COMMISSION OF INQUIRY INTO THE DECLINE OF SOCKEYE SALMON IN THE FRASER RIVER

Submissions of the Participants:

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I. INTRODUCTION ON PROCESS AND EVIDENTIARY GAPS

1. In broad terms, this honourable Commission was charged with determining the causes of the collapse of the Fraser River sockeye fishery and to make recommendations to rebuild the fishery and encourage broad cooperation among stakeholders.

2. To assist the Commission, this Participant did not object to a single document submitted by any party concerning the fishing practices of the fishermen represented by this participant. This Participant holds that its fishermen had nothing to hide from the Commissioner, but if any of its fishing practices could not withstand thorough review by the Commission, any such practice must change. Rather than hide improper practices in a plethora of technical objections, this Participant, without reservation, willingly and completely opened every aspect of its fishery to Commission scrutiny.

3. The Area E and Coalition fishermen represented by this participant had repeatedly called for this inquiry since 1992. Their call reflected the respect held in the public commercial fishing sector for the judiciary. Fishermen represented by this participant trusted that a judicial process would be free of the political interference, bias, conflicts of interest and the favouritism that has marked the management of the fishery for at least two decades.

4. They were disappointed when the Commission retained staff and contractors, such as chief Commission scientist David Levy, who publicly opposes the coastal commercial fishery in favour of terminal fisheries for his upriver aboriginal clients. They were disappointed by Commission contractors such as Karl English and Mike Staley who are employed by parties in this Commission thus lack the independence Area E and Coalition fishermen expected to find in a judicial inquiry.

5. They were disappointed with eleven days of hearings and fourteen days of witnesses on the *Wild Salmon Policy* with only one witness who could be considered critical of the policy. There are good reasons to be critical of the WSP and there are witnesses inside and outside of DFO who oppose the policy on solid biological, economic and fishery management grounds, but the Commission only heard one side of the story.

6. The following submission is submitted in the promise offered by the honourable Cohen Commission.

II. "COMPLEXITY" AND "UNCERTAINTY" IN FISHERY MANAGEMENT

7. A reoccurring subject in this Commission has been the "uncertainties" and "complexities" of managing Fraser River sockeye. This Commission should treat all such claims as suspect and ask three questions:

a. What is the *specific* "uncertainty" or "complexity"?

b. Was the specific factor experienced in the past and, if so, how was it dealt with?

c. Is the specific factor a DFO-induced policy choice?

2. The current generation of DFO fishery managers operate in a gifted management environment with a level of certainty not enjoyed by any previous generation. There are new problems, but DFO is the primary source of these problems.

3. Claims that "uncertainty" and "complexity" overwhelms fishery managers in 2011 can be easily be determined by reviewing the work of the IPSFC (International Pacific Salmon Fisheries Commission). The IPFSC was founded in 1937 and immediately began preparations for its assumption of regulatory control over the Fraser River sockeye fishery in 1946.[1] It managed the fishery until 1985 until the Pacific Salmon Commission was formed and DFO (Department of Fisheries) assumed effective control of the fishery.

4. The table below compares the daunting management task facing the IPSFC in 1937 with that of DFO fishery managers in 2011:

[1] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at pp. 50-51

COMPARISON OF UNCERTAINTIES AND COMPLEXITIES IN MANAGING FRASER RIVER SOCKEYE 1937 versus 2011			
1937 FISHERY	**CITE**	**2011 FISHERY**	**CITE**
Status of Technology			
Difficult transportation to spawning areas	Ex75/p87	Paved highways, helicopters, planes, zodiacs, research vessels, 4-wheel drives, teleconferencing, cell phones	Judicial notice
Roads often impassable	Ex75/p86		
Fish tickets often copied by hand	Ex75/p88	Photocopiers, word processors, scanners, email, teleconferencing, computers and computer models	Judicial notice
Status of Science			
Migration routes unknown	Ex75/p60	Migration routes well known	Ex603/p13
Migration periods unknown	Ex75/p62	Migration times well known	Ex603/pp23..
No means to identify individual runs	Ex75/p57	Run timing well-established	Ex603/pp23..
No means to determine run timing	Ex75/p57	Run identification well-established	Ex603/pp28..
Life of eggs, fry, fingerlings, smolts and adults in fresh water unknown	Ex75/p57	Fresh water biology generally well-understood	Ex 1
Status of Stock Assessment			
No program for counting sockeye catches by gear, area or country	Ex75/p81	Catch reporting programs well established	Ex603/pp20..
No means to accurately enumerate fish on the spawning grounds	Ex75/p57	Spawning ground enumeration programs well established	Ex603/pp32..
No test fisheries		Systematic test fishing began in 1958 – more than 50 years of data available	Ex75/p118
No count of fish heading upriver at Mission		Daily upstream migration at Mission began in 1972 by echo sounder, test fisheries and stock identification which have provided almost 40 years of data	Ex75/p121 Ex 72/p2
No tagging program until validity proved at Cultus in 1938 and then applied to the rest of the Fraser.	Ex 75/p76	Seventy years of tagging data since 1938	
Status of the Fishing Fleet			
Commercial fishing 5-6 days per week	Ex75/p110	All-citizens commercial fishing rarely more than one day per week	
Unlimited entry into the fishery	Grout	Strict limits on the number of vessels	
Up to 2,300 US and Canadian gillnetters fishing	Ex75/p38	Canadian Fraser gillnetters reduced from 1,500 pre-1996 to less than 400 in 2011	
Seine fleet unlimited in size until 1968 – about 600 pre-1996		About 600 seiners pre-1996, less than 150 since 1998	
Troll fleet unlimited and varying annually in size		More than 2,000 trollers pre-1996, less than 500 post-1998	
Status of the Fraser River			
Uncertainty whether Hells Gate slides or overfishing decimated the run	Ex75/p33 Ex75/p35...	Major blockages removed or fish ladders constructed – fish passage dramatically improved since 1937	Ex75/pp.89 -105
Blockages to fish passage at Hells Gate Bridge River, Farwell Canyon, Yale Rapids	Ex75/p89..		

5. Without even a photocopier for the first couple of decades, IPFSC fishery managers rebuilt the Fraser River sockeye run to near historical highs while maintaining a viable

commercial fishery. During the 40 years (1946 to 1985) that the IPFSC[2] regulated the Fraser sockeye fishery, the coastal commercial fishery harvested an average of 4.4 million sockeye annually.

6. The results of the IPFSC rebuilding program are shown below. Given its excellent performance, it is unsurprising that IPFSC managers earned the respect of fishermen and fishery managers around the world.

The Restoration of Fraser River Sockeye: 1937 to 1985[3]		
	Four Year Total Escapement	
Spawning Area	**1938-1941**	**1982-1985**
Lower Fraser	248,889	98,661
Harrison-Lillooet	222,682	824,462
Seton-Anderson	5,945	81,837
Early South Thompson	50,942	143,465
Late South Thompson	840,841	3,292,274
North Thompson	19,707	50,133
Chilcotin	737,136	1,015,307
Quesnel	1,075	1,387,527
Nechako	22,336	350,444
Early Stuart	15,520	308,212
Late Stuart	10,572	294,874
Bowron	15,554	24,954
Total Escapement	**2,191,199**	**7,872,150**

Note: In some years between 1938 and 1941, certain individual runs within a stock grouping may not have been counted. See the Early Stuart table below for an example of how this may affect overall counts.

7. The rebuilding is all the more impressive when considering the near-extinct status of many runs, both large and small, productive and unproductive. The table below shows the restoration and solid increase in biological diversity of the Early Stuart run.

[2] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 413
[3] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at pp. 381-382 and 396-397

The Restoration of Early Stuart Sockeye: 1937 to 1985[4]										
	1938-1941					1982-1985				
Stock	**1938**	**1939**	**1940**	**1941**	**Total**	**1982**	**1983**	**1984**	**1985**	**Total**
Ankwill	n.o.	n.o.	n.o.	25	25	46	44	99	12,012	12,201
Driftwood	0	p	n.o.	25	25	29	P	n.o.	93,959	93,988
Forfar	4,694	160	112	1,776	6,742	676	3,591	6,848	19,433	30,548
Gluske	n.o.	0	0	597	597	452	3,781	6,943	17,381	128,557
Kynoch	2,835	806	219	2,477	6,337	1,170	7,822	16,933	20,347	46,272
Narrows	115	9	0	196	320	78	895	1,568	4,209	6,750
Rossette	18	0	0	1,193	1,211	1,300	3,304	8,147	15,704	28,455
Misc.	9	4	4	246	263	809	4,437	4,709	51,486	61,441
Total					**15,520**					**308,212**

