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

Commaissaire

Held at:

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

Thursday, February 3, 2011

Tenue à :

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

le jeudi 3 fevrier 2011

Errata for the Transcript of Hearings on February 3, 2011

Page	Line	Error	Correction
25	31	four small populations	for small populations
68	17	Edena	Nadina
69	29	Edena (phonetic)	Nadina
69	25	Answer	Question
75	45	John Rosenbloom	Don Rosenbloom
76	1	MS. PENCE	MS. BAKER
77	8-10	missing Gerry Kristianson as a witness	GERRY KRISTIANSON, resumed.
78	38	possibly he should see	possibly we should see
86	16	lobbing	lobbying

Suite 2800, PO Box 11530, 650 West Georgia Street, Vancouver, BC V6B 4N7
Tel: 604 658 3600 Toll-free Tel: 1 877 658 2808
Fax: 604 658 3644 Toll-free Fax: 1 877 658 2809
www.cohencommission.ca

APPEARANCES / COMPARUTIONS

Wendy Baker, Q.C. Maia Tsurumi	Associate Commission Counsel Junior Commission Counsel
Hugh MacAulay Mitch Taylor, Q.C.	Government of Canada
Clifton Prowse, Q.C.	Province of British Columbia
No appearance	Pacific Salmon Commission
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.

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

APPEARANCES / COMPARUTIONS, cont'd.

No appearance	Métis Nation British Columbia ("MNBC")
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")
No appearance	Heiltsuk Tribal Council ("HTC") Articled Student

TABLE OF CONTENTS / TABLE DES MATIERES

EXHIBITS / PIECES

Vancouver, B.C. /Vancouver
(C.-B.)
February 3, 2010/le 3 fevrier
2011

THE REGISTRAR: Hearing is now resumed.
MR. LEADEM: I'm up on my feet, Mr. Commissioner. For the record, Leadem, initial T. appearing as counsel for the Conservation Coalition.

CROSS-EXAMINATION BY MR. LEADEM, continuing:

Q The remainder of my questions are for you, Dr. Riddell. I was intrigued by the smolt tagging study that you did on Chilko -- with the Chilko smolts and with your finding that they experienced a high degree of in river out-migration mortality before they reached the Strait of Georgia. The first question is is I understand also they exhibited a high rate of mortality once they were in the Strait of Georgia, as well, so that the next time that you picked up signals in Queen Charlotte Strait or Queen Charlotte Sound, they were further reduced; is that right?
DR. RIDDELL: Yes, we had survival rate estimates from Chilko Lake to the mouth of the Fraser River and then we have a line about central Strait of Georgia at the top of Texada to Hornby Island and across, and they had a longer period of residence in that area and some continued mortality, but their survival rate was quite high in that area. There was then a long migration of probably 200 kilometres from the top of that line to the outlet of Queen Charlotte Sound and we only observed, I believe it was three or four tags at that point. So the mortality was very high from the northern part of the Strait of Georgia through Johnstone Strait and we saw no tags going out through Juan de Fuca but it was aligned for detection of tagged fish, as well.
Q I was reminded when you were giving your evidence of Dr. Welch's evidence who came earlier and presented a similar study that he had done on smolts in Cultus Lake, I believe, that he radio tagged smolts from Cultus Lake and was able to track them through right through to the Strait of Georgia and then out to sea. And did he not --

did he show the same degree of mortality in-river and their out-migration pattern?
DR. RIDDELL: Not quite, no. Dave applied the same type of tags to very large smolts, because they were wiered at Rosewall Creek and then brought back and they were very big animals to carry this tag, and they moved very, very rapidly down Chilko -- or, sorry, the Cultus --
Q The Fraser?
DR. RIDDELL: -- Lake --
Q Right.
DR. RIDDELL: -- Sweltzer Creek into the Fraser and out and there was only two or three days there and they had a pretty high survival in that trip. But I think many people are concerned in Dave's is that it's a nice demonstration of the technology in itself but the fish were so large that we don't believe that they were representative of the natural populations. But they did follow a very similar pattern of mortality through the Strait of Georgia.
Q That you saw in your Chilko smolts?
DR. RIDDELL: Yes.
Q In the order of magnitude I think the Cultus Lake smolts were 20 centimetres roughly and yours were something in the range of eight or nine; is that right?
DR. RIDDELL: No. No, that's not right. Actually, ours were much larger.
Q Okay.
DR. RIDDELL: The eight or nine is probably a comment that Timber made is that roughly eight is about the size of a one-year-old smolt, eight centimetres. The two-year-old smolts are larger than that and the fish that we tagged were down to about 11.5 centimetres. So ours were atypical in the natural range. They were the largest naturally produced fish, but they're still bigger than the typical smolt leaving the Fraser River.
Q Do I have it right that with respect to our ability to capture smolts that there's only two locations where we can do that currently? One is obviously the Chilko, at the outlet of Chilko Lake into Chilko River and the other one is Sweltzer Creek or into the Cultus Lake pattern; is that right?
DR. RIDDELL: It's the only two places that we have

fences that facilitate handling fish easily. There are other places where you could capture smolts, but those are the only two fences where you can work easily to get the fish with minimal harm to the animals.

Q Would you agree as a scientist that it would be of some scientific benefit to have another additional place that we can conduct a study to make further determinations of what's going on in terms of the mortality pattern?

DR. RIDDELL: Well, if we continue to see that the -- if we can demonstrate that the natural populations are suffering mortality rates like these larger smolts, and I think as I said yesterday my concern is why would you assume that small smolts are going to have a much higher survival rate than large smolts? There are some reasons you can postulate, but I mean I think we need to demonstrate that.

If we're actually losing fish along the migration routes leaving then, yes, it would be advantageous to have other sites tagged so that we can actually look at what type of loss, what's causing the loss? We don't have any idea what that is. The obvious examples are predation and now with this concern about a virus-like signature in some fish, maybe there is a fish health issue involved that could be brought out by rate of passage and stress. But we need to really do some additional science on that component, as well.

Q Okay. That leads me into the next line of questions which focuses upon your comment that if you want to tackle the scientific explanation of why we have fluctuating populations or returns, for example, the declines that we saw exhibited in the first part of this decade culminating in the decline of 2009, and then the increase or the abundance in 2010, that the best place in your estimation would be to examine the Strait of Georgia to see if there's something going on in the Strait of Georgia. Do I have that right?

DR. RIDDELL: Yes. I think the only thing I qualified later, I came back and said and we shouldn't forget that there is this compounding factor of the fish health issue now, that if the fish are carrying something that we don't fully understand but it does look disease-like or a viral signature

they referred to, then that may confound what's going on in the Strait of Georgia. But the Strait of Georgia has been largely neglected as a major study in terms of ecosystems that salmon all use, and there really hasn't been a comprehensive study of the strait and what determines marine survival in the early phase.

Most countries around the North Pacific are certainly coming to agreement that the majority of the survivorship in terms of numbers of animals does occur in the early marine period, probably a month to two months even.

Q If you were to try to delineate where in Georgia Strait you would best conduct those studies, where would you postulate would be a good place to start?

DR. RIDDELL: Well, we've actually talked about that quite a bit in the last couple of years. I'm not sure that we would guess at a place to start. I think you'd need to clearly -- if you believe that the mortality is during the early period and it's compounding through time, then you probably need to start close to the river. We do know that from the tagging studies that have been done that there is a prolonged period of use of the estuarine environment between the mouth of the river and the first POST array at the top of Texada Island. So they do use that for a fair period of time. So you clearly have to do some investigation in there and then I think there is a natural division that you need to study the northern portion of the Strait of Georgia at that time. And then you probably have to look at Johnstone Strait pretty much as a whole, just because it's such an incredibly difficult environment to work in. So you could measure before and then basically after.

Q Right. You alluded to the -- I think yesterday, as well as just recently, to the health issue and you referenced a paper by Dr. Kristi Miller from DFO that was, I think, recently published in the scientific journal *Science* and in which she hypothesized that there was a genomic signature that was linked to pre-spawn mortality and in-river mortality and some sort of a virus-like disease that was in the fish. Have you been following that?

DR. RIDDELL: Yes.

Q And would that be something worthwhile for this commission to investigate and to look into?
DR. RIDDELL: Oh, absolutely. We've been looking at this for awhile. I've been following it, naturally, because Kristi was in my division before I left the department and as my background is genetics, we spent quite a bit of time talking about this, although I'm not sure I even understand genetics any more, the way it's evolved.

I think when you find something that -- the really, really startling thing with Kristi's work is the use of these genomic arrays. So I think if you look at the websites, you can see 16,000 cells on basically something about the size of a slide that you would have used in university. And in Kristi's work what she was finding is that fish that were described as healthy had no pattern on the array, as if there was largely green and things, the appropriate genes were active and not active at the right time. Fish that were unhealthy had this incredibly distinct signature where about half of the array was actually turned off inappropriately, and so that's where we immediately started looking at, you know, what could possibly be going on where you've got such a striking difference between fish all returning in the same year.

Now, the other thing that enabled us to really tie this down, of course, is that using DNA, you can identify where you expect these fish to go, so you knew the population of origin and then with radio tagging, you could follow these fish through the system and determine the fish that you knew where it was going and you knew its genotypic signature, the healthy/unhealthy thing, you could equate it to the fate of the radio tag that you had put on that fish. And so it's a really good example of putting all of the tools we have together to try and really improve our understanding. It's a very, very nice piece of work.

Q To lend support to your theory that Georgia Strait would be the place to examine, I would suggest to you that the Harrison Lake -- or, sorry, the Harrison River sample might lend some support for that, because unlike some of the other declines

that we saw in the first part of this decade, up until 2009, we saw that the Harrison River stocks were actually -- or the Harrison River CUs were increasing.

DR. RIDDELL: Mm-hmm.

Q And they do not follow that same period of migration out Georgia Strait, as I understand it. They actually follow a more southerly route out to the ocean through -- mostly through the Strait of Juan de Fuca and then up the West Coast of Vancouver Island. Would you agree with my principle that that tends to lend support to your hypothesis that we should be examining the Strait of Georgia?

DR. RIDDELL: Yes, I do. I would add that not only do they use the strait longer, they go out to sea at a very different time. So they are not really seen in samples, and as I just said, we can recognize all of the populations with DNA sampling now, so when you do sampling on the Strait of Georgia, the sockeye, in July you do not see Harrison sockeye. When you start your sampling in September, 90-plus percent of your samples are Harrison sockeye. Now, that population is not so large that it should overwhelm everything else, so that is not the reason. So what's really happened is the vast majority of the other Fraser sockeye have now left the Strait of Georgia and you're really seeing Harrison River utilization of the strait. And they do very, very well. They grow very rapidly in -- so they're in there in August through September. There have been cruises in November when they're still there. Now the abundance is starting to drop and they're more widely distributed.

The only thing I'd caution on is I don't think the evidence for them all going south or not going north is all that strong yet because of the concerns you have on tagging these fish. If you could get large enough fish in the strait in September, you could probably put POST tags on and monitor some of the movement of the fish, but that hasn't been done yet because many of the fish are not large enough to tag.

So, I mean, I'm still a little bit mixed on how strong the argument is that -- I think their survivorship is that they're doing very well in

the Strait of Georgia and that they're healthy enough to survive either way they go. But you are right, the prevailing thought now is that they go out the south. The evidence for that is that they're seen on the West Coast of Vancouver Island. But there's not as intensive sampling in the north to really prove that they go both ways. So that's my concern at this point.

MR. LEADEM: All right. Thank you for that. Those are my questions.

MS. BAKER: Thank you. The next questioner is Mr. Rosenbloom.

MR. ROSENBLOOM: Yes. My name is Don Rosenbloom. I appear on behalf of Area D Gillnet and Area B Seiner.

CROSS-EXAMINATION BY MR. ROSENBLOOM:

Q I have a number of questions for both of you. Firstly, Mr. Whitehouse, yesterday you testified about the nursery lake assessment program and you and I tried to speed this cross-examination up a little bit and having had a chat just before your testimony this morning, and if I can summarize what I understand from you, so that it goes onto the record. The nursery lake assessment program is a part of a habitat assessment, you would call it a habitat assessment but it's focused exclusively on capacity of a lake system to, in terms of the food source for fry that have obviously come from the river system into the nursery lake; is that correct to say?

MR. WHITEHOUSE: With one provision, not exclusively. The primary focus is identifying the ability of a lake to support sockeye and it examines a number of parameters, biological, physical and chemical, and including other components of the ecosystem in the lake to understand the relationship between those components and that lake's ability to support sockeye.

Q Yes. And so obviously part of your work is determining the capacity of a lake system to nurse and nourish a stock, a sockeye stock; is that correct?

MR. WHITEHOUSE: Yes.

Q And you would subscribe to the belief that there obviously is a threshold in terms of capacity

wherein a -- the number of fry will reach over capacity of the lake to feed and nourish that stock?

MR. WHITEHOUSE: What is clearly demonstrable in the work associated with evaluating the fresh water rearing capacity in nursery lakes is that density of sockeye fry or, in the case of lakes where there are multiple species that target on the same food resources, plankton-eating species, there's a link between the densities that recruit into the lake and the productive capacity of the system, and there are ways to model looking at environmental variables, what that capacity is.

Q Yes, sir. And one of the critical consequences of what I'll call an over-capacity of stock in a lake is that the -- those fry do not feed to the extent of being the size that one would normally see in a lake system, correct?

MR. WHITEHOUSE: One of the impacts of high density can be depression in growth rate, so that at higher densities you will see a reduced size of fry produced.

Q And this is obviously trite, but the consequence of that situation is that those fish have a lesser survival rate than obviously fish that are of what we'll call normal size?

MR. WHITEHOUSE: I --

Q Higher mortality.

MR. WHITEHOUSE: There is a conventional perspective that fish size does relate to survival and that the smaller you are, the lower your potential survival rates are. But that, as Dr. Riddell spoke earlier, there is work that needs to confirm that across the life history stages, particularly from the point where fish leave the lake to the point that they make marine entry.

Q It kind of makes sense, doesn't it? I appreciate you don't necessarily have scientific evidence of it, but the fact is a smaller smolt is more susceptible to predation than otherwise?

MR. WHITEHOUSE: I -- I don't think we can hold that as being a completely broad, acceptable broad statement. Size varies across years, year to year amongst a wide range of species and you see variable survival rates where small fish in one year do as well as large fish in another. The key is making the linkage between density and the

potential impacts. And you have to think a little broader than simply size.

And one example of what I'm talking about here would be the impact of very large spawning populations arriving in a lake and delivering nutrients to that system. So there can actually be an impact of sockeye on subsequent generations. They fertilize the lake with their carcasses in some instances. So you have to really study the nutrient budgets and the dynamics of the various trophic web components to understand what the ultimate impact to the rearing capacity in the system is going to be.

Q Well, let's try to make this really simple. You would agree with me that the optimum productivity of a stock is dependent in part on the fry being properly nourished in a lake in the nursery lake?

MR. WHITEHOUSE: Yes.

Q Yes.

MR. WHITEHOUSE: Yes.

Q And that being the case, obviously the carrying capacity of the lake to provide that nourishment to those fry is obviously relevant to those of you that are looking at productivity issues.

MR. WHITEHOUSE: Yes, carrying capacity is important.

Q Thank you. Now, in speaking about the nursery lake assessment program, I heard you to testify yesterday - and please correct me if I misrepresent your evidence - that currently there are really three nursery lake assessment programs going on or areas, I should say, where you are carrying on these assessments; is that correct?

MR. WHITEHOUSE: That is correct. We've been able to continue to deliver at the Shuswap system, at Quesnel Lake and in the Chilko system.

Q And am I not correct in hearing from you that prior to the 1985 critical year, for reasons we all know in this room, there was a more extensive program of nursery lake assessment?

MR. WHITEHOUSE: I would characterize the work that went on in the old IPSFC days as being extensive, providing broad synoptic overview of a large number of lakes within the Fraser watershed. When DFO assumed responsibility for those activities in '86 there was another concerted effort on DFO's behalf linked to the lake enrichment program to do a very broad synoptic survey on most of the major

nurseries within the Fraser watershed. And then since that time, since the approximately early '90s, is when we saw a tailing off in the amount of directed lake assessment, and focusing on key primary nurseries like the three mentioned.

Q All right. And let's be blunt about it. Surely from your perspective it is not favourable to stock analysis that these programs have been more limited in more recent time?

MR. WHITEHOUSE: I see these as important assessments.

Q And my question to you, sir, is can you explain to this commission why there has been such a diminishment of effort to carry out a more extensive program on nursery lake assessment?

MR. WHITEHOUSE: I think we touched on a number of the aspects of this yesterday associated with the meeting obligations to the Pacific salmon, treaty salmon, Fraser sockeye salmon assessment framework where under fairly onerous budgetary constraints we were in a position that finding ways to keep all of the assessment components functionally active, hard decisions had to be made given reduced budgets what could be afforded, and these lake assessments fell victim to that.

Q And that's a tragedy, isn't it, in terms of the kind of focus that we have at this commission today to try to explain things in terms of runs and run size? First of all, I'm sorry, Mr. --

MR. WHITEHOUSE: Yeah. I think a tragedy is quite a strong statement. I think that there is clearly value added to the overall information available to assess Fraser sockeye stocks, that the work that has been able to be maintained has focused on those areas where we had the highest priority issues, understanding what was going on, where density level impacts were coming into play. But we have missed some opportunity to understand what's going on on a broader base in the larger suite of nursery systems within the Fraser.

I should state that there has been considerable additional work outside of the Fraser and it's an important -- on nursery lakes. It's important to note that the department has, where it has the opportunity, attempted to ensure that an ecosystem-based approach to sockeye assessment has been supportable to the extent possible.

Q Yes. Dr. Riddell wanted to say something.

DR. RIDDELL: Well, I think Timber touched on it. I was just -- I think a tragedy is a bit of an overstatement for the loss. We're talking about a loss of one or two of the production lakes that would really have many any difference at all. It would be nice to survey many of the lakes and look at the population dynamics in the lake, but to be fair, I mean, we're talking about the loss in Stuart Lake which I personally think we need to go back and look at to determine how we recover that lake. And secondly, we have Francoise Lake which is actually not very productive.

So, I mean, the impact of the juvenile survey is to ensure we could cover the others. I think tragic overstates it. Is it preferable? Absolutely.

But the other comment I was going to make and Timber just sort of touched on this at the end, but a different reason, under the IPSFC you did have more broad coverage but more limited information captured. Under the Government of Canada, when they took over, I mean, you maintain the Fall survey, so that we have the fry enumeration so that we can look at survivorship in the lakes. There's an entire research branch that was added under Dr. John Stockner that for years had been looking at what limits productivity in sockeye lakes and that's a much, much more detailed assessment of the limnology. I think I went through this yesterday. You talk about the base in morphology, the turnover rate in the lake and that development along the shoreline, contaminants and so on. So there was a much more intensive study of some of the lakes. That's not to cover off the loss of the fry data, but there were two components in this limnological work.

Q Thank you. Throughout this hearing, we, of course, hear about Cultus Lake repeatedly. My question to you, Mr. Whitehouse, is why would there not be a nursery lake assessment analysis done for Cultus Lake in light of its sensitivities?

MR. WHITEHOUSE: There has been a considerable amount of habit-based evaluation and assessment that does go on at Cultus, including opportunistic. We have a particular benefit of having a research facility sited on the shores or immediately at the outlet

of that lake, the Cultus Lake lab, so there is the ability to do research related to habitat issues within that system, including working on the fry distribution studies and at very minimal or marginal add-on cost. So associated with recovery planning, the conservation team efforts that are going on at Cultus Lake, there are extensive habitat-based assessments in that system, including evaluation of spawning habitat, the impact of invasive aquatic weeds, the impact of shoreline development on spawning habitat within the system. These have been integral parts to a very intensive evaluation of the potential impacts of habitat degradation including effects of predators and competitors within that system.

