

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



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

## Public Hearings

## Audience publique

**Commissioner**

L'Honorable juge /  
The Honourable Justice  
Bruce Cohen

**Commissaire**

**Held at:**

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

Friday, April 15, 2011

**Tenue à :**

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

le vendredi 15 avril 2011

## APPEARANCES / COMPARUTIONS

Wendy Baker, Q.C. Maia Tsurumi	Associate Commission Counsel Junior Commission Counsel
Mitchell Taylor, Q.C. Hugh MacAulay	Government of Canada ("CAN")
No appearance	Province of British Columbia ("BCPROV")
No appearance	Pacific Salmon Commission ("PSC")
No appearance	B.C. Public Service Alliance of Canada Union of Environment Workers B.C. ("BCPSAC")
No appearance	Rio Tinto Alcan Inc. ("RTAI")
No appearance	B.C. Salmon Farmers Association ("BCSFA")
No appearance	Seafood Producers Association of B.C. ("SPABC")
No appearance	Aquaculture Coalition: Alexandra Morton; Raincoast Research Society; Pacific Coast Wild Salmon Society ("AQUA")
Tim Leadem, Q.C.	Conservation Coalition: Coastal Alliance for Aquaculture Reform Fraser Riverkeeper Society; Georgia Strait Alliance; Raincoast Conservation Foundation; Watershed Watch Salmon Society; Mr. Otto Langer; David Suzuki Foundation ("CONSERV")
Don Rosenbloom	Area D Salmon Gillnet Association; Area B Harvest Committee (Seine) ("GILLFSC")

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

Phil Eidsvik	Southern Area E Gillnetters Assn. B.C. Fisheries Survival Coalition ("SGAHC")
Christopher Harvey, Q.C.	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")
Sarah Sharp	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); Adams Lake Indian Band; Carrier Sekani Tribal Council; Council of Haida Nation ("FNC")
No appearance	Métis Nation British Columbia ("MNBC")

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

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

**TABLE OF CONTENTS / TABLE DES MATIERES**

	PAGE
KARL ENGLISH (Recalled)	
Cross-exam by Mr. Leadem (cont'd)	1
Cross-exam by Mr. Harvey	10/31
Cross-exam by Mr. Eidsvik	36
Cross-exam by Mr. Rosenbloom	48
Cross-exam by Ms. Sharp	57
Cross-exam by Ms. Gaertner	62
Cross-exam by Mr. Dickson	90
Cross-exam by Ms. Fong	94
Cross-exam by Mr. Lowes	96
Cross-exam by Mr. Eidsvik (cont'd)	98

**EXHIBITS / PIECES**

<u>No.</u>	<u>Description</u>	<u>Page</u>
726	Koenings and Kyle, Consequences to Juvenile Sockeye Salmon and the Zooplankton Community Resulting from Intense Predation, 1997	29
728	English et al, Influence of Summer-Run Sockeye on the River Entry Timing of Late-Run Fraser Sockeye, 'Stay with the School' Hypothesis, 2005	32
729	Pearse, Managing Salmon in the Fraser - Report to the Minister on the Fraser River Salmon Investigation, Nov 1992	43
730	Chapter 20 of the Report of the Auditor General of Canada, Nov 1999	48

1  
Karl English  
Cross-exam by Mr. Leadem (cont'd) (CONSERV)

1 Vancouver, B.C. /Vancouver  
2 (C.-B.)  
3 April 15, 2011/le 15 avril  
4 2011  
5

6 THE REGISTRAR: Order. The hearing is now resumed.  
7

8 KARL ENGLISH, recalled.  
9

10 THE COMMISSIONER: Mr. Leadem.

11 MR. LEADEM: Good morning, Mr. Commissioner. The fact  
12 that I'm occupying a centrist position today  
13 should not be construed as my abandonment of my  
14 usual position on the far left.

15 THE COMMISSIONER: We hadn't noticed, Mr. Leadem.

16 MR. LEADEM: It actually has more to do with my hearing  
17 disability and the ability to see the witness than  
18 anything, Mr. Commissioner.

19 THE COMMISSIONER: You're welcome wherever you stand,  
20 Mr. Leadem.  
21

22 CROSS-EXAMINATION BY MR. LEADEM, continuing:  
23

24 Q Mr. English, we have been discussing your report,  
25 which has been entered into evidence as Exhibit  
26 718 in these proceedings, and I was reviewing some  
27 of the recommendations in your report, because I  
28 found them to be informative and some of them to  
29 be very worthwhile. The one that we had  
30 specifically focused upon yesterday was your  
31 recommendation number 6. And I want to take you,  
32 before I take you there to revisit that slightly,  
33 is to refer you to your text, because I think in  
34 the body of the text I think you flesh out that  
35 recommendation very nicely. And if I could ask  
36 Mr. Lunn to pull up 102, page 102 of Exhibit 718,  
37 right at the very top of the page you say these  
38 words:  
39

40 The lack of clearly defined escapement  
41 targets for each indicator stock and the  
42 large year-to-year variability in escapement  
43 targets for each run-timing group makes it  
44 difficult to regulate fisheries and evaluate  
45 management performance.  
46

47 And you go on to say:

April 15, 2011

1           The trend towards increasing complexity in  
2           the definition of escapement goals may have  
3           become an impediment to achieving these  
4           goals.  
5

6           And to that I say, amen. And you go on to say at  
7           the end of the paragraph:  
8

9           A clearly defined set of escapement targets  
10          for each indicator stock and run-timing group  
11          would be much easier to communicate to  
12          fishers...  
13

14          I'm just going to stop there because I would ask  
15          you to insert the words "ENGOs" and "First Nation  
16          community" as well as fishers. Would you be okay  
17          with me inserting those words in that sentence?  
18

18        A     Sure. Certainly, yes.

19        Q  
20          ...than the current complex Total Allowable  
21          Mortality (TAM) rules and still allow  
22          managers the latitude to implement harvest  
23          rate ceilings to protect less productive  
24          stocks when returns of the target stocks are  
25          large.  
26

27          And I think you're onto something really critical  
28          here, Mr. English, and that's why I'm spending so  
29          much time here.

30          You may recall the discussion that we had  
31          yesterday with Mr. Commissioner, as well as me and  
32          yourself, about setting definable goals, setting  
33          some numbers so everybody knows with certainty  
34          what those numbers are. Do you recall that  
35          discussion?

36        A     Yes.

37        Q     And I agree with you that that position of setting  
38          definable numbers and definable escapement targets  
39          is critical both to conservationists, to First  
40          Nations and to the fishers, so that everyone knows  
41          what the goalpost, or where the goalpost is  
42          located, as you eloquently put it yesterday. And  
43          you still stand behind that evidence, do you not?

44        A     Oh, certainly, yes.

45        Q     All right. So I want to then focus upon TAM,  
46          because TAM to me is totally confusing, and to my  
47          clients, some of whom are excellent scientists,



- 1           it's confusing as well. And I would suggest that  
2           if we're going to resort to TAM and we either have  
3           a problem in communicating it, we should find a  
4           more discernible model or better model to use.  
5           Would you agree with that?
- 6        A    Yeah, I think that it has a role, but it is  
7           complicated from a lot of people's understanding.
- 8        Q    Right. And so because of the complication, it's  
9           not just a matter of complication, but as I  
10          understand the TAM rules, they're based on  
11          aggregates. It's not based on individual  
12          conservation units. Do I have that correct?
- 13       A    That's correct. I set TAM rules for each of the  
14          run-timing aggregates.
- 15       Q    Right. And so if you're really focused upon the  
16          conservation unit, as the Wild Salmon Policy tells  
17          us we should be, then the TAM rules really aren't  
18          going to be able to help us, are they.
- 19       A    Well, they don't deal with the goals for the  
20          specific population units, if that's what you  
21          mean.
- 22       Q    Right. And so, as a consequence, what's going to  
23          eventually happen if we keep on using these TAM  
24          rules is that fish are going to be caught  
25          inadvertently, or for example, we take the example  
26          of the Cultus Lake sockeye, we're going to still  
27          harvest Cultus Lake sockeye by using the presently  
28          construed TAM rules, are we not?
- 29       A    Yeah, well, the harvest of the fish is dependent  
30          on the timing of the runs and what the overlap is.  
31          So because unless you move fisheries into areas  
32          where certain stocks are not accessible or not  
33          vulnerable, then you're going to harvest those  
34          along with the -- the less-abundant stocks along  
35          with the more abundant stocks.
- 36       Q    Right. And that's the problem that we see, for  
37          example, with the Late run and the Cultus getting  
38          caught up with the Late run. So the Cultus gets  
39          caught up with some of the abundant runs, such as  
40          the Adams River and the Shuswap Lake complex runs,  
41          isn't that correct?
- 42       A    That's correct, yes.
- 43       Q    And so, as a consequence, we end up inadvertently,  
44          or not meaning to, overharvesting the Cultus Lake  
45          stock or the Cultus Lake conservation unit; isn't  
46          that right?
- 47       A    Yeah, in some years there's been very high harvest

1 rates on Late run. Not so much in recent years  
2 because of the efforts to actually protect Cultus,  
3 they harvest a lot less Late run than they would  
4 have if they hadn't had the Cultus concerns.

5 Q Right. Now, yesterday, when I went through with  
6 Dr. Sean Cox's critique of your commentary and  
7 your recommendation, you may recall that one of  
8 his critiques had to deal with: that's all very  
9 well to say that we're going to set escapement  
10 goals, but how do you do it? And I think you give  
11 us clues in the final paragraph in that on page  
12 102, because you then go into -- and if we can  
13 look at this together, you go into the Wild Salmon  
14 Policy and you say:

15  
16 The [Wild Salmon Policy] has identified the  
17 need to define lower benchmarks (LBs) and  
18 upper benchmarks (UBs) for each Fraser sockeye  
19 stock.  
20

21 And then you refer to Carrie Holt's paper and Sue  
22 Grant's paper, and both of them have given evidence  
23 to this Commission, and you go on to say -- and this  
24 is where you have an innovative recommendation. You  
25 said:

26  
27 There should be at least two different LBs  
28 and two UBs for each cyclic stock.  
29

30 And we talked a bit about that yesterday. And  
31 what I'm driving at is that if you, instead of  
32 using the terminology "stock", because a stock, I  
33 say, is old school, is old terminology, would you  
34 agree with me that what we really should be  
35 focusing upon with respect to the Wild Salmon  
36 Policy is the conservation unit.

37 A Yes, that's what the intent is under the Wild  
38 Salmon Policy is to manage things by conservation  
39 unit.

40 Q Right. And then further on in that paragraph you  
41 give an expression of how fishing can be conducted  
42 once you know what those lower benchmarks are, and  
43 you say:

44  
45 For example, if the run size is below the LB  
46 for a stock, no fisheries should be permitted  
47 to target that stock.

- 1 And so that is why it's so critical then to define  
2 the lower benchmark so that we can define a point  
3 at which there would be no fishing to occur on  
4 that specific conservation unit. Do I have that  
5 right?
- 6 A Yes, and you know, there is the challenge of  
7 combining the lower benchmarks and also the goals  
8 for specific stocks into groups where you can  
9 actually manage the fisheries, and look at  
10 opportunities to have fisheries in certain areas,  
11 and times where you can disaggregate this stock  
12 management problem.
- 13 Q Did you say disaggregate?
- 14 A Yes.
- 15 Q So if you can separate the stocks in some way by  
16 going to a more terminal fishery, then you can  
17 perhaps achieve that result, as well?
- 18 A Yeah, and the intent is that, or the idea there is  
19 that you don't have to eliminate all mixed stock  
20 fisheries in order to have some opportunity to  
21 harvest in those areas. You just have to spread  
22 the harvest out so that you're not harvesting all  
23 your fish in one area where they have a problem  
24 with mixed stock fisheries.
- 25 Q And you think that can be done.
- 26 A Yes, I think it can be done. It has been done in  
27 a number of locations.
- 28 Q But can it be done on the Fraser? I mean, we saw  
29 Bristol Bay and it can be done easily there  
30 because of the geographic differences, or because  
31 it's easier in the context of Bristol Bay. But  
32 can you do it in the Fraser?
- 33 A Yes, there's places in the Fraser where you can  
34 target the more abundant stocks. There's a trade-  
35 off, obviously, of fish are closer to spawning and  
36 in some runs can be less valuable, or more than  
37 they will be if they are harvested in a mixed  
38 stock area. But these are trade-offs that people  
39 need to evaluate against the concerns over the  
40 different trends for the different populations.
- 41 Q Does that mean that what you're conceiving of in  
42 your answer to me, does that mean that you're  
43 thinking of a different fishery than the one that  
44 we presently employ on the Fraser?
- 45 A Yes, definitely it's different than the current  
46 one for Fraser.
- 47 Q And that would still take into consideration First

1 Nations interests, would it?

2 A Yes, definitely. Yes. Or it must, as well,  
3 because they have significant interests in these  
4 resources.

5 Q All right. I want to go on to recommendation  
6 number 8. I'm pretty limited in terms of time,  
7 and so I want to at least look at some of the  
8 recommendations that you make with respect to  
9 number 8. And if we can flip back, Mr. Lunn, to  
10 page 174 of Exhibit 718. In this recommendation  
11 you emphatically say that:

12  
13 DFO needs to maintain its commitment to the  
14 recovery efforts for Cultus Lake sockeye and  
15 the monitoring programs needed to evaluate  
16 these efforts.

17  
18 Now, one of the critiques to your report was done  
19 by Mr. Al Martin; is that right?

20 A That's correct, yes.

21 Q And Alan Martin was the former Director of Fish  
22 and Wildlife for the Province of B.C., is he not?

23 A I think he was that, yes. He's retired now, I  
24 think.

25 Q And now I take it he's a consultant at this time?

26 A Yes, I guess they hired him as a consultant to do  
27 this review.

28 Q Mr. Lunn, could I have page M-12, it's Exhibit  
29 718, Appendix M -- actually, M-11 to begin with,  
30 and then it carries over to M-12. And under the  
31 item 4, "Are the recommendations provided  
32 supportable?" Under "Recommendation Number Eight"  
33 Mr. Martin says:

34  
35 I agree with the recommendation as far as it  
36 goes. However there are a variety of sockeye  
37 salmon stocks at risk in addition to Cultus  
38 Lake. An integrated program is required.  
39 There is a need to examine the range of  
40 drivers affecting the sustainability of the  
41 species for successful recovery and a  
42 requirement that information be provided to  
43 prevent similar events occurring in other MUs  
44 if possible.

45  
46 I'm not sure what he means by "MUs". I wonder if  
47 he means CUs. But he's not here, so he can't

1 clarify that for us. And your response under 8  
2 is, if we can carry over then to M-12 under the  
3 "Recommendation Eight" and you say:

4  
5 Recommendation #8, only relates to Cultus  
6 sockeye because one of our tasks was to  
7 assess the status and recovery plan for  
8 Cultus sockeye. We agree that Cultus is not  
9 the only sockeye stock at risk within the  
10 Fraser watershed and recovery plans for these  
11 other stocks at risk should be developed.  
12

13 I'm going to just stop there. So I take it that  
14 because your terms of reference for your report  
15 limited you to Cultus Lake, you did not focus upon  
16 other conservation units that might also be in a  
17 similar situation as the Cultus Lake conservation  
18 unit; is that correct?

19 A That's correct, yes.

20 Q And so are you aware from having read some of the  
21 reports, such as the Sue Grant paper, that there  
22 are something in the -- I think there's eight  
23 conservation units that are in the red zone, at  
24 least insofar as the draft copy of that report is  
25 concerned?

26 A Yes, I've seen that report.

27 Q Right. And we heard from Sue Grant, and she has  
28 gone back to the drafting board, so to speak, and  
29 she's going to come up with a redraft of that, and  
30 hopefully before the end of this Commission we  
31 will be able to see a copy of that. You're aware  
32 of that CSAS process that underlies that, the  
33 review of that particular paper?

34 A Yes, I was there for the initial review last fall.

35 Q Okay. You go on to say, and this is where I'm not  
36 sure I understand what you mean, you say:

37  
38 However, we do not agree that the concerns  
39 identified for these few stocks would justify  
40 concerns regarding the sustainability of the  
41 species.  
42

43 I don't take this to mean that you're just saying  
44 we should just write off these stocks because  
45 they're of limited value, or because they're so  
46 small. You're not saying that, are you?

- 1 A No. No. I'm saying they don't threaten the  
2 sustainability of the species sockeye.
- 3 Q So you're then taking the view, when you say the  
4 sustainability of the species, you're taking the  
5 view of the sockeye species as a totality. You're  
6 not breaking it down into conservation units. Is  
7 that fair to say?
- 8 A That's fair to say, yes. And to be fair, it would  
9 be even within the context of the Fraser, not  
10 globally the species sockeye.
- 11 Q Right. And so you're leaving out of that equation  
12 the whole concept of biodiversity, are you not?
- 13 A Yeah, I'm not talking about biodiversity. I'm  
14 talking about sustainability of the species.
- 15 Q Okay. But and perhaps you may not be competent  
16 enough to be able to comment on it, because you  
17 are an expert in fisheries management, you're not  
18 necessarily a conservationist biologist. Is that  
19 fair to say?
- 20 A I've got a lot of the same background, I guess, as  
21 others, but I haven't focused on conservation  
22 biology to the same degree as other people have.
- 23 Q Right. But in terms of biodiversity, you would  
24 agree with me that that's a worthwhile concept to  
25 protect if we're going to be talking about Fraser  
26 River conservation units; isn't that fair?
- 27 A Yes, and that's one of the reasons for defining  
28 these goals, so that we know what we're striving  
29 for with regard to each of the CUs.
- 30 Q Now, I want to go back to the recommendation  
31 number 8, and specifically I wanted to refer to  
32 Cultus Lake and Appendix K in your report. What  
33 you've done, as I understand it, in Appendix K  
34 through Table K-1 and K-2, is to provide to the  
35 Commission a summary of actions that have been  
36 taken by both the Department of Fisheries and  
37 Oceans, as well as what you call "Partners", in  
38 order to protect and help the conservation unit  
39 that is known as the Cultus Lake sockeye. Is that  
40 what you've done here?
- 41 A That's correct, yes.
- 42 Q And so dealing with K-1, it strikes me that when I  
43 reviewed this that there's a lot of people, not  
44 just DFO, that are involved in this initiative to  
45 try to protect the Cultus Lake sockeye; is that  
46 correct?
- 47 A Yes.

- 1 Q A number of conservation groups, a number of local  
2 groups, a number -- I see Fraser Valley Salmon  
3 Society, I see First Nations groups, the Soowahlie  
4 Band is involved in some of these initiatives. It  
5 strikes me that this is something that where a lot  
6 of people, and by the way, I understand also that  
7 the commercial fishing sector also contributes by  
8 way of funding to some of these projects, does it  
9 not?
- 10 A Yes, that's what I'm aware of. Yes.
- 11 Q Right. And it strikes me that this is an example  
12 where people have come together to try to protect  
13 an endangered stock, and it provides an example of  
14 how people with disparate interests could actually  
15 work together to achieve some common goal. Would  
16 that be a fair statement?
- 17 A Yes, I think people have come together for quite a  
18 number of reasons to try and make sure that the  
19 stock sticks around and is brought back, recovered  
20 as much as possible.
- 21 Q All right. And then under your second table under  
22 that appendix, Table K-2, you go into the summary  
23 of actions that have been proposed but not pursued  
24 by the Cultus Sockeye Recovery Team.
- 25 A Mm-hmm.
- 26 Q Do you happen to know why some of these things  
27 have not been done? Is it a question, once again,  
28 of lack of resources, lack of funding?
- 29 A I think it's a combination of reasons. I think  
30 with any one of these plans there's a priority  
31 set, and so certain things are higher priority  
32 than others, and some may be reviewed and thought  
33 to be, you know, not likely to be successful, so  
34 they decided not to do those.
- 35 Q Now, in the few minutes remaining, I want to move  
36 off of Cultus Lake and I just want to jump back  
37 again to the escapement targets and escapement  
38 goals. Because I want to keep focused upon that,  
39 Mr. English, because I think it provides an  
40 interesting key to some of the issues that we're  
41 dealing with here. The whole issue of sockeye  
42 salmon and the biology of sockeye salmon, it's  
43 complex, right?
- 44 A Mm-hmm.
- 45 Q I mean, the management of sockeye salmon is a  
46 fairly complex topic; is that correct?
- 47 A Yes, it is, it's not simple.

Karl English

Cross-exam by Mr. Leadem (cont'd) (CONSERV)

Cross-exam by Mr. Harvey (TWCTUFA)

1 Q It's not simple, but it's not -- it's not a  
2 situation where we can't solve it, right? We're  
3 not at that stage where we just throw our hands up  
4 in the air and say, well, it's too complex, we've  
5 just got to go away and hope for the best. We're  
6 not there yet, are we.

7 A No. No, it is -- it is solvable, and it requires  
8 cooperation with all the people involved because  
9 you've got to manage the people as well as the  
10 fish.

11 Q And the reason why I want to focus upon the  
12 escapement goals, because it does provide a really  
13 simple way of trying to address a complex problem,  
14 that if we have a definable goal in sight, that  
15 everyone can turn their attention to and provide  
16 some certainty to all the disparate elements in  
17 this room, then, it strikes me that that's one way  
18 of moving forward on this issue of what to do  
19 about the decline in the sockeye population. Is  
20 that fair to say?

21 A Yeah, very much so. And just like we talked about  
22 yesterday, in the opposite context, if we don't  
23 have agreement on the goal, we're definitely not  
24 going to get there.

25 MR. LEADEM: All right. Thank you. Those are my  
26 questions.

27 MS. BAKER: Thank you. Mr. Commissioner, we have a  
28 very tight schedule to get all the questions  
29 completed today, and the next questioner is Mr.  
30 Harvey for Area G, and he has 60 minutes as an  
31 allocation of time.

32 MR. HARVEY: So it's Chris Harvey for the Area G  
33 Trollers and the United Fishermen and Allied  
34 Workers Union.

35

36 CROSS-EXAMINATION BY MR. HARVEY:

37

38 Q Mr. English, I'd like to start with the farming  
39 analogy that you gave at the end of the day  
40 yesterday, because it seems to me that population  
41 dynamics, fisheries biology is no more complicated  
42 than that. Escapement is the equivalent in this  
43 field as seeding in the agricultural field, is  
44 that...

45 A That's the idea.

46 Q That's the idea.

47 A Putting the seeds, in this case eggs, in the



- 1 gravel.
- 2 Q Yes. And you said, I think, seeding at only half  
3 is obviously less than optimum. I want to suggest  
4 to you also that seeding at double the capacity  
5 that a field can produce in that area would  
6 produce a stunted and unhealthy crop, and  
7 therefore is also not optimum.
- 8 A Yeah. It's a little more complicated in the case  
9 of fish than in the case of agriculture in that  
10 regard, with regard to what the effects of having  
11 too many, having more than the optimal number of  
12 eggs in the gravel is --
- 13 Q Yes.
- 14 A -- because of the other parts of the life history.
- 15 Q Yes. But the analogy I'm using is not with the  
16 spawning ground so much as the rearing lakes,  
17 because it's the nutrient capacity and the  
18 carrying capacity of the rearing lakes that very  
19 much, well, in a number of our systems determines  
20 the optimum amount of escapement, does it not?
- 21 A Yes. And the ability of the fish to produce that  
22 number, the optimal number for the lake depends on  
23 the spawning ground habitat.
- 24 Q Yes.
- 25 A Such that if the spawning ground habitat is  
26 limited, it will control the numbers of juveniles  
27 that get produced that can then migrate  
28 downstream, or upstream, in some cases, to the  
29 lake and then rear in the lake.
- 30 Q Yes. I think, well, let's use the analogy of the  
31 Shuswap system and the Quesnel system, because  
32 both those systems have been described here as  
33 being lake limited, as opposed to spawning ground  
34 limited. Is that consistent with your  
35 understanding?
- 36 A Definitely for Quesnel. There are components of  
37 the Shuswap system, most notably the Lower Adams  
38 River, which is clearly spawning ground limited  
39 and has in some cases shown that you get very  
40 large returns that are confined to a very small  
41 area.
- 42 Q Yes. All right. Well, at any rate, there are  
43 those two limitations.
- 44 A Mm-hmm.
- 45 Q If we take the lake-limited areas, such as the  
46 Quesnel, there's another analogy with farming,  
47 isn't it, that if you over-seed the area, you will

- 1           deplete the nutrients, just as a farmer can  
2           deplete the nutrients in his field and thus there  
3           is a carryover effect in following seasons. That  
4           analogy applies, as well, does it not?
- 5        A     Yes. So in the case of Quesnel, the idea of  
6           putting -- you have more juveniles in the lake  
7           rearing, that affects, because it is more  
8           complicated than what we call primary production  
9           with seeds in agriculture, in that there's a whole  
10          food chain that supports those juvenile sockeye,  
11          and there's effects on that food chain and the  
12          dynamics of those populations, that in the case of  
13          Quesnel have shown in a few instances, not a large  
14          number, because there's not been a lot of cases  
15          where a huge number of fish have been put on the  
16          spawning grounds and essentially over-seeded the  
17          lake.
- 18       Q     Yes.
- 19       A     But in the few instances that have, it's shown  
20          that the juveniles don't grow as large, and then  
21          you end up with a potential for less returns.
- 22       Q     Yes. And with carryover effects in the following  
23          years, because once the food web is driven down,  
24          it will take time to recover.
- 25       A     Yes. And as the variety of studies, some of the  
26          best work done in Alaska related to carryover  
27          effects, but as they've noted there and elsewhere,  
28          there's a lot of -- there can be substantial  
29          differences between lakes because each lake is a  
30          different ecosystem.
- 31       Q     Yes. But with respect to escapements and lower  
32          benchmarks and upper benchmarks, there is a kind  
33          of a sweet spot which is meant to be right between  
34          the upper and the lower benchmark, isn't it, and  
35          the more precise the better?
- 36       A     Yes. Definitely that's the rationale behind the  
37          goal set for Bristol Bay, for example, is --
- 38       Q     Yes.
- 39       A     -- there's a range and I think that if they're  
40          right in the middle of that range, they're  
41          probably the happiest.
- 42       Q     Yes. So from a biological perspective, quite  
43          apart from the economic perspective, it is  
44          important to adhere to both the lower benchmark  
45          and the upper benchmarks?
- 46       A     There is, I think, let me clarify that the  
47          benchmarks defined for -- that are being proposed

- 1 to be defined under the Wild Salmon Policy might  
2 not be viewed as equivalent to the ones done in  
3 places like Bristol Bay.
- 4 Q Yes.
- 5 A The Bristol Bay ones would be more like bounds  
6 placed on an upper benchmark.
- 7 Q Yes.
- 8 A As opposed to the lower benchmark, which is  
9 envisioned as a location where you don't want to  
10 go near if you can avoid, if you can have returns  
11 greater than -- you don't want to have fisheries  
12 certainly if you're in the vicinity of the lower  
13 benchmark.
- 14 Q Yes. And that's one of the differences between  
15 Bristol Bay and our system in the Fraser, isn't  
16 it, that we don't have bounds placed on the upper  
17 benchmarks here, the way they do in Bristol Bay.
- 18 A Well, essentially we don't, we haven't defined the  
19 goal which is the intent of the upper benchmark --
- 20 Q Yes.
- 21 A -- for these stocks.
- 22 Q And the goal that you are speaking of with respect  
23 to the upper benchmark is a biologically driven  
24 goal, correct?
- 25 A Yes.
- 26 Q Yes.
- 27 A Yes, that's the idea, is that you'd use  
28 information on the biological system capacity,  
29 both spawning and rearing areas, to determine what  
30 would be the appropriate goal for seeding.
- 31 Q Yes. Yes. And it's biologically driven because  
32 if you don't have an upper benchmark in the sense  
33 you've described, you're basically ignoring other  
34 elements of the ecosystem, namely the food web,  
35 that is critical to the health and long-term  
36 survival of sockeye, correct?
- 37 A Yeah, you should be taking all those things into  
38 account in setting that goal.
- 39 Q Yes. Finally, with the farmer analogy, the farmer  
40 is obviously looking for long-term maximum  
41 sustainable yield from his field, and I take it  
42 your suggestion is that fishery managers should be  
43 looking for the same thing, long-term maximum  
44 sustainable yield from the sockeye fishery  
45 resource.
- 46 A Well, there's quite a bit of debate about whether  
47 you need to be looking at the maximum, but you can

1 set targets that will produce good, sustainable  
2 returns. Whether it's the maximum that you're  
3 targeting, or some optimal level, is the subject  
4 of a lot of debate.

