJOURNED AT 4:09 P.M. TO
2 THURSDAY, JANUARY 20, 2011, AT 10:00 A.M.)
3

4 I HEREBY CERTIFY the foregoing to be a true
5 and accurate transcript of the evidence
6 recorded on a sound recording apparatus,
7 transcribed to the best of my skill and
8 ability, and in accordance with applicable
9 standards.

10
11
12
13 _____
14 Irene Lim

15 I HEREBY CERTIFY the foregoing to be a true
16 and accurate transcript of the evidence
17 recorded on a sound recording apparatus,
18 transcribed to the best of my skill and
19 ability, and in accordance with applicable
20 standards.

21
22
23
24 _____
25 Karen Acaster

26 I HEREBY CERTIFY the foregoing to be a true
27 and accurate transcript of the evidence
28 recorded on a sound recording apparatus,
29 transcribed to the best of my skill and
30 ability, and in accordance with applicable
31 standards.

32
33
34
35 _____
36 Diane Rochfort

37 I HEREBY CERTIFY the foregoing to be a true
38 and accurate transcript of the evidence
39 recorded on a sound recording apparatus,
40 transcribed to the best of my skill and
41 ability, and in accordance with applicable
42 standards.

43
44
45
46 _____
47 Karen Hefferland