Q Well, I may be misleading you, but I was present when your colleague, Ms. Stahl (sic), testified before these proceedings and I hope I state her evidence correctly that she testified that there has not been a habitat status report done for Cultus Lake to the best of her knowledge, and I don't think anyone has challenged that in evidence given subsequently. Do you agree with that testimony? And wouldn't she be the one that would be aware of it?

MR. WHITEHOUSE: I'm not --

Q Stalberg, I'm sorry.

MR. WHITEHOUSE: Oh.

Q I believe her name was Stalberg.

MR. WHITEHOUSE: Okay. She may be talking about a formal habitat-based assessment that meets a particular set of criteria. I think we have had a status review of Cultus Lake that has run through the CSAS process within the past year, evaluating the restoration activities going on, including making comment on habitat components and uncertainty associated with the various recovery strategies that we've talked there. So it may be that Ms. Stalberg was talking about a different type of report. There has been directed work associated with evaluating habitat status and recovery in Cultus.

Q Well, let me ask you this. Are you satisfied of the habitat analysis work that has been done on Cultus over let's say the lasts five to ten years? Do you feel that it is providing you as managers with sufficient information to deal with the

problems that you're facing down at that lake?
MR. WHITEHOUSE: I think the balance that's been struck between the focus on research in the Cultus system is a balance that trades off a number of the same type of things that this commission is considering on a much larger scale - where to invest assessment activities, where to invest restoration activities to maximize the longer-term sustainability of a stock or CU.

So there has been directed work supported through both direct DFO funding and species at risk funding that has made a significant contribution to our understanding of population dynamics in that system. Dr. Riddell yesterday mentioned the fact that Cultus is quite unique in its history in that it is one of the stocks that was foundational in terms of the formation of our understanding around Fraser sockeye and a lot of the initial sockeye research going back to the days of Forrester and Ricker. So there's been a great deal of study within that system and evaluation of mechanisms that control productivity there.

Q And even though you have not done a nursery lake assessment program for Cultus, you believe that you're playing with a full pack of cards in terms of doing your management of that sensitive issue?
MR. WHITEHOUSE: I think that there has been enough of the components associated with the nursery lake evaluation, the fry assessments, those do go on, summer and Fall fry assessments, the trawl and acoustic programs are delivered as I mentioned, opportunistically; because of the situation of the lab on that lake that we are getting strong signals with respect to fry survival trends in that system.

Q Dr. Riddell wanted to say something?
DR. RIDDELL: Well, I think you're touching on a point that is probably a bit of a frustration for staff, and I can't comment on the last couple of years, of course, because I haven't been directly involved any more. But before leaving, we had very aggressive program to try and maximize survivorship in the lake and you're likely aware of extensive work with Area E Gillnet and developing methods for removing squawfish, pike minnow we call them, and that's been a very, very

successful program in maximizing survival of smolts. There have been --
Q That program was paid for by industry and not by DFO; is that not correct?
DR. RIDDELL: Well, they contributed substantially to it in developing the technology and then bringing the boat it. We paid for the staff and hiring people to work on the crew, so there were joint shared costs.
Q Thank you.
DR. RIDDELL: The species at risk also -- fund also contributed. But I think the comment I made about the frustration level is that one of the habitat effects, of course, is milfoil. Milfoil has been a very serious problem to control anywhere that it's got established and we do believe that it's having an effect on spawning areas. It's probably contributing to growth of pike minnow in the system. And the other is, of course, the extensive development around margins of the lake and what that's doing in terms of changes in water flow and that, so there are habitat issues associated with it, but they are all part of the recovery program and they are part of the research.
Q When you speak, Mr. Whitehouse, of the fact there are three lakes that you are focused on with nursery lake assessment at this point in time, would you agree with me that small lakes and the analysis of -- and assessment of those lakes are now as critical as the big stock lakes for reasons of the whole direction to the CUs and the Wild Salmon Policy and the fact that the life and productivity of stock in the small lakes will now have a huge consequence to harvest and escapement?
MR. WHITEHOUSE: I would agree that understanding the population dynamics and the carrying capacity and the relative loading of fish towards those ceilings of carrying capacity is very important to understand in terms of sustainability and understanding future production dynamics.
Q And you appreciate, sir, under the direction that the WSP takes us, that the health of stock in some of the small CUs can be critical to the harvest rate of my clients out in the marine environment obviously?
MR. WHITEHOUSE: Absolutely.

Q And therefore, you would agree with me, sir, that it would clearly be in the interest of the commercial fishery that DFO did nursery lake assessment not only in these three large lakes with large stock, but indeed with a very small areas, the CUs with small stock, because they can be totally consequential to the harvest of my clients?

MR. WHITEHOUSE: It's quite clear, there's clear examples today, Cultus Lake as a small stock within a very large complex can have significant implications and there is no doubt value in understanding the production dynamics associated with the populations in small lakes.

Q And therefore, you would agree with me that it is critical, you didn't like the word I used, "tragic", but it is critical that DFO start appreciating, through their funding superiors, treasury board, that the work has to be done in stock nursery lake assessment of small systems in light of the whole CU concept?

MR. WHITEHOUSE: In light of the CU concept, I take no argument with the importance of the work. The CU concept to me does not elevate the information in terms of a priority. The CU is a way -- just simply a construct in the way of looking at things here. So the need is clearly to understand population dynamics.

Q And the point I'm making is with the adoption of the WSP and its implementation, it will become more and more critical that there be nursery lake assessment, not only of these three large lakes we spoke of but of the smaller systems because there are such consequences if those small stock do not survive to your satisfaction?

MR. WHITEHOUSE: Understanding if nursery lake capacity issues are, in fact, the production limiting step would be important to understanding how we deal with very small stocks and their declining productivity if, for example, it were related to conservation --

DR. RIDDELL: Can I clarify possibly --

MR. WHITEHOUSE: Sure.

DR. RIDDELL: -- for you? Anything that's small compared to these large production stock is at some risk, just because of random error and when you execute a fishery possibly. But your point is

fundamentally correct, that understanding the dynamics of the small populations could become a significant limiting factor under Wild Salmon Policy because although CUs may be a construct, the policy clearly states that you are not allowed to take a CU to extinction through actions of management. So there will be an accountability that you have to protect the CUs in the Fraser complex.

Now, the other thing I would add though, the idea that something is small and therefore unproductive is not true and this is actually an example that I use with students. In ecosystems that maintain their habitat, so if these lakes are simply now barren for whatever reason, they don't have as many sockeye, the productivity of the lake, the rate of juvenile production per spawner can be quite high. I mean, it's true even in the Adams, when you get a small stock, you get higher productivity. Well, in lakes that are small in number because of the population for a number of reasons, the productivity in the lake may be very high. Right? The rate of sustainable fishing is a function of the productivity rate, right?

So these -- I'm agreeing with you from sort of an opposite direction in the sense that you could unduly restrict fishing opportunities because you think something is small and therefore unproductive. It is small, but it should be quite productive.

Q Yes. I didn't mean to imply that, if any of my questions --

DR. RIDDELL: No, but it's a common --

Q -- suggested that.

DR. RIDDELL: Yeah.

Q But what they are suggesting is that as we make this transition into a WSP implementation, there has to be hand in hand with that transition some recognition by DFO that there has to be more money put into the assessment at the nursery lake program because small lakes suddenly gain in importance, which otherwise they may not have; do you not agree with that? It's simple -- simply my position, my suggestion.

MR. WHITEHOUSE: I agree that it is important that we consider small lake assessments and the potential issues of productivity in the context of overall

fisheries management, that it is an important consideration and that --

Q Particularly because of the WSP, would you not agree?

MR. WHITEHOUSE: I think that the conservation obligations that arise under WSP with respect to CUs do heighten the importance of that information.

Q Thank you.

THE COMMISSIONER: Mr. Rosenbloom, could I just -- I just want to raise something if you could -- I'll leave it with you, sir, to decide whether you want to follow up, but just so you know, I have this question in my mind and you can pursue it or not, it's up to you. We've been talking about spawning and lakes. Sockeye also spawn in streams and rivers, as well, I understand. And so do your questions pertaining to habitat assessment, are you only directing those to nursery lakes? The other -- are you excluding all of the other areas where these small stocks may be spawning?

The other query I have is you mentioned Cultus Lake which I understand has a hatchery operation there and whether that distinguishes it from other nursery lakes that may not have hatchery operations associated with it or in a nearby location.

MR. ROSENBLOOM:

Q Well, let me adopt the commissioner's questions and deal with the latter firstly. Does the fact that Cultus has a special program as mentioned by the commissioner, does that in any way change the focus of DFO in terms of habitat nursery -- lake assessment?

MR. WHITEHOUSE: The enhancement program which is a conservation-based enhancement program designed to supplement production from wild spawning within the lake is -- it's important that we assess both the survival of the fry released into the system. There is a couple of different enhancement strategies that are used.

Some life history might help here. There are releases into the system as fry, so that's in the year in which they hatch. In addition, some of the fish are grown up to an older stage to that one-year age and released the next Spring into the system. They all receive distinctive marks, so

that we can understand where they originate from, what release strategies. Enabling us to track the survival, knowing how many are released and the fact that they pass out through the fence at Cultus Lake, at the Sweltzer Creek fence, and they're all enumerated in the smolt program that we talked about yesterday allows us to see which are the successful enhancement components. It's a very important point from a conservation and recovery planning perspective for this stock, understanding which are successful hatchery strategies, because we really don't have a lot of experience in enhancing in a conservation-based focus within the Fraser. It's really one of the first times.

So these assessments are important. We can see these marks applied to hatchery origin fish and understand if the lake is producing wild fish or hatchery fish and whether there's differential survival rates between the two when we see them next passing out through the fence. So a number of the pieces that we've talked about in terms of the assessment program come into play in evaluating the importance of hatcheries. There is not a hatchery on Cultus system, so these fish are taken, the eggs are taken and they're satellited out to two particular facilities, one in the Fraser Valley and one on Vancouver Island.

Q Thank you. And let's take the commissioner's former question, which is that you and I have been exchanging -- in terms of the nursery lake assessment program and that is exclusively, obviously, a lake analysis, a lake habitat analysis and not at the spawning grounds; is that correct?

MR. WHITEHOUSE: Yes. Could I --

Q But appreciating that, and I think what flows from that in terms of the commissioner's question might be would you not also agree with me that with our movement or transition towards implementation of the WSP, it is critical that there be extensive habitat analysis both at the nursery lake area but also on the spawning grounds for the same reasons?

MR. WHITEHOUSE: Can I tackle a bit more clarification with respect to what I heard in terms of the question? When we're talking about nursery lakes, we're talking about a place where juvenile sockeye

rear. There was a question with respect to whether fry originate from spawning within the lake or from spawning within rivers. The -- for the vast majority of sockeye stocks throughout the Fraser watershed, river spawning, river or creek spawning is the predominant mode. But there are systems where there are large numbers of lake spawners. We call those --

Q Right.

MR. WHITEHOUSE: -- beach spawners. The -- so there's a distinction there. When we're talking about the nursery habitat, it can -- the nursery lake habitat assessments, this involves the nursery that is common to all fry originating from either beach spawning areas or from river spawning areas. As their life history results in them spending one year in a lake prior to leaving for the ocean, the lake is an important nursery. That's where they do their growing.

Q Right.

MR. WHITEHOUSE: They don't spend any time in their natal streams beyond the time when they emerge from the gravel and migrate immediately downstream to those lakes.

Q But surely there is some importance in doing habitat study of the rearing -- excuse me, of the spawning area and the water system that takes those fry down to the nursery lake?

MR. WHITEHOUSE: Yeah. I was going there. I think it's important to understand those are essential pieces of habitat. Incubation habitat, the spawning gravels represent the seed source on an ongoing annual basis. Productive, healthy spawning habitat is crucial to productive, healthy sockeye stocks.

Q Yes. I don't know if the commissioner has questions that arise out of your response to my questioning, but thank you.

THE COMMISSIONER: Thank you very much.

MR. ROSENBLOOM:

Q I want to move to another area. We heard from you yesterday about the tagging of fish and their migration down to the marine environment. First question I have for you, both of you, in respect to that matter, is is there a lesser survival for fish originating at a greater distance from the marine environment as opposed to those that, for

example, would come out of Harrison or Cultus, for that matter? Is there any information in respect to that question?
DR. RIDDELL: Well, the information is very limited. There will be a very different mortality schedule when you talk about Harrison because Harrison move through the river as fry. This is the unique nature of Harrison River fish.
Q Right.
DR. RIDDELL: They leave the river as fry. They use the lower river and estuary to grow through the phase that other lake sockeye spend in the freshwater lakes.
Q Right. Let's forget Harrison.
DR. RIDDELL: Let's forget Harrison.
Q Right.
DR. RIDDELL: The information --
Q I'd like to forget Cultus too, I might add.
DR. RIDDELL: Well, I had comments on Cultus, but I'll leave it. It's very likely that there will be a relationship between distance up-river and the survivorship to the mouth. In other large systems that have been studied, that definitely is true - things like the Columbia - but they're not a very good model for undisturbed rivers. I mean, we clearly don't have the dams they have to negotiate.
Q Yes.
DR. RIDDELL: But there really is very, very little information on that at all.
Q All right.
DR. RIDDELL: The point really is that they -- and Timber brought this up a couple of times. It's amazingly compressed, the time that the animals use the migration period down the river, right? So whereas we talk about fishing going on from fish returning in June right through into the end of September, the smolts that move downstream probably move down in a month and maybe only up to six weeks. And they move very quickly.
Q They do not loiter anywhere in the river system and do their loitering once they get out into the Strait of Georgia; is that fair to say?
DR. RIDDELL: Well, they can't do a lot of loitering. Do they hold in some areas? That's quite possible and we don't know that yet, because there will be large mixing basins where the big tributaries come

in.
Q All right. Now, yesterday I think, Dr. Riddell, you spoke about your surprise that with the tagging program you determined that there was only a 25 percent survival rate to the mouth of the Fraser from... Originating where? I forget?
DR. RIDDELL: Mouth of Chilko Lake.
Q Chilko Lake. First question I have for you in regards to that astonishing figure, statistic. Has there been work done to determine whether the embedding of a chip into a fish in itself may affect its life -- its lifespan?
DR. RIDDELL: Yeah. Yeah, there's been extensive work on that. Just the development of the technology itself for years David Welch and Kintama have been working on surgical methodologies, measuring stress on the fish and how long they survive. We did exactly the same thing with the Chilko study. The 200 fish that were tagged, we had another 200 fish that had what we called dummy tags inserted in the exact same weight and size and they were retained. They were actually also driven from Chilko Lake to UBC and monitored for their growth. None of the fish that we held died.

But that doesn't disprove the concern that there's a tag effect in the natural environment, and this is a lingering concern. The only way that we have been able to really convince ourselves -- we could do two things to test it: one is to use different tags. You could use what are called micro-radio tags, a different tagging technology that doesn't go surgically and so there are ways that you can test that concern, but that's always a concern when you tag animals and alter their behaviour like that. What happens to it in nature?
Q Well, the fact that there's surgical intervention for the purpose of embedding a tag in itself surely doesn't -- isn't favourable to life expectancy.
DR. RIDDELL: No. When you hold these animals, there is almost no -- well, there is no mortality that we have seen yet on this, so to say that the -- I mean, would we really discard the fact that there could be substantial issues in the river that we're not even acknowledging? I don't put a lot of weight that the absolute value is going to be

25 percent 'cause as I've described, it is very much a pilot study. All right? We have not encouraged people to use this as a measure of downstream survival of Fraser sockeye. But I am concerned that we didn't see maybe 50 percent or higher survivorship. We saw the fish tagged over a couple of weeks. They all passed in a limited period of time. They seemed to stay together, so, I mean, I think the people that worked on the program were really not prepared to disregard that there could be a significant in-river mortality. We are not proposing that all fish have a 75 percent mortality rate.

Q No. And, in fact, with such a high mortality rate, if it did apply across the board to most of the stock, wouldn't there be visual observation with carcass identification --

DR. RIDDELL: No.

Q -- throughout the river? No? Why?

DR. RIDDELL: Well, I mean, we've lost two million, four million adult sockeye salmon in the river. Have you ever seen four million carcasses floating on the Fraser River?

Q Well --

DR. RIDDELL: You can lose enormous numbers of animals in these large river systems. I wouldn't expect to see large numbers of smolts. The predators will pick them up extremely rapidly. I mean, I think your point is very valid. The researchers, myself and others, certainly have concern what the effect is on the behaviour of the animal with a tag, particularly going down through a very steep canyon and we are looking at potential ways of testing that. For example, could we actually move the fish to an area to release them below the canyon? Let's see if there's an immediate jump in survivorship that way. But these are all very indirect, right?

Q We are going to hear more about tagging, I believe, when Dr. Karl English comes forward and I understand his focus has been very much the in-migration of fish and the tagging program, as opposed to the out-migration which you were talking about. Are we, in Canada, and in particular in the West Coast of Canada, cutting edge on this area of science or are the Americans, for example, south of us including the Columbia

basin, more if I can put it this way sophisticated and advanced in applying the new science that is afforded to you with the tagging system?

DR. RIDDELL: Well, obviously they're different environments. In Canada in terms of the application of the new tagging technologies, I would say that many of our people are on the leading edge. But there are obviously different challenges in the Columbia basin. I think yesterday I referred to the dams and the PIT tags and the receivers. This is an amazing technology where you put a little glass tag inside a fish. It's very small. You put it in with a needle. And then they build mats that detect this tag. Now, the tag is passive and so as the tag goes over the arrays, they're charged and they immediately discharge so you can identify the animal.

We don't have that technology utilized and that sort of thing. You could apply it in some special cases, but not much for going down through the Fraser.

But many of our people that are working on the sonic tag, this is the passive one that we put in surgically, and the radio tagging that Dr. -- well, Mr. English will talk to you about, many of our people are definitely leading edge in this work.

Q So the message to the commissioner is that we are not falling behind in terms of this area of science?

DR. RIDDELL: No, I wouldn't say that. Not at all.

Q Okay. Thank you. Now, I think, Mr. Whitehouse, you did want to say something or maybe I misunderstood your --

MR. WHITEHOUSE: I just wanted to validate your concern with respect to tagging impacts. Any study, and that includes any of the studies that we do in the terminal areas associated with tagging, key concern is representativeness of tag application. How well does the tag animal represent - and Dr. Riddell spoke about this, but how well does it represent the population that whole -- that has to. Whenever we're critically thinking about tagging programs, it's very important that we ask that question and put the necessary experimental pieces in place to the extent that we can to

identify whether there are factors associated with tagging like immediate mortality and the valuation that the program, working on the acoustic tagging for smolts, did to at least answer as many questions regarding representativeness as we can.

Q Thank you. The next area of my cross-examination is an area very critical to my client's interest and it relates to evidence that has been tendered both by you as a panel and by previous panels, and that was the decision of DFO in, I believe, 2004 to move the threshold for stock enumeration at the spawning site from 25,000 to 75,000 fish. And I need not obviously explain what that program is about as we've heard that evidence.

My question to you, and it's on the same theme as some of the questions I've asked you previously, in the context of the WSP and the transition towards implementation of WSP where there's more and more significance to the small stock -- the small stocks in the CUs, is it not, sir, counter-intuitive to have DFO around the period of the announcement of the policy in 2005 for WSP to change that threshold from 25,000 up to 75,000? Isn't it counter-intuitive to the fact that more and more the small stocks are, indeed, going to be critical to management of the resource and indeed to my clients' harvest?

MR. WHITEHOUSE: The short answer is no.

Q Why?