5 Q Yes. Well, I've assumed that everyone in this  
6 room would be happy with the maximum sustainable  
7 yield in the sockeye resource, and so I don't  
8 really know how controversial that is. But we'll  
9 get to the -- the point of your criticism is that  
10 the FRSSI model loses sight of the goal, whether  
11 it's maximum sustainable yield or a good long-term  
12 sustainable yield, it tends to lose sight of it,  
13 is that...

14 A Yes, it's defining a harvest rule that will  
15 produce an escapement without any reference  
16 directly to what the goal is for those particular  
17 stocks.

18 Q Yes. There should be a brief of documents in  
19 front of you. At Tab 15 is the latest Pestal and  
20 Cass document, which I looked to, to see what  
21 goals, if any, there are. And the best I could  
22 find was at page 0024, using the Ringtail numbers.  
23 Under "Performance Evaluation" it says:

24  
25 The overarching goal of the FRSSI process is  
26 to seek a balance between the fundamental  
27 objectives of (1) ensuring spawner abundance  
28 and production for individual stocks and (2)  
29 accessing catch-related benefits from the  
30 timing aggregates.

31  
32 That's anything but clear to me. Would you agree  
33 with that?

34 A I can certainly see how it's unclear. I do  
35 understand what it's trying to say.

36 Q Yes. But I searched in vain in this document for  
37 a clear statement that maintaining the largest  
38 sustained abundance of sockeye or a good sustained  
39 abundance of sockeye in terms of what the  
40 ecosystem can support is a goal. Did you  
41 similarly find that somewhat unclear?

42 A Well, I can't say I've gone through every one of  
43 these documents. I'm not sure whether there is  
44 something clearer in this document that I could  
45 find.

46 Q Okay. You mentioned in answer to questions from  
47 Mr. Leadem a moment ago that the individual

- 1 conservation units have to be taken into account.  
2 But there is a way, is there not, of maintaining a  
3 large overall abundance of sockeye and protecting  
4 weak stocks, and I'm going to suggest that the way  
5 to do that is to use what Carl Walters described  
6 in his evidence here, a sustainable overfishing of  
7 the weaker stocks. And I think, if I've got it  
8 right, what he was explaining is that stocks such  
9 as the Cultus are habitat limited and there are  
10 habitat degradation problems there, but a small  
11 number of a small return will sustain that genetic  
12 unit. A small return in an unproductive lake will  
13 sustain the lake. It doesn't have to be a large  
14 return in an unproductive lake. Is that something  
15 you basically agree with?
- 16 A Well, I understand what he's driving at there, and  
17 the concept is, and it's a similar concept has  
18 been identified on the Skeena with analysis that  
19 Carl Walters has done and others, to look at  
20 whether the smaller stocks can sustain themselves  
21 at these lower levels for a period of time.
- 22 Q Yes.
- 23 A And the real issue in that regard is it appears to  
24 have been the case historically, or we wouldn't  
25 have a lot of these small stocks today if they  
26 couldn't do as Carl has identified.
- 27 Q Yes.
- 28 A But the concerns, I think, as have been expressed  
29 by a number of people are that as you go forward  
30 into the future with other challenges on these  
31 populations, that that may not be the case, that  
32 what we've seen in the past may not bode out into  
33 the future.
- 34 Q Yes. But there is no firm evidence to support  
35 that, because in the past we have seen that where  
36 either a spawning or a lake-rearing habitat has a  
37 small number, as opposed to an overlarge number of  
38 fish in it, it will respond well. In other words,  
39 the productivity of the fish will be good.
- 40 A And that's the principle behind the stock  
41 recruitment analyses and --
- 42 Q Yes.
- 43 A -- most of the evidence regarding salmon is that  
44 at lower abundance levels, they tend to be more  
45 productive.
- 46 Q Yes.
- 47 A As long as there's not a predation effect.

1 Q Yes.

2 A So this predator pit-type effect that you can get,  
3 where very small populations, the predation is  
4 great and hold the population down at that level.

5 Q Yes. Yes, thank you. Well, getting back to the  
6 central point in your paper, that without, about  
7 an absence of clearly identified goals, that has  
8 led, I think, I think to a confusion as to how to  
9 deal with the escapement. That's the basic point  
10 that you make in your paper; is that correct?

11 A Yes.

12 Q Now, it is agreed, I think, and if we look at this  
13 paper, at page 0017, it is agreed that there is --  
14 by everybody, it seems, that there is a productive  
15 capacity limit for every stock. There's a  
16 paragraph beginning "The productive capacity" down  
17 at -- yes:

18  
19 The productive capacity of Fraser River  
20 sockeye stocks is limited in the freshwater  
21 environment, either by available spawning  
22 habitat or by available lake rearing habitat.  
23 Several approaches have been used to estimate  
24 productive capacity for individual sockeye  
25 stocks, including available spawning area,  
26 lake productivity, and numerical estimates of  
27 the capacity parameter from population  
28 models... This information can be used to  
29 shape prior assumptions about density-  
30 dependent parameters in the spawner-recruit  
31 model.

32  
33 So that's basically generally agreed what's set  
34 out there; is that correct?

35 A Yes, and very consistent with what I've just been  
36 saying.

37 Q Yes. And but what is discussed here, what the  
38 authors seem to leave out, is the empirical method  
39 or what I think is also called the stock recruit  
40 method, stock recruit analysis method of  
41 determining the carrying capacity of spawning  
42 grounds or rearing areas. That is another  
43 familiar method, is it not?

44 A I think the stock recruitment models are used to  
45 look at returns, essentially returns per spawner,  
46 where you're getting the best returns per spawner.

47 Q Yes.

- 1 A And they are naturally integrating a lot more than  
2 just the freshwater habitat.
- 3 Q Yes.
- 4 A They're looking at the returns being the fish that  
5 come back after rearing in the ocean and  
6 completing their life history.
- 7 Q Yes. If we look at page 102 of this paper, we see  
8 an analysis here, and I think this is the sort of  
9 thing that one looks at for a stock recruit  
10 analysis, is that right? We have the years down  
11 the left, the run size, the spawners, the  
12 effective female spawners, and then the recruits,  
13 which would be the recruits four years later,  
14 generally, including some five-year-olds.
- 15 A Yes. This is done by brood year, this would be  
16 exactly what I'm talking about. yes.
- 17 Q Yes. And if we look in the upper right-hand  
18 column, there's some shading bars, for example,  
19 the 1954 year, the shading, the bars on the right,  
20 that those indications are the productivity, are  
21 they not? So that indicates a high productivity  
22 in 1954.
- 23 A Yeah, it looks like it's the portion of the  
24 maximum for each variable. So it's indicating how  
25 much greater that variable, that value is, or what  
26 portion of the maximum I guess of that variable is  
27 occurring in that year.
- 28 Q And the way these analyses work, you can look  
29 down, let's say, down the "Effective Females"  
30 column, and then look at the "Recruits" beside it  
31 and determine what is the right level or what  
32 seems to be the right level of effective female  
33 spawners. For example, 1954 just over one million  
34 effective female spawners led to a high  
35 productivity, whereas four years later, in '58,  
36 with half a million, more than half a million,  
37 about 600, or half a million more effective female  
38 spawners, you have far less productivity. And  
39 then you go through the cycles in that manner and  
40 it gives you an idea of what is the right level of  
41 escapement. Is that...
- 42 A Well, what this is, is showing you the range in  
43 returns or recruits.
- 44 Q Yes.
- 45 A And you can see from a given level of spawning.
- 46 Q Yes. There are of course other factors --
- 47 A Yes.

- 1 Q -- in play, but this gives you a pretty good idea.  
2 For example, if we take the one million effective  
3 female spawners we have that again in 1978 with a  
4 lot of bars beside the right-hand columns, good  
5 productivity.
- 6 A Yes, and you also see in 1982, for example,  
7 escapement very similar to what was in 1958.
- 8 Q Yes.
- 9 A And it produced a substantial larger return than  
10 what was seen in the returns from the '58  
11 escapement.
- 12 Q Yes. But then in 1986 there's a smaller  
13 escapement again, closer to the 1954, and it's got  
14 a better productivity. It's produced even more  
15 returns than the larger escapement in '82,  
16 correct?
- 17 A Yes.
- 18 Q Yes. And just following through, it's interesting  
19 that the 2006 effective female spawners, 1,170,000  
20 is again seems to be right on the sweet spot. We  
21 haven't got the 2010 returns here, but we know  
22 that they were the record along with the '54 or  
23 '58 return. So this, looking at this, this gives  
24 a biologist an idea that on the stock recruitment  
25 or empirical method, just over one million  
26 effective female spawners seems to be about right,  
27 correct?
- 28 A It's certainly in that range, and I think if you  
29 look at the capacity for the lake, like rearing  
30 capacity for Shuswap Lake, the estimates that I've  
31 seen are in the order of something similar, but it  
32 can go as high as 1.9 million, spawning escapement  
33 to produce the juveniles that will achieve that  
34 capacity.
- 35 Q 1.9 million spawners in total?
- 36 A Yes.
- 37 Q So about half that would be effective female  
38 spawners.
- 39 A Yes.
- 40 Q Yes. I've got a paper in here at Tab 2. I don't  
41 think we need turn to it, but that's based on an  
42 analysis of the rearing capacity of the lakes  
43 using cone shaped nets to trap the fry and the  
44 little daphnia flies and other species that are  
45 used as feed, is that correct, as you understand  
46 it?
- 47 A Yes.



1 Q And through sort of a completely different type of  
2 analysis, about the same number, around about a  
3 million effective female spawners, slightly less,  
4 I think in Hume's analysis. slightly less is  
5 optimum.

6 A Yes. You may want to be aware that the egg-to-fry  
7 survival is obviously an important issue, so if  
8 that's low for whatever reason, lower, then you  
9 need more effective females --

10 Q Yes.

11 A -- to seed the right number in the lake.

12 Q Yes. All right. Now, is it your understanding  
13 that the old International Pacific Salmon  
14 Fisheries Commission used basically the stock  
15 recruitment analysis method? They didn't have the  
16 advantage of Hume's habitat measurements, but they  
17 used basically an empirical method to determine  
18 what they thought was optimum spawning levels; is  
19 that your understanding?

20 A Yeah, I think that it was more the case back a few  
21 years ago.

22 Q Yes. And the Alaskans used basically an empirical  
23 method supplemented by some pretty good scientific  
24 experiments. Is that as you understand it?

25 A That's my understanding, yes.

26 Q Yes. Well, let's turn to that in your report at  
27 page 4, your report, Exhibit 718. At page 4, the  
28 Bristol Bay fishery is described. They say in  
29 that second sentence that:

30  
31 One aspect of the Bristol Bay fisheries that  
32 should be considered seriously for  
33 application to the Fraser is the clarity and  
34 priority associated with their escapement  
35 goals. A clearly defined set of escapement  
36 goals for Fraser sockeye would not guarantee  
37 success but is one way that the management of  
38 stocks could be made simpler and increase the  
39 potential for achieving these escapement  
40 goals.

41  
42 Now, the report at page 126 discusses this in  
43 more detail, and I think in the interests of time,  
44 I won't deal with that in detail, but under  
45 "Management", towards the bottom, you describe how  
46 the "local Area Management Biologists (AMBs)".  
47 The "ADF&G's", that's Alaska Department of Fish

1 and Game, I think?

2 A That's correct.

3 Q

4 ...Research Biologists develop biological  
5 escapement goals for individual river systems  
6 based on sustained yield and/or maximum  
7 sustained yield (MSY) principles using  
8 relationships between escapement levels and  
9 subsequent returns (termed stock-recruit  
10 analyses).

11  
12 So that's the sort of analyses that we looked at a  
13 moment ago.

14 A That's correct, yes.

15 Q That's correct.

16

17 The primary duty of all AMBs is to hit these  
18 goals and distribute the escapements across  
19 the season based on historical run timing  
20 schedules.

21

22 Et cetera. And you say they've been very adept at  
23 hitting the goals.

24 The AMBs, as I understand, have I got it  
25 right, there are four senior biologists who  
26 basically run this system?

27 A Effectively, yes.

28 Q They have a staff, but it sounds like the cost of  
29 running that system, which is far larger in terms  
30 of run size than the Fraser, the cost must be  
31 miniscule compared with what the DFO spends doing  
32 an equivalent exercise. Do you know anything  
33 about that?

34 A I've heard it referred to that the costs there are  
35 substantially less. The exact amount I'm not  
36 familiar, I can't tell you today.

37 Q Okay. Then at page 128 -- so I guess we could  
38 summarize. That is a science-driven system,  
39 whereas ours seems to lean more towards being a  
40 consensus-driven system. Would that be a fair  
41 statement?

42 A There's a lot of focus on consensus, certainly on  
43 the Fraser.

44 Q Yes. Page 128, the paragraph beginning:

45

46 Although the Bristol Bay fishery is seen as a  
47 biological success story, from an economic

1                   standpoint...

2

3

And then you go on. Halfway down that paragraph:

4

5

Hilborn (2006) argued that the biological  
success story of Bristol Bay is due to clear  
biological objectives and clear lines of  
authority...

6

7

8

9

10                   So that's something you agree with, I think; is  
11                   that correct?

12

A     Yes.

13

Q     At page 137 there's an interesting graph here, if  
14                   we could look at it. The grey area at the bottom  
15                   is the escapement numbers and the area at the top  
16                   is the catch, or harvest numbers. And it looks  
17                   like the escapements fluctuated wildly until about  
18                   1980 or '82, the last of the big escapements, and  
19                   then they comparatively levelled off. Is it a  
20                   fair comment that the big escapements stopped in  
21                   Alaska about the same time as they started in the  
22                   Fraser?

23

A     I don't know that that is particularly the case in  
24                   terms of timing. I think it's really important to  
25                   note, I did ask Michael Link, who prepared this  
26                   part of the report and understands the fishery up  
27                   there in detail, what the reasons for the very  
28                   different shape of this graph was, between the  
29                   pre-1980 period and post-1980 period, and he said  
30                   that it was very much related to the regime shift,  
31                   where the productivity increased two or threefold  
32                   after '77. There was a well-known regime shift  
33                   that resulted in higher productivity for Alaskan  
34                   sockeye stocks, and the breakdown of a previous  
35                   pattern of cyclic dominance for the -- this is the  
36                   Kvichak stock that we started to talk about the  
37                   other day, that showed a very cyclic return for a  
38                   number of years and was contributing a very large  
39                   portion of the production, and that broke down  
40                   here just shortly after the -- at the same time as  
41                   this change in productivity occurred. And so you  
42                   get more production from lower levels of  
43                   escapement, as you're seeing in the subsequent  
44                   period.

45

Q     Well, without going into the chicken and egg  
46                   question of which caused which, it's accepted,  
47                   isn't it, in this field, that high escapements

- 1 will trigger wild variations in -- that's been  
2 referred to as cyclic dominance, cyclic  
3 variations. In other words, a very high  
4 escapement in one year will lead to depressed runs  
5 succeeding, and then if the ecosystem recovers, a  
6 high escapement can be supported four years later,  
7 but then the food web gets driven down again, and  
8 we get -- as long as we have the very high  
9 escapements, you're going to have cyclic  
10 dominance, high cyclic variations.
- 11 A Yes, it's hard to get into the subject without a  
12 lot more discussion, but there are what they refer  
13 to as broodline interactions --
- 14 Q Yes.
- 15 A -- associated with cyclic dominant stocks when the  
16 cycles are very large.
- 17 Q Yes. And it's the relationship between the  
18 carrying capacity of the freshwater system and the  
19 number of spawners that will trigger wild cyclic  
20 variations, or extreme cyclic variations, isn't  
21 it?
- 22 A In the case of the Shuswap stocks we were just  
23 talking about.
- 24 Q Yes.
- 25 A You can still hit the carrying capacity on the  
26 dominant cycle close, or even be under the  
27 carrying capacity on that cycle, and still have  
28 the cycle continue as cyclic, and the carrying  
29 capacity is not changing appreciably between the  
30 different years, so...
- 31 Q But presumably if you lowered escapement  
32 dramatically so that the food web remained  
33 consistent, you could iron out the cyclic patterns  
34 over time.
- 35 A Well, there's been a lot of debate about whether  
36 you can remove the cyclic pattern and produce a  
37 higher yield of a population without using the  
38 cycles.
- 39 Q Yeah. And it's very much a lake-specific concept,  
40 isn't it, because lakes differ.
- 41 A Yes.
- 42 Q But it has been observed, well, if I'm right, that  
43 there is this correlation, necessary correlation,  
44 the cyclic variations could be triggered either by  
45 high escapement or by the carrying capacity of the  
46 lakes being lowered through habitat degradation.  
47 It would have the same effect, either lowering the

1 carrying capacity through habitat degradation, and  
2 I'm thinking of the Cultus, as would have the same  
3 effect as increasing escapement if the carrying  
4 capacity had remained the same.

5 A Yeah. I think you want to keep habitat  
6 degradation that is not occurring in a cyclic  
7 nature, you know, habitat degradation generally  
8 takes place and then the overall capacity is  
9 reduced because of that.

10 Q Yes.

11 A Milfoil or --

12 Q Yes.

13 A -- loss of lakeshore spawning habitat, or other  
14 things that have been noted for Cultus.

15 Q Yes.

16 A That's separate from the estimate of the capacity  
17 of the system and how close to that capacity  
18 you're seeding it in a given year.

19 Q But doesn't that all go to determining what the  
20 capacity is? For example, if there's a lot of  
21 milfoil and if you're approaching a eutrophic  
22 state, doesn't that reduce the capacity?

23 A Certainly it affects the capacity, but what I'm  
24 saying is doesn't tend to occur on a cycle, like  
25 you have it in one year but not in another.

26 Q Yes. No, I wasn't meaning to suggest that.

27 A Mm-hmm.

28 Q All right. I think I have to move ahead in the  
29 interests of time. If we could just go to the  
30 next page, 138, in this. I wanted to note  
31 something here towards the bottom of that first  
32 long paragraph. The sentence beginning "However":

33

34           However, the regulations --

35

36           - this is in Alaska -

37

38                       -- specify that the [Alaska Department of  
39 Fish and Game's] highest priority is to  
40 obtain escapement goals and maintain genetic  
41 diversity of the escapement... When  
42 conservation concerns arise, management plans  
43 often set out how ADF&G should strive to  
44 address such concerns amid allocation issues.

45

46           It seems that they've got the same priority for  
47 maintaining genetic diversity that we have here in

1 the Fraser.

2 A They're referring to the same terms.

3 Q Yes. It's not as though they're ignoring

4 conservation concerns in Bristol Bay.

5 A No, they want to have a good seeding of the

6 available habitat and production from all the

7 lakes that are within a district, not just one or

8 two of them.

9 Q Yes. But they're -- yeah, they're not managing

10 the system. They're producing a very successful

11 fishery there in the way they do it with their

12 upper and lower boundaries. They're doing that

13 whilst not in any way ignoring conservation

14 concerns or genetic diversity; is that correct?

15 A Yeah. They're -- I'd say to be fair to the two

16 systems, there's less focus on the small stocks in

17 Alaska.

18 Q Yes.

19 A Than on the productive stocks.

20 Q Yes. But those small stocks continue to tick over

21 year-by-year, thus preserving the genetic makeup

22 of them don't they.

23 A I can't say I know exactly what's going on with

24 the smaller populations and the amount of

25 interaction of interplay, how distinct the small

26 populations are in Bristol Bay.

27 Q And that's just your lack of familiarity with...

28 A Yeah, and it's also fair to say that their

29 assessment programs are not focused on determining

30 that --

31 Q Yes.

32 A -- to the same degree that we are on the Fraser.

33 Q Thank you. Do you know anything about MSC

34 certification with respect to the Bristol Bay

35 fishery?

36 A I know that it was part of the certification

37 process. I don't know all the details --

38 Q Yeah.

39 A -- regarding their evaluation.

40 Q All right. So they're going through the same

41 process that we are here with respect to MSC

42 certification?

43 A Yes. They have gone through it initially before

44 British Columbia did, before the -- for sockeye

45 fisheries, and then they've gone through a

46 reassessment a number of years ago, so they're

47 using right now -- their initial assessment didn't

1 use the same criteria that was used for the B.C.  
2 sockeye fisheries, but their current assessment  
3 does use the same criteria.

4 Q Yes. all right. Now, I want to look at some of  
5 the science that they've based their fishery  
6 management strategies on, if we could look at Tab  
7 1 of the binder you have. This is the Koenings  
8 and Kyle 1997 paper on Consequences to Juvenile  
9 Sockeye Salmon and the Zooplankton Community  
10 Resulting from Intense Predation. The paper  
11 discusses the effects of over-escapement at page  
12 120 of the paper. It's, yes, the bottom of that  
13 page. That's it. The right-hand column about  
14 halfway through the paragraph it reads:

15  
16 In fact, successive escapements 2-3 times  
17 above the rearing capacity in Frazer Lake...

18  
19 They're talking -- that's one of the lakes they  
20 focused on here, Frazer with a "Z":

21  
22 ...caused the collapse of a dominant year  
23 run, and subsequent brood year return per  
24 spawner ratios fell below replacement levels.  
25 Such top-down effects, if related to  
26 overgrazing the forage base, are reversible  
27 by nutrient treatment...

28  
29 Mentions a number of papers.

30  
31 Top-down control by rearing sockeye salmon  
32 reduces the size of prey items, lowers  
33 zooplankton fecundity and density, displaces  
34 vulnerable prey species, and thereby  
35 restructures the zooplankton into a predator-  
36 resistant community... Once established, such  
37 an assemblage may resist immediate reversal  
38 to bottom-up (producer) control, either  
39 through decreased predation or increased  
40 primary production.

41  
42 So that, I think, encapsules the detrimental  
43 effects that they found from successive over-  
44 escapements; is that correct?

45 A That's what's written in the paper, for sure.

46 Yes. It looks like it happened.

47 Q Yeah. And the paper, the Frazer Lake that they

1 discuss, it's mentioned in the next -- or on this  
2 page, in the right-hand column beginning:

3  
4 Frazer Lake (57°5'N, 154°10'W) is the second  
5 largest lake on Kodiak Island...

6  
7 Gives the surface area. The lake has an outlet  
8 barrier:

9  
10 ...that until 1962 precluded salmon access.  
11 In 1962 a single steep pass fishway was  
12 installed and another was added in 1979.  
13 ...enabled a major run of sockeye salmon to  
14 become established... This lake has not been  
15 stocked in recent years, but nutrient  
16 treatment was conducted...

17  
18 So that was a good area for testing there that's  
19 discussed here. And it goes on. They discuss  
20 also two landlocked lakes in the paper, landlocked  
21 lakes that were then stocked, and then they  
22 watched very carefully what happened in the  
23 ecosystem once sockeye fry were introduced. And  
24 I'd like to turn to page 129 of the paper, which  
25 shows in the form of a graph what happens. If we  
26 could just read the words at the bottom first, Mr.  
27 Lunn, the Figure 5:

28  
29 Seasonal mean macrozooplankton biomass and  
30 density by taxa in Pass Lake...

31  
32 That's the "A", the top one:

33  
34 ...before stocking of sockeye salmon fry --

35  
36 - which is the -

37  
38 -- (control), during stocking, and during  
39 either nutrient treatment or no stocking.

40  
41 So if we go back up to the top, the control,  
42 that's before stocking of sockeye, and the almost  
43 black and white and the other shading areas, are  
44 described as the food web, "Cyclops, Daphnia,  
45 Diaptomus, Bosmina and Holopedium", those must be  
46 very interesting little critters, but very  
47 critical to the life of sockeye, it appears. So



1 without this sockeye fry there's a big mass of  
2 them. Then after sockeye stocking, 1988, they are  
3 being depleted and by 1989 it's all black, which  
4 means that Cyclops is the only one of the five  
5 that remains, the other two are wiped out, if this  
6 is correct. And then nutrient treatment, and a  
7 very slow return.

8 So this is part of what's discussed in this  
9 paper and it encapsules what happens when a whole  
10 lot of sockeye fry are introduced in a lake  
11 rearing system, is that...

12 A I think you want to be very careful that it's what  
13 happens when they did this experiment in this  
14 particular lake.

15 Q Yes.

16 A Each lake can have a different zooplankton  
17 community. These are all zooplankton species.

18 Q Yes. If we go back to page 127, the page before  
19 this, Mr. Lunn, something that I -- oh, I'm sorry,  
20 two pages before this. Yes. In the right-hand  
21 column near the top, the last line of that top  
22 paragraph beginning "However":

23  
24 However, *Diaptomus* never returned to 1978  
25 levels of abundance, even after 6 years of  
26 nutrient treatment.

27  
28 I just, I found that somewhat alarming because it  
29 indicates that once you do drive down these little  
30 creatures that the lake system ecosystem produces,  
31 it can take a very long time for them to recover,  
32 depending, of course on a number of things. But  
33 it can take a very long time for them to recover,  
34 correct?

35 A Yeah, it appears to be the case here, and I'd  
36 certainly recommend, because I'm not an expert in  
37 limnology, to the -- anywhere near the extent that  
38 someone like Jeremy Hume could --

39 Q Yes.

40 A -- probably provide you a lot more useful  
41 information on the Fraser lakes, the Fraser  
42 Watershed lakes --

43 Q Yes.

44 A -- for a comparison to this type of paper.

45 Q Yes. Why I found this alarming, it reminded me of  
46 the northern cod situation on the East Coast, once  
47 you get a stock knocked down, whether it's a

1 miniscule stock like these, or a large fish, it  
2 can take a long, long time to recover. So that's  
3 the Alaska system, what the Alaskan, the science,  
4 part of, a glimpse of the science that the Alaska  
5 system is based on.

6 The problem with the FRSSI model, isn't it,  
7 is that it's open-ended at the upper benchmark or  
8 upper boundary level. It doesn't have an upper  
9 boundary in the sense that once you -- well, let  
10 me see if I can find an example. I think we might  
11 have to -- well, let's just deal with it this way.  
12 If one million effective female spawners is the  
13 optimum in the Shuswap, let's say 1.5 million is  
14 set as the upper benchmark under the FRSSI model,  
15 1.5 million, if we had a return, a huge return  
16 like we had in 2010, where you might have 10  
17 million effective female spawners, after you reach  
18 the -- after the managers in their models have  
19 determined that you've exceeded 1.5 effective  
20 female spawners, then the harvest continues, the  
21 exploitation continues at 60 percent, which means  
22 that 40 percent of all the excess ends up on the  
23 spawning grounds. Am I interpreting it correctly?

24 A So you're saying that the total run size might  
25 have had a potential for 10 million effective  
26 females?

27 Q Yes.

28 A With a 20 million run size.

29 Q Yes.

30 A Yes.

31 Q And if 1.5 million effective females was the upper  
32 benchmark in the FRSSI model, everything between  
33 1.5 and 10 million, 40 -- well, I guess I have to  
34 go back to the 20 million run size, let's say,  
35 which on run size, three million would be the  
36 upper benchmark. So between three million and 20  
37 million, under this model, harvesting takes place  
38 at 60 percent, which means 40 percent goes on the  
39 spawning grounds.

40 A Yes.

41 Q Yes. All right. So effectively, you've got a  
42 situation under the FRSSI model where you can very  
43 seriously over-seed the spawning grounds; is that  
44 correct?

45 A If all those fish that entered the river survived  
46 their upriver migration, in the example you've  
47 presented, you could have eight million fish

1 arrive at the spawning area.

2 Q Yes. Do you happen to know how many arrived there  
3 in 2010?

4 A I actually have those numbers somewhere, but I  
5 can't remember what it is off the top of my head.

6 Q Could we have that --

7 A It's probably in the six million range, I think.

8 MR. HARVEY: Yes. Yes. In other words, substantially  
9 over the -- well, I'll let the numbers speak for  
10 themselves. Could this document be marked,  
11 please, as an exhibit.

12 THE REGISTRAR: That will be Exhibit 726.

13

14 EXHIBIT 726: Koenings and Kyle, Consequences  
15 to Juvenile Sockeye Salmon and the  
16 Zooplankton Community Resulting from Intense  
17 Predation, 1997

18

19 MR. HARVEY:

20 Q There's another Alaska paper which is Exhibit 419.  
21 In fact, that's already been exhibited. I don't  
22 think I have time to go into it.

23 I believe you have done some work on the  
24 Columbia River, Mr. English; is that right?

25 A That's correct, yes.

26 Q If we could bring up Tab 3, the paper entitled  
27 "Habitat Based Evaluation of Okanagan Sockeye  
28 Salmon Escapement Objectives". I note that in the  
29 reference page it references one of your papers,  
30 which is why I asked that question. This, what I  
31 find interesting in this document is that before  
32 escapement increased in the Columbia area, an  
33 evaluation was done of the carrying capacity. I  
34 found that curious, because it seems that the same  
35 thing wasn't done in the Fraser before the large  
36 escapement increases we had in the late '90s. But  
37 in this paper at page 24, I'll start. The  
38 Columbia, of course, one arm of the Columbia goes  
39 off to the Snake River area, and the other up to  
40 the Okanagan. That's correct, isn't it? So  
41 Osoyoos Lake and Okanagan Lake are part of the  
42 Columbia River system.

43 A That's correct, yes.

44 Q Yes. The recommendations in this paper at page 24  
45 number 1:

46

47 We recommend:

1                   (1) Provisional escapement objectives for  
2                   Okanagan sockeye be set at 58,730 adults (in  
3                   Wells Dam units) or 29,3655 adults as peak  
4                   visual counts...  
5

6                   Do you know why it is that in the Columbia we have  
7                   a focus on the carrying capacity of the rearing  
8                   areas that seems to be absent in the Fraser?

9                   A    I don't think it's fair to say it's absent.

10                  Q    Yes. Yeah, that's -- I agree with you, and I'm  
11                  putting it too strong, but we have more of a focus  
12                  in the Columbia area.

13                  A    Yeah, and there have been extensive studies on the  
14                  lakes that Jeremy Hume can probably relate to,  
15                  and/or describe to you, that will let you know  
16                  what they've found, and that information's not  
17                  been ignored, but it's using that information to  
18                  clearly define what these escapement goals are,  
19                  is --

20                  Q    Yes.

21                  A    -- is part of the challenge.

22                  Q    Yes. But here in the Columbia we've got a precise  
23                  number recommended, and I've not seen anything  
24                  like that for the Shuswap, the Quesnel, the  
25                  Chilko, or any of the other systems, any of the  
26                  other lake systems. Perhaps I've just missed it,  
27                  but why have we got such a precise number in the  
28                  Columbia, and not so far as I've been able to tell  
29                  in any of the Fraser system lakes?

30                  A    Well, there are -- it is curious why there hasn't  
31                  been agreement for using the available data to  
32                  identify a precise number, but that is exactly  
33                  what I've been talking about with regard to  
34                  setting escapement goals.

35                  Q    Yes. Yes, thank you. all right. Do you think it  
36                  may be that the Columbia has a large U.S.  
37                  involvement and influence in the way they manage  
38                  the fishery and that's resulted in this analysis  
39                  being done there, or is that...

40                  A    Well, there's certainly a lot of pressure coming  
41                  from groups on the Columbia, like the ones that --  
42                  or companies, the Douglas County Public Utility  
43                  District that runs the Wells Dam, for example,  
44                  wants to know what is the target. So there's  
45                  pressure from the hydroelectric power industry on  
46                  the Columbia. There's the cross-border nature of  
47                  that stock. And there's a lot of things that

1 affect how -- how those dams are operated that are  
2 related to sockeye and chinook and steelhead  
3 returns.

4 Q Yes. All right. But at any rate, the Columbia  
5 experience is that in 2008 and 2009 they had  
6 record returns in their sockeye fishery, whereas  
7 in the Fraser we've had somewhat dismal returns,  
8 is that...

9 A Yeah, they seem to be on a different pattern of  
10 returns definitely than the Fraser, and it's  
11 really important to note that the Columbia River  
12 sockeye stocks, specifically the Osoyoos Lake  
13 ones, are ones that are -- have an adaptation to  
14 handle higher water temperatures than any of the  
15 other sockeye stocks. They're the most southern  
16 abundant sockeye population and they have to swim  
17 through rivers that are even warmer than the  
18 Fraser during the spawning, during the migration  
19 period.

20 THE COMMISSIONER: Mr. Harvey, how much longer do you  
21 think you're going to be?

22 MR. HARVEY: Yes, I think I'll be four or five minutes  
23 longer.

24 THE COMMISSIONER: Why don't we take the break now.

25 MR. HARVEY: Yes.

26 THE REGISTRAR: The hearing will recess for ten  
27 minutes.

28 THE COMMISSIONER: Fifteen.

29 THE REGISTRAR: Fifteen minutes.

30

31 (PROCEEDINGS ADJOURNED FOR MORNING RECESS)

32 (PROCEEDINGS RECONVENED)

33

34 THE REGISTRAR: The hearing is now resumed.

35 MR. HARVEY: Yes, Mr. Lunn, could we please mark that  
36 document as the next exhibit?

37 THE REGISTRAR: That will be Exhibit 727.

38 MR. HARVEY: Yes.

39

40 CROSS-EXAMINATION BY MR. HARVEY, continuing:

41

42 Q Now, Mr. English, in the few minutes left, I'd  
43 like to turn to something that's directly relevant  
44 to the failure of the Quesnel run in 2009; 2005  
45 and 2001 were the preceding years of that cycle.  
46 In 2001, there was a huge unprecedented escapement  
47 level in the Quesnel system. And one of the

1 reasons we've heard for it was the fact that there  
2 was some Late-Run fish migrating Early mixed up  
3 with it. Now, you've looked at the possible  
4 reasons for the early migration of Late-Runs, I  
5 think; is that right?

6 A That's correct, yes.

7 MR. HARVEY: And I'd like to turn to two papers. One  
8 is at Tab 16. I'm sorry, Tab 10, if you like, Mr.  
9 Lunn. We'll start with Tab 10. That's the order  
10 I gave Mr. Lunn.

11 Q This is one of your papers; is that right?

12 A That's correct.

13 Q Explains it.

14 MR. HARVEY: Could that be marked, please, as the next  
15 exhibit?

16 THE REGISTRAR: That's Exhibit 728.

17 MR. HARVEY: 728.

18

19 EXHIBIT 728: English *et al*, Influence of  
20 Summer-Run Sockeye on the River Entry Timing  
21 of Late-Run Fraser Sockeye, 'Stay with the  
22 School' Hypothesis, 2005  
23

24 MR. HARVEY: And the next one at Tab 10.

25 THE REGISTRAR: We were just at Tab 10.

26 MR. HARVEY: Oh, I'm sorry. I was at Tab 10. Tab 16.

27 THE REGISTRAR: And our list of documents only goes up  
28 to Tab 15, I'm sorry.

29 MR. HARVEY: Oh, did I not give notice of this one?

30 There's another one. Oh, well. October 2009, an  
31 oral presentation you gave.

32 Q I think this was -- was this to the Simon Fraser  
33 University seminar on the 2009 collapse?

34 A I think that's what it was. I don't have the  
35 document in front of me but I think I was sent a  
36 document that was a presentation I gave.

37 MR. HARVEY: Do you have any problem if -- well, I  
38 guess we can't put that on the screen, if I  
39 haven't given notice of it.

40 Q All right. Well, at any rate, I'd like to ask you  
41 to explain, if you would, the theory, the  
42 hypothesis that you presented here to explain the  
43 early migration of the Late-Run fish in recent  
44 years.

45 A Okay. In as brief a manner as I can, essentially  
46 looks at the overlap in the timing between Summer-  
47 Run stocks and Late-Run stocks, as they're

1 migrating through the approach waters in the ocean  
2 and the relative size of those two populations  
3 with the basic principle being that because  
4 sockeye are a highly schooling species so they  
5 swim in dense schools.

6 And for one sockeye to the next, probably the  
7 picture that you have on the screen is the most  
8 appropriate, they can be often very close together  
9 and there would be no way for one fish, *per se*, to  
10 know what fish it's swimming beside, whether it's  
11 a Summer-Run or a Late-Run fish. And they densely  
12 school for a reason. It's for protection from  
13 predation. And it's sort of safety in numbers  
14 type of rationale that they follow right from when  
15 the times they were juveniles through their entire  
16 life history.

17 And the behaviour of fish when almost all the  
18 runs to the Fraser, other than the Late-Runs,  
19 migrate down the coast and directly into the  
20 Fraser with very little delay at the mouth. But  
21 the Late-Run, historically, a large portion of the  
22 stocks have delayed in that last stage. And the  
23 idea here is that when there's overlap, a lot of  
24 overlap between Summer-Run and Late-Run and  
25 Summer-Runs are very abundant, the dominant  
26 behaviour is going to be to migrate into the  
27 river. And so these Summer-Runs are essentially  
28 drawing Late-Run fish in with them when they're  
29 abundant and migrating earlier than normal. When  
30 the Late Runs are the dominant return or there's  
31 separation between the run timing groups then the  
32 Late-Runs become the dominant behaviour and there  
33 is an evolutionary advantage to those fish to  
34 delay in Georgia Strait so they'll stay out there  
35 and delay, as they did, in 2010 where they resided  
36 for two to three weeks off the mouth of the  
37 Fraser.

38 Q Yes. Now, the Quesnel is a Summer-Run; is that  
39 correct?

40 A That's correct.

41 Q If it had been cropped in the gauntlet fisheries  
42 in Johnstone Strait and other places in 2001 or  
43 these years that you have considered, if it had  
44 been cropped before arriving at the mouth of the  
45 Fraser, would that have mitigated that effect that  
46 you've just described?

47 A Well, there's huge differences in the abundance.

1           It's too bad you can't pull up the graph because  
2           you could see that on the dominant cycle for  
3           Quesnel the difference in abundance between Late-  
4           Run populations and Summer-Run populations is  
5           massive. Late-Run populations are definitely less  
6           than a million off and less than 500,000 returns.  
7           And it probably also is in this report, just not  
8           the graph. It's on page 19 in the report you  
9           entered as Exhibit --

10          Q     Tab 10.

11          A     Yes, page 19 in the report is a table. It's the  
12                top table in that tab.

13          Q     Yes.

14          A     If we look on the returns of Summers and Lates,  
15                you can see that the numbers are increasing, are  
16                getting larger in terms of total numbers arriving  
17                in Georgia Strait. So for 2001, for example,  
18                there's 4.238 million fish estimated arriving and  
19                the Late Run in that year was estimated at  
20                334,000. So to not have an effect in the dominant  
21                Summer Run years, you would have to crop down the  
22                return to well below the escapement goal, the  
23                logical escapement goal for that population. So  
24                this type of activity probably occurred and the  
25                paper talks about our ability to detect the early  
26                arrival of Late-Run fish prior to the development  
27                of the DNA stock identification techniques that  
28                were developed in or actually started to be  
29                implemented in 2000/2001.

30                So historically, we couldn't distinguish  
31                between Early, Summer and Late-Run Shuswap sockeye  
32                because they rear in the same lake and the scales  
33                look the same. And a scale stock ID technique was  
34                being used to distinguish them. Now, with  
35                genetics, we can distinguish between the  
36                populations that rear in the same lake. And so  
37                what we couldn't detect before we are detecting  
38                now and have been ever since 2001 very clearly.  
39                The early arrival of Late-Run fish, which, in my  
40                theory, has been going on at some level for quite  
41                a while because these fish that migrate along with  
42                the Summer-Run fish are going to have a high  
43                probability of continuing their migration up-river  
44                with that massive amounts of Summer-Run fish,  
45                especially in the dominant year like 2001.

46          MR. HARVEY: Yes, thank you. Those are my questions.

47          MS. BAKER: Mr. Commissioner, we have a bit of a



1 problem in that we're now over our schedule. And  
2 it's been pointed out, and I think it's a fair  
3 point, that the people that are typically at the  
4 end of the line-up get the short end of the stick  
5 when the estimates go over at the front half of  
6 the day. So we have the next group is Mr. Eidsvik  
7 and Mr. Rosenbloom. The original estimate for  
8 these two people were 45 minutes for Mr. Eidsvik  
9 and 15 minutes for Mr. Rosenbloom.

10 And I understand they were going to try and  
11 potentially reallocate some of that time but I  
12 don't know exactly how that will work. But I'm  
13 concerned now that we're going to have no enough  
14 time to complete the people in the afternoon. So  
15 we either have to ask the next two groups to  
16 reduce their time or we could rearrange the day so  
17 that they go towards the end. But we have a  
18 problem and we don't have enough time to complete  
19 today.

20 MR. ROSENBLOOM: Just for the record, Mr. Rosenbloom's  
21 original estimate was half an hour, 30 minutes,  
22 not 15.

23 MS. BAKER: I understand that. I can tell you that we  
24 had about over eight hours estimated and about  
25 six-and-a-half hours available so everybody's been  
26 cutback.

27 MR. ROSENBLOOM: I appreciate that. You just said the  
28 original estimate was 15 and it was actually --

29 MS. BAKER: The original allocation for Mr. Rosenbloom  
30 on my numbers.

31 MR. EIDSVIK: Good morning, Mr. Commissioner. Good  
32 morning, Mr. English or Dr. English.

33 MS. BAKER: I'm sorry. Mr. Eidsvik, before you start,  
34 could we have some understanding about what we're  
35 going to do here? Are we going to have a  
36 reduction in time with the next two questioners or  
37 will we move them to the end of the day? Or how  
38 are we going to proceed?

39 MR. EIDSVIK: I'm certainly going to try and  
40 accommodate the Commission. And while I was  
41 sitting there, you saw me with my papers. I was  
42 cutting substantial material from my argument.  
43 How much time do we have, Ms. Baker?

44 MS. BAKER: If you and Mr. Rosenbloom can complete in a  
45 combined 45 to 50 minutes, we would probably be  
46 back on schedule.

47 MR. EIDSVIK: Perhaps if I get near the end, again,

1           maybe some written questions to Mr. English might  
2           clean up some of the stuff and I'll do my best.  
3           How much time did you need? I'm just trying to  
4           get a sense of how much time I should be spending  
5           here.

6           MR. ROSENBLOOM: Well, I need at least 20 minutes. I'm  
7           not happy with 20 but I'll live with 20.

8           MR. EIDSVIK: Okay. And that gives me till...?

9           MS. BAKER: Twenty-five minutes.

10          MR. EIDSVIK: Twenty-five, thank you. For the record,  
11          it's Philip Eidsvik for the Area E and the  
12          Fisheries Coalition.

13  
14          CROSS-EXAMINATION BY MR. EIDSVIK:

15  
16          Q     Dr. English, I'm mostly interested in catch  
17          reporting. And if I had time on Cultus Lake, I'd  
18          deal with it. But I don't think we're going to.  
19          But first, before we get into that, a couple of  
20          clarifications in your report. In many places in  
21          your report, you refer to commercial fishing. And  
22          there's a couple of commercial fisheries in the  
23          Fraser River. And just for the record, when you  
24          refer to commercial fishing, are you referred to  
25          the public, all-Canadian commercial fishery, or  
26          are you referring to Aboriginal commercial  
27          fisheries as well?

28          A     Okay. In the commercial fishing section here, it  
29          is the public fishery not the First Nations. And  
30          the First Nations fishery is covered under the  
31          economic opportunity and pilot sales fishery.

32          Q     Okay. So wherever we see commercial fishing in  
33          your report, we automatically know you're talking  
34          about the public commercial fishery?

35          A     Within that section, yes. I may have referred to  
36          commercial uses of fish within the First Nations.

37          Q     Okay. And what type of fish harvest and  
38          mortalities aren't in your report? And I guess I  
39          just want to try and figure out the scope of your  
40          report. And fish harvested in illegal fisheries  
41          is not in your report?

42          A     Presumably if they've not been monitored, if  
43          there's no statistics on those catches then  
44          they're not in the report.

45          Q     Okay. Fishing-induced mortality, such as dropouts  
46          and set net fisheries, not in your report?

47          A     To the extent that they're included in the en

- 1 route loss component of -- there's some graphs  
2 that have en route loss accounted for, for recent  
3 years. To the extent that they're in there,  
4 they're included in the report.
- 5 Q Okay. So all types of fishing-induced mortality  
6 are in your report then. Is that what I can  
7 assume?
- 8 A Well, they could be. For specific years, there's  
9 a lot of uncertainty with what the true values of  
10 en route loss are for Fraser stocks.
- 11 Q Okay. Fish caught in one fishery and landed in  
12 another fishery not considered in your report?
- 13 A Well, the information we have looked at is what's  
14 been assigned to each of the fisheries. So I'm  
15 not sure what you mean by "caught in one fishery  
16 and landed in another".
- 17 Q Well, if you had fish that were caught, say, in a  
18 food fishery and were landed in a public  
19 commercial or an EO fishery, that would show up as  
20 EO or public, rather than food, right?
- 21 A Yeah, they would be included in the total, if you  
22 like. But the assignment, I think I mentioned the  
23 assignment of some of those catches in the 1990s  
24 to a specific fishery are questionable.
- 25 Q Okay. I'm not quibbling with you. I'm just  
26 trying to get the scope of the report proper here.
- 27 A No, no, that's fine.
- 28 Q So as a general overview of catch reporting  
29 systems, in designing an effective system, there's  
30 probably factors unique that might affect what  
31 type of system you need. For example, geography.  
32 If you have a different model of catch reporting  
33 might be needed for an area that's a hundred yards  
34 versus 500 miles?
- 35 A That's correct, yes.
- 36 Q The number of fishermen or vessels could influence  
37 the type of system you want?
- 38 A Yes.
- 39 Q If you have fishery with ten versus 500?
- 40 A Certainly, yes.
- 41 Q An incentive to cheat? Might have a different,  
42 say, in an IQ fishery, we have pretty rigid  
43 monitoring systems in halibut, black cod. We have  
44 cameras, dockside monitoring versus in competitive  
45 fisheries the monitoring is not as strict. Can  
46 you explain why?
- 47 A Reasons for the difference in the fisheries is

1 probably multifaceted but there's been a greater  
2 pressure created, I think, by the fishermen to  
3 increase the monitoring systems in fisheries where  
4 they have defined allocations, such as individual  
5 vessel quota fisheries and it's also some of the  
6 crab fisheries who have been promoted largely by  
7 the fishermen to ensure that everybody plays by  
8 the same rules.

9 Q Yeah, basically, if you're in an IQ fishery and  
10 you have an allocation of a hundred fish and you  
11 only report 50 of what you caught and you actually  
12 did catch a hundred, you get to go out and catch  
13 another 50; is that correct?

14 A Yeah.

15 Q Okay. And that's why we need pretty tight  
16 enforcement in an IQ fishery?

17 A Yes.

18 Q Thank you. And the number of fisheries might  
19 influence what type of system you need, whether  
20 you had fish for two days a year or 50 days a  
21 year. That would also make a difference?

22 A Yes, it would, yeah.

23 Q Thank you. And I'm going to move on to catch  
24 reporting in the Aboriginal fishery. I have a  
25 couple of quick things I want to correct before we  
26 get there. You say at page 26 that Native  
27 fisheries are open 365 days a year. And I think  
28 it's just a mistake in your report because,  
29 although they may be technically open 365 days a  
30 year, no Native organization fishes that much.  
31 It's actually they open it by a licence, is that  
32 correct, rather than a -- see in the bottom  
33 paragraph there?

34 A Yeah, it depends on the area but definitely, yes,  
35 it's not open 365 days a year on the Fraser.

36 Q Yeah, okay. It's just worth clarifying that. At  
37 page 25 of your report, you state that in 1992:

38  
39 The Aboriginal fisheries strategy was  
40 implemented to address several objectives  
41 related to First Nations and their access to  
42 the resource and response in the Supreme  
43 Court of Canada decision in *Sparrow*.

44  
45 Now, you're not a lawyer and, as everybody knows,  
46 I'm not a lawyer here, but where did that  
47 statement come from?

- 1 A The recognition that there was a major change in  
2 '92 and the impetus for it, as I understand it,  
3 was the legal precedent set by the Supreme Court  
4 needed a response. It wasn't something that was  
5 spelled out in the Supreme Court decision, that  
6 they had to respond this way, but DFO, I think,  
7 realized they needed to respond to that particular  
8 legal decision.
- 9 Q Okay. And I guess it's important to clarify this  
10 because you relied on it. For example, greater  
11 involvement in management is not a requirement of  
12 **Sparrow**, is it?
- 13 A I don't think -- I can't really talk about the  
14 details in **Sparrow**. It's been so long now since I  
15 read the decision.
- 16 Q Yeah, well, I guess you've cited it and that's the  
17 problem I'm having.
- 18 MR. DICKSON: Sorry, Mr. Eidsvik, I object to that line  
19 of questioning, Mr. Commissioner. We've  
20 established that Dr. English is not a lawyer.  
21 That's clearly interpretation of a legal decision.
- 22 MR. EIDSVIK: I'm happy to drop that line of  
23 questioning.
- 24 Q Perhaps maybe you can just clarify it for me that  
25 you're not a lawyer and didn't really understand  
26 what **Sparrow** meant when you wrote that paragraph?
- 27 A No, when I wrote this paragraph, I said that was  
28 implemented to address the objectives related to  
29 First Nation fisheries and their access in  
30 response to the decision. It doesn't say that  
31 each one of these actions was spelled out in the  
32 **Sparrow** decision. It just says it was a response  
33 to.
- 34 Q Okay. That's fine. Thank you.
- 35 MR. TAYLOR: I might offer that we could all take this  
36 paragraph as written by someone who's not a lawyer  
37 and read it in that light and it'd be fine, I  
38 think.
- 39 MR. EIDSVIK:
- 40 Q And I'd bring you there but at Exhibit 77 in the  
41 John Fraser 1994 report at page 63, I don't think  
42 we need to go there. He says that DFO went beyond  
43 the **Sparrow** decision in this policy. I guess we  
44 can assume that.
- 45 MR. EIDSVIK: Maybe Mr. Taylor can direct the proper  
46 way to ask that question.
- 47 MR. TAYLOR: We can assume John Fraser wrote what he

1 wrote but we can't assume that he's right or  
2 wrong. I think we're into an area where lawyers  
3 have spent decades making submissions to judges  
4 about this and judges have ruled on it and I think  
5 we need to leave this aside in terms of the  
6 witness here.