MR. WHITEHOUSE: I think it's quite -- not complex, but we have to link this to the assessment framework and the requirements for information that are used to manage Fraser sockeye.

When we look at the -- I want to clarify and make sure why the issue of the 25 to 75,000 may be a consideration and elevate in terms of concern for those who are interested in what we're doing in terms of enumeration and why. The primary issue associated with the switch is that we will have less accurate -- now, it's a bit of a misnomer, isn't it, 25,000 high precision between 25 to 75,000. The key is there's a concern that we'll have less accurate estimates for two or three populations on a yearly basis. So two or three populations that may be 50 to 75,000 fish in a return of perhaps two million.

The key is are we making the necessary steps

to undertake the calibration work necessary to understand the relationship between the previous enumeration methods which involve visual counting and high precision estimation techniques which would have involved those marker capture or fence counts. And we are making progress on proceeding with understanding those calibration relationships and it's actually an interesting point that Dr. Riddell pointed out in the document that we reviewed yesterday.

The comment in that document was that visual surveys tend to underestimate abundance. And the reality of that statement is we can accept the visual surveys tend to underestimate abundance. What we don't do is simply accept that that is the estimate of abundance. We go through a process where we generate a population estimate based on those surveys. That involves the application of expansion factors which take into account the difference between a high precision and a low precision method. What that does is adjust the information associated with the new technique to a standard that tells us we are accounting for some of the potential bias underestimation associated with visual techniques.

The key thing that people need to understand with respect to the move between 25 and 75 from the perspective of survey design and population sizes within the watershed is that when we make the move, the application of the factor that we use right now is four small populations. They use small habitat. There's a very discrete set of criteria that link to those surveys. And the 1.8 factor that we talked about yesterday, the expansion factor, is designed specifically for those populations.

As we move to populations that can be in the 25 to 75,000 range, you actually bring in another subset of habitat within the Fraser, larger systems. And the question that needs to be asked and we have to answer is are the expansion calibration factors that we use for small streams appropriate to apply to these populations that have now moved in the 25 to 75,000 range? And the question is we are evaluating that through the calibration program. The key message is the signal in terms of abundance using low precision

methodologies for populations, whether they're 25 -- under 25,000 or 75,000, we still obtain the necessary signal to understand trends in abundance associated with spawning patterns. And that is satisfactory to meet our needs under WSP, to understand the production patterns within the watershed.

Q (Indiscernible - microphone not on) -- I'm sorry. To apply high precision as opposed to low precision methods, you're going to get greater accuracy, are you not?

MR. WHITEHOUSE: You will improve your accuracy. If your calibration program is thorough enough, though, you will get commensurate accuracy through a calibrated visual survey.

Q But if you're going to improve your precision, your analysis, by applying high precision and appreciating the consequences of the possibility of a stock going below the lower benchmark, is it not in the interest of everyone in the industry that high precision be applied to stock enumeration and analysis for the small stocks?

MR. WHITEHOUSE: No, I wouldn't agree with that.

Q You wouldn't agree with that, even though I believe you are at least joining me in suggesting that high precision is a more favourable analysis and more accurate analysis of stock enumeration than to apply the low precision method?

MR. WHITEHOUSE: We can --

Q Just before you -- Dr. Riddell, yes -- sorry, answer it.

MR. WHITEHOUSE: There is no doubt that if we had the flexibility from a budgeting perspective to implement high precision programs everywhere, we would be unable to afford a sustainable assessment on 200-plus stocks within the watershed. We're talking -- you have to keep in context that we're talking about perhaps two or three populations in a given year, and as I mentioned that when you see abundances reach the 50 to 75,000 fish range, they quickly move out of that in the sockeye world, Fraser sockeye world, and become a component of those populations that would be assessed with high precision methodologies.

So it's -- we're -- I think we're really drilling into an issue that is overstating the importance of population assessment on two to four

spawning sites a year.
Q So you speak of affordability of doing high precision on the entire watershed system. I appreciate that. Why at least is there not a priority to do high precision stock enumeration for those stocks that are imperilled, those stocks that may reach that lower benchmark? Couldn't you limit your program to at least give high precision analysis to those stock because of the consequences of misreading the situation and leading to harvest limits and closures?
MR. WHITEHOUSE: No. I think -- I think you may be confusing the signal that we're getting. Actually, the largest uncertainty associated with the smaller stocks that we're talking about is catch accounting. The much stronger --
Q Sorry? Is what?
MR. WHITEHOUSE: Catch accounting.
Q Mm-hmm.
MR. WHITEHOUSE: They're very small abundance in large catch, the ability to detect, so in reconstructing abundance, probably the greatest certainty that we had, even though we're using low precision methods across a number of these small stocks, is the population trend abundance that we get from spawning ground assessments using low precision estimates.
So it's -- I'm not making the same leap or agreeing with the extension that you made there in terms of the argument.
Q Thank you. Dr. Riddell?
DR. RIDDELL: Yeah, well I think Timber has got to maybe the crux of the discussion here. I don't think there's anything logically the way you phrase the question "wouldn't it be better", well, of course it would be better if we had good information everywhere. If we had the money to do it, we would have done it. Right? And clearly, Timber is answering from the perspective of his current situation. He doesn't have the money. If it is only three or four systems that are a limiting factor to fisheries then, yes, there is an argument to be made for improving the information quality on the escapement, because ultimately that will be your measure of the conservation status of the stock. All right.
Now, the issue here is one of -- under the

Wild Salmon Policy if you have a situation where you think that a population is below the lower benchmark, then the department is required to respond and do that. Right? So this will be a financial pressure in the future, because if its below that, then they have to develop a recovery plan and then surely they'll want to measure the success in recovery.

Right. Now, Timber is implying that most of the stocks below the 75 -- 25 to 75 are recover above the 75. Well, it's quite possible, actually, that some sockeye lakes are quite happy in the 25 to 50,000 range. Right? So they may never get out of that. But you can develop the lower benchmark with the methodology that you're thinking about. If you're using a visual survey and calibration standards then you set the buffer, which is implicit in the benchmark, larger. So you set your goal so that you don't get yourself into that red zone. So you could build this in. You don't necessarily have to go to an entire mark recapture. But you can go to more defensible and more structured surveys that you have good confidence in and you particularly want to be able to ensure that you measure any trend occurring. If you have a trend that's declining that you want to be able to separate that from is it consistent with other stocks that might be associated with marine survival? Is it something going on in the fishery? So you do have to be able to account for these small stocks, and the Wild Salmon Policy requires that.

So as much as right now we don't have the money, the department may simply have to do it because that will be required in assessing the recovery.

Q And speaking of money, we talked yesterday or you talked yesterday, both of you, about funding issues with DFO and I believe, Dr. Riddell, I was actually out of the room for a few minutes when you testified about the budgetary restraints, the five percent reduction, and as I have had it reported - we don't have a transcript yet - you spoke of how that five percent reduction hits the operating expenses of the budget and not the salary portion of the budget and therefore, the five percent's really a more significant

percentage than five percent because it's applied solely to the operating expense; is that correct?
DR. RIDDELL: Yes. The conversation was one of -- and this does vary depending on how the reduction is defined, but if you have a five percent on total budget, that will include salaries. Typically you will also have restrictions on what you can take the reductions in and it frequently does not include salary. But if you have a five percent off total budget, it can easily equate to a 15 percent of operating funds.
Q Right. And you having been with DFO for so many years and informing us of the consequences of five percent really being maybe 15 percent, that is incredibly significant to DFO's mandate to manage the fishery in British Columbia, particularly in the context of implementing WSP; would you not agree?
DR. RIDDELL: Well, it's not quite that simple, because you get the five percent off the department and it's up to the department then on how they allocate their -- the reductions through their branches and activities, right? If it's applied equally everywhere, then yes, it's a confounding effect and -- but, for example, the specific Salmon Treaty, if you weren't in the room, that's a special allocation that is not subject to the current five percent, for example.
Q Yes.
DR. RIDDELL: Right? And so you can have various ways that these reductions are applied. The difficulty in salmon stock assessments throughout British Columbia through my time was the regularity of the reductions and we were only able to sustain our program because there were special allocations frequently to meet certain agreements with the United States or some other issue that came along. But there's no question that over time, we have had to reduce the number of projects just to meet the budget reductions.
Q And if it is the choice of DFO to give priority to the sockeye programs, it obviously is at the expense of the other stocks, the other species of salmon that are not receiving the attention they should and I think both of you have generally testified to that yesterday; is that fair to say?
DR. RIDDELL: Absolutely. That's definitely what we

were in during my tenure as Division Head that you knew that you were going to fund the Fraser sockeye as a first priority. You looked at them carefully to make sure that they were justifiable cost, but after that you had to pay for Fraser sockeye and then you had the residual money for everything else in the province.

Q And as the other programs with the other species suffer, it obviously has huge consequence to my clients' interest in terms of harvest because they're harvesting not only sockeye.

DR. RIDDELL: Well, not necessarily directly, but it can, yes. I mean, the example we discussed yesterday was Coho assessment in the Fraser.

Q Yes.

DR. RIDDELL: Right. So that's one where there is obviously a risk of a direct limiting factor in the fisheries and so we would try to sustain money in that because you know that it could be a limiting factor. But you can see that it becomes sort of a game of dominoes, right? You're looking for the next limiting factor down the list and you keep going down. But you're right, it can definitely do that at some point.

Q And would you join me in agreeing that we really are facing a crisis in funding of DFO when DFO is facing down these five percent reductions. We've had testimony already from Deputy Minister Dansereau early on in these proceedings in October that she's facing another five percent budgetary cut. Does this not lead to a crisis in terms of DFO carrying out its mandate, not only in respect exclusively to sockeye, but to all of its other programs with other species?

DR. RIDDELL: To be perfectly honest, I'm not really the person to comment on that. I know from my experience that if there's been five percent off total budget for the past two years that I have not been in DFO any more, if you had further reductions from where we were when I left, then you're definitely dropping significant number of programs around B.C. in stock assessment. So I'd already written documents suggesting that we're getting down below a critical assessment level.

Q So --

DR. RIDDELL: I call it core assessment responsibility you have to meet.

Q That speaks to crisis, doesn't it?
DR. RIDDELL: Yeah, I guess -- how you define crisis. But, I mean, it -- no question that -- I said yesterday in another -- or discussion about the value that I place on long-term monitoring. Stock assessment is long-term monitoring. I mean, we do it because there is an annual need for advice for managers and management. Fundamentally though you're talking about the long-term monitoring of Canada's natural resources and I see that that's a core responsibility of our department and we put a lot of effort into.
Q I wonder whether you also, Mr. Whitehouse, want to make comment. I appreciate you still are with DFO but do you have any comment to make in response to my question about crisis?
MR. WHITEHOUSE: I would agree with Brian. We are reaching a critical tipping point in terms of the ability, particularly in the assessment world. We're reaching a critical tipping point in terms of being able to provide the necessary monitoring, particularly outside of the Fraser. I think this is an important distinction that is worth making for this commission, that maintaining Fraser sockeye assessment has come at a high cost and that there are not many additional pieces that can fall off without getting to the point where the word "crisis" could come into play.
Q This Royal commission is obviously focused on the Fraser sockeye, but you would agree with me, sir, the public interest is more than simply the Fraser River sockeye and there are huge consequences to budgetary restraint on the entire program of DFO?
MR. WHITEHOUSE: Certainly more than just Fraser sockeye needs to be considered in terms of public interest. Consequences are large, yes.
MR. ROSENBLOOM: Mr. Commissioner, I see it's 11:15 or so. I believe I might be ten, 15 minutes left, which isn't making Ms. Baker very happy. Probably not making the commission happy, but I have approximately 15 minutes, I think. I'm in your hands.
MS. BAKER: It would be nice if we could finish Mr. Rosenbloom before we took the break, if that's possible, but it's up to --
MR. ROSENBLOOM: Happy to.
MS. BAKER: If that's -- if we could break at 11:30

perhaps and make Mr. Rosenbloom get as quickly through his questions as he could, that would be great.

MR. ROSENBLOOM: Happy to do that.

THE COMMISSIONER: I just -- and I'm going to complicate it but I just wanted to ask quickly, the mark recapture program that falls within the lower profile rather than the higher profile or accuracy area, I'm not completely clear about the mark recapture program. You've mentioned it several times.

MR. WHITEHOUSE: Mark --

THE COMMISSIONER: In different contexts. I just want to make sure I understand it.

MR. WHITEHOUSE: Thank you, Mr. Commissioner. There's a distinction that I need to make. First of all, mark recapture is an enumeration technique. It actually falls into the high precision suite of tools that we use. It involves tagging fish, as they approach the spawning grounds releasing them and allowing them to mix back in with the general population to generate an estimate with subsequent sampling.

MR. ROSENBLOOM:

Q Yesterday an exhibit was put before you, Exhibit number 385, and I don't think it's necessary to put it on the screen. This was Mr. Saito's letter to the two commissioners of the Pacific Salmon Commission in regards to the concern of the Fraser River Panel over stock enumeration back in '02/'03. My question to you is -- you, Mr. Whitehouse, I believe yesterday you were asked whether you know of other written communication from the Fraser River Panel to the commission regarding concerns after 2003 and I believe you said no. Are you testifying that there has not been any form of communication, either orally or in writing, from the panel expressing concern about stock enumeration after 2003?

MR. WHITEHOUSE: No, that's not what I'm testifying to at all.

Q Okay.

MR. WHITEHOUSE: In fact, the response would have been could I identify specific examples like that letter, no. I am well aware that in the interval between 2002 and present there have been numerous occasions on which the Fraser River Panel has

expressed concern with respect to budgetary impacts at various stages during the planning process each year.

Q And has that expression been communicated to you by document or by documents?

MR. WHITEHOUSE: Directly to me, no. It would have -- it would flow through a different route, but it's safe to say at some point I would see those concerns expressed.

Q So you are aware that there has been written communication from the panel or through the Pacific Salmon Commission to DFO expressing concern about the quality or quantity of stock enumeration subsequent to 2003?

MR. WHITEHOUSE: I'm aware of repeated communication.

Q Yes. And are you aware whether that communication - I haven't seen that documentation. Maybe it exists in the body of whatever we have now, 500,000 documents on Ringtail. Has that communication suggested that DFO is in non-compliance with the international treaty obligations of this country with the U.S. by failing a proper standard of stock enumeration?

MR. WHITEHOUSE: Important to make a distinction here. They're normally responding to proposed assessment plans. That may be shaping up. They're iterative through a season. As we talked about, there's a preliminary budgeting stage and an impact statement like the one we saw yesterday. That would be a May timeline. And then subsequent to those impact statements, there are generally budget adjustments and they are largely exercises to find ways to fund pressures that Fraser sockeye represent. Brian spoke about this.

In a number of cases the response comes from the panel very early in the year expressing concerns that if the program profile as currently identified proceeds there will be significant deficiencies. And as a result with the exception of three years that we talked about, we have found a way to fund the full suite of Fraser River sockeye spawning ground assessments on an annual basis.

Q So we're back to rectifying the deficiencies and satisfying the panel and the commission at the expense of other programs of DFO, because you're unable to get -- you can't secure further funding

from Ottawa for it?
MR. WHITEHOUSE: Well --
Q Correct?
MR. WHITEHOUSE: Well, not necessarily.
Q Well, first of all, for the record, correct?
MR. WHITEHOUSE: What happens is for the record we make adjustments to the budgets based on reductions proposed and then division head, RD of Science in the senior executive within the region, having been made aware of gaps in the program, then find funds to address that.
Q And those funds are within the operating budget of DFO, the existing operating budget?
MR. WHITEHOUSE: I don't know the source of those.
Q I'm sorry, Dr. Riddell?
DR. RIDDELL: Well, I'm sorry for butting in like that. But the reason for qualifying is that once we get into a situation where the budget is allocated, it's very possible that at something of an international level that the resources could be easily found in Ottawa in DFO or they could be found in Ottawa more generally. They would not necessarily require us to resort to cancelling programs in mid-summer or something like that. I never did that in my time. I think the -- your question the way you phrased it about has Canada been in writing accused of not meeting the requirements of the treaty, I think it's honest to say that that sort of statement between governments would be (a) seldom made, and if made would be in writing at an international level, not something that we would typically see at the working level on the West Coast. We might hear about it and be required to sort of respond, you know, how we're compensating, but I don't think it's too surprising that we wouldn't have seen something in writing that would say something of that nature.
Q Well, Dr. Riddell, you're now with your foundation. Does your foundation take the position that stock enumeration as currently carried out by DFO does meet international obligation?
DR. RIDDELL: I can honestly say I don't think anybody in our foundation has actually discussed that. As a Canadian commissioner, I certainly have a concern about where the funding is trending for

stock assessment in the Fraser.
Q Thank you. Moving on, if I may, one of my last areas of examination relates to your testimony, Dr. Riddell, given yesterday where we really got to the essence of the mandate of this inquiry by asking ourselves can we explain away, for example, 2009 run from 2010. And you particularly focused on the lack of marine assessment and what I think you called the early marine assessment, I assume to be the Strait of Georgia and maybe Johnstone Strait. I want to focus for just a few minutes in respect to your testimony in that regard.
Firstly, can you explain why this assessment, the marine assessment, has not been carried out up to this point in time? What's the explanation?
DR. RIDDELL: Well, that was an argument I had in house for several years because we're talking about Fraser sockeye now, but you could equally be concerned at looking at the change in recreational and commercial fishing for Chinook and Coho salmon since the mid-'80s, where conservatively we'll have lost about 1.5 million fish a year. Right? That's a huge reduction. What we have seen through the hatcheries that there's been a significant drop in marine survival. The more we've learned indicates that that marine survival is likely being determined in the early phases of when these animals go to sea.
And why has the department not responded with an intensive investigation of that ecosystem? I cannot give you a good answer. I can say, though, that must be -- it would be five or six years ago we did implement a limited program called the ecological research initiative and that was in the Strait of Georgia. It was to be designed as a much larger program but it was limited to about $300,000 a year for five years.
But there are a number of organizations very interested in examining the ecosystem in the Strait of Georgia now in terms of there's obviously been huge changes. One of the most notable for the public is the growth of the seal population and the impact of that. But when you really start to investigate it, one of the things we know almost nothing about are the -- is the fish communities of the small pelagic fishes. We talk about ground fish and we talk about some

shellfishes and we talk about salmon. We very seldom talk about the animals that are probably the food base for many of these species. So there's a lot of concern. I don't have a good answer why.

Q All right. And as the commissioner deliberates on his report at the end of the day and if he chose to try to influence Ottawa to put more focus on the inner marine environment and assessment, do you have any sense of the kind of cost that the government would face in having a robust program of marine investigation?

DR. RIDDELL: Well, I do actually, because at the request of a private donor two years ago I put together an ecosystem-based study of the Strait of Georgia to answer the specific question about the loss of Chinook and Coho salmon. And that program, after extensive consultation with our universities and government labs, came out to be $10.5 million over five years.

You know, it sounds like a big number, but in my personal assessment, $2 million a year with the potential return of an area that is so important to British Columbia and Canada is almost trivial. But you've got to go and find it.

Q You didn't get your money?

DR. RIDDELL: No. I think there was too much science apparently and unfortunately, that donor decided -- did not follow through. The Salmon Foundation, though, has made a commitment that we will proceed to try a campaign to raise those funds and we're actually meeting -- I will be meeting with two U.S. government groups when I'm down in Portland.

Q What about DFO?

DR. RIDDELL: I think DFO will contribute if we can find some of the funds. I think right now that $10 million commitment over time would be fairly large. I think that when the groups actually see that there is some private funding for this, that we will get government involved, but we've got to go a ways. But it is designed now to be a very intensive study for two years to test many of the ideas that people have and then establish an active recovery for Chinook and Coho while conducting -- there are 14 specific projects to test people's ideas of what's going on in the strait.

Q Why, Dr. Riddell, is your mindset that these kind of programs should be privately funded as opposed to exclusively government funded? Isn't this in the public interest that the Government of Canada pay for these kind of critical studies?

DR. RIDDELL: I don't think it's fair to say it was my mindset. I responded to a request by individuals that had the wealth to do this. We took it very seriously and wrote what I think is a very professional proposal and the individual decided it wasn't quite what he wanted and decided not to. Now who funds it now, I think it's a government/private support, corporate support; any way that we could fund it is equally as important.

Q But don't you agree that primarily it should be the fiscal responsibility of the Government of Canada to carry out these kind of studies?

DR. RIDDELL: I mean, obviously I think that there is a "yes" to this, but the reality of fundraising and I am learning this because of my recent two years, there are many, many government priorities that we're fighting against in that. And if we can do it jointly, we're more likely to make some progress, basically.

MR. ROSENBLOOM: I'm pleased to say that completes my questioning. I thank you for answering my questions.

MS. BAKER: Thank you. Mr. Commissioner, if you would like to take the break now, this would probably be a good time. The next -- the next and final questioner for these witnesses is Brenda Gaertner or perhaps it's Leah Pence, I'm not sure, but that team.

THE REGISTRAR: Hearing will now recess for 15 minutes.

(PROCEEDINGS ADJOURNED FOR MORNING RECESS)
(PROCEEDINGS RECONVENED AT 11:49 A.M.)

THE REGISTRAR: Order. The hearing is now resumed.

MS. GAERTNER: Good morning, Mr. Commissioner, it's Brenda Gaertner for the First Nations Coalition, and with me, Leah Pence.

Gentlemen, I'm going to begin by talking about some broader questions around information needs and then turn to food, social and ceremonial information needs, and then some options for information collection, and then, finally, with

some questions around potential recommendations.

CROSS-EXAMINATION BY MS. GAERTNER:

Q I'm going to first start, Mr. Whitehouse, if I heard you correctly yesterday, it's my understanding that DFO's management objectives drive the information needs that you use to determine priorities for stock assessment; is that a fair summary?

MR. WHITEHOUSE: Yes.

Q And would you agree with me that in the recent years DFO's management objectives have been evolving, so in the past those management objectives were primarily to provide for information to feed the international treaty obligations and, in particular, establishing commercial TAC and focusing on the strong runs, but now those objectives are broadening to include such things as we've talked about the Wild Salmon Policy, so those management objective are actually changing and have been changing over the last while; would you agree with me on that?

MR. WHITEHOUSE: There is change, yes, in management objectives.

Q And would you also agree that in addition to the Wild Salmon Policy, the management objectives that you're needing to balance include license retirements and programs like PICFI, in which DFO is beginning to pursue commercial fisheries in-river? You're aware of the PICFI program and the goal of pursuing commercial in-river fisheries?

MR. WHITEHOUSE: Yes, I am.

Q Would you also agree with me that DFO has a policy on selective fishing and that that's an increasing management objective?

MR. WHITEHOUSE: Yes.

Q Would you also agree with me that it's clear that DFO has obligations around First Nations FSC requirements and that's a growing management objective, including providing priority for FSC fisheries?

MR. WHITEHOUSE: FSC are priority issues, yes.

Q And you will agree with me that meeting those FSC priorities, particularly in low abundance years, can be challenging?

MR. WHITEHOUSE: Correct.

Q How have these emerging management objectives and these changes changed your approach to the type of information that you would like to be gathering or you feel you should be gathering for stock assessment purposes?

MR. WHITEHOUSE: I think the construct, in terms of information requirements, have been responsive to the challenges faced in identifying the gaps associated with a number of issues, late run mortality, in-river mortality, et cetera, that have represented significant change to understanding dynamics of stocks as the system changes away from some of the fundamental assumptions.

So by that I mean we've added pieces on to address gaps in information to try and provide further certainty with respect to reconstruction of abundance on an annual basis.

Q Can you give me examples of the kind of things you've added on? My observation of the evidence over the last days is you're suffering from budget cuts, so what's been added?

MR. WHITEHOUSE: When we think in total, with respect to the in-season run management, we have verification components that have been added into the in-season run strength estimation, so the Qualark system has been a piece that has assisted in validating the abundance of fish returning to the river at Mission.

There has been the implementation of radio and acoustic tagging programs in both marine and freshwater areas, tags applied to specific target groups, evolving through time as we understand the dynamics associated with run timing and mortality in-river to improve understanding of the likelihood of needing escapement objectives based on targets set for Mission.

There has been, also, additional work associated with the add-on of the Fraser River Environmental Watch Program, which is involved in in-season management to provide estimates of potential loss rates due to mortality or environmental conditions -- mortality related to environmental conditions within the river, again, with the purpose of attempting to support the meeting of escapement objectives in terms of fish arriving on spawning grounds.

Q Are any of those efforts actually affecting in-season management decisions?
MR. WHITEHOUSE: Yes, indeed.
Q Could you give me an example of that?
MR. WHITEHOUSE: The Environmental Watch Program develops a factor that varies for run timing groups through the year, called the Management Adjustment. It is a procedure whereby survival is monitored -- or not monitored, but modelled based on environmental conditions, to provide a leading estimate of the potential loss rates to be expected based on environmental conditions so that additional fish can be escaped into the system to ensure that if there are loss rates that spawning objectives will be achieved. So that would be one example.
Q Okay. Mr. Commissioner has heard a bit about management objectives, and we'll hear more about those -- or management adjustments --
MR. WHITEHOUSE: Adjustments.
Q -- so Dr. Riddell, is there anything you'd like to add to this discussion about how information could be collected to better address the various management adjustments that DFO has on their plate?
DR. RIDDELL: The one thing that we haven't touched on is that for the last few years we have been working with - "we", and it's started again within DFO and then subsequently, and Mr. Al Cass is involved, and a number of other players - working with Simon Fraser University to develop what we call an in-river management model, and the intention of this model is specifically to try and look at delivery of spawning escapement objectives, or First Nations objectives in some areas of the basin, and using all the information we're acquiring on the environmental conditions and the mortality of the fish moving upriver with the radio tagging, how quickly do they move, are there areas in the river that they'd hold, and basically what we're trying to do is build a risk management model that would reconstruct the fish entering the Fraser River and how well do we think they're going to survive to get up the river.
This is still very much developmental, but it's a step beyond many of the comments that Timber made about things that have been added. He

didn't touch on some of the external research on late run Fraser sockeye mortality funded through the Pacific Salmon Commission and through the Pacific Salmon Foundation.

So that's probably the most outstanding additional piece that I would think of coming to mind.

THE COMMISSIONER: Sorry, who is developing that? I didn't hear you, Doctor, I'm sorry.

DR. RIDDELL: The model's being developed at Simon Fraser University through a sort of small, if you want, coordinating committee, involving people like Scott Hinch, Karl English, myself, Mike Staley. Those are probably the major players.

MS. GAERTNER:

Q And why isn't that being done by DFO? Is that primarily a budgeting issue?

DR. RIDDELL: No, I wouldn't say that that was the primary reason at the time. The primary reason was that the people that we spoke with we felt had the capacity to build this quickly at the time. That doesn't sound like a very good decision, at this point, because it hasn't been done as quickly as we wanted, but we did need to go to people with strong modelling capability. We have people like that in the department, but they were already committed to particular activities.

Q And so that work was the result of meetings that were held a couple of years ago; is that correct?

DR. RIDDELL: There was one workshop on this particular one, but it was not about the actual development of the model. They wanted to add additional elements to the modelling, particularly social economic considerations. The outcome of the workshop was one that, as we have probably seen very clearly, now, adding additional things to the model and adding complexities to the model was just -- it was too soon, because we simply didn't have the physical model built to really add anything onto.

Q Perhaps I'll just stay with this topic, in particular, increasing the understanding of what's happening in-river and the different pressures that are associated with that. Given the recent years of increasing in-river or en route mortality and increasing challenges with water temperature and water flow, what methods are being considered

to be used to inform stock assessment for returning sockeye upriver of Qualark? And in answering that question, I would like you to particularly speak on the challenges associated with runs of low abundance, if you're relying on radio tagging, and those circumstances.

MR. WHITEHOUSE: I think the key pieces that we're talking about relate back to two components that I mentioned earlier; the environmental watch program and the development of models that link the conditions within the watershed to specific migratory success patterns.

So this is an important piece and it applies throughout the entire Fraser Watershed, it provides estimates for stock groups based on their entry timing and the conditions prevalent within the river during the period which they will be resident and migrating in the river. That's one piece.

The second piece I think that's important to point out is the telemetry work, and it needs a little bit of explanation, because there is levels of resolution that are quite important in the way the sampling design is structured with respect to the tagging program. What this program involves, in terms of a set of monitoring networks, is the placement of receivers at very important intervals along the migratory route in the main stem of both the Fraser and Thompson Rivers. And as tagged fish move through the system, we're able to estimate areas in which we see losses of sockeye due to the environmental conditions. It may be a cumulative impact of associated encounters with nets and environmental conditions, but the key is that we are able to narrow down our understanding of where loss rates are. We also get information based on the relative vulnerability of particular stocks based on the DNA that is collected from those fish at the time of tagging.

So what happens with this program is we release a batch of fish with radio tags and we distribute them through their arrival timing, and we've done that in both marine areas and in freshwater. I believe that marine area tag application, for example, Johnstone Straits or Juan de Fuca, is preferable, because then we get a signal of fish arriving in the river and their

survivorship curves as they pass frequent stations. And these stations, there can be up to 20 of them in a given years, so that we can break survival rates throughout the main stem.

This information is important, as it identifies areas where we may expect loss of fish based on a pattern of environmental conditions developing in a given year, and it allows us to then apply and begin to develop a model that has predictive capacity for multiple years, based on patterns associated with flow and water temperature.

So the integration of those parts are very important in understanding the dynamic of fish migration into the watershed.

Q Dr. Riddell?

DR. RIDDELL: I think Timber's touched on most of the points. I think to put this together you need to have the components that we've talked about in previous meetings here. Qualark is essential, where you get a good count at the bottom of the canyon. We have the radio taggings. We have to know the tags going by. You have to have the environmental watch so we can use the environmental conditions to predict what the expected loss rate in the river might be. And then we have to have good catch accounting so we can keep track of the tags as they're possibly being removed from the river system. And then you need this modelling framework to put all this information back together.

And the model is obviously, as people say, is a representation, but if we can predict the return of fish, and particularly using the radio tags to test how these animals are moving up the river, then we can really start to build some confidence that we understand what the loss is of Fraser sockeye and how we can deliver them to particular populations.

Your particular question about small stocks, tagging is a problem for small stocks, because the likelihood of grabbing one of the very small populations at random in a very large population is very, very low. In most cases, you probably will not put a radio tag on a very, very small population. And so the model, then, allows you to also -- you have to then assign -- we talked about

indicators yesterday, so you have to assign the very small stocks and some ratio to a bigger population that will likely have tags and can be monitored, and then you would have to infer what you observed in the large stock and that it's the same for the smaller.

It's definitely more risky, because you don't have a direct monitoring for it, but that's one of the fundamental reasons by describing this model as a risk assessment model, because then you can build these uncertainties into the modelling framework. And because we're talking about risk and it has human costs, because they have to determine, you know, how risk averse or risk prone do you want to be in delivery, we would establish this model and then take it out to the community groups to discuss how you would apply it in season and what are these risk levels that you want to achieve.

Q Thank you. Many of my clients who participate on listening in on the Fraser Panel calls, you know, they hear test fishery reports from the marine and then they hear the numbers past Mission, and then they hear the Qualark -- hopefully over time they're going to hear Qualark more and more, but the question they often -- or an observation they often have is that information upriver from Qualark gets pretty anecdotal or qualitative in nature.

Would you agree that it might be useful or helpful to develop a series of networks of sampling platforms in the Fraser River that would provide more direct information that could be used in-season?

MR. WHITEHOUSE: I think there's conceptual value added to that approach, but it really needs to be structured in terms of what management objectives are. Right now, the management system is building the capacity to accommodate achieving escapement objectives plus net upstream fishery objectives through the escapement management at the Mission site with the various enhancements that we're talking about.

The biggest question that comes to mind, from my perspective, when we talk about in-season infrastructure above the canyon, for example, is how would it really come into play in terms of

meaningful engagement of management decision-making?

And the reason I raise this is because it largely reflects the fact that decisions are made based on Mission/Qualark escapement. Management decisions are made based on escapement patterns and allowances allocations for various fisheries objectives above those points, including accommodating things like loss rates.

And a lot of the fisheries that are operating above there are already having impacts such that the value added in adding additional assessment capacity above those points becomes questionable in terms of providing useful in-season management perspective.

Q Would it not also help you in assessing health of the salmon?

MR. WHITEHOUSE: Sampling platforms definitely have value. I think there's something that's being overlooked, though, and that is that there are extensive fisheries operating throughout most of the Fraser above Qualark, and these represent readily accessible opportunities in terms of both run timing estimation, not run timing, run size, indications of run strength, and as well as very constant feedback, through monitoring programs, of fish health.

So there are pieces in place, now, that support these fairly effectively.

Q Okay. Dr. Riddell?

DR. RIDDELL: I agree with essentially everything that Timber has added. There's no question you can get, you know, collect samples and assess fish health is useful. Many times there's a significant lag in looking at fish health and how you associate that back to in-season decisions that are made fairly quickly.

For a number of years we've talked about this integrated stock assessment platform throughout the Fraser basin. I still think that that's a good way to be thinking about this. But what we have learned in working in the lower river and applying the tags that we then follow, and I think we talked about this during hydroacoustics, there's very clearly a cut-off of when we should handle fish in freshwater and apply these tags.

If we can tag fish at about 18 degrees

Celsius and lower, then we have very good survival. If we just were tagging about 18 and a half, then we were losing substantially more fish, and the impact of that is that you then have a compounding or confounding of what's the fate of that tag; was it removed in some fishery or did it die naturally in the river? And you can't really attribute the cause of the loss of that radio tag.

So I think the real value in the system, now, is putting the radio tags on where you can get large numbers with good survival and then use the in-river programs as the recovery platforms where you still get your mark recapture. You get the marked fish to unmarked ratios and then you can sample for fish health.

But tagging in-river is looking like it's less and less likely because of the confounding factors.

Q A number of my clients are quite interested in the introduction of fish wheels and the use of fish wheels as a supplement to stock assessment, and as you know, there was and has been a fish wheel operating at Siska for a number of years. I wonder if you could comment on the usefulness of fish wheels and either at Siska or others as a stock assessment platform?

MR. WHITEHOUSE: We've had opportunity to evaluate in a number of instances and locations throughout the river the utility of fish wheels in terms of their ability to support sampling activities. One of the things that's becoming quite clear, and it was quite clear early on, is that fish wheels within the Fraser have a more limited utility than they do in other systems where there is substantially higher turbidity.

One of the issues is that we're consistently seeing issues and concerns with respect to representativeness in terms of the sampling that we can achieve. This includes evaluations in the main stem of the river down in the Mission area. There has been more success associated with consistent and catch abundance in the Fraser canyon area associated with the Siska fish wheel operation as a potential representative sampling tool.

However, when we get above there, the catch data, again, seems to be quite spotty and suggests

that the sockeye are able to fairly well avoid the gear and thus there's some bias associated with the sampling that occurs within it. Extensive evaluations in the Thompson have shown that there's essentially low value in proceeding with evaluations of fish wheels there.

Fairly equivocal results coming out of the middle/upper Fraser in terms of its ability to catch fish in sufficient numbers to represent much in the way of meaningful platform for sampling.

So they held promise. I think from the overall contribution that they are able to make in an ongoing way, our expectations have been substantially tempered recently, given performance.

Q Dr. Riddell?

DR. RIDDELL: Well, I think Timber's comment about the incremental value of wherever you place any tool in the river is the key point again. And as I say, now we have the concern about if the temperature is above about 18 and a half, then we don't want to be applying more tags and stressing the animal, because we know that we're going to lose a significant portion. I mean, frequently we were losing 50 percent of that, and so it is a significant problem.

But if the fish wheel was to work in a canyon area with very opaque water, they can be a wonderful sampling platform in the sense that they catch fish at a very regular rate and so you can get them in good quality and so on. So, I mean, as a fishing tool, they might be appropriate, but I think it's really a matter of when you start talking about building a stock assessment framework throughout the basin, then we need to really think about where we put incremental programs that really provides some additional information for people conducting management in-season.

Q Perhaps you've answered this generally, but I'd like to ask you specifically: The Northern Shuswap Tribal Council, as you know, has proposed fish wheels as a sampling platform for the measure of health and abundance coming through the NSTC member community territories, and they have not yet been able to manage to secure support from DFO for these efforts. Why is that, and is that

linked to the answer you raised earlier; have you concluded it's not of much value?

MR. WHITEHOUSE: It's not so much that it's not of value. It comes down to the benefit associated with implementing that program. Where would that information fit into? How would you use in-season run estimation abundance at a point in the area where this program is operated when most of the fisheries decision-making has occurred well downstream of that point? There are not much in the way of regulatory options to effect management change with a monitoring site that far above major fisheries.

Q So Mr. Whitehouse, I wonder if we could -- Mr. Lunn, if we could go to Exhibit 381? I'd like to pick up on that comment in a slightly different way. And it raises concerns that I observed when I reviewed Exhibit 381, which is your 2004 and 2005 Salmon Stock Assessment Plan.

I didn't find, in any of this document, any objectives around ensuring the priority of FSC fisheries as part of your stock assessment, and I'm wondering if you could review that. I see, on page 1, Objective 4, you want to improve capacity and opportunities for First Nations in that assessment plan, and I can turn to the various pages to help you review it, but I was quite surprised and I'd like to give you an opportunity to comment on why it is that FSC priorities are not part of your priorities in stock assessment.

And, in particular, if you could go to page 2 of 57, the next page, and if you go to sockeye, I see that the PST and the international obligations in the management of domestic fisheries are there, but there is no mention whatsoever of First Nations obligations or the priority of those; would you agree with me on that?

MR. WHITEHOUSE: Without a detailed review of the document, I cannot agree with you. I'd have to go through this extensively.

Q Well, the pages on sockeye, that's the one page. The next one is right next to it, page 3 of 57.

MR. WHITEHOUSE: I think I'll take a slightly different approach to responding to you here.

Q Okay.

MR. WHITEHOUSE: The key is assessment components within this document as a framework for providing

information. The relative impact of harvest comes into play at a general level; are stocks exploited in a high, moderate or low manner, and irrespective of what the source of harvest is. So if there are high expected harvest rates, the assessment elements respond to that by providing higher resolution. If there are low expected harvest rates, it's not important to an assessment framework who the harvesters are in order to shape that.

Q All right. Well, maybe I'll just add -- Dr. Riddell, did you want to answer that now, or if I could, I just want to ask one more question of Mr. Whitehorse.

We started, this morning, or earlier today, talking about the various management objectives that you're trying to balance, and you just mentioned, again, that the fish wheels aren't that useful or necessary in your stock assessments because most of the fishing has already occurred, or the large fishing will have occurred. I'm assuming you're talking about the fisheries in the marine. If you're not --

MR. WHITEHOUSE: That's an incorrect assumption.

Q Or in the lower Fraser.

MR. WHITEHOUSE: Yes.

Q All right. So if you were -- a management objective was to move commercial fisheries or some of the fisheries upriver, and if you were actually trying to ensure FSC priorities for the upriver First Nations, a management objective and a usefulness could be found in fish wheels; is that correct? Or in other selective fisheries upriver that can harvest large amounts of fish, provide sampling, provide health abundance, do all of those things; would you agree with me on that?