7 MR. EIDSVIK: I'll agree with Mr. Taylor and we'll move  
8 on to simplify matters. I'm sure this will be  
9 debated strongly at another point in these  
10 proceedings.

11 Q At page 23 in your report, you state that:

12  
13 Regulations for mandatory landing sites for  
14 pilot sales and EO fisheries since 1993 --

15  
16 - I'm going to skip a bit -

17  
18 ...have substantially improved the catch  
19 reliability of catch estimates.

20  
21 There's actually no regulation for mandatory  
22 landing sites, is there?

23 A I think there is a requirement that for the EO  
24 fisheries or pilot sale fisheries, they have to  
25 have landing sites. That was in the Bert Ionson  
26 report.

27 Q Okay. Perhaps I'm being too technical again.  
28 There's a difference between a licence condition  
29 and a regulation. Licence conditions can be  
30 changed tomorrow. Regulations have to go before  
31 Governor-In-Council for change.

32 A Okay. Well, these would be --

33 Q Okay. A requirement.

34 A -- conditions of licence then.

35 Q Okay. Thank you. The level of Aboriginal  
36 harvest. If we could go to page 21 at Table 2 of  
37 your report?

38 A Yes.

39 Q Now, if we see up on the chart, we see at the  
40 percentage of catch: Canadian First Nations, 29  
41 percent; Economic opportunity, 6 percent. So  
42 that's about 35 percent, if my math is good. Now,  
43 at page 18 of your report, we go to Table 1. I  
44 think it would be helpful. Page 18. So if we  
45 look at this table now, and we'll start off at  
46 2009, if we see "commercial", and again I'm  
47 assuming that's public commercial. We see they

1 harvested zero. We see First Nation catches of  
2 71,800. So much more than 35 percent in that  
3 year; is that correct?  
4 A Yes, in that particular year.  
5 Q In 2008, we see the commercial harvest of 16, the  
6 Aboriginal harvest of 447, much more than 35  
7 percent in that year?  
8 A That's correct.  
9 Q 2007, the same thing. 2005, 2004, we're kind of  
10 about 50 percent for commercial, 40 percent for  
11 Aboriginal. 2002, about 50 percent. 2001, we see  
12 a much higher Aboriginal catch. 2000, we see a  
13 similar catch. 1999, we see a much higher  
14 Aboriginal catch. And in 1995 and 1996, again,  
15 we're fairly close. So you could say in the last  
16 ten years that the vast majority of fish caught in  
17 the Fraser River, setting aside 2010 at least on  
18 an annual basis, can look a lot different, that  
19 the major fishery on the river is the Aboriginal  
20 fishery?  
21 A It can be and is in years when run sizes are very  
22 small and the commercial fishery is obviously not  
23 opened or given very little opportunity.  
24 Q Yeah. I'm looking at some three, four, five, six  
25 -- so a lot of years in the last ten years then?  
26 A Yes.  
27 Q Okay. Thank you. I notice in your report, you  
28 don't have any discussion about the amount of  
29 fishing time. And as we noted earlier, and you  
30 agreed, the amount of fishing time can have an  
31 impact on the type of catch monitoring program  
32 that you need. And I just briefly want to go  
33 through, and based on your knowledge, the amount  
34 of fishing time. Do Aboriginal organizations  
35 generally start fishing somewhat in January?  
36 A They are fishing for different species at  
37 different times of year based on the permits  
38 issued. So the initiation of their fisheries  
39 could vary depending on the specific group. And  
40 there's a lot less fishing, you know, and it also  
41 varies from year to year. So if they start  
42 fishing at every January or don't start fishing  
43 until mid-June, which is the case the last couple  
44 of years because of chinook conservation, you  
45 know, it varies from year to year.  
46 Q So in comparison, if you had to guess, how many  
47 days would, say, the Area E public commercial

- 1 gillnet fleet fish in an average year?
- 2 A Well, in some these years, as you've noted, they  
3 might not fish at all. So depending on the size  
4 of the run, they're going to get different days.  
5 But it could be as little as a few days, less than  
6 five, to 15 or 20.
- 7 Q Okay. And Aboriginal organizations typically, say  
8 when the sockeye are running, usually fish every  
9 weekend through August and July?
- 10 A Yeah, the typical fishing plans that I've seen  
11 involve starting fishing on Friday, fishing  
12 through Saturday and Sunday, depending on the  
13 abundance of the runs, the timings, the other  
14 management considerations.
- 15 Q Okay. Aboriginal fisheries catch reporting, 1992  
16 to 2000, you break those out, that period compared  
17 to the 2000 and on, 2001 on period in your report.  
18 And at page 29 at Table 6, you conclude the  
19 accuracy of catch reporting in Aboriginal  
20 fisheries was fair, variable and likely the  
21 highest precision achieved. And I'm a little bit  
22 confused.
- 23 MR. EIDSVIK: It's at the bottom of the page, Mr. Lunn.  
24 Right there.
- 25 Q The footnote. I'm kind of confused. Can you tell  
26 me what that means? I don't mean what exactly  
27 "good" or "fair" means but the footnote.
- 28 A Okay. Well, the footnote is referring to those  
29 specific years where precision estimates were  
30 available through reports for those two specific  
31 fisheries. So it's that the precision in those  
32 years was likely higher than it is in other years  
33 of catch monitoring. The reason for that is that  
34 I think the levels of effort in those years were  
35 close to peak levels, levels of monitoring effort.
- 36 Q I'm sorry. I must be a little thick.
- 37 A Okay.
- 38 Q Again, I'm not quibbling with you. So if we look  
39 at "Fraser - below Sawmill", 1992 to 2000, it says  
40 "variable". Can you try it one more time?  
41 Sometimes I don't get this.
- 42 A All right. Which footnote, I guess, is you're  
43 referring to? It's Table 6 or Table 7?
- 44 Q In Table 7, "likely highest" -- sorry, Table 6.
- 45 A Okay.
- 46 Q "Likely highest precision achieved".
- 47 A All right. Yeah, so Table 7, the bottom one is



1 talking about the 2001 to 2009 period. And there  
2 is unknown precision for the marine fisheries so  
3 there weren't any published documents that showed  
4 what the precision estimate was.  
5 Q Okay. That helps a lot.  
6 A But there are for the other two.  
7 Q And I can see that my major mistake is not looking  
8 at the footnote right underneath Table 6.  
9 A Yes.  
10 MR. EIDSVIK: Thank you. And I appreciate the other  
11 counsel for correcting that. I want to go to one  
12 of the documents we want to review is the Peter  
13 Pearse Managing Salmon in the Fraser, Mr. Lunn,  
14 CAN002473. And if we could go to page 15 of that  
15 report?  
16 Q Have you seen this report, Dr. English?  
17 A Yes. By the way, it's Mr. English.  
18 Q Is it Mister?  
19 A Yeah. So there's no confusion.  
20 Q Okay.  
21 A I don't have a Ph.D.  
22 Q Thank you.  
23 A Yeah.  
24 MR. EIDSVIK: Could I have this marked as an exhibit,  
25 Mr. Lunn?  
26 THE REGISTRAR: Exhibit 729.  
27  
28 EXHIBIT 729: Pearse, Managing Salmon in the  
29 Fraser - Report to the Minister on the Fraser  
30 River Salmon Investigation, Nov 1992  
31  
32 MR. EIDSVIK:  
33 Q If we go to page 15 of that report, in the right-  
34 hand column, about the last almost about halfway  
35 down the paragraph where it starts with "By". And  
36 this is referring to the 1992 fishery. And it  
37 says:  
38  
39 By May, fishing activity was increasing as  
40 numbers of chinook in the river increased.  
41 This activity was largely out of control.  
42  
43 MR. EIDSVIK: If we can move to page 17, please? And  
44 if we go to the first column, the first paragraph  
45 there, Mr. Lunn.  
46 Q And he talks about towards the bottom of the  
47 column:

1 Reports in evidence I received of fishing  
2 from Mission to Lillooet tell the story of  
3 unprecedented intensity, management  
4 confusion, weak surveillance and enforcement  
5 and general excess.  
6

7 MR. EIDSVIK: If we go to page 19?

8 MS. BAKER: Mr. Commissioner, I'm wondering if there's  
9 a question here or is there...?

10 MR. EIDSVIK: There is a question coming. If we go to  
11 page 19? And in the middle column, or sorry, the  
12 bottom of the first column, and we're talking  
13 about estimates of catch that were unreliable.

14 Q This says:

15  
16 Under intense fishing the method of  
17 estimating catches in the lower river broke  
18 down. The established technique for  
19 estimating catches developed by fishery  
20 officers over many years involves assumptions  
21 about fishing practices which changed. The  
22 catch monitoring system administered by the  
23 LLFA was also inadequate.  
24

25 And it goes on. And my question is, does that fit  
26 in with your conclusion of a fairly accurate catch  
27 data program?

28 A Well, the programs that I was referring to are  
29 ones that were just being initiated for the first  
30 time in these years, like '92. And so they evolve  
31 from where they were initially and the reason for  
32 a lot of the effort that's been put in is to try  
33 and address these concerns.

34 Q Okay. But despite those findings by Mr. Pearse's  
35 investigatory team, you considered that fair?

36 A Well, it's different years that we're talking  
37 about.

38 Q Okay. Well, we're talking about 1992 to 2000.

39 A Well, these are referring specifically to '92, I  
40 think, are they?

41 Q This is the 1992 report, that's correct.

42 A Yeah. Yeah, and the period that I'm talking about  
43 is that period over which the fishery monitoring  
44 systems were changing quite dramatically within  
45 the lower Fraser.

46 Q Okay. So let me just step back then. So if you  
47 looked at '92 in isolation, you wouldn't consider

1           this type of sales slip and catch reporting system  
2           as fair?

3       A     Well, there were definitely problems with the  
4           early catch reporting systems on the Fraser and  
5           ones prior to '92.

6       Q     Okay. If we could go to Exhibit 77, please, page  
7           21? And it's the second paragraph, estimates of  
8           in-river catch. And the part that I'm looking at  
9           is the second paragraph there, the inset.

10                           Given the information from numerous  
11                           interveners, we agree with the in-river catch  
12                           estimation working group that the reliability  
13                           of in-river catch estimates cannot be  
14                           verified.  
15

16  
17           So given the lack of ability to verify the catch  
18           in 1994, would you describe that year as fair?

19       A     Well, it's consistent with what we're saying here,  
20           is that the number that -- it's why they've got a  
21           fair rating rather than a good or a very good  
22           rating. There were some estimate of catch but  
23           they're not as good as the more recent time  
24           period. So it's a relative evaluation of these  
25           different catch reporting periods.

26       MR. EIDSVIK: And Mr. Lunn, if you could go to the  
27           report of the auditor general at Chapter 20?

28       THE REGISTRAR: I think that's at Tab 10 of your list?

29       MR. EIDSVIK: I think so. I'm sorry. Yes, it is.

30       THE REGISTRAR: Thank you.

31       MR. EIDSVIK: If you could go to page 20-18, please?

32       Q     So this report is discussing the 1997 fishery. So  
33           we've had five years since the beginning of 1992.  
34           And at paragraph 2060, it states:

35  
36                           At the time of our audit, the Science Branch  
37                           had received catch data for 1997 from only 15  
38                           percent of the bands required to report it.  
39

40           Is that in keeping with a fair catch reporting  
41           system?

42       A     Well, the requirement to report may be different  
43           than what is actually done with regard to  
44           reporting. Are you suggesting that only 15  
45           percent of the bands actually reported catch data  
46           in that year?

47       Q     That seems to be what the auditor general is

1 saying.

2  
3 At the time of our audit, the Science Branch  
4 had received catch data for 1997 from only 15  
5 percent of the bands required to report it.  
6

7 A Well, I'm not familiar with what the requirement  
8 was versus what the catch numbers were. And the  
9 presumption I have from talking with people at DFO  
10 is that they're getting catch numbers from all the  
11 bands.

12 Q Well, we're looking at the period from 1992 to  
13 2000, I guess, and so that's why I'm trying to  
14 determine your assessment. I'm trying to get a  
15 good understanding of what "fair" means because  
16 you've graded the catch data reporting in this  
17 fishery as fair for that period.

18 MR. EIDSVIK: If we could go to the decision in **R. v.**  
19 **Douglas** at paragraph 53, Mr. Lunn?

20 A If I could clarify that "fair" is not a good  
21 rating. It's lower than good, okay?

22 Q Yes, I agree.

23 MS. BAKER: Mr. Commissioner, I note that we're just  
24 about out of time for Mr. Eidsvik so if you want  
25 to bear that in mind as you ask your last  
26 question.

27 MR. EIDSVIK: Okay. I think we could go to that court  
28 decision, Mr. Lunn, if you could bring us there,  
29 and go to paragraph 53.

30 A I should also note, if I can, that in the table  
31 that they have in the report, actually talk about  
32 the estimates above Sawmill being fair in that  
33 period and the marine fisheries being fair but the  
34 below Sawmill fisheries are rated as "variable",  
35 which addresses some of these issues in that we  
36 don't know the reliability of the estimates in  
37 each of the years to be consistent with the other  
38 ones.

39 Q At paragraph 53, Judge Jardine stated:

40  
41 On the evidence of Mr. Quipp, Mr. Wood and  
42 Mr. Victor, no one actually counts how many  
43 fish the Cheam catch. Mr. Quipp estimated  
44 his catch with Mr. Wood, his partner, to be  
45 conservatively 10,000 or more sockeye, as  
46 well as more than 1,000 chinook. If he's  
47 correct and there are 60 such fishers, the

1                   Cheam take a large number of fish. This  
2                   would constitute an estimate in the hundreds  
3                   of thousands. Mr. Quipp was candid when he  
4                   said that of the fish he caught he first  
5                   satisfied his need and then sold  
6                   approximately 90 percent of the remainder.  
7  
8                   You would say that that's not fair catch  
9                   reporting, would you, there?  
10                  A    Well, this is in the context of interview with an  
11                   individual or a statement? What is the document  
12                   this is in?  
13                  Q    It's a court decision and it's the conclusion --  
14                  MS. BAKER: Mr. Commissioner, this is not a fair line  
15                   of questioning. He's being asked about a court  
16                   decision of an individual prosecution and the  
17                   questioner is asking this to be applied to  
18                   statistics that he's looked at for an entire  
19                   sockeye fishery on the Fraser.  
20                  MR. EIDSVIK: So perhaps I could just word it easy.  
21                  Q    Were you aware of that court decision?  
22                  A    What is the court decision again?  
23                  Q    In your review of the sockeye counting system,  
24                   were you aware of that court decision concerning  
25                   the 2000 fishery?  
26                  A    Which court decision was this again?  
27                  Q    The one we're looking at right now, the **R. v.**  
28                   **Douglas** one?  
29                  A    **R. v. Douglas**. I think I've heard of the decision  
30                   but I have not read the decision, no.  
31                  MR. EIDSVIK: Okay. Mr. Commissioner, I, of course,  
32                   have another 15 or 20 minutes and I see my friend,  
33                   Mr. Rosenbloom. So we'd like to follow this up  
34                   with some written questions. Thank you. And I'd  
35                   like to mark the court decision as an exhibit,  
36                   please.  
37                  MR. TAYLOR: There's no need.  
38                  MR. ROSENBLOOM: That would have livened up the  
39                   proceedings. Thank you. For the record, my name  
40                   is Don Rosenbloom. Mr. English, I represent --  
41                  THE COMMISSIONER: Mr. Rosenbloom, just half a moment.  
42                   There's just a little confusion here with marking  
43                   things. Exhibit 729 is the Pearse report. The  
44                   auditor general's report, which Mr. Eidsvik  
45                   referred to, Tab 10, has that been marked?  
46                  THE REGISTRAR: Not yet.  
47                  THE COMMISSIONER: Not yet.

Karl English

Cross-exam by Mr. Eidsvik (SGAHC)

Cross-exam by Mr. Rosenbloom (GILLFSC)

1 MR. EIDSVIK: It should be marked as an exhibit.

2 THE COMMISSIONER: All right.

3 MR. EIDSVIK: I'm sorry, Mr. Lunn, if I didn't ask you  
4 that.

5 THE REGISTRAR: That'll be Exhibit 730, seven three oh.

6

7 EXHIBIT 730: Chapter 20 of the Report of the  
8 Auditor General of Canada, Nov 1999

9

10 THE COMMISSIONER: Thank you, Mr. Rosenbloom.

11 MR. ROSENBLOOM: Thank you. Mr. Commissioner, my name  
12 is Don Rosenbloom. I represent Area D  
13 Gillnet/Area B Seiner.

14

15 CROSS-EXAMINATION BY MR. ROSENBLOOM:

16

17 Q Mr. English, I have a number of questions for you.  
18 I'm limited to 20 minutes. It is now  
19 approximately 20 minutes after 12 o'clock. I want  
20 to be as surgical as I can because I have a number  
21 of topics. The first one is the non-retention  
22 fisheries. I don't believe you've been cross-  
23 examined about the substance of your report in  
24 respect to non-retention fisheries. So I want to  
25 very quickly go to a quote from your paper, report  
26 number 7, and it is a quote at page 57.

27 MR. ROSENBLOOM: And if Mr. Lunn can have that before  
28 us? And it is a quote at the end of the first  
29 paragraph, the conclusion of the first paragraph.

30 Q You said:

31 However, there has been little research to  
32 quantify levels of mortality or to understand  
33 the mechanism underlying mortality in order  
34 to better mitigate or prevent mortality.

35

36 And this is in the context of a paragraph, "Non-  
37 Retention Fisheries". You said:

38

39 Without this type of information, especially  
40 in an era of warming waters wherein we expect  
41 higher stress-related mortality, it is  
42 difficult to ensure sustainability of salmon  
43 fisheries and conservation of stocks.

44

45 Then what you have in your report, Mr. English, is  
46 reference to the Carleton University study. I'll  
47 refer to it as Carleton University *et al*, with a

- 1 number of other parties. You make reference to  
2 the Donaldson study. This paragraph that I just  
3 read to you, which speaks in the present, are you  
4 satisfied that the two subsequent studies referred  
5 to, both Carleton University and Donaldson, does  
6 provide us with the kind of information necessary  
7 on non-retention fishery, or are you still saying  
8 in a dramatic fashion it is difficult to ensure  
9 sustainability of salmon fisheries and  
10 conservation of stocks without further study being  
11 done?
- 12 A Well, those two studies provide some of the  
13 initial indications. They're not complete.  
14 They're sort of the first steps towards trying to  
15 get at these questions.
- 16 Q All right. And you would agree with me, sir, that  
17 those two studies and what we now know as of the  
18 last couple years, provides some very dramatic  
19 evidence of high mortality, particularly with the  
20 catch and release with the recreational fishery  
21 and with the beach seine fishery?
- 22 A Well, the mortality rates you see in those tables,  
23 that's why it's important to view those as  
24 relative, they're fish that are released and then  
25 could encounter other fisheries or other factors  
26 further upstream towards the spawning ground. So  
27 it's not saying that the mortality you're seeing  
28 is directly related to the actual capture and  
29 release by the sports fishermen.
- 30 Q Well, it's a combination of catch and release and  
31 then other factors that may be playing on  
32 mortality, such as, for example, temperature of  
33 river, you'd agree?
- 34 A Yeah, temperature of the river and the -- because  
35 the numbers in here, and to be really clear, the  
36 table on the subsequent page there, I think it's  
37 on page 60, I just don't want people to think that  
38 when a person catches a fish and releases it, only  
39 36 percent of them will make it through to the  
40 spawning grounds because of that capture and  
41 release stress.
- 42 Q But the catch and release is an event or factor  
43 that is contributing to the mortality rate, as set  
44 out in your table, which is Table 18, found at  
45 page 60, correct?
- 46 A Yeah, and what you want to focus in on is the  
47 difference between something like a beach seine,

- 1           which should have less stressful or have a  
2           different stress - not necessarily less - than  
3           angling, comparing those two values and saying  
4           what's the difference between those two gears?
- 5           Q     Yes.
- 6           A     More than the absolute value.
- 7           Q     And when analyzing this data, and I have so little  
8           time, I obviously can't get into this in the way I  
9           would like to, we are left with, obviously, at  
10          least some information through these studies that  
11          is significant in terms of pre-spawn mortality of  
12          fish migrating up the Fraser River, in part,  
13          related to both beach seine and to the other forms  
14          of fishing encounters that we're speaking about.
- 15          A     Yeah, and it's the initial information. What's  
16          really important to note is these studies were  
17          done at a specific time of year. There may be  
18          conditions about the river at that time of year  
19          that are going to be different between that time  
20          of year that year versus other years. So that's  
21          why they're intending to continue this work using  
22          different gear, looking at different times  
23          periods, which have different stocks, as well as  
24          different temperature regimes to see what  
25          differences they get in terms of survivorship.
- 26          Q     Right. And so a lot of work still has to be done.  
27          But in the context of the little that we know now,  
28          as reported to us through your paper, does that  
29          cause you to revisit the issue of how to deal  
30          with, for example, the recreational fishery and  
31          the catch and release program?
- 32          A     Yes, well, I think you can say that from this and  
33          other information it's not a good idea to be doing  
34          a lot of catch and release on sockeye at high  
35          temperatures.
- 36          Q     And appreciating that opinion, where does that  
37          take you in terms of recommendations to DFO and  
38          its managers and to the government generally about  
39          catch and release programs?
- 40          A     Well, be aware of the temperature factor. Where  
41          you have high temperatures, you probably need to  
42          consider not having those fisheries or conducting  
43          those fisheries during periods when temperatures  
44          are lower because you know you're going to have  
45          less impact on a stock.
- 46          Q     Thank you. Are there more studies that you know  
47          in the process of being done in respect of this



1 subject?

2 A Yes, there's ongoing research. There was some  
3 done last year and there's work that's planned for  
4 2011, this summer, by the same groups, Carleton  
5 University and University of British Columbia.

6 Q To the best of your knowledge, is there a shortage  
7 of money for this research or what you feel is  
8 necessary and should be done is being done?

9 A Well, there's always a shortage, a limitation on  
10 the funds available. A lot of the money that is  
11 available for this is coming through the NSERC  
12 program. But there's limitations on setting up  
13 the telemetry arrays, for example, within the  
14 Fraser in order to track these fish that are being  
15 released.

16 Q Thank you. I go to the second of my areas of  
17 focus, which relates to catch monitoring and  
18 relates to the chart that we were just referring  
19 to a moment ago. All this is found at page 40 and  
20 the table at page 42. And I want to focus, in  
21 particular, on my clients, the seine fleet, Area  
22 B, and the references you make to that to your  
23 assessment of quality of catch estimate. My  
24 clients give me the following instructions so I've  
25 got to do this so quickly, Mr. English, I'm going  
26 to tell you what my instructions are and you tell  
27 me whether you have any reason to dispute what I  
28 say. Before saying that, can you tell me, where  
29 did you glean this information to provide this  
30 table to us, which is Table 14 at page 42?

31 A Table 14. Well, the information on the catch was  
32 obtained from the catch reporting datasets from  
33 the Salmon Commission on the distribution between  
34 the different gear types. And the evaluations  
35 were based on information provided by DFO from  
36 interviewing the DFO representatives that monitor  
37 these fisheries.

38 Q Well, let me try to be surgical here by telling  
39 you what my instructions are and please tell me  
40 whether you have any reason to dispute them. I'm  
41 told in respect to Area 20, which is found within  
42 your table, that since 2001, the seiners have had  
43 imposed upon them what truly is the gold standard  
44 for catch monitoring. I am informed of the  
45 following, that all the fisheries in Area 20 seine  
46 fishery, and I gather Area 20 is exclusively a  
47 seine fishery, all the fisheries have been closely

1 monitored, there's been mandatory logbook and  
2 hails required.

3 For most of the fisheries in those years,  
4 observers were required; in some cases, they were  
5 assigned to vessels for the day, others have  
6 roving or random sampling. For all fishery sets  
7 we're monitored by DFO managers with fishermen  
8 providing set-by-set hails of all species caught.  
9 And they needed authorization from managers even  
10 to set nets. Now, I don't want to get into a dog  
11 fight with you; we just don't have the time here.  
12 Do you have reason to agree with me that that is  
13 the standard that is being utilized in Area 20 by  
14 the seiners?

15 A Well, I know that they have the logbook  
16 requirement. I know that there are hails done by  
17 Fisheries officers. It's usually not a hundred  
18 percent. And I didn't hear you mention any  
19 dockside monitoring requirement, which I don't  
20 think has occurred for those fisheries. But the  
21 information we provided here was what was provided  
22 by the Department of Fisheries and Oceans that  
23 conducts a lot of this work.

24 Q Because this is very much in dispute, could you  
25 provide the Commission and, in turn, to me what  
26 DFO provided to you that gives you the  
27 information, as set out in this chart?

28 A Yes.

29 Q Thank you. I move on the same subject to your  
30 analysis of the quality of catch estimates for  
31 Area 11 to 16, which I understand to be both of  
32 seiner and gillnet. I'm instructed as follows,  
33 that in respect to the seiners, they have a  
34 mandatory hail in of catch and delivery and  
35 logbooks. They have roving observers that were  
36 present for many of the fisheries, charter patrols  
37 which station themselves at strategic locations at  
38 the conclusion of fisheries to request hails from  
39 vessels as they headed to fish plants and that  
40 more than 90 percent of the seine caught fish are  
41 landed at major processors. Most are very  
42 diligent in ensuring numbers are passed on. In  
43 other words, the processors are diligent in  
44 ensuring that numbers are passed on. Do you have  
45 any reason to dispute any of that?

46 A No, those seem like reasonable statements. What  
47 they're not including is the dockside monitoring

1 by an independent group in that.

2 Q And you believe that that would place the catch  
3 monitoring in respect to the seine fleet in that  
4 area to be simply fair for accuracy?

5 A It's just the lack of verification. It's very  
6 possible the catches are completely accurate and a  
7 complete record of what was caught. The question  
8 is whether it's been verified. It's the lack of  
9 verification that gives it a lower rating.

10 Q And that again might or would put the accuracy at  
11 only fair?

12 A Yes.

13 Q Okay. Again, would you provide the information  
14 that has been provided to you by DFO to speak to  
15 this chart, okay?

16 A Sure.

17 Q Thank you. I go to the third of my subject  
18 matters. You had an exchange with the  
19 Commissioner yesterday in respect to target  
20 escapement. And much has been said in cross-  
21 examination and much as I'd like to deal with you  
22 about that, I have to leave the record as it is.  
23 But let me ask you this, in the context of what  
24 you're recommending, which is a target escapement,  
25 you say at page 172 of your report, and I want to  
26 briefly explore this with you. At 172 down at the  
27 bottom of the page under "Abundance Estimates",  
28 the last five lines, six lines:

29

30 However, the future of this valuable time  
31 series and the conversion of historical and  
32 future data into catch escapement total  
33 abundance estimates for each CU will depend  
34 heavily on the resources available to support  
35 critical monitoring programs, effort to  
36 capture these data in structured databases  
37 and the work needed to complete the necessary  
38 analysis.

39

40 Let me ask you this. Whether one adopts your  
41 suggestions of how to approach the management or  
42 the resource by imposing target escapement or  
43 whether the FRSSI model or whatever, are you  
44 saying here that you are concerned that the DFO  
45 does not have the financial capacity to actually  
46 discharge these initiatives, be it as you promote  
47 it, or as DFO wishes to have it under the Wild

1 Salmon Policy and FRSSI model?

2 A I think it's drawing attention to the fact that  
3 resources are getting fewer and farther between  
4 and compared to what they were for a bulk of this  
5 valuable time series that we have before us. So  
6 the current resources are certainly less and the  
7 future resources may be less till than what  
8 they've been.

9 Q And that being the case, maybe it's self-evident,  
10 but where does that lead you in terms of your  
11 prognosis of DFO effectively setting out the  
12 benchmarks or the target escapements for these, be  
13 it, 19 indicator stocks, or indeed, I think  
14 something like 29 CUs. What's your prognosis?

15 A Will it happen, do you mean, in this case?

16 Q Yes.

17 A Well, there's a lot of pressure to make it happen  
18 for the Fraser because of the -- through the  
19 Marine Stewardship Council certification process,  
20 it has to happen or they'll lose certification.  
21 So there's a lot of pressure to do it on the  
22 Fraser so resources will probably be channelled  
23 there from other areas because it's a priority. I  
24 think it's on schedule. There's been a  
25 commitment. There's an action plan prepared to  
26 define a lot of these things, these lower and  
27 upper benchmarks, limits and target reference  
28 points for Fraser sockeye. So I think it's going  
29 to happen. It's just it'll probably have impacts  
30 of fisheries management and other areas.

31 Q Well, you, sir, probably as well as anybody can  
32 speak to the impact all over the province. You do  
33 work in the Nass for the Nisga'a, do you not?

34 A Yeah, we've done work with the Nisga'a for a lot  
35 of years.

36 Q And the Skeena?

37 A Yes.

38 Q And various other regions. Can you tell this  
39 Commission, because I'm going to suggest that the  
40 Commission cannot be blind to the impacts of  
41 putting priorities on Fraser stock at the expense  
42 of other stock, what are the implications of the  
43 financial crunch in respect to trade-offs where  
44 areas other than the Fraser are going to have less  
45 attention than you believe should take place?

46 A Well, it's all the more reason to conduct the  
47 analysis and reviews that look at what's the best

- 1 way to get the most for the resources that we  
2 have. So there's been programs elsewhere that  
3 have identified essentially core stock assessment  
4 programs. And what's critical is once those have  
5 been identified there needs to be the support to  
6 implement those so that you can maintain, in the  
7 case of the Fraser, and establish in other cases  
8 where there isn't a reliable long-term dataset, a  
9 dataset that's needed for management. So there's  
10 a real need to look at the available resources and  
11 figure out what the priorities are and how to make  
12 sure that you're not undermining these important  
13 long-term databases because those are the ones  
14 that tell you how the resource is responding to  
15 changes in the environment.
- 16 Q And you're destined to undermine those databases  
17 if there isn't more money injected into the  
18 system, aren't you?
- 19 A Yes.
- 20 Q The next area is relating to the unreliability of  
21 pre-season forecasting, and your report says that,  
22 I believe, and accepting that. There's been a  
23 significant exchange of you with various parties  
24 here at the Commission about the unreliability of  
25 the data and, therefore, not to invest too much  
26 import in the pre-season forecasting. My question  
27 is this. You appreciate that the IFMP is founded  
28 upon a pre-season analysis, correct?
- 29 A Yeah, the initial fishing plans.
- 30 Q Right. And one of the exchanges that has taken  
31 place at this Commission in the past is whether  
32 DFO has the flexibility or carries out amendments  
33 to the IFMP based upon changes in-season and so  
34 on. Would you agree with me, in the context of  
35 your opinions that the pre-season analysis is so  
36 unreliable that the IFMP should be approached by  
37 DFO in the most flexible manner in terms of  
38 ensuring that they can turn on a coin and make  
39 changes at the point where information is derived  
40 from an in-season database?
- 41 A Yeah, definitely, yes.
- 42 Q And do you believe, from the best of your  
43 knowledge, in terms of an expertise in management,  
44 that DFO has had that flexibility to that extent  
45 up to this moment in time?
- 46 A Well, there's some things that are determined in  
47 the IFMP that have been identified as significant

1 constraints to management and, therefore, not  
2 allowing the flexibility that you're talking  
3 about. But I think over the last two years we  
4 should have all really learned the lesson that we  
5 need a flexible system because we have to respond  
6 to some pretty substantial changes from what we're  
7 expecting.

8 Q Thank you. My last area, and hopefully I have a  
9 minute or two, this Inquiry, I suggest to you, is  
10 attempting, in part, to find the reasons for the  
11 decline in recruits per spawner. Would you agree  
12 that that, to the best of your understanding, is  
13 what we're really looking at here; it's the bottom  
14 line?

15 A Yeah, it was the trend observed over a number of  
16 years that had the lowest point in 2009 that  
17 created, I think, the purpose of the Inquiry.

18 Q Yes. And so in focusing on the decline in  
19 recruits per spawner, we're looking at what are  
20 the factors or factor that has caused that  
21 situation, that direction, correct?

22 A That's right.

23 Q And you would agree with me further that  
24 curtailing fisheries doesn't speak to resolving  
25 the problem in that over, for example, the last 15  
26 years or so, there's been a diminished harvest,  
27 year by year by year, and in spite of that, what  
28 we're seeing here is a continuing problem of  
29 decline in recruits per spawner. Would you agree  
30 with that?

31 A That's correct, yes.

32 Q Pardon me?

33 A There has been a decliner in recruits per spawner  
34 and the reductions in the fishery have been  
35 occurring at the same time. So the fishery hasn't  
36 been the one that has changed the recruits per  
37 spawner; it's more the marine environment that's  
38 having a factor.

39 MR. ROSENBLOOM: Thank you. I have no further  
40 questions.

41 THE REGISTRAR: The hearing is now adjourned until 2:00  
42 p.m.

43  
44 (PROCEEDINGS ADJOURNED FOR NOON RECESS)  
45 (PROCEEDINGS RECONVENED AT 2:00 P.M.)  
46

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

1 MS. BAKER: Thank you, Mr. Commissioner. The next  
2 questioner is Sarah Sharp for the Western Central  
3 Coast Salish First Nations.

4 MS. SHARP: Mr. Commissioner, Mr. English.

5  
6 CROSS-EXAMINATION BY MS. SHARP:

7  
8 Q I want to go to page 111 of your report, please.  
9 You're discussing the total abundance estimates  
10 and the extent of overharvesting here. You look  
11 at the extent of overharvesting by looking at  
12 exploitation rates?

13 A That's correct.

14 Q And exploitation rates are calculated based on  
15 estimates of catch as a percentage of estimated  
16 total abundance?

17 A That's correct.

18 Q Okay. When we look at Figure 22, on page 116,  
19 exploitation rates of the Early Stuart sockeye  
20 were high from 1960 to 1983?

21 A Yes.

22 Q Averaging 75 percent?

23 A Yes.

24 Q Exploitation rates for the Early Summer Run  
25 sockeye were high from 1960 to 1989?

26 A Yes.

27 Q Averaging 77 percent?

28 A That's what's in the report, I think.

29 Q Yes. Exploitation rates for the Summer Run  
30 sockeye group were high from 1960 to 1989?

31 A Yes.

32 Q Averaging 78 percent?

33 A Sounds about right. I don't think I have it.

34 Q It's on page --

35 A Yeah.

36 Q -- 114.

37 A Yeah.

38 Q 113. Exploitation rates for the Late Run sockeye  
39 group were high from 1960 to 1989?

40 A Yes.

41 Q Averaging 76 percent?

42 A Okay, yeah, that's what it says in the report.  
43 The outcome of the numbers --

44 Q We can go to the page, if you want. It's at page  
45 114.

46 A 114, yes.

47 Q In that first paragraph there. These exploitation

- 1 rates, 75 percent, 77 percent, 78 percent, and 76  
2 percent, they reveal that rates were high up until  
3 the mid to late '80s?
- 4 A That's correct, yes.
- 5 Q Your report also comments that the Early Stuart  
6 sockeye were probably overharvested between 1984  
7 and 2000?
- 8 A The Early Stuart, yes. I think I clarified that  
9 it was just in the primary period when  
10 productivity was declining in the late '70s and  
11 early '80s, that there was very high exploitation  
12 rates at the same time as declining productivity.
- 13 Q Okay. And you also note the Early Summer sockeye  
14 were probably overharvested between 1960 and 1989?
- 15 A That's correct, yes.
- 16 Q And the high exploitation rates of the Late Run  
17 stocks pre-1993 have been implicated in the  
18 decline of the Cultus sockeye?
- 19 A Yes, they have been.
- 20 Q And since 1993, we see a declining trend in the  
21 exploitation rates for the Early Summer Runs,  
22 Summer Runs and Late Runs?
- 23 A That's right, yes.
- 24 Q Since 2001, the exploitation rate for the Early  
25 Stuart Run has also been low?
- 26 A Yes.
- 27 Q Averaging 13 percent?
- 28 A Yes.
- 29 Q Now, Fraser River sockeye stocks are cyclical?
- 30 A Some are; some aren't.
- 31 Q Okay. But distinguished from the Bristol Bay,  
32 Alaska run, the portfolio effect, we don't have  
33 anything like that here?
- 34 A Well, we have a portfolio of stocks, we just don't  
35 have as diverse a portfolio as they have in  
36 Alaska.
- 37 Q Okay. To the extent that the number of returning  
38 sockeye impacts the stock recruitment and the  
39 number of effective females, there's a pattern  
40 there in the four-year cycle?
- 41 A Yes. There's definitely a strong four-year cycle  
42 in Fraser sockeye and almost all the stocks.
- 43 Q Okay. And we can expect the effects of high  
44 exploitation rates to be felt in subsequent years,  
45 then, as they effect these numbers, the  
46 recruitment and the returning females?
- 47 A Yeah, the combination of exploitation rates and



1 productivity is the key. So you could have the --  
2 there wouldn't be the runs that we see today if  
3 productivity had been low during this period when  
4 exploitation rates were high. Obviously, the  
5 managers wouldn't have permitted those kinds of  
6 high exploitations rates in that period if  
7 productivity had been lower. It's the challenges  
8 they face is adjusting the exploitation rates  
9 quickly to respond to changes in productivity.

10 Q Okay. But you did note that there was some  
11 overharvesting that was happening in that  
12 pre-1993 --

13 A Yes.

14 Q -- period?

15 A Yeah.

16 Q Okay. So to the extent the returns depend on the  
17 number of spawners, these effects can be seen for  
18 many generations. We've established that?  
19 There's a bit of an echo effect, perhaps --

20 A Yeah.

21 Q -- that happens in subsequent years?

22 A Yeah. No, if you -- it's the -- it's probably  
23 best described in the graph that shows for Late  
24 Run the building up of the Adams River stock, the  
25 Shuswap stocks on the strong cycle. That's in the  
26 Figure 22.

27 Q Okay.

28 A And you can see the progressive increase from 1962  
29 on through to the peak there in '86.

30 Q That was for the Early Stuart you're speaking --

31 A No, this is the Late --

32 Q The Late --

33 A The Late Run is the graph --

34 Q Right.

35 A -- on the --

36 Q Okay.

37 A -- projector.

38 Q The lower right-hand side?

39 A Yes, and so it's a --

40 Q Okay.

41 A -- continual building of that as a result of, you  
42 know, good survivorship of those fish during the  
43 periods, obviously good productivity, and then  
44 success of the increasing returns.

45 Q Okay. But you'll agree with me that we will see  
46 the effects of returning salmon in subsequent  
47 years in terms of productivity in later years?

- 1 A Yeah, so if you -- the reverse of this is if you  
2 have a -- you're not seeding the grounds and you  
3 have lower productivity, then it will ripple on  
4 through to the other -- in the opposite direction.
- 5 Q Okay. So I want to take you, now, to Table 1 on  
6 page 18, please.
- 7 A All right.
- 8 Q So at the bottom here there's a calculation of  
9 averages from 1986 to '91, 1992 to 2000, and 2001  
10 to 2009?
- 11 A Yes.
- 12 Q When we look at the averages calculated for the  
13 fisheries for these years, for the First Nations  
14 fisheries, we can actually see that for not the  
15 percentages but the absolute numbers, the First  
16 Nations fisheries harvest have changed very little  
17 in the past 25 years?
- 18 A Yeah, the absolute numbers, the averages, are  
19 similar, yes.
- 20 Q Okay. Now, the AFS was not introduced until 1992?
- 21 A That's correct, yes.
- 22 Q Okay. So to the extent that we see high  
23 exploitation rates as an issue for the Fraser  
24 sockeye salmon, this is an issue that predates the  
25 AFS?
- 26 A Yeah, definitely the exploitation rates that we're  
27 talking about here, most of the higher ones were  
28 prior to '92.
- 29 Q Okay. Now, I just want to briefly return to an  
30 issue discussed in your initial examination by  
31 Wendy Baker. You discussed some advantages, or we  
32 can call them distinguishing features of the less  
33 complicated Bristol Bay sockeye fishery?
- 34 A Mm-hmm. Yes.
- 35 Q You mentioned that one of those is that spawning  
36 occurs close to or a short distance away from the  
37 enumeration sites?
- 38 A Yes.
- 39 Q Okay. You noted to implement this in the Fraser  
40 would require managing the fishery as a terminal  
41 fishery?
- 42 A Yes. That's the only way you could do it similar  
43 to Bristol Bay, yes.
- 44 Q Okay. So it wouldn't be enough to fish at the  
45 mouth of the Fraser?
- 46 A Well, there are some stocks that are reasonably  
47 close to the mouth of the Fraser, but then others

1           are a long way --  
2       Q     Okay.  
3       A     -- distant.  
4       Q     So no ocean fisheries? No commercial --  
5       A     Sorry?  
6       Q     No ocean fisheries? With your idea of the  
7           terminal fishery, we wouldn't have ocean  
8           fisheries?  
9       A     No, I'm not saying we wouldn't have ocean  
10           fisheries. I say that if you wanted to reduce the  
11           exploitation rates on some stocks while allowing  
12           some fisheries on all stocks, then you could have  
13           a portion of the harvest taken in a traditional  
14           fishery, the traditional ocean fisheries, but then  
15           you'd have to look at harvesting the surplus, if  
16           you like, or the ones that are more productive,  
17           more terminally. So it isn't closing down one  
18           fishery and opening up a new set of fisheries; you  
19           have a mixture of fisheries.  
20       Q     Okay. So we're not talking about shutting down  
21           the entire ocean fishery, no fishing for the  
22           Heiltsuk, none of the Island nations, we're not  
23           talking about something like that?  
24       A     I'm not talking about that, no.  
25       Q     Okay. I just wanted to be clear. Okay. And you  
26           also said that it's possible to count the marine  
27           harvest, we're able to assess that -- those  
28           numbers if the --  
29       A     Is it possible to?  
30       Q     Oh yes.  
31       A     Yeah, it is definitely possible and there is an  
32           accounting of marine harvest and -- that you can  
33           see right here in this table. Those are the  
34           estimates of what is harvested.  
35       Q     All right. So now, I'm just going to go back,  
36           now, to you were brought to Table 6 and 7 earlier  
37           today, this morning?  
38       A     Yes.  
39       Q     And we looked at the accuracy, precision and  
40           reliability of the catch monitoring programs used  
41           to estimate the FSC harvest for Fraser sockeye?  
42       A     Yes.  
43       Q     And you were pointed to the table for 1992 to  
44           2000, Table 6?  
45       A     Yes.  
46       Q     Okay. We also -- and then there's, for 2001-2009,  
47           just looking at this table, I see that the quality

Karl English

Cross-exam by Ms. Sharp (WCCSFN)

Cross-exam by Ms. Gaertner (FNC)

1 of catch estimates, by your measure, has improved  
2 since 1992 till 2001, for those years you've  
3 assessed?

4 A Yeah, the --

5 Q They've gone from fair, variable and fair, to  
6 good, good, fair?

7 A Yes, definitely the reason for having the two  
8 tables is to emphasize the difference between the  
9 periods.

10 Q Okay. So for Table 14, then, we looked at - it's  
11 on page 42, sorry - we looked at the equivalent  
12 table for the commercial fishery?

13 A Yes.

14 Q Okay. We just have it for 2001 to 2009?

15 A That's correct.

16 Q Okay. You were asked, earlier, for the data for  
17 the years -- or the breakdown here for the  
18 different gear types?

19 A Yes.

20 Q Do you have the data for the years preceding 2001  
21 for the commercial fishery?

22 A I have the data for -- that you see in Table 1  
23 that goes back to the beginning of that time  
24 series.

25 Q Okay.

26 A And other tables that were prepared by the -- I  
27 think those ones go back, yes, to '86.

28 Q Table 1 goes back to '86, yes.

29 A Was that to '86? Okay, yes. So that all the  
30 tables that go back to '86 have information on the  
31 same panel areas and non panel area breakdown,  
32 because they come from the Pacific Salmon  
33 Commission files.

34 Q Great. Would you be able to produce that data, as  
35 well, for us?

36 A Sure.

37 MS. SHARP: Great. Thank you.

38 MS. GAERTNER: Mr. Commissioner, it's Brenda Gaertner,  
39 for the First Nations Coalition, and with me is  
40 Leah Pence. And I believe I have about 45 minutes  
41 for my time, and I am optimistic that my work with  
42 Mr. English, today, can be completed in that  
43 period of time.

44

45 CROSS-EXAMINATION BY MS. GAERTNER:

46

47 Q Mr. English, I wanted to thank you for the work

1 that's reflected in your report and your helpful  
2 evidence today and yesterday. I find it very  
3 direct and you're very easy to read, and I think  
4 that's a compliment that scientists should take.

5 A I appreciate it.

6 Q And I want to primarily focus on the methodology.  
7 My clients are pretty satisfied with the  
8 methodology and data in the report, which supports  
9 your conclusions. However, there's some facts and  
10 some recommendations that you have relied upon  
11 that we think could use some further explanation  
12 and perhaps go a couple steps further, if you  
13 will, with me. And ultimately, at the end of my  
14 questions, I'll take you to your recommendations  
15 and tweak some of them, or ask you to tweak some  
16 of them, if you're willing to. And then, if time  
17 allows, I've got a couple of questions relying on  
18 your expertise and the terms of reference that  
19 Commissioner Cohen has in front of him in this  
20 work.

21 A All right.

22 Q So I'm going to start, first, with page 1,  
23 paragraph 1, of your executive summary, right at  
24 the beginning of the report. And you mention a  
25 very strong statement there, I think, that there  
26 is:

27  
28 The limited documentation for DFO catch  
29 monitoring program, few estimates of  
30 precision, and minimal verification at  
31 landing sites for most Canadian commercial  
32 fisheries -

33  
34 -- I think he's got it. They'll catch up with it.

35 A Yes.

36 Q "(42% of the harvest)", and then you say:

37  
38 - leave substantial room for improvement in  
39 the catch monitoring programs.

40  
41 Q Now, I just want to just clarify, and this is  
42 probably my linear mind, so bear with me. Because  
43 it's so prominent in your material, it's your  
44 first thing that you go to and it's also one of  
45 your first recommendations, do we take anything  
46 from that? Is that, you know, a priority from  
47 your work and given the report that this is the

1 most important thing to look at, or is that just  
2 because that's how it was reflected in your terms  
3 of reference?

4 A No, there's no order to the points in the  
5 executive summary other than that they follow the  
6 order -- no, priority order, so they follow the  
7 order of the sections in the report.

8 Q Thank you. And that's similarly true for your  
9 recommendations?

10 A Yes. Yes.

11 Q Now, why is the level of verification used in the  
12 commercial gillnet fisheries and Area D and E so  
13 different from the verification that is now being  
14 used for First Nations gillnet economic fisheries  
15 in the -- at the mouth and in the Lower Fraser?  
16 And in particular I'll turn your attention to the  
17 evidence that came out yesterday and is in your  
18 report, that managers are achieving or are now  
19 imposing a 35 percent verification in the gillnet  
20 commercial fisheries and have now achieved 100  
21 percent verification in the economic opportunity  
22 fisheries for gillnets First Nations?

23 A Well, there has been certainly a focus on the  
24 First Nation fisheries because of some of the  
25 problems that occurred in the 1990s to try and get  
26 a more reliable catch number for those fisheries,  
27 so that's created a lot of the focus.

28 During that same period in the 1990s, there  
29 was a reliance mostly on the sale slip system, and  
30 it wasn't until the late '90s that the  
31 deficiencies in the sale slip reporting system for  
32 the regular commercial fishery, I'll call it, the  
33 general commercial fishery it's sometimes referred  
34 to. That concern over the sale slips created a  
35 need to implement independent monitoring systems.  
36 So the solution was to conduct aerial surveys and  
37 obtain information on catch per effort as a  
38 sample. So treat the commercial fishery more like  
39 a sport fishery is being treated, where you're  
40 doing surveys and sampling coming up with an  
41 estimate that's independent of the fishermen  
42 reporting their catch in total.

43 And so that's the approach that has been used  
44 since and for most of the time from 2000. It was  
45 sort of in development in 1999-2000 and has been  
46 improved over recent years. I think the emphasis  
47 in -- towards going to 100 percent catch reporting

1 is it puts more of the cost associated with the  
2 fishery back on the fishermen. So these are for  
3 the seine ITQ fisheries and troll ITQ fisheries.  
4 And that -- because, you know, maintaining  
5 independent catch monitoring systems can be  
6 expensive, you have to do aerial flights or on-  
7 the-ground counts compiled, whereas if you could  
8 move to a 100 percent verification of catch at  
9 landing sites, then -- and have fishermen land  
10 their fish at specific sites, it's going to be  
11 less expensive to monitor it that way, and it puts  
12 the onus back on the industry.

13 And it's following a pattern that has  
14 occurred for similar fisheries with the ground --  
15 we heard this morning about the groundfish  
16 fisheries and some other fisheries, halibut  
17 fishery.

18 Q So I'm still not -- thank you, but I'm still not  
19 quite clear. Why are we aiming for a 35 percent  
20 verification in the commercial gillnet marine  
21 fisheries, and 100 percent verification in the  
22 First Nations economic fisheries?

23 A Well, I don't think it's a question of what we're  
24 aiming for. There's a transition going on from  
25 this program of doing independent catch monitoring  
26 programs with gear counts and catch per effort  
27 estimates, to verification. So they went to 100  
28 percent for the seine and troll ITQ fisheries in  
29 2010, and they set the requirement at 35 percent  
30 for the Area E, I think, because of logistics  
31 associated with trying to go from where they were  
32 in 2009, or, I guess, it was a few years since  
33 they really had much of a fishery, so where we  
34 were in the previous year when they had a fishery,  
35 to what was being required for 2010.

36 Q And so, from your perspective, 35 percent is not a  
37 necessary accuracy requirement, it's more a stage  
38 in getting up to 100 percent; is that where --

39 A Yeah, I think it's an effort to improve it.  
40 Whether the Department's going to set a  
41 requirement to go 100 percent dockside monitoring  
42 catch verification for that fishery is yet to be  
43 seen. They obviously ran for quite a number of  
44 years without that requirement but doing the catch  
45 estimates by these other methods I just described.

46 Q Now, I'm aware, and this is a bit of a challenge,  
47 given where we are in the procedures with the

- 1 inquiry, but there's a policy and practice report  
2 that will be filed coming forward, and from that  
3 policy and practice report I understand that Area  
4 E gillnetters have strongly opposed the mandatory  
5 landing site requirements and that they've argued  
6 that those are time -- cost time and cost money  
7 and that they have to land these and set packing  
8 sites are going to restrict their abilities to  
9 deliver to their buyers and disrupt their  
10 marketing abilities; are you aware of that?
- 11 A Yes.
- 12 Q And for some reason in 2010 DFO agreed to drop the  
13 mandatory landing site requirement; are you aware  
14 of that?
- 15 A In 2010?
- 16 Q Yes.
- 17 A Well, this is for the Area E was the -- what I was  
18 told was that they had a requirement for 35  
19 percent of the catch to go through the sites, not  
20 all the catch.
- 21 Q Were you able to review that information in  
22 preparation of this report?
- 23 A That's what I -- I got those pieces of information  
24 from the people who were involved in the Area E  
25 management in last year.
- 26 Q I guess as you can tell by my questions, my  
27 clients have always been concerned about making  
28 sure that fisheries are treated equally, and there  
29 is, at least from my perspective, from this  
30 vantage point, I can't see any difference between  
31 Area E and Area D and the Lower Fraser gillnet  
32 fisheries economic fisheries. They're all gillnet  
33 -- most of those are gillnet fisheries. They're  
34 all located pretty close to the mouth of the river  
35 or from it, they're often accessing the same  
36 markets. Why would one require 100 percent  
37 verification and another require 35 percent  
38 verification? You can appreciate that that might  
39 cause problems on the ground?
- 40 A Yes. And it has been raised with a number of the  
41 groups that I've talked with and -- First Nations  
42 groups, that they feel it's not fair that they  
43 have a requirement which is more stringent than  
44 those for the other fishermen.
- 45 Q And if I could take you to Exhibit 428 for a  
46 moment, are you familiar with the work that the  
47 ISDF has done, the Integrated Salmon Dialogue



1 Forum, on monitoring and compliance? Are you,  
2 first of all, familiar with the ISDF?  
3 A I have heard about that process. I have not  
4 participated in it.  
5 Q All right. If you go to page -- first of all,  
6 page 2 on the forward, you'll see that the  
7 monitoring and compliance panel describes itself  
8 as -- on page 2 of the forward, Mr. Lunn, do you  
9 see that -- yes, you'll see it.  
10  
11 The M&C panel, as it has been dubbed, is an  
12 independent collection of representatives  
13 from the aboriginal, recreational, commercial  
14 and conservation sectors. But while  
15 independent, the panel also works [closely]  
16 with [DFO] in a collaborative attempt to map  
17 a better pathway for monitoring and  
18 compliance.  
19 A Yes.  
20 Q If that helps you understand a little bit of the  
21 work that this group is doing. And if you go to  
22 page 5 of that report, and in particular Principle  
23 2, they strongly recommend using consistent  
24 monitoring standards. Do you see that?  
25 A Yes.  
26 Q I'm wondering, you didn't mention that in your  
27 report as part of your recommendations. I wonder  
28 if you could take a moment to look at that  
29 principle and wonder whether or no you might add  
30 that as a necessary or a useful step in ensuring,  
31 going forward, we've got good monitoring and  
32 compliance standards? Sorry, page 5 of the  
33 report.  
34 A Mm-hmm.  
35 MS. GAERTNER: Sorry.  
36 MR. LUNN: My apologies.  
37 MS. GAERTNER: No, that's okay, it's me probably just  
38 going too fast. I'm sorry.  
39 A Unfortunately, I had page -- I had page 5 here,  
40 so --  
41 Q You've got it, right?  
42 A Yeah.  
43 Q And you've got Principle 2?  
44 A Yes.  
45 Q Is there anything in that principle that you  
46 disagree with, or are you happy to adopt that  
47 recommendation as a useful way of going forward in

1 monitoring and compliance within Fraser River  
2 sockeye fisheries?