MR. WHITEHOUSE: I'm not sure that I make the same extension that you do. The infrastructure, in terms of in-season run strength abundance and the tools in the lower river, with the management adjustments and the understanding of potential survival rates, and the management objectives of meeting an allocation, for use of a different word, for FSC requirements, so FSC becomes a part of escapement objectives at Mission, these account for the need to move fish upstream, and if the objective is to move more fish upstream, Mission

will simply provide the ability to document that we've done that.

With the other tools in place, the environmental watch program, the tagging programs, models to adjust for management adjustments, the necessary pieces are in place to support additional fish, and because we have resolution to stock or CU levels based on estimates at Mission.

So I would describe it as a nice-to-do, but not a need-to-do, if we were going to organize things that way.

Q Is there anything you'd like to add, Dr. Riddell?

DR. RIDDELL: Well, I mean, I'm glad that Timber brought up the point about incorporating it in the escapement objective past Mission, so there is always an allowance made for the Interior fisheries and that it's built into, by the run timing groups, what is the management escapement goal to pass Mission, right? And so in that context, we do take that into account.

In this document, where I would agree that Timber made the comment that a dead fish is a dead fish, basically, and that we are -- always discuss, and I think I mentioned this yesterday in terms of prioritizing programs, the importance of a program to delivery of a First Nations agreement or a food fishery location. But we really do consider that to be one of the domestic fisheries in the sense that we don't differentiate that.

If the delivery requirement changes substantially through time, then I expect that there is a point where we would have to make, very similar to previous discussions about the Wild Salmon Policy, we may well have to adjust how the department estimates in-season and where the fish actually are to conduct in-river fisheries.

Q Okay. When I turn to that one I get to the recommendations. I'll move on from this exhibit. One more question about FSC, and I know you've picked up on this in a couple of different ways, but my clients, for example, those in Haida Gwaii and those on the Vancouver Island, are also concerned with the ever increasing Fraser centric nature of DFO's stock assessments. Would you agree that the increasing Fraser centric nature of these informations and these programs are being balanced against providing the necessary

information or having the necessary program dollars to attend to the salmon that are returning to spawn in either Haida Gwaii or in some of the Vancouver Island streams and that creates extra pressure?

DR. RIDDELL: Well, I think we've addressed that several times. Yes, there's no question that as the budgets are reduced through time and the priority placed on Fraser sockeye will put additional pressure on, well, I'd even include Fraser non sockeye stocks and non Fraser stocks.

Now, in terms of impact on specific fisheries, you really have to look at that on a specific basis.

Q All right. I have a couple more areas to cover. One is, Mr. Commissioner has heard a little bit, and we'll hear more about the importance, from a First Nations perspective, on using traditional ecological knowledge as part of the balance to the scientific information. I haven't yet seen in the assessment plans or anything else, how is traditional ecological knowledge presently used, or how could we improve on that when determining what needs to be assessed and where?

MR. WHITEHOUSE: That is a difficult question to respond to. I don't have a good answer for you. We've struggled with defining what and how traditional ecological knowledge might be obtained to feed into systems. I think it is clearly an area that we have identified as needing additional work and a recognition that there is value to considering traditional ecological knowledge. But from my perspective, it's something that we clearly need to do additional work on in order to make anything meaningful in terms of progress.

Q Dr. Riddell?

DR. RIDDELL: Well, unfortunately, I have to agree. I mean, we've talked about it extensively through my time with the department, and it's always one that we've struggled to determine exactly how we would build in, in my, what I would say is limited understanding or experience with traditional knowledge, I find it informative on an ecosystem basis. Now, it's quite possible that people within the Fraser would have good insights into what we're calling the Environmental Watch Program, so they may have something to contribute,

in what's the severity of the conditions, or where you're losing fish along the Fraser.

That sort of information would be very useful to incorporate in the discussion like we had in the in-river management modelling, to use it to sort of verify whether it meets people's expectations.

But we've talked about this at great lengths through the years and we've never really made a great deal of progress in how to incorporate it, to be honest.

THE COMMISSIONER: Ms. Gaertner, can I just ask --

MS. GAERTNER: Yes.

THE COMMISSIONER: -- and I've probably heard this and I apologize to ask you to repeat it, but the Environmental Watch Program, I take it, is exclusively operated by the DFO?

MR. WHITEHOUSE: Yes, it is. Yeah.

THE COMMISSIONER: And in the context of Ms. Gaertner's question, is that what you were addressing in terms of incorporating TEK, or are you talking about something else?

DR. RIDDELL: Well, I think the question was more general than that, but I wouldn't limit the incorporation of TEK into the environmental watch. The environmental watch is very much a physical measurement of flow and temperatures and a modelling program. It actually starts with an array through the Fraser, that you've heard from David Patterson. The modelling involves a 10-day forecast of environmental condition on the river, and that's conducted at the Institute of Ocean Sciences, and then fed back to the Fraser Panel at the Pacific Salmon Commission.

MS. GAERTNER:

Q Okay. Turning to another area, which is collaborative work with First Nations in the implementation of your stock assessment plans, again, I can refer you to Exhibit 381, I think you got it yesterday, there's one of your objectives is to work more closely to identify opportunities with First Nations.

Mr. Whitehouse, you spoke, yesterday, about the complexities with sockeye spawning enumeration and capacity issues around First Nations, and if I heard your evidence correctly, you also spoke that it was in your opinion it was difficult to carve

off any pieces of sockeye enumeration -- spawning enumeration assessments for First Nations.

Could you speak a little bit more about that? I understand there are various parts of sockeye enumeration; there's the visual surveys, there's the operating of fences, and it's also my understanding that there is some capacity already in place in some of these areas to do some of those parts. So I'd like you to help me understand why it is that some of that couldn't be carved out and better working relationships developed with people like the Northern Shuswap Tribal Council with respect to sockeye enumeration?

MR. WHITEHOUSE: I think, first, it's important to acknowledge that there are a large number of collaborative efforts going on with First Nations throughout the watershed, that there has been directed activity on DFO's part to support the development of capacity within First Nations groups through the Aboriginal Fisheries Strategy, and this has been a major partner in terms of sockeye assessment -- I will extend that to salmon assessment within the Fraser since '92.

We have to recognize that throughout the watershed there are substantially different capacities amongst groups to participate. Some groups have made substantial progress in that period and have biological staff in-house that can provide the necessary oversight in terms of program delivery. I would stress that stock assessment is easy to characterize as counting fish, but it is a science discipline, and it's important that there is the ability within organizations who are undertaking this work to support a science-based organization.

There has been significant progress made and some groups have in-house biologists, have technical staff that work on stock assessment activities and are participating quite fully in a number of stock assessment activities, including sockeye assessment.

For others, there are significant challenges in reaching these objectives in getting technical and biological staff on strength. The challenges come from a number of different sources. Some of them relate to simply having an opportunity to do

enough of this work to actually be able to retain staff year after year. In a number of cases, we're talking about fairly limited opportunities in terms of duration of work annually; six to eight weeks, if we're simply dealing with field work.

And really, what's important, if we're going to make progress, is to get an extension of the work that First Nations are involved with to the analytical, the data side, and this is where they're going to develop the capacity to make linkages, and I speak about complexity to make linkages on aspects of fish behaviour and the implications of study design to changes in fish behaviour, to changes in study design as they impact the quality of estimates delivered. These are all very important things, from a science perspective, to be able to maintain rigour on in terms of delivery.

I know that there are a number of instances where First Nations would like to have much greater participation. They're running up against capacity issues and being able to find and retain people who have the technical background to participate. So I think we really need to work at a number of different levels in order to be able to help develop those.

There's been instability with respect to the organizations that have resulted in strength, waxing and waning over the period '92 to 2000, and where we do see groups having real ability to participate is where they've developed this in-house biology and technical capacity.

So I think that's an important component.

Q Dr. Riddell, is there anything you'd like to add to that?

DR. RIDDELL: I don't know that I can, really. I think Timber has a much more specific and direct understanding of the conditions. I shouldn't really comment.

THE COMMISSIONER: Ms. Gaertner, I note the time.

THE REGISTRAR: The hearing will now adjourn until 2:00 p.m.

(PROCEEDINGS ADJOURNED FOR NOON RECESS)
(PROCEEDINGS RECONVENED)

THE REGISTRAR: The hearing is now resumed.

CROSS-EXAMINATION BY MS. GAERTNER, continuing:

Q Gentlemen, there's just one other area that I wanted to cover before we get to some questions and recommendations. And we briefly spoke about capacity and the capacity challenges and the benefits associated with that. Would you also agree with me that communication is something that's increasingly a demand on the stock assessment group and, in particular, I'd like you to comment on one of the things that Mr. Commissioner has heard and will continue to hear is the challenges associated with distrust between First Nations and DFO historically, and the necessities in moving forward in more collaborative ways. And we spoke briefly this morning about management objectives and the need to see change and the complexities associated with that. Could you tell me whether your budgets have included, and what your challenges associated might be around increased communications with First Nations on your goals and approaches to stock assessment and all of that, and where we could benefit from new and improved ways of doing things?

MR. WHITEHOUSE: Yes, I think the key, and you've hit an important point with respect to communications, the key is that there are a number of existing processes in place, particularly aligned with the resource management sector as a formal representative of DFO's interests, communications as a point of contact for First Nations groups. They organize a number of bilateral meetings in terms of planning on an annual basis.

Stock assessment does feed into those meetings, but I would never disagree with someone who said that we couldn't use work to improve communications. I think we can always work to improve in those areas. So there are processes in place and I think those processes can undoubtedly be strengthened to improve the level of discussion between groups and to hopefully build on the trust that has been established.

Q I'll just use an example of this. The DNA sampling that's done from in-river FSC fisheries

or otherwise in-season, are the results of that DNA done in-season and, if so, are they communicated to First Nations; to your knowledge?

MR. WHITEHOUSE: We'd have to get the people who deal with that data. That isn't a source of information that I deal with regularly so I don't know who is processing that or who would be receiving the information and on what timelines.

Q All right. I'm just going to turn briefly to -- my goal on your next set of questions is to see if we can get a little bit more specific about where we might go on recommendations around stock assessment. We've heard clearly that you need to maintain your base budget and your base stock assessment data and that there's room for improvement. Dr. Riddell, yesterday, you spoke about a transition plan and I'm going to suggest that perhaps what might be useful is a multi-year plan, including the modelling work that you mentioned today, including any transition steps that would increase the type and location of stock assessment data to deal with these changing management objectives. Do you think that would be a useful next step?

DR. RIDDELL: Yes, I'm trying to recall exactly how I used "transition," but it's not a bad term for the whole process because if we are looking to have a more integrated program, involve more groups so we can deliver the program with available funds and capacity, and a transition period of developing it and testing it and then proceeding is a good idea.

Q And would you agree that it would also be very useful to develop that plan collaboratively with First Nations so that they can ensure that their interests and responsibilities are properly addressed and that they can collaboratively work with the Department to implement those plans?

DR. RIDDELL: Well, I would, but I wouldn't just limit it to First Nations because I think, as I said a couple of times, there are the universities in the interior now that want to be more involved in a training capacity and a professional capacity, and they bring another level of resourcing to those particular areas. So I think it really should be a multi-sector discussion.

Q Mr. Whitehouse, do you have anything to add to that?

MR. WHITEHOUSE: I think I limit my remarks to the aspects with which stock assessment relates. You're speaking in a much bigger context in terms of overall management objectives. That really is dealt with by the management resourcing side of this. So I agree with the concept of increased and improved collaboration where that makes sense, including within stock assessment based activities.

Q Actually, I wasn't speaking generally, I was speaking about stock assessment. Given the increased management objectives and the changing management objectives that we spoke about earlier, there is a need to develop a transition and a new plan to deal with all the various management objectives and the information that might be necessary, you'd agree with me on that?

MR. WHITEHOUSE: In part, yes.

Q And from Dr. Riddell, and I think Mr. Whitehouse, your information yesterday, that plan is going to have to deal with both identifying for significant capital investments over term and commitments for multi-year funding for operational purposes, and that that would be a necessary and useful thing for ensuring that the data collection is in place and available over time; is that correct?

DR. RIDDELL: Well, the capital investment very much depends on the methods applied, but I think in the long term, for repeatability and for efficiency of delivery, the capital investment is certainly something that would be worth looking at up front.

I have no concern about what you're saying about the multiple involvement. I think we have to keep a broader picture on the available resources. There are a number of organizations involved throughout the Fraser that have access to particular funds, it's just a matter of making sure that anything that we put in place has longevity and that even in the volunteer programs I work with now, providing them a program for five years and then not having continuance of that can cause problems and breaking of the information flow and inconsistencies on how the data's collected. So we just want to ensure that we have a long-term program.

Q All right. And then just picking up from my earlier comments, that multi-year plan and that

implementation of that would necessarily include a communication strategy that would ensure reporting back and increased flexibility over time in how we're implementing that program; is that correct?

DR. RIDDELL: Well, I think to keep everyone involved, you need to have that information flow and if it is truly integrated, I think that that would evolve very quickly.

Q I just had one brief comment -- question for you, Dr. Riddell, in closing. You mentioned yesterday that you have been, and it's clear you are taking efforts to access and raise funds to complement the funds of the Department of Fisheries and Oceans, or Canada, but you mentioned restrictions on your abilities to do that. And are those restrictions DFO, or Government of Canada restrictions? And if so, what are they and is there ways that we should be looking at improving abilities to collaborate?

DR. RIDDELL: Well, it's a limitation on how funds are raised, and it is a government, not DFO, it's a federal government limitation through the ***User Fee Act***. And you know, it's not a strict limitation on what you can raise, it's a limitation on the processes involved that are accountable. But whenever we query government about what the standard for consultation are, and how do you meet these standards, we actually don't get any reply whatsoever. And so it is a frustration, we want to talk to the public, but I don't really want to go out generally raising people's expectations if we can't deliver so what I need to have is some goalposts that we can work towards that we can meet these expectation and raise the funds that we all need.

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

THE COMMISSIONER: Mr. Whitehouse, I wonder if I could just ask you, I understand that the escapement figure that the PSC works with comes from DFO. Is stock assessment the main data centre for providing that escapement figure?

MR. WHITEHOUSE: Yes, that's correct.

THE COMMISSIONER: Okay. And is anyone else, any other department, or any other personnel involved in providing that figure?

MR. WHITEHOUSE: Because the nature of the program

delivery is collaborative, there are a number of groups that feed information into the stock assessment program.

THE COMMISSIONER:

MR. WHITEHOUSE: So there are probably at least seven other groups, primarily First Nations, that are involved in project delivery at some level --

THE COMMISSIONER: Okay.

MR. WHITEHOUSE: -- that do contribute to the program delivery.

THE COMMISSIONER: Okay. Thank you.

MS. BAKER: Thank you, Mr. Commissioner. I understand that Mr. Dickson has one question.

CROSS-EXAMINATION BY MR. DICKSON:

Q Yes, it's Tim Dickson for the Sto:lo Tribal Council and Cheam Indian Band. Dr. Riddell, I just have one question for you. Earlier today, Mr. Rosenbloom made a comment that the funds that were raised for the Cultus sockeye recovery work were provided by industry, and my understanding of the origin of those funds is a little bit different and I want to just quickly ask you whether you share my understanding. I understand that the money came from the sale of 100,000 sockeye and that the catch and sale of those fish came about because of an agreement between the Commercial Salmon Advisory Board and the Sto:lo, who are my clients.

DR. RIDDELL: Mm-hmm.

Q And they agreed that 100,000 sockeye could be caught. In circumstances where DFO felt that Cultus sockeye needed to be protected and so would set a low exploitation rate, and so the notion was that 100,000 sockeye could be caught and sold, by industry, and they would take out their costs from the proceeds and then the remaining proceeds would be put to Cultus recovery work. And that work is -- well, the funds are being held by the Salmon Table Society, which is largely operated by certain Sto:lo members. Is that generally your understanding?

DR. RIDDELL: I recall this sale, but I don't know that I ever understood or knew about the sort of particular uses of the fund.

Q Mm-hmm?

DR. RIDDELL: So I mean, at our working level, we did have local First Nation peoples involved in the program. We had the Cultus Lake lab people that were under my supervision. People at Simon Fraser from DFO. We definitely had the Area E Gillnetters developing the technology for the net and for the boat, and we had money coming from the ***SARA, Species at Risk*** funds for Cultus Lake sockeye. But I don't think I knew the sort of background of how the money was distributed. I did know about the sale and subsequent discussions, and of the salmon dialogue table you're talking about.

Q Right. And you're aware that the Salmon Table Society is conducting some of this recovery work on Cultus Lake?

DR. RIDDELL: Yes, now. Yeah.

Q Thank you. Those are my questions.

MS. BAKER: Thank you. Mr. Commissioner, I think we can conclude these witnesses now. Thank you very much. Unless there's questions arising from the bench?

THE COMMISSIONER: Yes. No, I don't know how many times I've thanked Dr. Riddell, but it's never too much, Dr. Riddell. Thank you again for making yourself available for this panel, and to you, Mr. Whitehouse, thank you very much for being part of this panel for the last couple of days. Much appreciated. Thank you.

MS. BAKER: Thank you.

THE COMMISSIONER: We're moving to another --

MS. BAKER: Yes, we're moving to another witness, also dealing with stock assessment, but his name is Gord Sterritt.

THE COMMISSIONER: Okay.

MS. BAKER: Just go ahead and have a seat. Thank you. Thank you. If the witness could be sworn, please.

GORD STERRITT, affirmed.

THE REGISTRAR: Would you state your name, please?

MS. BAKER: I'm sorry, before -- he needs to turn his mike on.

MR. STERRITT: Oh.

THE REGISTRAR: Would you state your name, please?

MR. STERRITT: Gordon Neil Sterritt.

THE REGISTRAR: Thank you.

MS. BAKER: Does he need to actually take the oath with the mike on? He might --
THE REGISTRAR: Did you get that?
THE RECORDER: Oh, yes, I got it.
MS. BAKER: Okay, thanks. Thank you. Thank you very much for coming down, Mr. Sterritt, and thank you for waiting patiently in the gallery for the last two days.

EXAMINATION IN CHIEF BY MS. BAKER:

Q Mr. Sterritt, you're Fisheries Natural Resource Manager with the Northern Shuswap Tribal Council; is that correct?
A That is correct.
Q And you have been involved in wildlife and resource matters since '96, when you were a technician with the Strategic Watershed Analysis Team in Hazelton?
A That's correct.
Q And then you worked with the Gitksan Watershed Authority as a technical biologist from '99 to 2005?
A Correct.
Q And you've been with the Northern Shuswap Tribal Council as a Fisheries Natural Resource Manager since 2005; is that right?
A That is correct.
Q Thank you. And you administer the Northern Shuswap Aboriginal Fisheries Strategy Agreement with DFO and the programs that are run under that agreement?
A I do.
Q And I think I'll just get right into -- oh, sorry, yes, your *CV*, I'm sorry, is at Tab 12 of the binder of materials for stock assessment before you and it's now on the screen. Is that the *CV* you provided?
A That is correct.
Q Thank you.
MS. BAKER: I'd like to have that marked, please, as the next exhibit.
THE REGISTRAR: Exhibit number 389.