3 A I think the issue of just consistent monitoring  
4 standards is good as long as those standards are  
5 adequate, like I can have consistently poor --

6 Q Yes.

7 A -- so they may have to be a little inconsistent,  
8 initially, to get things -- to change things for  
9 fisheries that are not believed to be monitored  
10 adequately now or in any one period. But once  
11 you've established a reliable set of catch  
12 monitoring systems, yes, maintaining them  
13 consistently. And I think that was hope, is that  
14 initially the sale slip system was going to  
15 provide that for commercial fisheries, for  
16 example, continuously, as it had, for many years,  
17 but it kind of broke down. There was a change in  
18 how fish were being landed and how catch was being  
19 sold, and so what they had to do was adapt.

20 So you need to be consistent where you can  
21 be, but adaptable to a change -- changes in the  
22 fishery over time.

23 Q All right. And finally, just a last question on  
24 the catch and our catch monitoring component of  
25 your paper, at page 44, and I don't think you need  
26 to go there, you just mention the 100 percent  
27 monitoring for the ITQs. You'll agree with me  
28 that ITQs aren't a necessary part of getting 100  
29 percent monitoring? I mean, they're not linked at  
30 the hip, or anything like that, it's just a  
31 sufficient way of -- or it seems to be an  
32 incentive that DFO is using, now, to try to get  
33 some of these fisheries to increase monitoring and  
34 the cost of monitoring on ship?

35 A Yeah, you don't have to have an ITQ fishery to  
36 have 100 percent dockside monitoring.

37 Q Thank you. And my next line of questions, Mr.  
38 English, are really going to -- perhaps what I was  
39 trying to do yesterday, I'm going to take you to  
40 page 25 of your report, which is where you begin  
41 to summarize the First Nations FSC fisheries.

42 And it's my assessment that a number of facts  
43 that you rely upon and present in the pages from  
44 25 to 26 and onward do not actually go directly to  
45 your assessment of the catch monitoring accuracy  
46 precision reliability of the First Nations  
47 fisheries, but really are background or

1 descriptions of the fishery. And I need to draw  
2 your attention to some of the things that are said  
3 there because, from my clients' perspective,  
4 they're either inactive or incomplete, and I don't  
5 know what these pages in your report might be used  
6 for in the future.

7 A Okay.

8 Q So I am going to point out, again, and you've  
9 agreed with me as you began this, that your  
10 expertise is not necessarily on traditional  
11 fisheries practices of Aboriginal people; your  
12 expertise lies in the scientific management  
13 processes in a modern context; is that correct?

14 A That's correct, yes.

15 Q All right. So then just bear with me for some of  
16 these questions and we'll get some of this looked  
17 after.

18 You are the author of this part of the  
19 report, if I got your evidence correct, right?

20 A That's right.

21 Q So if you can go to page 25 and that first  
22 paragraph. First of all, you call it First  
23 Nations FSC fisheries, and then you describe it as  
24 the management structure. You're going to --  
25 you'll agree with me that it's the management  
26 structure presently used by the Government of  
27 Canada, through DFO, to manage the FSC fisheries  
28 by First Nations?

29 A That's correct.

30 Q And you'll agree with me that the special  
31 obligation you're talking about in that first  
32 paragraph is the constitutional obligation that  
33 DFO has to manage the fisheries pursuant to s. 35  
34 or treaty rights that are concluded; is that what  
35 you're referring to there?

36 A Yes.

37 Q And what did you mean in that first sentence when  
38 you said that:

39  
40 Since the late 1800's, when Canada asserted  
41 management control of Pacific coast  
42 fisheries, the ability of First Nations to  
43 harvest for "food" purposes has been  
44 integral -

45  
46 -- I found that word to be fascinating --  
47

1                   - integral to the overall fisheries  
2                   management system.  
3

4                   What were you trying to communicate to us there?

5           A        I guess there's -- it's been an issue making sure  
6                   that First Nations have access to salmon for food  
7                   for most of that period. There has been periods  
8                   when it has been -- has been a problem, but it's  
9                   been an integral challenge for the management  
10                   agencies to deal with that one in one form or  
11                   another throughout that period.

12          Q        All right. Integral challenge is something, I  
13                   think, my clients could live with. So let's move  
14                   onto AFS. You describe AFS as the management  
15                   structure. You're aware that DFO is trying to use  
16                   a bunch of tools in their toolbox, now? They've  
17                   got an AAROM, and they've got a PICFI, and now  
18                   they've got treaties with Tsawwassen, and so it's  
19                   not the only management tool, by any means, that  
20                   DFO is trying to use; is that correct?

21          A        That's correct.

22          Q        But it is, for some reason, the one that you  
23                   focused on in this report?

24          A        It's the one that was noteworthy in terms of how  
25                   it has affected the catch monitoring component of  
26                   the First Nation fisheries.

27          Q        And for that you mean it was the funding  
28                   arrangement beginning in the post-**Sparrow**  
29                   environment that helped to put some capacity into  
30                   First Nations to provide some better collaboration  
31                   with DFO; is that what you meant?

32          A        That's what I mean, yes.

33          Q        Okay. And are you aware, also, that there are  
34                   strong concerns by First Nations around the type  
35                   of management that arises from the AFM, in  
36                   particular the notion that DFO has the ultimate  
37                   decision-making powers and that they have to sign  
38                   agreements that say that in order to obtain this  
39                   funding?

40          A        Yes, I'm aware of --

41          Q        You're aware that that causes --

42          A        -- lots of details, yeah.

43          Q        You're aware it causes significant friction  
44                   between DFO and some aboriginal groups?

45          A        Yes, and it's the reason why there is not  
46                   agreements in every year, as identified later in  
47                   the report.

- 1 Q All right. So then, at page -- well, 21, and then  
2 you say, again, and then at page 26, you suggest  
3 that 72 First Nations target Fraser sockeye.  
4 Where did you get that number?
- 5 A I think that's the total in the table that is  
6 provided under Table 5.
- 7 Q All right. And so that's at page 28. And then  
8 you go on to say that 39 groups representing most  
9 of these First Nations have AFS agreements, and  
10 currently most First Nation groups in B.C. have  
11 AFS agreements with Canada. You say all of these  
12 things. Are you relying on that conclusion all on  
13 Table 5?
- 14 A It's largely being -- because this is -- we asked  
15 for this, actually, for multiple years, and we  
16 were only able to get it for 2009, so a lot of the  
17 conclusions, yes, are derived from the information  
18 from the 2009 documentation that was provided by  
19 DFO.
- 20 Q Maybe I'll just ask this question, then: Are you  
21 aware that the Nlaka'pamux communities that are  
22 along the main stem and the Stl'atl'imx  
23 communities, do you know those two tribes?
- 24 A Yes, I do.
- 25 Q Are not signatories to AFS agreements?
- 26 A I know that there's groups that met within the  
27 Fraser that are not signatory.
- 28 Q And you know their territories. You would  
29 describe them as fairly significant areas within  
30 the middle part of the Fraser that don't have AFS  
31 agreements?
- 32 A Yes.
- 33 Q Yes. So when you say "most of them" have AFS  
34 agreements, that might be a little bit of an  
35 overstatement?
- 36 A Yes. And, you know, and I guess it would look at  
37 it from -- you could look at it two different  
38 ways. One, is that just the portion of the total  
39 number of First Nations versus the portion of the  
40 First Nations that -- in terms of their catch of  
41 Fraser sockeye, so...
- 42 Q Now, you weren't relying on the fact of whether  
43 they were an AFS signatory, to do your catch  
44 monitoring assessment --
- 45 A No.
- 46 Q -- though, were you?
- 47 A No.

1 Q So that helps us in terms of that conclusion. Are  
2 you also aware that the outstanding issues between  
3 First Nations and DFO regarding the  
4 responsibilities around management and appropriate  
5 co-management are significant hurdles that have  
6 not yet been overcome and are hurdles for the  
7 management of the Fraser River sockeye?

8 A Yes.

9 Q And you're also aware that aboriginal traditional  
10 fishing locations within the Fraser are very --  
11 the actual locations are very culturally relevant,  
12 and in many, many situations they are longstanding  
13 within families that have used very specific sites  
14 that are sacred responsibilities for that family?

15 A Yes.

16 Q And would you agree that respecting those  
17 relationships and those locations will be highly  
18 useful and helpful in developing functional  
19 management structures for ongoing management of  
20 the Fraser River sockeye and the FSC fisheries?

21 A Certainly, yes.

22 Q And including the movement towards terminal  
23 fisheries?

24 A Yes. You know, it's very important that whatever  
25 fisheries are conducted in an area where First  
26 Nations have a tradition of harvesting fish  
27 respect the use of those fishing sites and areas.  
28 We've experienced it firsthand in just doing  
29 research where I understand that if we don't talk  
30 with the First Nations in the area then we're  
31 going to create a lot of problems for ourselves,  
32 and so we do -- we abide by that and virtually  
33 everywhere we've done work, whether it's the  
34 Fraser or the Nass or the Skeena, we're working  
35 very closely with First Nation groups for those  
36 reasons.

37 Q Great. And then would you also then agree that  
38 that longstanding knowledge and relationship to  
39 the fishery and those very local situations is an  
40 asset to the long-term management of the Fraser  
41 River sockeye salmon and not an impediment?

42 A Certainly. Definitely working with people that  
43 understand how the fish move through their  
44 territory is absolutely vital.

45 Q So often when we hear the challenges with a number  
46 of First Nations along the Fraser, we could  
47 actually change our glasses and see it as an

1 opportunity to obtain local and historical  
2 information that will be extremely useful in  
3 developing assessments of things like habitat and  
4 habitat abilities?

5 A Sure. The more information the better.

6 Q All right. So I'm going to turn, now, to the non-  
7 retention fishery section of your paper. And I  
8 just want to pick up on a couple of things that  
9 Mr. Rosenbloom touched on earlier today and take  
10 it a little further. And I want to start with  
11 what you've done at page 56 of your report, and  
12 take you to that last paragraph and, in  
13 particular, beginning with the sentence:

14  
15 Although salmon fisheries are typically  
16 managed to harvest a specific species or  
17 stock it is often impossible not to intercept  
18 other co-migrating salmon, including some  
19 that are threatened.

20  
21 And my clients took quite a bit of interest in the  
22 three options that you set out there, in  
23 particular, you can either continue to harvest  
24 abundant stocks until they're extinct. That's one  
25 option, hopefully not an option that we're looking  
26 for. Second, you can shut down lucrative  
27 fisheries to protect threatened ones. And third,  
28 you can apply restrictions in the form of release  
29 requirements for non-target species or stocks.  
30 And you look at the various different options that  
31 you have there.

32 And then you go onward and say:

33  
34 Release requirements have been applied to  
35 several gear types,

36  
37 And then you say:

38  
39 Releasing fish...has become used increasingly  
40 in management but is predicated on the  
41 assumption that true release mortality  
42 estimates are known

43  
44 And then you spend two pages, and Mr. Rosenbloom  
45 has taken you to some of these in which you  
46 clearly identify that that assumption is not  
47 founded in the information we have today; is that

1 correct?

2 A Yeah, that we're lacking information on the  
3 release-related mortalities for a lot of the  
4 different species.

5 Q And it's not just the catch and release on the  
6 anglers, it's the catch and release in the marine,  
7 also, that we don't have information on either; is  
8 that correct?

9 A Wherever catch and release occurs, there's  
10 variable levels of information. So you can go to  
11 sport fisheries at different parts of the coast  
12 and you'll find better information in some areas,  
13 or in other areas you can look at releases from  
14 seine vessels fishing in the north coast or in  
15 Barkley Sound that have been studied in those  
16 areas, and you can see there is some information.

17 This specifically is looking at the fisheries  
18 associated with Fraser sockeye and the areas where  
19 Fraser sockeye are being released in these  
20 fisheries, so therefore it's focused mostly on the  
21 fact that there's very little Fraser sockeye being  
22 released in other south coast fisheries,  
23 commercial fisheries. Most of it occurs in --  
24 associated with the in-river fisheries for sport  
25 fisheries.

26 Q So if you go back to those three options that you  
27 had at page 56, Mr. English, I can only make the  
28 assumption, if we don't want it to be extinct and  
29 we don't have the information to rely upon for  
30 catch and release, the only thing we can do is  
31 change where we're fishing?

32 A You can change the -- alter the methods and  
33 locations of fishing, yes, to reduce the impacts  
34 for cases where you are releasing. If you're  
35 retaining the fish, if you're not releasing them,  
36 then they're dead and you're harvesting them.

37 Q All right.

38 A So it's only those places where you're actually  
39 releasing the fish and with the intention that  
40 they survive where this is an issue.

41 I think it's -- the writing here was to  
42 indicate that a lot of the research -- you know,  
43 it's a broad subject and a lot of the research has  
44 been focused on chinook and coho and steelhead,  
45 because these are species that are typically  
46 needed to be released in fisheries that are  
47 targeting sockeye and pink, for example, or chum.



- 1                   And so there's a broader, seems to me, wealth  
2                   of information than just what is applicable to  
3                   Fraser sockeye fisheries.
- 4           Q        Sorry, I just got sidetracked with how much time I  
5                   have left. All right. But what I read your --  
6                   that earlier paragraph to say was you've got three  
7                   options when you're dealing with co-migrating  
8                   stocks --
- 9           A        Mm-hmm.
- 10          Q        -- that some of which are running the risk of  
11                   extinction. Two of those options aren't on the  
12                   table right now, as I see it, as I read your  
13                   report; one of them could be.
- 14          A        Yeah, well, obviously they're extremes and, you  
15                   know, the intent is that they find -- we get more  
16                   information -- where you allow release fisheries,  
17                   where you're can release fish, you get more  
18                   information on the survivorship, so you aren't  
19                   just assuming 100 percent survival. So you've got  
20                   to look at and say, "What's the likelihood of  
21                   survival of these fish," study it directly, or  
22                   relate it to other studies done, that what's  
23                   likely to be the survivorship of those fish being  
24                   released.
- 25                   So it doesn't remove three -- what's proposed  
26                   under 3, as an option.
- 27          Q        Okay. So then I want to go on, because the next  
28                   part of this is en route losses and what you do at  
29                   page 61. You'll agree with me that we only call a  
30                   dead, uncaught salmon an en route loss once it's  
31                   lost in the river after it's been enumerated at  
32                   the Mission; that seems to be the nomenclature  
33                   right now; is that correct?
- 34          A        Where the en route loss is really referring to  
35                   fish that go -- that we estimate have gone by  
36                   Mission but didn't make it to the spawning  
37                   grounds.
- 38          Q        So we don't have data on en route losses in the  
39                   marine before the Mission, but clearly there may  
40                   be en route losses after fish have passed by the  
41                   marine fisheries going into the river?
- 42          A        Yes, could be there, too.
- 43          Q        And so water temperatures could, as they're  
44                   increasing, effect a fish that's been caught and  
45                   potentially released, either deliberately or  
46                   undeliberately from nets in the marine?
- 47          A        Yes.

1 Q It's not just in-river fisheries that we're  
2 worried about with respect to that?

3 A Well, the reason for the focus of in-river  
4 fisheries is because the temperatures are much  
5 higher in-river than in the ocean.

6 Q But if the marine fisheries are causing some of  
7 the challenges the fish is experiencing by the  
8 time they get into the river, we shouldn't close  
9 our eyes on that?

10 A No, they're all having their impact. If we  
11 weren't in the way of these fish, they would have  
12 a lot less stress on them.

13 Q And I need to take you to page 61, at the bottom  
14 of the paragraph beginning, "The 2002-2009 sockeye  
15 telemetry studies," and particularly the last  
16 sentence, because I'm very concerned with what  
17 you're suggesting here and want to make sure we  
18 understand this:

19  
20 While there is little that can be done about  
21 annual water temperatures or difficult  
22 passage points, it is possible to minimize  
23 cumulative effects environmental and fishery  
24 related factors by dissociating the timing  
25 and location of in-river fisheries from these  
26 other stressors.

27  
28 You're not suggesting that we close First Nation  
29 fisheries in the canyon or other places where  
30 there may be, what did you call them, difficult  
31 passage points, those are very traditional  
32 aboriginal fishing sites, are you? That's not  
33 what you're suggesting in that sentence, are you?

34 A Well, there may be years when, with extreme  
35 temperature, that you need to look at different  
36 harvesting methods.

37 Q But surely -- different harvest -- but first of  
38 all, surely you'd be looking at making sure  
39 there's enough fish that pass so those first in  
40 priority can access those fish?

41 A Yeah, so they can access the fish, but at the same  
42 time we don't want to have -- conduct fisheries  
43 where we know they're going to be -- we're going  
44 to be stressing fish in warm periods of time and  
45 some of those fish are not going to be removed.

46 So you have a target number of fish that you  
47 would like to catch in a fishery and you want to

- 1 have those fish removed without having an impact  
2 in the other fish that are either going to fall  
3 out of nets or not be captured efficiently.
- 4 So there's different capture measures that  
5 can ensure that all the fish that are encountered  
6 are retained and the other ones swim upriver and  
7 are able to spawn.
- 8 Q All right. Let's go to net fallout, just on that,  
9 for a moment. In your report, you seem to focus  
10 on net fallout in the river. A gillnet is a  
11 gillnet, if I understand it, and a gillnet in  
12 Johnstone Strait or in Area E or any of those  
13 things could also have net fallout --
- 14 A Yes.
- 15 Q -- will you agree with me on that?
- 16 A Yes.
- 17 Q Why is it that you seem to be worried only about  
18 gillnets in the river?
- 19 A It's a cumulative stress issue and it's because we  
20 don't -- with the tools that we have been using  
21 and the complexity of working in the marine  
22 environment, it's more difficult to assess the  
23 impact of marine fisheries in terms of -- and the  
24 survivorship of fish in marine fisheries due to  
25 potential things like net fallout. This  
26 information is coming from the in-river telemetry  
27 studies that have been done in looking at  
28 locations of losses.
- 29 Q But surely if we've got gillnets with dropout in  
30 the Johnstone Strait or in Area E we're going to  
31 -- we want to look at that, don't we? That's one  
32 of the first things the salmon are getting --
- 33 A Yes.
- 34 Q Yes.
- 35 A We want to -- wherever you have a -- you know, the  
36 theory here is that the combination of  
37 temperature, difficult passage points, stress and  
38 migration, and fisheries, is probably the case  
39 where you're going to have bigger stresses, but it  
40 doesn't mean that you're not going to have any  
41 stress associated just with net fallout. In fact,  
42 one of the biggest stresses might be fish not  
43 being retained in the net, because they struggle  
44 as they encounter the net and they -- if they  
45 struggle long enough some of them escape, and they  
46 may have to do that several times in order to get  
47 from A to B.

- 1 Q And in addition to other fishing methods, there's  
2 lots of things we can do to improve gillnets; is  
3 that right?
- 4 A To improve gillnets, as opposed --
- 5 Q Yes, so we can make sure they're using the right  
6 monofilaments, where we can make sure they've hung  
7 them right, we can make sure they've got the  
8 floats and that they've let -- the lead lines are  
9 properly located within -- depending on where --  
10 there's a lot of education that could be done; is  
11 that true?
- 12 A Yeah, there is definitely better gillnets and  
13 worse gillnets, for sure.
- 14 Q And the obvious point is that Bristol Bay is  
15 almost all gillnets, aren't they?
- 16 A There's a lot of gillnetting. Well, it is,  
17 effectively, all gillnets. Either set gillnets or  
18 drift gillnets.
- 19 Q Okay, I'm going to move, now, to preseason  
20 forecasts, and I just want to -- I know there's  
21 been a lot already said, I don't want to take too  
22 much time, but the -- there seems to be two  
23 options for precautionary management in a  
24 situation where we've got -- hold on, let me  
25 rephrase this, I'm rushing too quickly.
- 26 Given the unreliability of preseason  
27 forecasts already agreed upon, would you agree  
28 that no significant or strong fisheries in the  
29 marine should be occurring before in-season data  
30 confirms the peak of the runs?
- 31 A Before the peak.
- 32 Q So by the time we get some accuracy and the actual  
33 abundance of the run.
- 34 A It's common to allow fishing to occur as you  
35 approach the peak with it being conservative, like  
36 you're not going to, you know, start off with a  
37 multi-day fishery, for example, you might start  
38 with a fishery that lasts a few hours earlier in  
39 the run just to get a sense of how many fish are  
40 coming back. But definitely it's the closer --  
41 the more you can be confident that you're near the  
42 peak the better your test fishing, and the peak,  
43 really, is the 50 percent point. So you can see,  
44 "Oh, we've seen this many fish so far, if we're  
45 roughly around the 50 percent point, then we can  
46 expect there's another half of the run to come."  
47 So that's often done for the early components

- 1 of runs, so that gives you an indication of  
2 whether the run in that particular year is coming  
3 back early or late.
- 4 Q So what I want to stress is that, as I understand  
5 the changing climate conditions and the lack of  
6 certainty going into any particular run, the only  
7 time you can really become more secure about the  
8 size of a particular run is just after the peak  
9 has been identified?
- 10 A Yes.
- 11 Q And so if we're going to be precautionary, we're  
12 going to have to wait for that, for any  
13 significant effort fisheries to occur?
- 14 A Yeah, there's two goals, though, in the fisheries  
15 management, is to harvest a -- to not exceed what  
16 can be sustainably harvested or you know, not  
17 harvest into your escapement target, but at the  
18 same time distribute the fishing pressure over the  
19 run of the fish so you're not always waiting until  
20 the last half of the run to mount all your  
21 fisheries. So that would alter the run-timing and  
22 the -- and possibly have negative effects on the  
23 biology.
- 24 Q All right. So there's two options that flow from  
25 that with the Fraser River; you can either move  
26 your test fisheries further out and get your data  
27 better and before and do your stock composition  
28 before you open any of the marine commercial  
29 fisheries, or you can move the fisheries further  
30 up the river so you've clearly had an opportunity  
31 to identify the peak and identify the stock  
32 composition. Would you agree with those two  
33 options?
- 34 A Yeah, there's those options and the fact that you  
35 -- with the current test fishery locations they're  
36 providing information in advance of other fishing  
37 areas in the marine environment, because they're  
38 occurring in Johnstone Straits and Juan de Fuca  
39 Straits anywhere between five and seven days prior  
40 to when fish will arrive at the mouth of the  
41 Fraser or the Lower Fraser.
- 42 Q So do you want to move them further out so you can  
43 get the necessary information on the peaks and  
44 stock composition, which I understand takes at  
45 least two days of DNA sampling before you open the  
46 marine?
- 47 A Well, moving the fish -- the test fisheries

1 further to the ocean -- further along the  
2 migration of salmon becomes problematic because  
3 the location of landfall, these stocks may vary.  
4 Some years you could have information from Alaska,  
5 for example, telling you what's coming back,  
6 because a lot of them are migrating through the  
7 Alaskan fisheries. Other years, virtually none of  
8 them will be migrating through the Alaskan  
9 fisheries. So you have to conduct your test  
10 fisheries at locations where Fraser sockeye are  
11 going to be consistently vulnerable to those test  
12 fisheries, and that's why they're located in their  
13 current locations.

14 Q So you agree with me, then, that the most obvious  
15 next choice is to move the fisheries more in-  
16 river?

17 A The earlier fisheries, the -- our conservative  
18 approach is to have those definitely inside those  
19 test fisheries and more towards the river or  
20 upriver than in the approach waters.

21 Q So going forward, as we begin to look at  
22 re-managing the fisheries for sustainability, we  
23 should strongly be looking at how we can catch  
24 more fish in-river?

25 A Yeah, do it in a way which is not going to have  
26 these other problems with temperature.

27 Q Thank you. Let's just turn, briefly, to in-season  
28 estimates, and I note at page 85 of your report -  
29 I'm going to read it while Mr. Lunn finds it - you  
30 say:

31  
32 In general, the in-season forecasts have been  
33 sufficiently accurate, precise, reliable, and  
34 timely to make the management decisions  
35 needed to achieve the harvest rate goals  
36 defined for each of the four run-timing  
37 groups.

38  
39 And I note you didn't say "the escapement goals",  
40 and I note you didn't say "conservation units",  
41 and I expect that was deliberate on your part; is  
42 that correct?

43 A That's correct. Yes.

44 Q And so we don't have in-season forecasts that are  
45 sufficient to ensure escapement goals for  
46 conservation units?

47 A Well, it's not how they're being used, so we can't

1 evaluate it the -- what's being done until -- once  
2 they're defined, then the test of whether the  
3 current in-season forecasts or in-season  
4 estimation system is adequate will be once those  
5 goals are defined and then how well we do to  
6 achieve them.

7 Q Right. So we don't have it. Now, I want to ask  
8 you about these four run-timing groups. They're  
9 often used for much of what we're doing in-season  
10 right now. As I understand it, there are a number  
11 of Early Summer sockeye populations, in particular  
12 the Scotch and the Seymour and others that are  
13 migrating with Summer stocks, and particularly the  
14 Stellako and the Late Stuarts. Why are they  
15 located in the Early Summer populations, and is  
16 that causing problems, from your perspective?

17 A Well, certainly there's a significant overlap, and  
18 in more recent years it may have been historically  
19 that there was less overlap between those run-  
20 timing -- or between those stocks and there --  
21 were in those run-timing groups for those reasons.  
22 I'm not clear, I haven't asked the people who were  
23 managing the resources back when those stock run-  
24 timing groups were defined, why they chose those  
25 specific stocks.

26 Q But you'd agree with me that they're more  
27 accurately part of the Summer stocks as they --  
28 and it's where they're actually migrating than  
29 they are the Early Summers?

30 A Certainly that's been my observation in recent  
31 years. Most of my intensive work on the Fraser  
32 started in 2002, and in all the years that --  
33 since then, when we've been looking at the runs  
34 and the migration timings, it appears there's a  
35 lot of overlap between Scotch and Seymour, for  
36 example, and the other summertime stocks -- Summer  
37 Run stocks.

38 Q And so to the extent that we're moving forward  
39 making decisions right now on run-timing groups,  
40 would you agree that it would be useful to make  
41 sure we redo the composition of these run-timing  
42 groups so they accurately reflect how these fish  
43 are returning?

44 A That would be good, yes.

45 Q And so that would be a recommendation you would  
46 add to your paper?

47 A To the extent that it's appropriate, because I'm

- 1 not sure that -- I think my paper's submitted and  
2 final.
- 3 Q But you can adopt it, now, as a recommendation  
4 that you would make to the Commissioner for  
5 something to consider in the improvement of the  
6 Fraser River sockeye?
- 7 A Yeah, in the context, I guess, of this hearing or  
8 testimony. I don't think they're - correct me if  
9 I'm wrong - but I'm not -- I don't get the  
10 impression I'm supposed to go back and make edits  
11 to the --
- 12 Q No, I'm not asking you --
- 13 A -- report. Okay.
- 14 Q -- to make edits.
- 15 A Yeah.
- 16 Q But you would adopt that as a useful  
17 recommendation for --
- 18 A Yes, for sure.
- 19 Q -- the improvement of Fraser River sockeye?
- 20 A Yes.
- 21 Q And is it your understanding that the four run-  
22 timing groups is mainly a constraint of the  
23 Pacific Salmon Treaty?
- 24 A I guess because it's a traditional approach that  
25 has been used by the Fraser Panel to manage these  
26 stocks. I don't know whether it is actually  
27 referred to in the Pacific Salmon Treaty that it  
28 must be done in that way, but it could be in  
29 there.
- 30 Q All right. I just have, briefly, and again, I  
31 think I'm going to be pushing my time estimates,  
32 but let's see how I do. I want to turn to  
33 escapement targets very briefly, and then  
34 particularly I adopt the work in the -- that Mr.  
35 Leadem did, today, with you, and was grateful for  
36 it being done, but I have to go a couple more  
37 steps with you, if I may.
- 38 The challenge of using stock recruitment data  
39 to set targets is that right now we have data on  
40 19 indicator stocks, correct?
- 41 A That's correct.
- 42 Q And as I understand your report, of the seven of  
43 those indicator stocks we don't have sufficiently  
44 reliable stock recruit data to do assessments on  
45 escapement targets; is that fair to say?
- 46 A For seven of the 19?
- 47 Q Yeah. If I take you to paragraph two on page 75,



- 1 that might help us. I just want to make sure I've  
2 got this right, because if we're going to start  
3 anywhere to do this, let's start with the  
4 indicator stocks.
- 5 A Yes. So which page is it on?
- 6 Q Page 75, paragraph two.
- 7 A Paragraph two.
- 8 Q This is how I best understand that.
- 9 A Okay, so I want to really help clarify this. This  
10 is related to preseason forecasts, so it doesn't  
11 say you can't do stock recruitment, it just means  
12 that there isn't a good relationship between the  
13 forecast and the return.
- 14 Q But that is the information we would also be using  
15 to - or maybe it isn't - what information would we  
16 use for escapement targets on the 19 indicator  
17 stocks?
- 18 A Well, one very basic piece of information would be  
19 the capacity of the freshwater habitat to support.
- 20 Q All right. I'm going to take you there in a  
21 second, but I just want to get a sense of what  
22 other data do we have -- what data would we have  
23 for the 19 indicator stocks that we could  
24 immediately turn to, to start setting escapement  
25 targets?
- 26 A Well, it's well laid out in the Sue Grant report,  
27 et al, working paper for all these 19 stocks, the  
28 data that -- and they go through it in exhaustive  
29 detail. It's stock recruitment data, not run  
30 forecasting data that we're using.
- 31 Q Okay. All right, let's leave that. So your other  
32 option, and I'm going to go to that, because  
33 that's really where I wanted to focus, and I  
34 wanted to make sure we had the data right, is you  
35 say we've got to start with what I -- what's often  
36 been called as the garden, and I'm going to call  
37 it a wild garden as distinct from anything that  
38 sounds domesticated --
- 39 A Mm-hmm.
- 40 Q -- and we need to understand the nature of that  
41 wild garden. And do you agree with that --
- 42 A Yes.
- 43 Q -- as a good place to start? And you need to  
44 confirm this at the present spawning habitat, and  
45 the Commissioner has actually heard from a number  
46 of my clients about their views that a lot of the  
47 present habitat is underutilized in some of the

1 areas and that there's a lot more habitat that  
2 could be used. Is that your understanding of the  
3 Fraser?

4 A I don't have that, I guess, level of detailed  
5 understanding, certainly not equal to your  
6 clients.

7 Q And so you would actually agree that working  
8 closely with First Nations to understand that  
9 wild garden would be a very useful step?

10 A Yes, definitely.

11 Q And, in fact, it might be one of the more useful  
12 steps in quickly moving to some collaborative and  
13 co-management opportunities?

14 A Yes.

15 Q And so what we would want to do is assess from  
16 there historical knowledge and otherwise the true  
17 larger capacity of some of the spawning ground  
18 areas of the Fraser?

19 A Yes, certainly.

20 Q That would be a good place to start?

21 A Yes. And understanding that the -- there might  
22 well have been substantial changes over time.  
23 Some of those areas may be better today than they  
24 were historically; some may be worse.

25 Q All right. I just have a couple of final areas  
26 that I want to cover. I want to briefly turn to  
27 Bristol Bay.

28 As I understand it, and of course we can't  
29 change geography, and we can't -- but we can  
30 change fisheries and management styles, and so if  
31 we wanted to learn from the Bristol Bay and, in  
32 particular, wanted to adopt some of their  
33 conservation approaches and more effective  
34 management approaches, one of the ways we can do  
35 that is to move our fisher closer to the natal  
36 streams and the lakes. That would make us closer  
37 to the nine areas in Bristol Bay; is that correct?

38 A In principle, yes.

39 Q Well, it's actually practical and possible?

40 A Yes, to the extent that you could do the  
41 harvesting in those areas similar to what -- if  
42 you wanted to harvest similar numbers of fish,  
43 there might be logistical differences or  
44 difficulties doing that in some terminal areas.  
45 But the idea that -- the principle -- the concept  
46 or principle of moving fisheries closer to the  
47 spawning areas gives you a lot more control over

- 1 the returns to specific stocks.
- 2 Q As I heard your evidence yesterday and as I read  
3 your report, that's as critically important  
4 component of the success of Bristol Bay, is  
5 they've got a very close relationship between when  
6 the -- the people who call the -- open the  
7 commercial fisheries and that which is happening  
8 on the spawning grounds, correct?
- 9 A Yeah, it seems to have worked to ensure that they  
10 get their escapement goals.
- 11 Q And so what we might want to do is increase  
12 capacity to allow ourselves to do that?
- 13 A Certainly that's one approach, yes.
- 14 Q And I didn't see that in your recommendations, in  
15 your written recommendations. Is that a  
16 recommendation you have for Commissioner Cohen?
- 17 A What, to --
- 18 Q Increase --
- 19 A -- increase terminal fisheries?
- 20 Q Yes. And increase our knowledge about terminal  
21 fisheries and increase our abilities to act -- to  
22 harvest large amounts of fish in terminal areas,  
23 therefore allowing ourselves to make more  
24 precautionary decisions associated with  
25 escapement?
- 26 A I think it's one that needs to be evaluated, just  
27 like we need to evaluate what escapement goals  
28 should be. So there's a -- once you define the  
29 goals for the different stocks, you can determine  
30 to the extent to which you can harvest those in  
31 mixed stock fishing areas, and the extent that  
32 you'll need to move fisheries more terminally, and  
33 that may vary from year to year and stock to  
34 stock. But we shouldn't be eliminating  
35 opportunities that exist for -- and eliminating  
36 alternative forms of harvesting fish just because  
37 it wasn't used in the past or wasn't used in  
38 recent history.
- 39 Q Thank you. And in fact, it's not only we  
40 shouldn't eliminate, we should take active steps  
41 to figure out how we can do that?
- 42 A Yeah.
- 43 Q Would you agree with me on that?
- 44 A Yeah. I would say that it goes in a sequence that  
45 you determine what you need to do, look at the  
46 fish and say, "What do we need to do to achieve  
47 the goals that we have for these populations of

- 1 fish," and then implement the fisheries in a way  
2 which allows you to achieve those goals.
- 3 Q And in order to do all of that is fairly complex,  
4 primarily because of the longstanding vested  
5 interest we may have in the Fraser, would you  
6 agree that it's also going to be very useful to  
7 have structured decision-making processes that are  
8 clear and transparent in order to make those  
9 decisions that would be extremely useful from a  
10 management perspective?
- 11 A Yeah, clear and transparency is really important.
- 12 Q And that wouldn't necessarily be the Fraser River  
13 Panel, because that's 50 percent of the U.S., but,  
14 rather, we need to have that at home, in Canada,  
15 dealing with our terminal fisheries; is that  
16 correct? Would you also go with me as far as  
17 that?
- 18 A Yeah, we have to deal with our domestic fisheries  
19 separate from international obligations.
- 20 Q Thank you. I'm going to just -- I think I've just  
21 been given a little bit more time by my friend,  
22 and so I'm going to take about five more minutes  
23 -- or maybe five more minutes with you, Mr.  
24 English. Thank you for your patience.
- 25 I'm going to take you to your  
26 recommendations, because I just want to be clear,  
27 in addition to the ones that we've talked about,  
28 and they're found at page 173 of the report. And  
29 so I just wonder if, given our discussions on  
30 consistent monitoring across the sectors would be  
31 something you would add, now, to recommendation  
32 number 1?
- 33 A Certainly consistently good monitoring across the  
34 sectors, yes.
- 35 Q Thank you. And to recommendation number 2 you  
36 would add commercial gillnets in Area E and D as  
37 something that we need to look at, as it relates  
38 to net dropout?
- 39 A Certainly, yes, you could add that.
- 40 Q And given the discussion you had with Mr. Taylor,  
41 would you also be willing to unlock the  
42 recommendation in 3 to say that higher priority  
43 for human and, if necessary, financial resources  
44 should be placed on setting clear escapement goals  
45 and in-season decision-making management models to  
46 help ensure we meet those goals?
- 47 A Certainly, yes.

- 1 Q And that we need to clearly communicate to all  
2 harvesters and the public the limited usefulness  
3 of preseason forecasts and the uncertainties  
4 associated with them?
- 5 A Yes.
- 6 Q And then, with respect to number 6, as I  
7 understand your evidence, that we should be  
8 talking about conservation units rather than  
9 indicator stocks and run-timing groups; would you  
10 agree with that?
- 11 A I think we're talking about both. Some of them  
12 are the same. Conservation units are very similar  
13 to indicator stocks, and the indicator stocks will  
14 provide us information on conservation units and,  
15 in fact, they may be all the information we have  
16 for specific conservation units because we don't  
17 have a monitoring system in place, or some of  
18 these conservation units are so small that we  
19 don't have a history of data for a specific  
20 conservation unit.
- 21 Q And would you also add the discussion we had,  
22 then, that we need to work closely with First  
23 Nations and others with local information to  
24 better understand the habitat abilities?
- 25 A Yes.
- 26 Q And then finally, with respect to recommendation  
27 number 9, we're not just really -- really we're  
28 not just talking about managing better the in-  
29 river fisheries, we're talking about managing  
30 better all of the fisheries to deal with the  
31 changing environmental conditions and meeting  
32 commitments related to First Nations agreements  
33 and the Wild Salmon Policy?
- 34 A Certainly it applies to all fisheries with the  
35 understanding that the current trends are -- have  
36 been focused on in-river fisheries because of the  
37 increasing water temperatures that have been  
38 observed in freshwater.
- 39 Q Thank you.
- 40 A So it's a special emphasis there.
- 41 Q Taking into consideration cumulative effects that  
42 begin in the marine?
- 43 A Okay, yes, it's accumulative effects, definitely,  
44 that we're looking at.
- 45 Q So those are my questions on your report. I just  
46 have two remaining questions that go to the terms  
47 of reference that Commissioner Cohen is facing.

- 1           The first one is: Would you agree that when  
2 you look at, overall, the fisheries management on  
3 the Fraser River, that some of the key challenges  
4 for it are developing a management system that is  
5 collaborative rather than competitive? It's one  
6 of the challenges?
- 7   A    Yes.
- 8   Q    You'll also agree that the challenge is shifting  
9 it from a harvest-focused management to a  
10 conservation-focused management?
- 11   A    I think that shift is already starting to occur.
- 12   Q    You also agree that we will need to carefully need  
13 to look at incentives for ensuring that the  
14 changes that are necessary in the management are  
15 welcomed by those that respect and rely upon the  
16 fisheries?
- 17   A    That would be nice, yes.
- 18   Q    And do you agree, also, that we need to have an  
19 increasing willingness on the part of scientists  
20 to look a little broader, look outside the box,  
21 often is the expression, and not rely on  
22 historical datasets as being the only way of  
23 making hard decisions but go broader than that?
- 24   A    I think it's the job of scientists to include all  
25 of the information that they can obtain and  
26 provide the best advice they can.
- 27   Q    And that clearly will include, as we go forward,  
28 relying and working more closely with First  
29 Nations and the expertise that they can bring to  
30 the table?
- 31   A    Yes. I've certainly experienced that first-hand,  
32 the benefits of doing that, and definitely support  
33 it.
- 34   Q    Now, this is an even broader question, my next  
35 one, and this is my final question.
- 36   A    Mm-hmm.
- 37   Q    What are your views on the extent to which DFO's  
38 management of Fraser River sockeye salmon,  
39 historically and currently, has contributed to the  
40 decline of the sockeye? To what extent has the  
41 current model, with test fisheries located in the  
42 same areas as the strongest catch efforts and  
43 management systems that are reliant on inaccurate  
44 run-timing groups and mixed stock fisheries  
45 contributed to the decline on sockeye?
- 46   A    Well --
- 47   MS. BAKER: Sorry, that's an extremely big question,

1 and --

2 MS. GAERTNER: It is a big question.

3 MS. BAKER: -- I don't know if we can --

4 MS. GAERTNER: He's definitely got the expertise.

5 You've qualified him as an expert --

6 MS. BAKER: It's not the --

7 MS. GAERTNER: -- in this hearing.

8 MS. BAKER: -- expertise that's the issue, it's just

9 there's so many assumptions in that question, I

10 wonder if it could be either broken down or left

11 in a more general way, or let the witness know

12 that --

13 MS. GAERTNER: All right, I can -- thanks Wendy -- or

14 Ms. Baker. I'll just leave it as the general.

15 Q What are your views on the extent to which DFO's

16 management of Fraser River sockeye salmon has

17 contributed to the decline of sockeye?

18 A Well, there are some that argue that the declines

19 that we've seen were heavily related to

20 environmental conditions that none of the managers

21 have any control of, in terms of ocean

22 productivity. There's others that believe that we

23 could have implemented a more precautionary

24 approach earlier with regard to the management

25 structure.

26 There's a lot of complexities that you guys

27 have heard tons about with regard to balancing the

28 international responsibilities and the domestic

29 ones, dealing with a lot of different groups, and

30 I think that's all created challenges for

31 implementing fisheries management rules, if you

32 like, quickly to have the best impact on the

33 stock.

34 So I think -- I would hate to see that people

35 think that it's the sole responsibility of the

36 Department or any one group to oversee the success

37 of management. It's all our combined

38 responsibility. The scientists bear some of the

39 blame, the fishermen bear some of the blame. If

40 the stocks have declined because of human

41 decisions, we all are sharing some of the

42 responsibility and blame for what's happened.

43 There is a lot of evidence to suggest that

44 the stocks that we have can produce substantial

45 returns, even under the current conditions. We

46 got that very graphically in 2010. So I think the

47 jury is out, if you like, on what exactly has

1           caused -- and what the -- which group has been  
2           more responsible or another. I think we have a  
3           collective responsibility to all work together to  
4           ensure that the stocks don't continue to decline,  
5           if they are declining, and if they're improving,  
6           continue to improve.

7           MS. GAERTNER: Thank you, Mr. Commissioner. Those are  
8           my questions.

9           MS. BAKER: Mr. Commissioner, there's two more counsel  
10          to ask questions and, in fact, Mr. Lowes would  
11          like to ask questions if there's time at the end.  
12          So I don't know if you wanted to take an afternoon  
13          break?

14          THE COMMISSIONER: Sure, we'll take a 10-minute break,  
15          thank you.

16          THE REGISTRAR: The hearing will recess for 10 minutes.

17  
18                         (PROCEEDINGS ADJOURNED FOR AFTERNOON RECESS)  
19                         (PROCEEDINGS RECONVENED)  
20

21          THE REGISTRAR: The hearing is now resumed.

22          MR. DICKSON: Mr. Commissioner, it's Tim Dickson and,  
23          Mr. English, I represent the Sto:lo Tribal Council  
24          and Cheam Indian Band.

25  
26          CROSS-EXAMINATION BY MR. DICKSON:  
27

28          Q        I'd like to start by saying that along with Ms.  
29          Gaertner, my clients are also generally impressed  
30          with your report, and I only have a few questions  
31          on it.

32                    I heard my friend, Mr. Eidsvik, question you  
33          this morning regarding challenges with catch  
34          monitoring of First Nations' fisheries in the  
35          1990s. As a general proposition, do you agree  
36          that catch monitoring of those fisheries has  
37          improved substantially since then?

38          A        Yes.

39          Q        And I just want to take you to a couple of  
40          statements in your report, if I can, in that  
41          regard.

42          MR. DICKSON: They're on page 23, Mr. Lunn.

43          A        Yes.

44          MR. DICKSON:

45          Q        In the middle of that paragraph after the notation  
46          of Table 4, there's a first statement that says:  
47



1 Catch monitoring for First Nation fisheries  
2 was rated having higher quality than  
3 commercial fisheries because of the extensive  
4 efforts to verify effort and catch rates  
5 using independent surveys instead of reports  
6 from fishers.  
7

8 And then you cite a report, Alexander 2002. And  
9 so am I right in thinking that that statement  
10 relates to the state of affairs as of 2002?

11 A The 2002 report was on a First Nations catch  
12 monitoring program I think conducted in 2001.

13 Q Very well. And so as of that point, you're saying  
14 that the catch monitoring for First Nations  
15 fisheries had a higher quality than for commercial  
16 fisheries; is that so?

17 A At that point in time was when the commercial  
18 fisheries -- the concerns about the sales-slip  
19 system were substantial and the reason for the  
20 shift in monitoring systems for commercial  
21 fisheries at the time.

22 Q Yes. And then on First Nations' fisheries catch  
23 monitoring, since then there have been subsequent  
24 changes as you set out in the next sentence:

25  
26 Regulations for mandatory landing sites for  
27 "Pilot Sales" and Economic Opportunity (EO)  
28 fisheries since 1993, and --  
29

30 Here's the real point:

31  
32 -- separation of FSC and EO fisheries since  
33 2004, have substantially improved the  
34 reliability of catch estimates for EO  
35 fisheries.  
36

37 That's true?

38 A Yes.

39 MR. DICKSON: Thanks. Now, I just wish to turn to page  
40 37, Mr. Lunn. There are two sentences at the end  
41 of that main paragraph, that last paragraph that I  
42 would like to ask you about. It says:

43  
44 ...the reported FSC harvests for years  
45 without Sto:lo Agreements tend to be larger  
46 than the reported FSC harvests for years with  
47 Agreements.

1 Obviously some years are agreements, some years  
2 are not agreements. And then you say:

3  
4 If we exclude the years prior to 1998 when  
5 FSC catch was likely underreported, the  
6 average FSC catch in years without  
7 Agreements...was 1.3-fold larger than the  
8 average of the reported FSC catches for years  
9 with Agreements.

10  
11 Obviously you're saying that the FSC catch is, in  
12 non-agreement years, is larger than in agreement  
13 years.

14 A That's correct, yes.

15 Q And are you noting that because one would expect  
16 the FSC numbers to be the same?

17 A Not necessarily. I would just -- because there  
18 was a natural split here between agreement years  
19 and non-agreement years, it seemed appropriate to  
20 compare the results.

21 Q To observe the difference.

22 A Yeah, observe the -- see what the differences  
23 there would be.

24 Q And just because I read that and I note the  
25 difference, I just want to see if I can put two  
26 propositions to you that might explain the  
27 difference a little bit and see if you agree with  
28 me.

29 A Okay.

30 Q And the first is that my clients report to me that  
31 following the implementation of AFS in '92,  
32 there's been a revitalization of fishing in their  
33 communities. There are more fishers now more  
34 interested in fishing. There's been a resurgence  
35 of this aspect of their culture, more smokehouses,  
36 more ceremonies. It's been a very good thing for  
37 their communities.

38 But, in any event, there are more fishers,  
39 and when there's an agreement, there's an economic  
40 opportunity component obviously, as well as FSC,  
41 and so some of the fishing effort goes to economic  
42 opportunity. In years with no agreement, and so  
43 only FSC, all of it is going to FSC, and so  
44 there's more FSC fish caught. Does that make  
45 sense to you? Does that...?

46 A Yeah, it definitely makes sense that in years  
47 where there's an economic opportunity fishery,

1           it's going to take some of the fishing pressure  
2           away.

3       Q     And the second proposition is that the Sto:lo are  
4           not what you would call a rich -- population rich  
5           -- rich in money, in any event --

6       A     Mm-hmm.

7       Q     -- and there's not a lot of discretionary cash in  
8           the communities, and so when there's an economic  
9           fishery and there's some money generated from  
10          that, a substantial portion of it, I'm told, goes  
11          to food. And when there's no economic  
12          opportunity, there's more pressure to go and catch  
13          fish for food for the winter. Does that make  
14          sense as well?

15      A     Yeah, seems reasonable to me.

16      Q     Thank you. I just have one more question and it's  
17           really a follow-up from Ms. Gaertner. It's this:  
18           If the stock recruitment relationship being used  
19           to forecast is not reliable, that is, that it's  
20           producing some randomness, producing random  
21           guesses, does that imply a weakness in using the  
22           relationship between stock recruitment -- stocks  
23           and recruitment to set escapement goals?

24      A     Well, when you have a strong stock recruitment  
25           relationship, you'll have more confidence in those  
26           goals than you will if you have a weak one or one  
27           that is not as reliable.

28           The problem with forecasting is you're asking  
29           it to predict what's going to happen in terms of  
30           return in a subsequent year. The goal -- the idea  
31           of escapement goals is to say for this particular  
32           population, this is the number of spawners, if you  
33           like, if that's what it's based on, the number of  
34           spawners that we think will produce, on average, a  
35           better return. That's a different thing than  
36           asking somebody to say right now, 2011, we're in  
37           April, I want this scientist to tell me what's  
38           going to come back in July and August. That's a  
39           totally different question.

40           You can sit here today with -- going (sic)  
41           all the best biologists in the region that know  
42           about stock assessment or the Fraser sockeye, sit  
43           them down and talk about what they think are the  
44           values that will produce the best return, and  
45           there will be much more agreement on that than  
46           will be on what's going to come back next year, or  
47           this year.

Karl English

Cross-exam by Mr. Dickson (STCCIB)

Cross-exam by Ms. Fong (HTC)

1 MR. DICKSON: Thank you, Mr. English.

2 A Mm-hmm.

3 MS. FONG: Mr. Commissioner, Lisa Fong for Heiltsuk  
4 Tribal Council.

5

6 CROSS-EXAMINATION BY MS. FONG:

7

8 Q Mr. English, I only have one question. It's  
9 regarding your response that you gave to Ms.  
10 Gaertner. I understood your testimony to be that  
11 because of where and when test fishing occurs, it  
12 would be better fishery management to move  
13 fisheries up river. What I want to understand is  
14 this: What you're not saying, however, is that  
15 there should be no interception fisheries on the  
16 coastline.

17 Before you answer, just let me give you an  
18 example. I'm counsel for Heiltsuk. You're not  
19 saying that the Heiltsuk should not fish in their  
20 traditional territories because, at the time that  
21 the salmon passed them, there has been no test  
22 fishing information. You're not saying that,  
23 correct?

24 A I'm saying we would -- you should evaluate, look  
25 at the fisheries, see what potential impact they  
26 might have on the stocks, and whether they could  
27 safely, in the case of Heiltsuk food, social and  
28 ceremonial fishery, allow that level of harvest  
29 even in the absence of a lot of in-season run size  
30 information. You wouldn't want to initiate a  
31 large fishery that was going to have a big impact  
32 on a stock before you had a good handle on the  
33 returns.

34 Q We've heard testimony in this proceeding, and my  
35 clients tell me, that at the time that the test  
36 fishing data is available - we're talking, if I  
37 remember correctly, July and August - by that  
38 time, the Fraser River sockeye salmon have passed  
39 where the Heiltsuk are located. They're located  
40 in management area 7 and 8.