EXHIBIT 389: *Curriculum vitae* of Gord Sterritt

MS. BAKER:
Q All right. I just start off at the top, asking if the Northern Shuswap Tribal Council is involved in stock assessment of Fraser River sockeye in its traditional territories?
A I would say that no, the Northern Shuswap Tribal Council is not involved in stock assessment as we see our involvement. We do have some efforts towards that, but it's not the involvement that we would like to see.
Q Have you done any work to determine or to assess in-season abundance or health indicators for fish in the territory?
A Yes, we have.
Q And I understand that there was a demonstration commercial fishery in 2005 and 2006 in the traditional territory; is that correct?
A Correct.
Q And that demonstration fishery provided the impetus to move into some of the abundance and health indicator programs that you're running today; is that right?
A That's correct.
Q Okay. Did you do a feasibility study or assessment for stock assessment once that commercial pilot had concluded? I guess, sir, I'm sort of leading it to how did you move from the commercial pilot into the in-season abundance and health indicator program you're running now?
A Well, we had an opportunity to test the feasibility of a commercial fishery on the Quesnel River in 2005, and we were -- in-season, we found that we did not have the information that we were looking for in order to inform that fishery. So it could be a longer story than that, but, I mean, that's the gist of it. And so what we did was we thought that -- knowing that there was gaps in-river of what the fish were doing as they moved up river, we started to put together a proposal and look at doing stock assessment, as we see it, with the fish wheel project in the upper river area.
Q And where exactly is this fish wheel, like where is the traditional territory located, in a general sense, and where is this project located in that territory?
A Well, the Northern territory extends from what we call Deadman Creek to the south and Marguerite

Ferry site, between Williams Lake and Quesnel, on the Fraser River, to the north. And so essentially, the fish wheel project that we have is in the southern part of the territory, and that it's below the Chilko River, it's below the Quesnel River, which are tributaries, so it's essentially in the southern part, before a lot of the fisheries start in the upper river.

Q Okay. And what is a fish wheel? Can you describe that for the Commissioner?

A The fish wheel is an apparatus that -- I mean, it's floating in the river, it's got pontoons, it's got several baskets on it. You lower the baskets into the river. They're powered by the water. And they scoop up fish as they're migrating through the system and deliver them to live boxes on the sides of the pontoons and allow us to -- as a live capture technique.

Q Okay. And with this ability to capture the live fish, what do you do with those fish once you've caught them? What are you looking for and what do you do with them?

A Well, since we've implemented the fish wheel, our In-season Abundance and Health Indicator Project since 2007, or 2008, 2010 would have been the third year, we've been measuring the health of the fish as they move up river. The first year is a feasibility, and the second year, as well, but what we've been doing is measuring the health by collecting data on the marks that they receive, what kind of condition they're in, are they lethargic, are they healthy, and is there -- what kind of -- like, again, like I said, what kind of marks are on the fish. Are they from different fisheries, are they natural caused, and information like that.

Q So when you talk about the marks on the fish, you're looking for scarring or interruptions --

A Yeah.

Q -- on the surface of the fish, you're not looking for, like, the Mark Recapture Program kind of marks that we heard about from Mr. Whitehouse; is that right?

A No, we're looking for scarring and gashes, and different disease if we can do that.

Q Okay. And once that data's been collected, what's the purpose of the data collection, what is it

used for?
A Well, we're hoping to -- I mean, what we're trying to do is inform our fisheries and as well as -- which I mean by our fisheries, I mean food, social and ceremonial, and as well as policy direction to move fisheries inland so commercial fisheries that could be moving in-river. And so we're hoping that, I mean, with the information that we're collecting, that we would be able to inform those fisheries of potential impacts that they may be seeing.
Q Who receives the data that you collect?
A Right now, the data that we have, I mean, we put out reports. The Fraser Salmon Watershed Program has received those reports. We use it for our personal for the Northern Shuswap purposes and we also put out data to other up-river groups for their information.
Q Does it go to Department of Fisheries and Oceans?
A We have provided some report to the Department of Fisheries and Oceans.
Q And who funds this project? Is it funded by the Northern Shuswap, or is it funded by contributions from other sources?
A Currently, the initial phases of this project has been funded by the Fraser Salmon Watershed Program.
Q And is this program part of a wider project being pursued by different First Nations in-river to establish a network of projects, assessment projects in the in-river environment?
A This was the intention of the project, was we -- we've had discussion. There's been wider discussion about having a network of projects to monitor the fish as they move through the system. Currently, most of the assessment projects are below or include Mission. And so in 2005, sort of answering some of the missing fish issues and not knowing what's going on in-river, First Nations got together with some DFO and NGO people and we discussed the ability to put together a network of these assessment platforms that could possibly verify and feed into the Mission Assessment.
Q You mention that you do give, or you have given some of the information to the Department of Fisheries and Oceans. To your knowledge, has the Department or the Fraser River Panel used that

information provided for decision making in-season for fisheries in-season?
A No, they haven't.
Q And is the program still going on?
A Up to 2010, the program was still in place.
Q And do you have funding to continue it?
A We're currently awaiting funding results and it's a little bit early yet.
Q Okay. You were in the gallery when Mr. Whitehouse was talking about the Quesnel DIDSON program that's been developed. Do you remember hearing that evidence?
A Yes.
Q Yes, I do.
Q Okay. Did you find that to be a successful program? Well, first of all, did your organization participate in that program?
A Yes, we did.
Q And was it a successful program?
A I think it was a successful program. I think it -- I mean, it promoted some collaboration. I'm not entirely sure that we've done all the work yet to determine whether it's a successful stock assessment platform. Two years of work there, it was mostly feasibility, but as far as our participation with the Upper Fraser Fisheries Conservation Alliance and DFO three-way partnership in this project, there were some positives coming out of that.
Q And was there anything else that you feel the Commissioner needs to know about it that wasn't covered by Mr. Whitehouse?
A I can't recall at this time, no.
Q Okay. You recall we took Mr. Whitehouse to an email that you sent to him and others, and that's been marked as Exhibit 387, and it's going to be pulled up on the screen, there, for you to have a look at. Okay. This document says, in the second paragraph -- and first, before I get into this document, you have various correspondence with the Department on the issues we're going to talk about over the years, and this is an example of one of the letters or the emails that you've written to the Department. So I just wanted to confirm, you have obviously written more than this one that we're going to have a look at; is that fair?
A Yeah.

Q Okay. Second paragraph, you just review the fact that the Northern Shuswap Tribal Council has been trying to become involved in stock assessment activities in the traditional territories for a number of years. What are you referring to there?
A Well, I guess we're referring to the consultation that we expect DFO to come to us and discuss their activities within the traditional territories of the Northern Shuswap. And we've been expressing our desire to become involved, and also wanting to know what's going on. We're out doing some work in the traditional territories and we've got DFO STAD personnel working out in the traditional territories, as well. And we believe that we need to collaborate and cooperate and discuss the activities that will be occurring pre-season, and as well as post season. And so that's what that was referring to and the -- it's been continually expressed to have STAD come and talk to us regarding their activities, their planned activities in our territories.
Q And when you're talking about STAD, you're talking about Stock Assessment Division, right?
A Stock Assessment Division BCI.
Q B.C. Interior?
A B.C. Interior. Sorry.
Q At least we don't have to say "British Columbia," we know that much, at least.
A Yeah, B.C. -- British Columbia Interior.
Q Okay. Thank you. Does the Northern Shuswap Tribal Council have the capacity to do some of the work that you would like to do in terms of stock assessment?
A I believe we do have the capacity to do some of the work that we would like to do. We realize that we don't have the capacity to do all the work. Some of it's pretty high level and but we think there's some grassroots activities that we can become involved in and work collaboratively with the Department to do that.
Q Do you think that if the Northern Shuswap Tribal Council had a larger role in Fraser River sockeye stock assessment, that it could be done on a more cost-effective manner than what is currently being done? Like, do you think there's some benefit, some cost savings in having the tribal council involved?

A I say given our location and vicinity to the areas that we would be involved in, that we are definitely in the position to maybe reduce the costs, or at least minimize some of the costs that are associated with that.
Q What was the outcome of this email that we're looking at here, Exhibit 387? Did you have discussions with Timber Whitehouse or others in the Department?
A We had a discussion with Timber Whitehouse, or I had a discussion with Timber Whitehouse regarding some of this and some of the discussion revolved around maybe planning a strategy where we could become involved, and that's about as far as its gone to date.
Q All right. So was there any -- is there any information that we should know between 2009, when this was written, and today? Did anything happen over 2010?
A Other than a meeting with several resource managers regarding the same issues, there's no other -- we expressed the same issue, we expressed the same desire, we expressed our concerns and it continues.
Q Has an implementation strategy been developed?
A No.
MS. BAKER: Mr. Commissioner, those are my questions. I know that Ms. Pence has questions for Mr. Sterritt on behalf of their client group and will probably cover some of the areas I've touched on just briefly, but I think she's going to come back and cover them in a bit more detail so unless you have questions arising, I think I'll turn it over to Ms. Pence.

CROSS-EXAMINATION BY MS. PENCE:

Q Mr. Sterritt, just so that the Commissioner has a bit more of a sense of what the Northern Shuswap Tribal Council is, could you --
MS. PENCE: Sorry, Leah Pence, counsel for the First Nations Coalition. With me is Ms. Gaertner.
Q Mr. Sterritt, as I was saying, just so that the Commissioner has a sense of who you are and who you represent, could you please just tell him who are the members of the Northern Shuswap Tribal Council?

A The Northern Shuswap Tribal Council is a support agency for the communities of Williams Lake Indian Band, Soda Creek Indian Band and Canim Lake Indian Band, and the Dog Creek/Canoe Creek Indian Band.
MS. PENCE: I wonder if Mr. Lunn could actually please pull up Exhibit 340 and go to page 7.
Q Because I'd also like you to give the Commissioner a sense of the stocks and CUs that both travel through this territory and that spawn in this territory so he understands what particular fish you're looking at. So there's a list there of various CUs. If you could tell us which of those CUs pass through and which spawn in your territory.
A So the CUs that pass through the territory are the Stuart CU, which would be the Early and Lates, Takla/Tumbler, Bowron, the Francois, Edena (phonetic), Taseko, Chilko, both Earlys and Summers. And then the Takla/Tumbler Summers, McKinley, Quesnel, the Fraser, again, the Francois and --
Q So it that --
A Yeah, that's essentially -- so that will be essentially all the groups that pass through.
Q And that's probably about a dozen, or so, of the 32 CUs there, is that --
A About.
Q About that? Okay. Thank you.
A And as far as spawning, we've got the Bowron and the Quesnel, Horsefly, and McKinley stocks that spawn within the territories.
Q Thanks. And which of these CUs would you say are of most concern in terms of abundance levels for you and for the Northern Shuswap Tribal Council?
A To rephrase it, I would say that all the stocks are of concern --
Q Mm-hmm?
A -- to the Northern Shuswap, the people. They rely on all those stocks for their food fishery and social and ceremonial purposes.
Q Ms. Baker asked you about the Northern Shuswap In-season Salmon Abundance and Health Indicator Program and I'm just going to refer to that shorthand as the Fish Wheel Program. Can you tell the Commissioner exactly where that's located? Am I right in understanding it's on Churn Creek?
A Churn Creek's location, it's the vicinity of it.

It's actually upstream of Churn Creek and about a kilometre, which is -- I mean, it's below the Chilko, it's above Churn Creek.

Q And of the CUs that are on this list, which CUs would you be monitoring through that fish wheel?

A Right now, all of those CUs, except for the Early Stuart.

Q Mr. Sterritt, in your own words, how can the fish wheel be useful as a tool for in-season management?

A Well, I think it -- I mean, I think it's useful in that it fills in a gap. We have FSC fisheries where we do collect data in some parts of the watershed and within our area, but we don't -- we can't rely necessarily on that data that is collected in-season. It was indicated by Timber Whitehouse earlier that maybe it gets -- it's more of a post-season information base that fills in the blanks for escapement. So what we're trying to do is we're hoping to fill in the gaps and inform our fisheries, as well as other fisheries from other First Nations and commercial opportunities within the river, that is a new direction for the Department, that that's where we see the information, the usefulness of that fish wheel. Filling in the gaps above Mission, above the canyon and trying to address some missing fish issues.

So am I understanding you right that it would be filling in the gaps past Mission, and then assisting the fisheries, most of them being currently First Nations fisheries north of where you're located in the Upper Fraser area?

A Correct.

Q In-season so that they have a better sense of what to expect when they're conducting their own fisheries?

A Correct.

Q And can you just speak a little bit to how this specifically ties to some of the DFO policies? I know you mentioned some policy objectives loosely. Can you be a little more specific into which ones you're referring to?

A That would be PICFI and -- essentially, it was PICFI.

Q And that's Pacific --

A Yeah, Pacific Integrated Commercial Fishing

Initiative. Can I just go back to where else we would fill in the gap --

Q Please.

A -- as far as that project? We find that when we're doing fisheries up in the upper river, that we're getting the fish. A lot of it depended -- the food fisheries depend on the abundance of fish being there. If the abundance isn't there, we don't have the people -- actually, the effort taking place within the food fishery that we would need in order to inform maybe some of the issues that could be arising from the in-season migration of the sockeye. And so that's -- I mean, that's part of what we'd want to be filling in. The other part is we've been in positions where, and the 2005 commercial fishery is an example, where we were on the river, getting ready to do this demonstration fishery, and the fish that were predicted past Mission were not coming past Mission, or were not arriving on the spawning grounds. And so there's a bit of a blank, or I guess we see it as a bit of an early warning system that we can inform. So through Mission -- sorry, through Mission, because of Mission, there was commercial fisheries initiated. And we weren't seeing the fish showing up and so we started expressing our concerns that those fish weren't showing up and that Mission wasn't as correct as thought to be for that season. And, I mean, Qualark's probably addressing those issues, but we thought that as far as informing our in-season fisheries upriver that this would fill in that gap.

Q So do you see the fish wheels or other types of stock assessment programs you may develop as part of that connection, part of Mission, Qualark, and then moving up as a way to measure what's happening to the fish as they move upriver?

A Yeah. I mean, I think it's all part of making sure that the fish we're expecting are making it back to the spawning grounds.

Q Yesterday and then a little bit today, Mr. Whitehouse suggested that the fish wheel that you're operating through Northern Shuswap Tribal Council is not a stock assessment tool per se, but rather, simply an evaluation of in-season conditions. I'm wondering what your response is

to that and how you might expand on that.
A Well, if you put it in context with the spawning escapement, it's not a spawner escapement tool, but it is a measure of -- it is an assessment of the stock as they're moving upriver. And so I see -- I guess I'd have to disagree with that comment.
Q The other thing that we heard from Mr. Whitehouse is he described the fish wheel as well meaning, and I'm not sure that I'm getting his exact words, but I think the sentiment was that it was well meaning, but noted that when he was talking to resource managers regarding its utility, it wasn't particularly well positioned to provide the kind of advice that DFO managers might need in-season. Can you comment on that?
A I'm not aware of any -- I don't know that it's not well positioned. We feel that it's very well positioned to inform fisheries, and a prime example was last season, we were on a conference call with DFO and other First Nations and we were asking, we wanted to know how the stocks were as they migrated through our area, what's going on and there was no real answer. And it's information that we need so that we can let people know when they can go fishing, when they can expect to meet their food requirements. And asking that question, and I don't believe it was just me, I think there were other groups that were asking the same question, but I mean, we feel that we're in a position with such -- with that assessment apparatus, or other, that we can provide that information that's required. So I don't know if that's --
Q That's helpful, thanks. What steps is the Northern Shuswap Tribal Council taking to have the data from the fish wheel analyzed and kind of taken to the next stage in terms of being a stock assessment tool?
A Well, we're looking at the data, we've got three years of data now and we're looking at -- we're actually currently preparing it to present to a biometrician to have him analyze it for gaps and make recommendations, and seeing how it fits into this overall stock assessment.
Q Picking up on something that Dr. Riddell was speaking about this morning, he mentioned an in-river management model that's being developed, I

understand, through some researchers and students at SFU. Have you been involved in those discussions? Are you aware of that work?
A I believe it's a model that Sean Cox and a few of his students from SFU have been developing over the years. And I was involved in, probably, an initial workshop, I'm not certain what year it was, and I have seen a presentation on it in the past couple of years. And there has been some talk about -- I mean, they're putting this model together, but they've got a -- from what I can remember, that they need to be able to do some verification on it. And so part of it is having some of these platforms within the watershed and different assessment methods to verify some of the modelling work that has been going on, that the students have been working on.
Q So do you see an opportunity for First Nations to be involved in some of this modelling work, like you're saying, in terms of verification or in other ways?
A Yeah, with the assessment platforms that we've got in place. Yeah.
Q Continuing on the topic of kind of collaborative work that's ongoing, has the NSTC been involved in other collaborative work with other organizations, not SFU, perhaps?
A Well, we collaborate with other First Nations and Upper Fraser Fisheries Conservation Alliance --
Q Mm-hmm?
A And the FRAFS and Lower River First Nations and whatnot. We also have -- are in the process of collaborating with the University of Northern B.C. with the freshwater ecology research that Dr. Riddell was talking about, and we're hosting a think tank at the end of this month towards freshwater ecology research that will involve academia and scientists and whatnot in our area, alongside -- in partnership with the UNBC and we'll bring in Thompson River University and --
Q So what are you really going to be discussing at freshwater ecological research? For somebody who's not a scientist, like me, what kind of topics will you be discussing there?
A Well, actually, it's brainstorming about research areas that we can develop to better understand the fish that are returning to the freshwater areas

within -- but using the Quesnel watershed. And I mean, it could expand outside the Quesnel watershed, but the focus right now, because it's the Quesnel River Research Centre, and it's a bit of a hatchery and -- but there's a large area, and Coho and sockeye, and pink and Chinook that return to the area, that it will be an ideal area for us to concentrate on at first.

Q Thank you. I want to ask you some questions about what your vision or definition of building capacity is. When you speak about a desire to build capacity for members of the NSTC in terms of stock assessment, are you meaning having your members be part of DFO's crews who are doing some of the stock assessment work, or are you talking about something different?

A Well, I'm talking about something different. I'm talking about building the Northern Shuswap capacity to be able to co-manage with DFO. And over the past -- over the years at certain times, we've had members of the Northern Shuswap working alongside or working with DFO, under the DFO umbrella to build -- to do an enumeration of activities within the watershed. And I guess part of the goal that we see, and I think DFO probably sees it, too, is that we've got -- so we're building that experience and then hopefully that we would move that experience to the Northern Shuswap so that we can have that co-management arrangement and work alongside each other with the experience that we've gained.

Q And is Northern Shuswap in a position right now to start getting a foot in and getting this capacity building beyond just what's happening with the fish wheel?

A I believe there's areas within the stock assessment, sockeye stock assessment within the watershed that we can access and work with DFO on.

Q We've also heard that Fraser sockeye assessment is quite complex. That's something that Mr. Whitehouse spoke about. What's your take on this complexity and the current capacity that you have to be involved in such a complex undertaking?

A I can understand the complexity that he's speaking towards, and the integration of the different programs that -- let's just focus on the Quesnel watershed, where they have mark recapture programs

and moving on -- and also different programs in concert with those.

I think that I'm not entirely sure that they have to -- if we're working closely together and we're doing some of the more grassroots work, visual surveys and whatnot, that I just -- I think there's an opportunity for us to work alongside of DFO in that capacity. I never suggested that we completely take over or assume full responsibility, and I guess the goal is to co-manage the resource and be able to provide the information to the people that we represent and other First Nations and be able to argue the case for the fish. And so I can understand -- getting back, I can understand the complexity. I don't understand the reasoning behind it, I guess, is what -- I think we can participate and I think we can work alongside each other on that.

MS. PENCE: Mr. Lunn, could you please pull up Exhibit 381 for me?

Q Mr. Sterritt, I'm just going to have you take a look at the Salmon Stock Assessment Plan from '04/05, it's a document that's been before the Commissioner a number of times today. Sorry, I should have given you a heads up. You'll see on page 1, on the right-hand side, I believe it's objective 4, so these are the objectives from the Salmon Stock Assessment Plan and objective 4 says:

> To provide improved capacity and opportunity for First Nations.

And the bullet says:

> Improving capacity and providing opportunity for First Nations in a period of budget reductions and heightened expectations while complying with government financial and workforce regulations remains a significant challenge.