41 A Right, yes.

42 Q So there isn't -- would you disagree with me that  
43 there's no real sense of in-season management for  
44 them as it relates to this Fraser River sockeye  
45 salmon?

46 A Effectively, yes, and the issues there should be  
47 to know just how many Fraser fish they are

1 catching in those fisheries because there's a lot  
2 of stocks in area 7 and 8, or close to there, like  
3 areas 9 and 10, sockeye stocks, that are not  
4 Fraser stocks. So you need to know what the stock  
5 composition is in those fisheries.

6 In a year like this year with a very small  
7 Early Stuart run, and everybody agreeing that  
8 there shouldn't be harvest on that particular  
9 population because of its size, then presumably  
10 people at Heiltsuk would also support that  
11 conservation approach and agree that they  
12 shouldn't be fishing either on the timing of Early  
13 Stuart, for example.

14 Q Correct. So that might apply to Early Stuart but,  
15 for example, that couldn't be done with -- I'm  
16 just thinking like the run after Early Stuart  
17 where the information would not be available until  
18 after the fish have passed Heiltsuk.

19 A Yeah, so you might want to look at these outside  
20 fisheries. A prudent approach would be to look at  
21 stock timings that you're very confident you're  
22 going to get an abundant enough return in 99 out  
23 of 100 cases, or 95 out of 100 cases, and so you  
24 would focus in on -- it would suggest that for  
25 fisheries that are going to occur before you can  
26 do an assessment, you want to do it on stocks that  
27 you know are going to be able to withstand that  
28 level of harvest, for sure.

29 Q Right. So then you're relying on pre-season  
30 management information for folks like Heiltsuk.

31 A Yeah, and looking at -- with the context that has  
32 been mentioned here, there's wide bounds, but  
33 there are certainly, even within the wide bounds  
34 of those pre-season estimates, there's an  
35 indication of whether you've got runs that'll be  
36 the size of Early Stuart versus a Chilko or a  
37 Quesnel or a Shuswap stock.

38 Q Okay. And just, sorry, just coming back to my  
39 original question, I'm not sure if I got the  
40 answer to that. But in agreeing with Ms. Gaertner  
41 that perhaps moving the fisheries further up  
42 river, you aren't saying no to interception  
43 fisheries at all. You're not saying all those  
44 fisheries on the coastline have to stop fishing,  
45 and that the only fisheries that should occur  
46 would be on river.

47 A Yeah, no, I'm not saying that you close down all

1           your marine fisheries because you want to move to  
2           a system more like Bristol Bay. I want to say you  
3           look at the different locations of fishing and  
4           choose a suite of fisheries that gives you the  
5           best management control for the stocks and the  
6           management issues you're trying to deal with.  
7       MS. FONG: Thank you. Those are my questions.  
8       MS. BAKER: Mr. Commissioner, Keith -- oh, did you have  
9           something...? Keith Lowes will follow and then,  
10           Mr. Commissioner, because it looks like we'll have  
11           a few moments, I talked to Mr. Eidsvik over the  
12           break and could he complete his examination  
13           without having to do it in writing at the end of  
14           the day? That's what I'd like to suggest we do.  
15       THE COMMISSIONER: If there's time, yes.  
16       MR. LOWES: I'll be quick. J.K. Lowes for the B.C.  
17           Wildlife Federation and the B.C. Federation of  
18           Drift Fishers. Mr. Lunn, could you call up  
19           Exhibit 531, please?  
20  
21       CROSS-EXAMINATION BY MR. LOWES:  
22  
23       Q     Mr. English, are you familiar with the document on  
24           the screen, Exhibit 531?  
25       A     I haven't read that particular document, I don't  
26           think. Is that a PowerPoint, though? I might  
27           have seen some of these --  
28       MR. LOWES: I'm sorry, why don't we call up 528.  
29       A     I've just been given that document today, and I  
30           may have seen that other PowerPoint presentation.  
31       Q     All right. So I think you've answered my  
32           question. You've just seen that document today?  
33       A     This one here, this printed version. I probably  
34           saw an earlier draft of it possibly in 2009.  
35       Q     Yeah. Are you aware of a three-year study  
36           conducted by J.O. Thomas on the recreation hook-  
37           and-release fishery on the Fraser River?  
38       A     Yes, I've been aware that they've been doing a  
39           study.  
40       Q     Did you take it into account in doing your report?  
41       A     Yes.  
42       Q     And J.O. Thomas is a reputable monitoring and  
43           assessment firm?  
44       A     Yeah, no, I've seen Jim's work and I --  
45       Q     You know Jim Thomas?  
46       A     I know Jim Thomas, yes.  
47       Q     And he does a lot of this kind of statistical and

- 1 analytical work for the Department and others?  
2 A Yes, I've known him for a lot of years. He's  
3 probably worked pretty much the same time frame  
4 that I've worked on Pacific salmon.  
5 Q You wouldn't have anything to quarrel about in his  
6 mortality report after three years of study?  
7 A I guess I'd have to review it to know whether I  
8 would have any differences of opinion, but --  
9 Q But as of today, right now, at about a quarter to  
10 4:00, you don't?  
11 A I don't have an opinion on it right now, no.  
12 Q Yeah. And I understand, and evidence has been led  
13 in these proceedings, that following that report,  
14 the mortality rate for the recreational hook-and-  
15 release fishery was dropped from ten percent to  
16 three percent in terms of the assumption made by  
17 the managers. Are you aware of that?  
18 A I was not aware that they'd dropped it from ten to  
19 three percent, no.  
20 Q Yeah. If they did, would you quarrel with that?  
21 A Well, I think there's a concern in that this is --  
22 this report is a document of short-term mortality.  
23 Q Yes.  
24 A It doesn't address the longer-term effects and all  
25 the different types of factors that would come  
26 into play under those longer term --  
27 Q Yeah, you've cited two reports. One, I think you  
28 called the Carleton Report and there was another  
29 one in your report; is that correct?  
30 A Yeah, Donaldson's work.  
31 Q Yeah, and you haven't cited Mr. Thomas' work.  
32 A No, I didn't cite his work in here.  
33 Q And your recommendation number 2 is, in effect,  
34 that First Nations and recreational fisheries  
35 continue to work with the Department to learn more  
36 about catch-and-release mortality?  
37 A Definitely, yes.  
38 Q And would you agree that Mr. Thomas' report is an  
39 example of that kind of work?  
40 A It's an example of part of that kind of work. I  
41 think the work that's being done right now by  
42 Carleton and UBC, looking at extended periods of  
43 time after the release of fish, is the natural  
44 extension over what Jim had done in his earlier  
45 years.  
46 Q Well, what about what Jim has done last year?  
47 A Well, he may have done a similar study. I'm not

Karl English

Cross-exam by Mr. Lowes (WFFDF)

Cross-exam by Mr. Eidsvik (cont'd) (SGAHC)

1           sure whether he was actually working with the same  
2           crews. At various times there's been overlap  
3           between what Carleton and UBC people have been  
4           doing and what Jim has been doing, but I think  
5           most of Jim's work is looking at short-term  
6           survival or mortality related to angling.

7           Q    Yeah, well, but you wouldn't have any quarrel with  
8           the Department relying on his advice with respect  
9           to the mortality rate?

10          A    Short-term mortality rate, he's probably assessing  
11          that reasonably. The real question we need to  
12          focus in on here is the -- you don't account for  
13          the longer term effects. We've done a lot of work  
14          on this over the last number of years on the  
15          Fraser with applying tags to fish and looking at  
16          how well they survive through to the spawning  
17          grounds, as opposed to just how many are alive at  
18          the time you release them.

19          Q    Yeah, and those long-term effects obviously, by  
20          definition, won't be known until there's a long  
21          term.

22          A    No, they're known -- long-term effects, it's from  
23          the point of release to the spawning ground, so  
24          that's often within three to six weeks for the  
25          slowest-moving fish.

26          MR. LOWES: Okay. Thank you.

27          MS. BAKER: Then we'll complete with Mr. Eidsvik's  
28          questions today.

29          MR. EIDSVIK: I like your smile, Ms. Baker. Always the  
30          happy assumption. Phillip Eidsvik, for the  
31          record, Mr. Commissioner. I did break my original  
32          cross down into several sections, and I'll try and  
33          get a couple more done so they're out of the way  
34          and save you, Commissioner, having to read  
35          questions.

36                Mr. Lunn, perhaps if I could go to Exhibit  
37                606, please, page 18.

38          MR. LUNN: Thank you.

39

40          CROSS-EXAMINATION BY MR. EIDSVIK, continuing:

41

42          Q    And in the first part of my cross-examination, Mr.  
43          English, I dealt with the aboriginal fishery in  
44          the Fraser from 1992 to 2001. That was the  
45          breakdown you had. I'm not going to take you into  
46          detail on the subsequent 2001 to 2009 period that  
47          you cover. But this one report was done by the



1 former Chief Justice of the B.C. Supreme Court,  
2 the Honourable Brian Williams.

3 At page 18, we can see that -- again, we're  
4 talking about catch reporting. He says:

5  
6 However, in a number of areas the Committee  
7 was advised that the catch monitoring regime  
8 for local First Nations was undermined by  
9 largely uncontrolled and/or unauthorized  
10 fishing.

11  
12 And that section goes on. So my point is simply  
13 that again in 2004, at least, we have another  
14 situation, but you're still content to call that  
15 catch reporting good at this point?

16 A Yes. The focus we did was on the sockeye catches  
17 and monitoring systems. There could be problems  
18 with other species, other times of year that  
19 occur, but our focus was on sockeye.

20 Q You're aware that this report was to do with the  
21 sockeye fishery?

22 A Yeah, but it also has mentions for chum openings  
23 and other things, so I'd have to read the context  
24 for the section to know what exactly is being  
25 referred to.

26 Q Okay. Thank you, and we'll move on.

27 MR. EIDSVIK: Mr. Commissioner, there's much data and  
28 papers and documents that will come up in  
29 subsequent hearings, so I can set that aside for  
30 the moment.

31 If we go to your report at page 31 would be  
32 helpful, Mr. Lunn, if you don't mind. Before you  
33 do that, Mr. Lunn, I want to raise one point.

34 Q And it's with respect to terminal fisheries -- you  
35 could stay right there. There's been quite a bit  
36 of discussion, Mr. English, about moving to  
37 terminal fisheries. Those are pretty red sockeye  
38 on the front cover of your report. Have you any  
39 idea what a sockeye like that would be in a  
40 Japanese sushi market compared to a Johnstone  
41 Strait silver-bright?

42 A I don't suspect it would command as large a price,  
43 no.

44 Q Thank you. If we could go to page 31? Now, in  
45 this, if I understand it correctly, at Table 8  
46 this describes the surveys that are done of  
47 fishers in certain areas on the Fraser, and I

- 1 gather the average kind of goes from 22 to 47  
2 percent. Can you tell me exactly what that is?
- 3 A Okay, this is --
- 4 Q What are you summarizing in that table?
- 5 A Okay. So this is the interview coverage of the  
6 set net fishery expressed as a percent of the  
7 total nets counted during aerial surveys.
- 8 Q So what exactly is an interview?
- 9 A This is talking with the fishermen and recording  
10 their catch per effort in an interview.
- 11 Q So somebody comes up to a fisherman who's leaving  
12 the fishery or at some point in the fishery, says,  
13 "How many fish have you caught?"
- 14 A That's correct, yes.
- 15 Q And who asks that?
- 16 A So there's a variety of surveyors. Usually  
17 they're First Nations fisheries technicians in  
18 these fisheries interviewing their fishermen.
- 19 Q Is there any verification of the catch or is it  
20 simply, "I caught 100, Joe." "Okay, Joe, thanks."
- 21 A Yeah.
- 22 Q Or is there -- do they unload the fish and count  
23 them like in an IQ fishery in a dockside  
24 monitoring program?
- 25 A They often are encountering people with the fish  
26 so there's an opportunity to actually count the  
27 fish in many instances, and sometimes they're at  
28 specific landing sites where a lot of people are  
29 going through and offloading their catch. I'm  
30 sure there's variability in the numbers of fish  
31 that are actually counted versus ones that are  
32 obtained from an estimate. The intent of the  
33 interview is to get a reliable estimate of the  
34 number of fish caught in a particular length of  
35 time fishing.
- 36 Q Are you aware of any audits done to determine how  
37 valid that data is?
- 38 A I think audits are done by DFO working with the  
39 First Nations fishermen, but I have not seen the  
40 results of those particular audits, no.
- 41 MR. EIDSVIK: Mr. Lunn, if you could perhaps pull up  
42 one of the documents that I enclosed. I'm sorry,  
43 I don't have the tab numbers: GILL000562.
- 44 Q Now, you know there's a problem both in the  
45 commercial sector, what we call the public  
46 commercial sector, and in other sectors with  
47 hails.

1 A Mm-hmm.

2 Q Because of accuracy issues not only in the  
3 aboriginal fishery, but in the commercial sector,  
4 the public commercial sector. Are you aware of  
5 that?

6 A Yeah, that's the idea for dockside monitoring so  
7 that you're not relying entirely on just what is  
8 hailed or given verbally.

9 Q If you could go to the second page of this. This  
10 is an email from Mr. Redekopp to Mr. Ionson, and  
11 it raises the hail issue again. It's simply --  
12 under the conclusion it says [as read]:  
13

14 The catch data provided to DFO by the  
15 Musqueam Fisheries Department is poor at best  
16 and should not be used to make fishery  
17 management decisions, and misreporting is not  
18 a matter of making an error. The evidence  
19 collected by DFO fishery officers presumes  
20 some Musqueam fishers are deliberately  
21 misreporting to the AFOs.  
22

23 Now, Mr. Ionson was aware of that memo because  
24 this is from him. Did he advise you of this type  
25 of issue around hails? You've relied on him  
26 throughout your report.

27 A Well, he provided a report and some information.  
28 He didn't send me any of these emails, no.

29 Q Did he tell you that there was problems with  
30 relying on hails?

31 A No, he didn't identify it as a problem for the  
32 sockeye fishery and I didn't ask him about the  
33 chinook fishery.

34 Q Okay. You suggested -- if I can move on to --  
35 I'll do a little bit of catch reporting on the  
36 public commercial sector. It kind of raises this  
37 issue.

38 Now, the Native catch monitoring, the counsel  
39 for the Sto:lo and Cheam asked - my apologies,  
40 I've forgotten your name - he cited Alexander in  
41 2002 for that conclusion that catch monitoring and  
42 First - at page 23 - catch monitoring and First  
43 Nation fisheries was better than commercial  
44 fisheries. You cite Alexander, 2002. When I  
45 looked at page 175, 76, of Alexander's reports --  
46 he drafted two reports. Can you tell me which one  
47 that conclusion comes from? You refer to two

1 reports.  
2 A Well, are there two reports with the same  
3 citation?  
4 Q Yes, you didn't cite. You just said "Alexander  
5 2002", and there's a 2002 A and B.  
6 A Oh, okay. There's --  
7 Q Perhaps --  
8 A I don't know which one it came from off the top of  
9 my head, but it should have been quoted as "A" or  
10 "B".  
11 Q So it would be a surprise to you if Mr. Alexander  
12 didn't make a statement like this, then?  
13 A Well, the reference was to do with the reliability  
14 of the catch monitoring for First Nation  
15 fisheries, and that level of precision is better  
16 and more known than it is for the commercial  
17 fisheries.  
18 Q I guess what I'm getting at, did Mr. Alexander  
19 specifically compare the public commercial fishery  
20 with the aboriginal fishery? I read the two  
21 reports and I couldn't find it in there.  
22 A No. No, he didn't specifically compare the two.  
23 Q Okay. So that statement, then, is in error then?  
24 A Well, if it's interpreted that it's the comparison  
25 that's being made as opposed to the amount of  
26 effort used by independent surveys is greater than  
27 that for the commercial fishery. So it's going to  
28 give you a higher quality estimate because of the  
29 extensive efforts to verify catch and independent  
30 surveys instead of reports from fishers.  
31 Q Okay. Thank you. At page 21 you cite U.S.  
32 commercial fisheries as having very good accuracy.  
33 Are the U.S. salmon fisheries IQ fisheries?  
34 A No, they're not, as far as I know, IQ fisheries.  
35 Q Yeah. You said that at page 48 you note that  
36 there's little or no dockside monitoring systems  
37 in Alaska or Washington, and you rate catch  
38 reporting in those fisheries as very good. Not  
39 just "good"; "very good".  
40 A Yes. That's from talking with the U.S. fisheries  
41 managers that indicate that when they have done  
42 verifications -- they have a lot of enforcement,  
43 and when they do verification of their catch, they  
44 have found that compliance with, you know, from  
45 complete reporting has been very good. In the  
46 case of the Alaska/Bristol Bay fishery, the catch  
47 are going through very specific sites. There's

- 1 large volumes being dealt with so there's very  
2 little time for catch to go astray, if you like,  
3 go to alternative routes so they can't enumerate  
4 it. It's the nature of the fishery.  
5 I think you brought the issue before. It's  
6 the size of the fishery, the nature of the fishery  
7 that gives these other groups much greater  
8 confidence and the level of enforcement that's  
9 applied in those areas.
- 10 Q Yeah. I think that's a good comment, because I  
11 think it applies probably fairly broadly where you  
12 have heavy intense fisheries. Part of the reason  
13 is I think it respects the ability of a fisherman,  
14 say a fisherman in a small boat, to sell a whole  
15 bunch of fish in a short period.
- 16 A Mm-hmm.
- 17 Q Especially if the fisheries are close together.
- 18 A Yes.
- 19 Q Okay. So it's fair to say, then, the dockside  
20 monitoring and phone-in systems aren't essential  
21 to get good catch data out of a commercial  
22 fishery.
- 23 A No, that's not going to be the only way you can do  
24 it. It's going to be -- the reason why it's been  
25 proposed in recent time, I think, is to reduce the  
26 costs associated with generating the independent  
27 estimates which is what has been done in the past  
28 in B.C., using boat counts and information on  
29 catch per effort from interviewing or hailing or  
30 phone-in reports from fishermen.
- 31 Q Now, did you do any analysis of what percentage of  
32 Area E harvest - I'm talking the lower Fraser  
33 public commercial gillnet fleet - has sold at the  
34 dock or brought home for food?
- 35 A No.
- 36 Q Did you talk to any of the processing companies to  
37 get an idea what they thought?
- 38 A That was sold at the dock or taken home for food?
- 39 Q Yeah.
- 40 A No. No, I didn't talk with them about those  
41 specific issues. I just assume the Area E  
42 fishery, being a commercial fishery, that the  
43 catch numbers that were being obtained for it were  
44 essentially tallied up as commercial harvest.
- 45 Q Do you know how much Canadian fish, ocean fish in  
46 Bella Coola, the major fish companies, what  
47 percentage of the harvest they would purchase on

- 1 the Fraser River?
- 2 A Not offhand.
- 3 Q Would it surprise you if it was more than 50
- 4 percent?
- 5 A Fifty percent of the entire harvest, or just
- 6 the --
- 7 Q Of the entire harvest in the Fraser River in an
- 8 Area E gillnet fishery opening. Would it surprise
- 9 you?
- 10 A For the Area E?
- 11 Q Yeah.
- 12 A If it was more than 50 percent?
- 13 Q Would it surprise you if it was more than 50?
- 14 A No. I would presume historically it was probably
- 15 a lot more than 50 in terms of -- it's just recent
- 16 times where the concern was on a lot of these
- 17 dockside sales not being captured in the sales-
- 18 slip system that why the independent estimate of
- 19 catch was being produced.
- 20 Q No, but dockside sales have been a factor for
- 21 probably as long as there's been a fisherman
- 22 fishing in Steveston and in places like that. How
- 23 did the Salmon Commission and DFO account for that
- 24 in the past?
- 25 A Well, prior to -- my understanding, from talking
- 26 with DFO people who are responsible for the catch
- 27 numbers is prior to 1998, they were using sales-
- 28 slip information that was accumulated from
- 29 whatever sales were recorded on sales slips to
- 30 compute the annual catch estimates.
- 31 Q Were you aware that they added an expansion factor
- 32 to offset the anticipated and expected dockside
- 33 sales and did some surveys and analysis?
- 34 A It's possible. I was not aware of what expansion
- 35 factors were used.
- 36 Q Now, on the aboriginal fishery, once the fish from
- 37 the slips are totalled up, what then happens? How
- 38 does that information get transmitted to DFO?
- 39 What happens? What's the process for that?
- 40 A I think each of the First Nations' landing sites,
- 41 the people collecting the data would collate it
- 42 and provide it to the lower Fraser or whatever the
- 43 regional management office is responsible for
- 44 those fisheries.
- 45 Q Are you aware that in the agreements, there's a
- 46 meeting between DFO people and the aboriginal
- 47 groups and they have a meeting to decide what

1 number should be forwarded to DFO managers, and if  
2 the aboriginal side doesn't like the number, they  
3 get to appeal to the Regional Director General?  
4 Are you aware of that?

5 A No.

6 Q I guess my final point is on the catch monitoring.  
7 On the food fishery, a large fishery, and at your  
8 Table 31, only 47 percent of the people that are  
9 talked to, there's no dockside monitoring there.  
10 There's no independence in terms of the people at  
11 arm's length doing the counting. Yet you give  
12 that a very -- or a good rating from 2001 to 2009.  
13 Yet in the commercial sector where there's  
14 independence in the sense that an individual --  
15 I'm sorry, Mr. Commissioner, I'm --

16 THE COMMISSIONER: Finish your question.

17 MR. EIDSVIK:

18 Q In the commercial sector, there's independence in  
19 the sense that most gillnetters pull up beside a  
20 packer, they offload their fish, there's a  
21 financial transaction and a sales slip is  
22 generated. I'm curious why you would think that  
23 the food fishery, based on talking to half the  
24 people, where there's a lack of independence,  
25 where there's no dockside monitoring program, but  
26 you're very critical of the commercial sector in  
27 the Area E for having no dockside monitoring  
28 program and you downgrade them for that, yet you  
29 hold that the aboriginal food fishery is good.  
30 Can you explain that contradiction?

31 A Well, the survey effort is just to generate a  
32 catch per effort estimate, and the portion of the  
33 individuals surveyed, as it's indicated in that  
34 table, is while it's not 100 percent of the  
35 fishermen, that's not essential. It's to do  
36 enough so that you're getting a reliable estimate  
37 of catch per effort. On top of that, there are  
38 fishermen counts, vessel counts, net counts that  
39 occur throughout those fisheries so that they can  
40 expand those catches to generate a total estimate.  
41 The same amount of information -- similar methods  
42 are being used for the gillnet fishery, but the  
43 phone-in compliance rate that I was told by DFO  
44 when I talked with them, was in the order of ten  
45 to 25 percent.

46 MR. EIDSVIK: Thank you for answering my questions  
47 today, Mr. English. Thank you, Mr. Commissioner.

1 THE COMMISSIONER: Thank you, Mr. Eidsvik, very much.  
2 MS. BAKER: Before we close, Mr. Eidsvik, will you be  
3 continuing with written questions or are you  
4 complete?  
5 MR. EIDSVIK: I'm sorry, I'm not complete. But I have  
6 greatly reduced number of written questions  
7 because of the last ten minutes.  
8 MS. BAKER: Thank you. I wonder if we can just set a  
9 deadline then for getting those written questions  
10 in. Could you have them in to us by next  
11 Thursday?  
12 MR. EIDSVIK: Of course.  
13 MS. BAKER: Thank you. And, Mr. Commissioner, I will  
14 have some re-exam which I'll also put in writing.  
15 MR. DICKSON: Mr. Commissioner, can I just ask are  
16 those questions going to counsel, going to the  
17 parties first? Because there may be questions  
18 that I object to, and I'd just like to be able to  
19 see them before they go to Mr. English.  
20 MS. BAKER: Yes, the questions will come to us and we  
21 can circulate them to counsel. I don't know if  
22 it's possible, because next week is a short week  
23 and there's the long Easter weekend, Would it be  
24 possible to get the questions to counsel on  
25 Wednesday or is that too short? I don't know.  
26 MR. EIDSVIK: I will do my best to get it to you on  
27 Wednesday.  
28 MS. BAKER: Okay. Then maybe we can have other people  
29 -- if there are objections, they can be dealt with  
30 by Thursday so we can get them out the door to Mr.  
31 English.  
32 MR. EIDSVIK: Thank you.  
33 MR. DICKSON: I appreciate that, thank you.  
34 MR. ENGLISH: In the interest of a livelier end to a  
35 long couple of days, I'd like to provide this hat  
36 to be held for the Commissioner for when he  
37 completes his job. It's the Fraser River 2005  
38 Sockeye Stock Assessment hat. The work that was  
39 done in 2005 was on the parents of the fish that  
40 came back in 2009. Those parents had no idea what  
41 challenges and problems their kids were going to  
42 create when they spawned them in 2005. So I think  
43 it's a very appropriate hat that I would like to  
44 provide to the Commissioner for once he completes  
45 his job.  
46 THE COMMISSIONER: Thank you. It's comforting to know  
47 that fish are no different than people when it



1           comes to problems with children and parents.

2 MR. ROSENBLOOM: Can we have the hat marked as an  
3 exhibit?

4 MS. BAKER: That comes off your time next time.

5 THE COMMISSIONER: Thank you, Mr. English, very much  
6 for your report and for your patience and  
7 willingness to answer the questions of myself and  
8 all counsel. I believe now, Ms. Baker, we're  
9 adjourned until 10:00 a.m. Monday morning; is that  
10 correct?

11 MS. BAKER: That's correct.

12 THE COMMISSIONER: And I charge you with the  
13 responsibility of looking after the hat.

14 MS. BAKER: Thank you.

15 THE COMMISSIONER: Thank you very much.

16 THE REGISTRAR: The hearing is now adjourned to Monday,  
17 April 18th, at ten o'clock a.m.

18

19                   (PROCEEDINGS ADJOURNED TO APRIL 18, 2011 AT  
20                   10:00 A.M.)

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1 I HEREBY CERTIFY the foregoing to be a  
2 true and accurate transcript of the  
3 evidence recorded on a sound recording  
4 apparatus, transcribed to the best of my  
5 skill and ability, and in accordance  
6 with applicable standards.  
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11 Pat Neumann  
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35 Karen Hefferland  
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Diane Rochfort