I wonder if I could ask you to comment just on how well DFO has done in your last five, six years, or so, working with Northern Shuswap in meeting that fourth objective in terms of stock assessment programs, that objective of providing improved capacity and opportunity for First Nations?

A I guess for the -- I mean, as far as the simpler programs are concerned, Chinook and Coho, I think DFO has met that objective fairly well. And that was expressed by Mr. Whitehouse. I think that as far as sockeye enumeration is concerned and building our capacity and providing more opportunity, I don't think we've met that quite so well in our area.

Q Thanks. My last question for you, Mr. Sterritt, is whether you think DFO is willing to embrace the co-management of stock assessment for sockeye?

A I guess in theory, I think there -- I mean, they're willing to embrace. I mean, it's been expressed. I just don't see it actually practically happening. So at this point, no, I guess, would be the answer.

MS. PENCE: Thank you. Subject to any other questions from the Commissioner, those are my questions.

THE COMMISSIONER: I do have a question for you, sir. I think you were in the room earlier when the panel was asked about traditional ecological knowledge, or traditional aboriginal knowledge and how that might be factored into stock assessment programs. Do you have any views on that?

A Well, it's -- I think it's something that First Nations have been wrestling with, as well, to bring in the knowledge that they've gained over hundreds or thousands of years, and it's a science. I mean, it's like science, it's an accumulation of information over time. And I guess to make it work, First Nations have this information. DFO or any -- or the Department, anyways, would -- I think, to make it work, there needs to be a true collaborative management relationship. It's information that is very dear to First Nations and I think -- and there's valuable information there. And I think the best way to make it work is that we can't just hand it over. It's our -- like, it's considered First Nations information and I think a collaborative management relationship would go a long ways to making that work.

MS. BAKER: Thank you. I don't think anybody else had questions, but I'll just canvass the room. Canada? No. And John Rosenbloom? No.

MR. MacAULAY: Mr. Commissioner, no questions from the Government of Canada.

MS. PENCE: Mr. Dickson?
MR. DICKSON: Tim Dickson for the Sto:lo Tribal Council.

CROSS-EXAMINATION BY MR. DICKSON:

Q I just wondered if you had anything to expand on on the Commissioner's question there. I heard you saying that knowledge is dear to First Nations and a collaborative management approach would be the best means of allowing for it to be shared, and do you have anything further to add to that? That was an interesting perspective for us to hear.
A Well, I think you, the Commissioner, you are probably more looking at how the information can be melded or combined to complement each other and, I mean, I think there is large parts of the information that that could work, and I guess I just see the immediate need for collaborative management to -- or a co-management relationship to make that work. And as far as using the information, I wouldn't want to start discussing that right now. Thanks.
MR. DICKSON: Very well. Thank you.
MS. BAKER: Thank you, Mr. Commissioner, then I think we can thank Mr. Sterritt for his time here today and maybe take the break and come back at 10 after 3:00 and see if we can finish the other panel which we have coming back for cross-examination.
THE COMMISSIONER: All right. Do we know that we can do that, Ms. Baker?
MS. BAKER: They're here. Well, I would like to see what use we can make of the time and see if we can get through them, yes. I'm hoping we can. Whether we can, or not, I don't know, but I do want to definitely start with them and try and get it done.
THE COMMISSIONER: All right. Thank you.
THE REGISTRAR: The hearing will now recess till 3:10.

(PROCEEDINGS ADJOURNED FOR AFTERNOON RECESS)
(PROCEEDINGS RECONVENED)

THE REGISTRAR: The hearing is now resumed.
MS. BAKER: Thank you, Mr. Commissioner. We're happy to welcome back Mr. Kristianson, Mr. Saito and Mr. Matthew. This was the decision-making panel that

we started with the other day. We're now entering cross-examination and the first counsel to begin that will be Leah Pence again.

MS. PENCE: Leah Pence for the First Nations Coalition. And with me is Ms. Gaertner. Mr. Lunn, if you could please again pull up Exhibit 340?

PAT MATTHEW, resumed.

WAYNE SAITO, resumed.

CROSS-EXAMINATION BY MS. PENCE:

Q And please go to page 7. I recognize this is a panel but I will be directing my questions to Mr. Matthew on the panel. If others have anything to add, by all means, add, but they will be focused for the most part on First Nations views on the IHPC and other processes. Mr. Matthew, I asked this of Mr. Sterritt and I wonder if I could ask it of you as well. If you could give the Commissioner some background in terms of what the Secwepemc Fisheries Commission is and the types of the fish that are in your territories, perhaps using this table as a guide.

MR. MATTHEW: Well, the Secwepemc Fisheries Commission is, I guess, a department underneath the Shuswap Nation Tribal Council, a Native organization, which is made up of nine Secwepemc communities within the Thompson/Shuswap Basin near Kamloops. So yeah, the main sort of watershed that we're in is the Thompson Basis of which there's the Shuswap system, as well as the North Thompson. But going down the list there, in terms of conservation units, there's Kamloops Early Summer, Shuswap Lake Complex, number 9, number 24, Shuswap Complex-Lates and number 29, Kamloops Lates. I don't know if I missed any there. I don't have my glasses either.

Q Thank you.

MR. MATTHEW: I can read them. I'm kidding. Sorry.

Q Thank you.

THE COMMISSIONER: I was going to lend you mine.

Q Thanks for that context. I'm going to jump back in time a little bit, back to the discussion we were having on Tuesday. Ms. Baker was asking you some questions about First Nations at the Fraser

River Panel. And we discussed that there's two First Nations representatives there right now: Marcel Shepert from the Upper and Grand Chief Ken Malloway from the Lower Fraser. And my question to you is, what mechanisms are there for those two First Nations representatives on the Fraser Panel to be accountable to First Nations on the Fraser River?

MR. MATTHEW: At this point, there are no mechanisms that are understood by me. As far as I understand it, they actually report to the minister or, I guess, to DFO, and they speak on behalf of Canada or DFO there. There's no clear accountability back to any First Nation organization other than they report back to the Fraser River Aboriginal Fishery Secretariat has teleconference calls on Thursdays every week on run sizes, escapements, those types of sort of technical issues.

Q Thank you. In your view, how should these First Nations members of the Panel be advised by and mandated by First Nations on the Fraser?

MR. MATTHEW: Well, I guess the problem -- I don't know if I mentioned the other day -- is I believe there's sort of a procedural problem at the Fraser Panel in that I don't believe there's been sort of a reconciling of First Nations' interests in how Canada deals with them at the Fraser Panel and -- or has there been any sort of consultation around that. How does Canada reconcile our interests at the table? I don't know the structure, whether they vote or whether it's by consensus but I see various gear sectors there representing their harvest interests at the Panel and yet I only see two First Nations there that don't represent First Nations. They're there.

If there was a structure that would be suitable in its current form, I would like possibly he should see First Nations' sectors that dip net and that spear and that run weirs or gillnet from various sectors of the river that represent those fisheries' interests just like the others do, if it was in the current form. So to me, I don't think the procedures are right there to meet First Nations' interests. I think there has to be sort of reconciling of that. And I don't know how we would move in that direction. But I guess a vision for First Nations is to have

some form of authority within that structure that ensures First Nations' interests are met and similar authority perhaps to what the U.S. tribes have in Washington and on their side where the U.S. cannot make a decision without first consulting those First Nations about their interests.

Q Okay. From your experience in sitting on some of the Fraser Panel calls, not the Thursday calls, which are the First Nations' calls, but the Friday calls where you're just listening in on the line, can you tell the Commissioner, from your experience, how the Panel considers risk management or precautionary measures in making decisions about openings and closures?

MR. MATTHEW: To me, it's not clear how they do it, what criteria they use to risk manage. I've only listened in on a few calls but I can give one example. And I think it might have been in 2009 where Mike Lapointe from the technical group brought forward several options for establishing a run size based on various forms of criteria. And all of those run sizes that he brought forward were less than 200,000 run size. So the pre-season sort of rules or cut-off points where no fishing could occur was for Early Summer, was 200,000 or greater.

And so if they accepted any one of those options by Mike Lapointe, there shouldn't have been any run size and therefore no TAC established, or total allowable catch established, for any fishery to go ahead. But I could be wrong about this but there -- all of those options were very conservative or they at least indicated numbers below the cut off of 200,000 fish. But Canada and U.S., as far as I can recall on the call, simply both agreed on a run size based on a pre-season forecast of 240,000, which enabled a TAC to occur and, therefore, First Nation fisheries were opened on the Fraser.

Within days, new test fishery information came through and I believe throughout the whole season, the run size never exceeded 200,000. So in my mind, it wasn't clear to me how and why they used the pre-season forecast to establish a run size. And therefore, to me, that didn't seem to be very precautionary when, in fact, your own

scientists gave you several other options that you could have used.

Q Thanks. I'm going to move now to some questions about the Integrated Harvest Planning Committee, the IHPC. On Tuesday, you spoke a bit about some of the representation issues at the IHPC, as far First Nations go and I'm not going to re-canvass all of those. But what I understood from that was for the South Coast IHPC, you are attending on behalf of the Secwepemc Fisheries Commission that Marcel Shepert is there for the UFFCA, the Upper Fraser Fisheries Conservation Alliance, and that Don Hallis there for the Nuu-chah-nulth; is that right?

MR. MATTHEW: That's correct.

Q And that in addition, Murray Ned has been attending or has started to attend as an observer from the Lower Fraser?

MR. MATTHEW: Yes.

Q Just so that the Commissioner understands, are you and Marcel and Don political leaders or are you attending there in your capacity as fisheries technicians?

MR. MATTHEW: I guess in a technical capacity. I'm not a political person.

Q And when you attend the IHPC, do you have a mandate from the Shuswap Tribes to negotiate any changes to the Integrated Fisheries Management Plan, the IFMP, based on, you know, discussions that you're having with the sectors at the IHPC?

MR. MATTHEW: I do not have a mandate to negotiate. My role there has been to bring forward our conservation and harvest interests to the table, as I do with any other table that we attend to. And so no, we don't have a mandate to negotiate. And I'm really not clear whether any of the other sectors have a mandate from their members to negotiate either. I'm not clear about that.

Q So we've mentioned the three different First Nations who are attending for the South Coast IHPC. What, in your view, is the reason that more First Nations aren't attending these meetings?

MR. MATTHEW: Well, I guess part of it could be capacity in terms of having individuals to actually have the experience and understanding to actually attend and be of some value there. There might be resourcing issues but I guess the overall

issue, I think, and that I've heard sort of repeatedly is that First Nations want to deal with Department of Fisheries and Oceans in a bilateral sense and that this is not a bilateral meeting; it's a third party interest meeting.

Q Just picking up on what you're talking about bilateral, when you were speaking with Ms. Baker, you talked about the need for a coordinated approach. When you use that word "coordinated approach", are you talking about a Tier 1 process for the Fraser that would also then feed into bilateral discussions?

MR. MATTHEW: I would hope that there would be a coordinated approach on the Fraser. I guess the problem that I see is that Department of Fisheries and Oceans meets with each Nation or group of Nations in the Fraser bilaterally. But they take the information, such as ours, our concerns and recommendations around conservation and harvest and they take them into consideration. But unless we're coordinated amongst First Nations, DFO basically, and I don't blame them, they go away and make decisions, balance the interests of ours against others. So my, I guess, idea and others, is that we need First Nations to coordinate, I guess, our approach in terms of conservation and harvest at a watershed-type level. And then hopefully approach DFO in some fashion that, you know, we can achieve at least some of our -- some of our interests.

MS. PENCE: I wonder if Mr. Lunn could pull up, please, I think it's at Tab 26 from the First Nations Coalition documents. Or no, sorry, this was actually Tab 7 from the Commission's documents.

Q Mr. Matthew, I wonder if this document might assist a bit in some of the stuff we're talking about. It's the Secwepemc Fisheries Commission's Consultation and Engagement Matrix. And when we're talking about the IHPC work and also discussions about what might be involved for a more coordinated approach, can you help -- well, first, do you recognize this document?

MR. MATTHEW: Yes, I do.

Q And were you involved in creating this document?

MR. MATTHEW: Yes.

Q And can you give us just a brief overview of what this document shows?

MR. MATTHEW: I guess it's part of our strategy-building exercise in terms of trying to lay out at what level do we represent ourselves in various functions, represent our interests. And so we're trying to use this sort of information to plan which meetings to attend, where to put our best interests and energy and resources. And so unless we lay it out, we are not able to do that. So it goes in various layers.

Of course, there's local issues and we actually have Band Fisheries and committees and chiefs and councils, Fraser-wide issues, the Upper Columbia and broader issues, the Pacific region or Canada and Pacific Salmon Treaty issues. So there's various forms of requests for consultation from us at various levels right from local right to the Pacific Salmon Treaty. Example, DFO is asking First Nations to consult about the Pacific Salmon Treaty, the sockeye parts of it that are being amended.

And so the other, along the top row, if you're looking horizontally, it goes right from our community members and a lot of First Nations believe is where the authority lies is right at the community membership right to the Nation area or Nation that -- I guess the Shuswap Nation Tribal Council, such as I work for, to bilateral relationships with DFO. And then locally, with DFO I should say, and then to what's called Tier 1 with other First Nations on the Fraser Watershed and Tier 2, which is First Nations and DFO at a larger watershed level or B.C.-wide level, and then Tier 3, which is First Nations, DFO and others of which the Integrated Harvest Planning Committee is one of many of those that you see on the list there. And so --

MS. PENCE: I'm just going to stop you for a quick second, Mr. Matthew, and see if we could please have this marked as the next exhibit.

THE REGISTRAR: Exhibit Number 390.

EXHIBIT 390: Secwepemc Fisheries Commission - Consultation and Engagement Matrix

MS. PENCE:

Q So I understood that you said that the IHPC, which is located on that far right column under Tier 3

is just one of the many Tier 3 processes in which the SFC is involved; is that right?

MR. MATTHEW: That's true.

Q And another thing that you had spoken about on Tuesday is that you said that there's an assumption implicit in these third party or Tier 3 processes like the IHPC, that issues regarding Aboriginal fishing rights have been dealt with bilaterally with DFO and First Nations. Is this assumption correct? Are these Tier 1 and bilateral conversations occurring before we're moving into Tier 3 processes?

MR. MATTHEW: They are at some levels. For instance, the regional bilateral level between SFC and DFO of which the B.C. Interior staff at Kamloops, DFO staff and ourselves, meet bilaterally each year pre and post-season. In terms of meeting at a watershed level with DFO, those processes are just being developed as we speak, I would say.

Q This is quite a daunting chart. Who from the SFC is involved in these processes? Is this just your job? These are the bullet-pointed meetings that you're going to?

MR. MATTHEW: Well, I would say myself is one of the primary ones that attends these. Some of them are technical processes where we have a biologist and a technician that attends to some of them. Some of them, at the Fraser Watershed level, we have First Nation political representatives from our Tribal Council that attend and some community members do attend some. But primarily it's our Secwepemc Fisheries Commission staff that does most of the attendance.

Q So primarily it's you who's attending most of these?

MR. MATTHEW: Well, try.

Q In your opinion, are there too many engagement processes out there right now? And let's ask that just -- I realize that there's issues on this chart for Upper Columbia as well, but just focusing on Fraser and focusing on sockeye issues, are there too many engagement processes to attend to right now?

MR. MATTHEW: I would say for the capacity we have, myself, a biologist and a technician and one manager, for myself to attend to as much as needs to be done, I don't think there is the capacity

there to do it. So I would say many of the processes, there's repetitive information that is presented to us by DFO in terms of technical pre-season and post-season information. And at the IHPC, at various levels, you see a lot of the same data, a lot of the same people providing the same information so, yeah, I think there's too many processes going out there. There needs to be some form of streamlining.

Q I want to go back to the capacity issue. Could you give us a sense of how the capacity of the SFC to attend these meetings? You spoke about yourself and a biologist attending. How does you capacity compare with the capacity of other First Nations who may be invited to attend some of these processes?

MR. MATTHEW: A few other First Nations have biologists or are just now building them into their plans. My role is actually to work within these processes, consultation processes from various levels back to our community and try to coordinate the information and coordinate an effective response back in consultation, I guess. We do have a consultation protocol with Department of Fisheries and Oceans that we try to follow at least in the Interior. But for other First Nations, I don't believe there's many people such as myself that do the planning in between these processes and their communities, which is actually quite critical.

Q So in your opinion, when we're talking about capacity, you're not only talking about technical capacity and needing biologists, but also needing communications-type people who can communicate what's happening at these meetings back with leadership? I don't know if I'm using the right word. Correct me if I'm -- I should be referring to different types of people that would be needed to build this capacity.

MR. MATTHEW: Well, I think you need people that can interpret some of the technical and management information in the planning that's being put in front of us back to our communities and try to interpret to them what it might mean to them and try to elicit some kind of response from them in terms of how it might impact their fisheries or their management aspirations or interests.

Q And in terms of financial capacity, where, in your mind, should this be coming from? Should it be AAROM? AFS? Other sources?

MR. MATTHEW: Well, we use AAROM and AFS. And I would suggest that those are good sources to start with. I don't know that there's enough funding like that to cover off all the needs of all the First Nations on the Fraser but those are the ones we use. And I think the other parts of it are looking at the technical requirements, I don't really believe that we have enough technical capacity for First Nations on the Fraser that can look at the technical information and interpret it for us.

MS. PENCE: Okay. Getting back more directly to the IHPC, Mr. Lunn, could you please now pull up document 26 on the First Nations Coalition list?

Q Mr. Matthew, what I'm hoping you'll be able to speak to the Commissioner about is the type of feedback that you, on behalf of the SFC, provide at the IHPC process, the type of feedback you provide on the IFMP specifically?

MS. PENCE: From the first FNC list. Okay. While we're waiting for that maybe I'll just see if there's a different area I can move to. I don't know if I can ask you to do two things at once then, Mr. Lunn. Perhaps we could look at Exhibit 342 while we're trying to find the other.

Q In the meantime, what we're looking at is the Terms of Reference for the Integrated Salmon Harvest Planning Committee. And I wonder if we could just focus in on the mandate part. So Mr. Matthew, it says that:

> The IHPC is the primary contact for the Department for cross sectoral communication and advice and make recommendations on operational decisions related to salmon harvesting in the Pacific Region. The goal of the IHPC will be to ensure fishing plans are coordinated and integrated, identify potential conflicts, and if there are disputes, make recommendations for solutions if possible.

How effective, in your opinion, is the IHPC in meeting this goal of being a coordinated and

integrated approach to talking about fishing plans?

MR. MATTHEW: I don't think that we're that effective at it in terms of coordinating and integrating. People are speaking to the Integrated Harvest Management Plan while they're there and speaking to the parts of it that relate to them. The commercial and recreational sector and perhaps ourselves, First Nations, are speaking to it in terms of maybe issues but I think in total it's more or less piecemeal. And I haven't really seen that many conflicts in the IHPC for resolution or disputes. In my mind, people are going there and identifying concerns or interests related to their own sector. And I wouldn't go as far as saying lobbing DFO but putting those forward to advice to DFO and DFO's taking that advice from the group away and dealing with it as they will.

Q So would I be correct in characterizing what you've said as that there's still a missing link here in terms of understanding how all of these different interests are coordinated into one plan?

MR. MATTHEW: I would say that. We, as a group, do not all look at the IFMP and sign if off in terms of all approving of it and then all agreeing to all parts of it and sending it to the minister. For the record, we don't do that. I might have missed it. But anyways, I don't see that sort of coordination happening there.

MS. PENCE: Thanks. I understand that document 26 is here?

Q So this is a letter that's dated April 20th, 2009. And it says:

> Recommendations and Comments for the Pacific Region Integrated Fisheries Management Plan '09/'10.

And it's a letter that was drafted by you, is that right, Mr. Matthew?

MR. MATTHEW: That's correct.

MS. PENCE: If I could have this please marked as the next exhibit?

THE REGISTRAR: Exhibit 391.

EXHIBIT 391: Letter dated April 20, 2009, from Secwepemc Fisheries Commission to Jeff Grout

MS. PENCE:
Q And am I right in understanding that this is a good example of the type of letter that you would be sending on behalf of the SFC on an annual basis to provide your feedback on the content of the draft IFMP?
MR. MATTHEW: That's correct.
Q And if we could just scroll through a little bit. And I'd like to ask you to highlight to the Commissioner the types of issues that you bring forward at the IHPC through this letter.
MR. MATTHEW: That part's mainly the background but what we try to put forward are our communal harvest targets that our communities are putting together. And we go through a process with them and we look at pre-season harvest forecasts for sockeye and we look at outlooks for all the stocks or all the species and we attempt to develop a harvest target or harvest targets for those that are conservative in nature and we express those in the table there.

And we use these for negotiating our communal licences with DFO but for the purposes of the IHPC, we try to show that this is part of our harvest planning process. So that's the harvest target process. I haven't gone through it in great detail with the IHPC but they do get a copy of it. And I guess for each one of these parts, we try to put together a recommendation regarding our communal harvest targets. And I won't go through them but that's part of it. We expect that DFO will respond in full to each one of our recommendations in writing, as per our consultation protocol with them.
Q And do you get that kind of response?
MR. MATTHEW: We do get a response back in the pre-season from DFO.
Q And do you see specifically where these recommendations have been taken into account in the IFMP, the final IFMP that goes to the minister?
MR. MATTHEW: I would say we don't consistently get specific responses. We get responses that DFO's

policy is designed to address our concerns or their program is designed to address our concerns or I would say, no, we don't get specific responses for each one that's satisfactory to us, I would say.

Q Thank you. And just as a follow up, I remember from Tuesday you were saying that you hadn't seen fishing plans from other sectors and Dr. Kristianson suggested that perhaps the fishing plans from, for example, the recreational sector might be that that's already included in the draft IFMP. Am I right to understand that you're not seeing letters of this kind from the others who are attending the IHPC?

MR. MATTHEW: Well, not that I could recall, no.

Q So I just have one last area of questions and then I'll be sitting down. And this is on the Wild Salmon Policy. Given that we're speaking about pre-season processes like the IHPC and then moving into in-season processes, Mr. Matthew, can you explain to me from your perspective how the objectives of the Wild Salmon Policy, and what I mean by that is the conservation of the biodiversity of various CUs, making sure that none of them fall below the lower benchmarks into the red zone, how is this objective of the WSP being considered in these pre-seasons processes like the IHPC and IFMP process and in-season?

MR. MATTHEW: At this point, it's not clear to me as far as sockeye go. I imagine through the FRSSI process that DFO is attempting to do that. But the problem to me is it's really how will DFO manage through commercial and in-river fisheries harvest to meet those conservation objectives, as stated in the Wild Salmon Policy. Further, the biodiversity and the genetic objectives that are equally important to First Nations is one part of the problem. To me, that's not clear how they're going to do that. They haven't really described to First Nations much of that in the Wild Salmon Policy dialogues they've had. They've had dialogue sessions with us a couple of years ago. We haven't really heard much more about it.

So to me, that's really the challenge for DFO is how do they realign their management, their data collection, you know, in the marine and in-river fisheries to do that. And on top of that,

to not only meet those objectives but meet First Nations objectives in those same areas. How do they protect those stocks through marine, commercial and in-river fisheries to meet a conservation unit objective in a geographic area like the Thompson of which we talked about already? And so to me that's a challenge that's out there. And I believe First Nations want to be involved in that process and participate in some sort of a coordinated fashion.

Q My last question for this panel and for you, Mr. Matthew, is, what might we learn about sockeye management from how the Coho are managed in-season?

MR. MATTHEW: Well, what I've seen an attempt to do with Interior Fraser Coho is -- of course, Interior Fraser Coho are in a state of conservation so one of the ideas or management tacks that DFO has taken is to try to manage a number of Coho into a geographic area, which is up into the Upper Fraser. Above Hell's Gate is where sort of the boundary is for Interior Fraser Coho. They try to manage to about 30,000 or 25,000 Coho up into or above Hell's Gate.

And if they manage to that level, that will ensure that biological objectives or diversity objectives are met for several of the streams within the Upper Fraser areas. So what they are attempting to do is ensure that of that 25,000 that the majority of the stocks or streams will have a certain number of fish in them.

I believe it might be a thousand so that you maintain genetic and biodiversity objectives for a geographic area. And in my mind, for sockeye, I think that's the challenge is how do you manage a group of fish through all those fisheries back to a geographic area to meet the objectives of several CUs or groups of CUs within a watershed. So to me, that's the challenge and they've developed a bit of an idea how to do that with Coho.

MS. PENCE: Those are my questions for this panel.

MS. BAKER: Thank you. The next counsel is Cliff Prowse from the Province.

MR. PROWSE: Yes, so Mr. Commissioner, Cliff Prowse for the Province. And my questioning will be directed to Mr. Saito on the Integrated Salmon Dialogue

Forum to which reference was made the other day.

CROSS-EXAMINATION BY MR. PROWSE:

Q Mr. Saito, can you tell us in a nutshell how you think in light of your own experience in many forms of negotiation and other processes, how does the Integrated Salmon Dialogue Forum relate to that and why is it important? What is it that it can attempt to accomplish?

MR. SAITO: Well, as you stated -- if I could just check and see if my microphone is working. Is it working properly? Thank you. No, I have a microphone on my tie. I'm sorry, Mr. Prowse, again? I got distracted there. The question you had?

Q Just if you can tell the Commissioner why it's important for him to understand the Integrated Salmon Dialogue Forum and what you believe it can accomplish.

MR. SAITO: Okay. I'm sorry. Thank you. Well, what I believe the Integrated Salmon Dialogue Forum can accomplish and can address is the policy issues, the regional and perhaps longer-term issues that include, for example, the environmental and ecological and conservation issues that DFO is charged to make decisions upon. But the value and the importance of the Integrated Salmon Dialogue Forum is that they could make these decisions after all the parties had made every reasonable effort to achieve a consensus rather than seeking different input from individual sources and then having to resort to the responsibility or the action of being the ultimate decision-maker. By virtue of making every attempt to hear from all parties and develop a consensus and, hence, a single output or a single product upon which the minister might be asked to make a decision, is the value and the virtue of the Integrated Salmon Dialogue Forum.

Q And one of the questions that you were asked on Tuesday had to do with the Victoria, I'll call it, recommendation about a policy advisory committee. So what do you say about the desirability of having such a standing policy advisory committee?

MR. SAITO: Well, the importance of having a standing advisory process like that is the ability of

issues to rise or to be raised to a process where a fair hearing can be made with respect to, should this particular issue be resolved and how it should be resolved?

Q All right. And why having a standing committee? What does that enable the policy advisory committee to do that's not done now by DFO?

MR. SAITO: The ability is to ensure that the input or the advice or the considerations take place in a cross-sectoral or multi-sectoral process.

Q All right. Thank you. Now, Mr. Saito, the other day --

MR. PROWSE: Mr. Lunn, could you please pull up the document on Canada's list for this topic, Tab Number 1?

Q Yes, Mr. Saito, the other day, you made reference to what you considered to be the equivalent of the terms of reference of the Integrated Salmon Dialogue Forum. Is this the document to which you were referring?

MR. SAITO: It is.

Q And you and the other participants between January 2007 through March and April of 2007 all signed off on this document, did you?

MR. SAITO: There was a consensus to support this document, yes.

MR. PROWSE: All right. Mr. Commissioner, might that be the next exhibit?

THE REGISTRAR: Exhibit Number 392.

EXHIBIT 392: Framework for the Integrated Salmon Dialogue Forum

MR. PROWSE:

Q Mr. Saito, in the brief time that I hope to spend on this topic, I'm just going to highlight with you a few of the pertinent parts of this document. First of all, you referred the other day to Glenn Sigurdson and Barry Stuart. They are two of the persons sort of leading as facilitators of the ISDF, are they?

MR. SAITO: They were and are.

Q And Mr. Sigurdson is a leading expert on complex multi-party challenges whose work has been acknowledged in the publication of the program negotiation at Harvard Law School, "Public Dispute Mediators and Profiles of 15 Distinguished

Careers"; is that right?
MR. SAITO: That's correct.
Q And he's also been involved as the president of the Society of Professionals in Dispute Resolution?
MR. SAITO: Yes.
Q And he's also worked in the Skeena Watershed, to your knowledge?
MR. SAITO: Yes, he has.
Q And Mr. Stuart, amongst his other qualifications, he was a judge in the Yukon, was he?
MR. SAITO: My understanding is that he was Chief Justice of the Yukon.
Q And he also was a chief negotiator for the Yukon Land Claims. He negotiated the Umbrella Lands Claim Agreement that enabled 11 First Nations to conclude their self-government and land claims agreements; is that right?
MR. SAITO: To my understanding, yes.
Q Now, the forum --
MR. PROWSE: If you could turn to page 2, Mr. Lunn?
Q The forum, first of all, has a heading at the top of page 2, "What is the Forum"? Do you see that, Mr. Saito?
MR. SAITO: Yes, I do.
Q And highlighting it then, really, the words are "collaborative" in Item (a):

> ...in ways that respects the Wild Salmon Policy and serves both people and salmon.

So that was one of the defining attributes that everybody signed onto when they created the ISDF?
MR. SAITO: That's correct.
Q And the second is that:

> Participants have agreed to make best efforts to work through their respective processes, agencies and organizations to give effect to any consensus reached in the forum, and to address any differences that emerge.

So that was agreed on early on?
MR. SAITO: Yes, it was.
Q And you, in particular, worked through on something to do with the Monitoring and Compliance Panel that we'll discuss a little bit later. But

that's an example of a successful process that did these things; is that right?

MR. SAITO: That's one example, yes.

Q In terms of the goals of the forum, goal (d), also on page 2, talks about:

> Building collaborative relationships, networks and partnerships through which different sectors will have an opportunity to express and advance concerns and interests, and explore how they might best create mutual value.

So that was one of the goals?

MR. SAITO: Yes.

Q And then item (f) talked about working at two levels, a "high beam" and a "low beam". And can you just highlight your understanding of those two things?

MR. SAITO: Well, the high beam was code or a description of attempting to work on or just have discussions regarding the longer-term with the broader public policy type of issues and the low beam was to put into practice perhaps some of the possible solutions that were or are an outcome of those sorts of discussions.

Q All right. And I think I'll just note, but without asking a question, that on page 3, there's a reference to the considerations, one of which is "certainty of access". And that was a reference to attempts to deal with, amongst other things, the question of a quota that Dr. Kristianson was talking about the other day was that was one of the considerations that was in mind; is that right?

MR. SAITO: In my estimation, yes.

Q And then also on that page, there's a heading "Credible Information". And that, as I understand it, was key to the M&C panel in which you were involved. Can you explain to the Commissioner why credible information was important in that context?

MR. SAITO: Well, very briefly, one of the concerns that many of the participants to the process had was the lack of confidence that parties had with each other's numbers and other information associated with each other's fisheries. So part

of the discussions, there's a fairly lengthy history to the evolution of this but basically, the bottom line here is that there was a universal or a consensus that there was a concern with respect to confidence in each other's information and how that information is generated. And that was seen to be a particularly key aspect and one that perhaps the process could work on towards some sort of logical conclusion.

Q On page 5, there's a reference to self-design as being one of the principles that will inform and guide the work of the forum, on the upper right-hand side. Again, on the M&C panel, was that part of the process that you used?

MR. SAITO: It was in the sense that the question was asked and then we basically developed a process to actually begin to start taking apart that question and providing some sense with respect to the answers.

Q And I understand that on January 18th and 19th of this year, you went to a session led by the ISDF on "Building Our Capacity to Work Better Together - A Pilot Program in the Lower Fraser River". Did you do that, sir?

MR. SAITO: I did.

Q And that again was facilitated by Mr. Sigurdson and Mr. Stuart; is that correct?

MR. SAITO: That's right. In addition to other additional colleagues as well.

Q Right. And that, in fact, has got a second session that's coming up on the 15th and 16th of February?

MR. SAITO: That's correct.

Q And all of that tried to talk about the disciplines of self-design that are part of this kind of a process; is that correct?

MR. SAITO: That's correct.

Q And with respect to connection to existing laws and processes, that's dealt with on page 6 of the framework document? "How Does it Relate to Existing Processes" is the topic that's dealt with?

MR. SAITO: That's correct.

Q And item (b) simply sets out that rights and titles for First Nations are:

> ...entirely separate and independent from the

Forum, but will be recognized and respected.

So that was agreed on by the participants, including the First Nations' participants at that forum and all of the participants, is that right, as part of this framework consensus?

MR. SAITO: Yes, there was consensus.

Q And that has continued to be one of the precepts and principles that has been followed?

MR. SAITO: Yes.

Q And at page 7, reference is made to "Who Should Be Involved and How?" And at item (b), the participating sectors are identified as the First Nations, the Commercial Sector, the Recreational Sector, the Department of Fisheries and Oceans, the Province of British Columbia and the Conservation Sector. And so all of those sectors were participants in this document?

MR. SAITO: Yes, they were.

Q And there's continued to be different representatives but different people from the sectors have continued to participate throughout until now; is that right?

MR. SAITO: Yes.

Q With respect to the M&C, Monitoring and Compliance documents, called "Charting Our Course", you were a participant in that panel that produced that document?

MR. SAITO: Yes, I was. And I had a fair degree of involvement in the actual construction of the document as well.

Q And I understand that Peter Sakich, who will be one of the people attending on the second half of this panel, was also involved in that process?

MR. SAITO: Yes, he was. And he is the current chair of a Monitoring and Compliance panel.

Q And from DFO, Colin Masson?

MR. SAITO: That's correct.

Q And from NGO, Craig Orr was involved in your panel, was he?

MR. SAITO: Yes, Mr. Orr was the first chair of the Monitoring and Compliance panel.

Q And I may pronounce the names wrong but from the First Nations were Mark Duiven and Ken Malloway?

MR. SAITO: That's correct.

Q And they both were active participants in this document?

MR. SAITO: Yes, they were.
Q And the panel chairs for this particular panel were historically Craig Orr in 2009, Ken Malloway December 2009 to March 2010, and then Peter Sakich from April 2010 to March 2011?
MR. SAITO: That's correct.
Q And how would you summarize the importance of this document?
MR. SAITO: I would summarize this document as a tangible step towards addressing that issue that was raised earlier with respect to the item of credible information. And the participants, and I might note that the recreational fishing sector is also represented in this particular panel, actively and effectively represented, have worked together to develop a document that provides the assessment of the state of fishery monitoring and catch reporting in the Pacific Fisheries and some suggestions and thoughts as to how progress might be made towards addressing the lack of confidence that the sector would have and First Nations might have with respect to how information is gathered and portrayed and communicated to each other.
Q And this document, "A Draft for Discussion", was produced in October of 2010?
MR. SAITO: Yes, there were several drafts that were circulated around, distributed and then it was finalized in October of 2010.
Q And DFO produced a document in November of 2010 also dealing with -- there was an overlap between the two documents?
MR. SAITO: There was a significant amount of overlap between the two documents. The Monitoring and Compliance panel published a document titled "Fishery Monitoring in the Pacific Region - Charting Our Course". And the Department of Fisheries and Oceans produced a document titled "Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Region" in December -- or November, I should say, of 2010. There is a significant amount of similarity and a lot of the issues, the mission statements, the goals and objectives and principles are mirrored in both documents.
Q And did you and Mr. Sakich and Mr. Masson attend at the IHPC in about the month of, as I understand it, November of 2010?

MR. SAITO: If I recall correctly, it was November or December. I can't remember the exact date but yes, a presentation was made to the Integrated Harvest Planning Committee to inform the committee of the progress made towards his work.
Q And the IHPC, is it able to address policy issues?
MR. SAITO: In my opinion, the IHPC is not able to address policy issues. It is not mandated to do so.
MR. PROWSE: Mr. Commissioner, I've got my eye on the time. I realize I'm over time. I would like to, with the consent of the parties, perhaps we can mark the Capacity Workshop documents later, either at the beginning of the next session or some convenient time. I think there's consent to that by the other participants. And having done that, I will conclude my examination. The suggestion is we mark those now, Mr. Commissioner. Mr. Lunn, those are the documents that were circulated by Ms. Tam, were four modules. Those are them.
MR. LUNN: Do you want to mark each one?
MR. PROWSE: I suggest we just mark them as one exhibit or whatever's mechanically appropriate.
THE REGISTRAR: Module 1 of that document will be 393.

EXHIBIT 393: Module 1

THE REGISTRAR: Module Number 2 will be 393-A.

EXHIBIT 393-A: Module 2

THE REGISTRAR: Module 3 will be 393-B.

EXHIBIT 393-B: Module 3

THE REGISTRAR: And Module 4 will be 393-C.

EXHIBIT 393-C: Module 4

MR. PROWSE: Thank you, Mr. Commissioner.
THE COMMISSIONER: Mr. Prowse, because I don't have all these documents, the document you referred to as the DFO document, is that one of these documents? You referred to the --
MR. PROWSE: No, I haven't marked the two M&C documents that have been referred to, Mr. Commissioner.
THE COMMISSIONER: But that's what you were referring

to. You were referring to a DFO November and December --
MR. PROWSE: Yes, the document that Mr. Saito -- that was presented with Mr. Saito, there were two different documents, neither of which have been marked. Perhaps what I'll do is I'll just read the titles of the documents into the record and I can sort that out with my friends. So the document produced by the Integrated Salmon Dialogue Forum is called "Fishery Monitoring in the Pacific Region - Charting Our Course - A Strategy for Improved Confidence and Support". And this is a draft report for discussion October 2010.
Q So that's the document that you were involved in with the ISDF, Mr. Saito?
MR. SAITO: With the Monitoring and Compliance panel, yes.
MR. PROWSE: And the --
THE REGISTRAR: Did you wish that one marked?
MR. PROWSE: No, it hasn't been marked, Mr. Commissioner. And I'll just identify the second document for the record and then I'll talk to my friends about getting them marked. The second document is called "Strategic Framework for Fishery Monitoring and Catch Reporting in the Pacific Fisheries - Draft - A Discussion Paper - Fisheries and Oceans Canada, Pacific Region, Fisheries and Aquaculture Management November 2010".
Q Is that correct, Mr. Saito?
MR. SAITO: That is correct.
MR. PROWSE: All right.
THE COMMISSIONER: And the ones that you did mark, the modules, the authors of the modules?
MR. PROWSE: I'm sorry.
Q The authors of those modules were Mr. Sigurdson, Mr. Stuart and their companion, Ms. Jessica Bratty, is that correct, Mr. Saito?
MR. SAITO: That's correct.
THE COMMISSIONER: Okay. Thank you.
MS. BAKER: Mr. Commissioner, we have still Mr. Rosenbloom to cross-examine these witnesses so we'll have to schedule a time to have them come back but I can advise that Mr. Matthew will not be required by Mr. Rosenbloom. So if we could excuse him and thank him for his participation, I'd

appreciate that. And then we'll have to find some time, unfortunately, for the other two to come back.

THE COMMISSIONER: Thank you very much, Mr. Matthew. I appreciate your assistance.

MR. MATTHEW: Thank you.

THE COMMISSIONER: Very well. Thank you, then.

THE REGISTRAR: The hearing is now adjourned for the day and will resume at ten o'clock tomorrow (sic) morning.

(PROCEEDINGS ADJOURNED TO FEBRUARY 7, 2011, AT 10:00 A.M.)