Note: "n.o." means "no observation" and "p" means fish observed but not counted

8. Certain IPFSC actions were key to rebuilding Early Stuart sockeye including:

   a. The IPSFC closed *all* fisheries on *all* early-run stocks above Hells Gate. In 1946, fishing in the Fraser River did not start until August 8 and "A strong message had been sent to the industry… The 1946 closure in the early season was followed even more stringently in 1947. The commercial fishery was not opened until August 18 in both countries and the Fraser River was not opened until September 8." The closures in the early part of the season were maintained for four years;[5]

   b. In 1955, the Early Stuart run did not make it to the spawning grounds in sufficient numbers due to a river blockage at Yale. Yale fishways were designed, constructed and in full operation by May 1957.[6]

9. Wise management combined with new fishways at Hells Gate and Yale "provided access to spawning grounds for the early Stuart race that never existed historically. This race now travels easily among the best migration path ever available."[7] This is but one inheritance passed by the IPFSC to DFO's current group of fishery managers.

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[4] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at pp. 381-382 and 396-397
[5] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at pp. 110-111
[6] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 98
[7] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 103

10. In addition to tripling escapement, the IPFSC also achieved large gains *in total run size.* For example:

a. in 1973, 1.4 million Early Stuart sockeye returned and a similar number again in 1977. These were the largest returns on record dating back to 1900 and very likely the largest ever to the system;[8]

b. from less than 1,000 spawners in 1941 of a total run of about 5,000 fish - a race on the edge of extinction – the total return of Horsefly River sockeye in 1985 was 9.6 million sockeye;[9]

c. in 1941, the Mitchell River run was only 200 fish of which 41 arrived at the river. In1981, escapement was 66,000 fish from an estimated total run of about 260,000 fish. In 1985, the run totaled about 1.5 million sockeye of which 205,000 reached the spawning grounds;[10]

11. In 1937, the IPFSC was faced with a management task far more difficult than any DFO manager in the past twenty years. Rather than being beset by uncertainties and complexities, no group of fishery managers in the history of the Fraser sockeye fishery have been blessed with such an advantageous management environment as the current generation. There is simply no merit to the complaint that the collapse of the Fraser River sockeye fishery stems from "uncertainties" and "complexities".

12. A key question for this Commission is why did DFO abandon a fisheries management model that was so successful.

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[8] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 285
[9] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 285
[10] Exhibit 75, *Restoring Fraser River Sockeye Salmon,* at p. 285

III. HISTORICAL VERSUS CURRENT METHODS OF PROBLEM SOLVING

13. The three major problems confound the management of Fraser River sockeye; (1), Early Stuart sockeye; (2), early-entry of late-run sockeye, and (3), Cultus Lake sockeye. It is useful to examine how the IPFSC and DFO dealt with each of these problems.

A. Early Stuart Sockeye

14. The ES (Early Stuart) run is the first sockeye run to enter the Fraser and it does not co-migrate with any other sockeye stock though it co-migrates with early chinook stocks . Harvest of ES can be easily be avoided by not having any targeted fisheries on the stock.

15. As noted above, when the IPFSC faced low numbers of ES sockeye in 1946, it closed *all* fisheries and built fishways to improve passage conditions in the Fraser River. DFO has not taken the same approach to the post-1992 decline despite a vast increase in in-river fishing effort compared to 1946.

16. The first two columns of table below[11] (*italics*) shows ES cyclical escapement in the first and last years of IPFSC operation. The remaining columns show escapement during DFO's post-1985 management regime:

2008 Cycle	*1940*	*1984*	1988	1992	1996	2000	2004	2008
Escapement	*335*	*45,247*	179,807	65,617	87,5569	89,747	9,281	29,867

2009 Cycle	*1941*	*1985*	1989	1993	1997	2001	2005	2009
Escapement	*6,535*	*234,531*	387,799	687,967	265,697	170,906	98,537	45,297

2010 Cycle	*1938*	*1982*	1986	1990	1994	1998	2002	2006	2010
Escapement	*7,671*	*4,560*	28,584	97,035	29,831	30,592	24,637	35,816	n.a.

2011 Cycle	*1939*	*1983*	1987	1991	1995	1999	2003	2007	2011
Escapement	*979*	*23,874*	148,194	141,119	122,710	24,532	13,166	5,347	n.a.

[11] Escapement for the IPFSC years is at pp. 382-397 of Ex. 75, *Restoring Fraser River Salmon*

17. The first step in determining the reason/reasons for the post-1992 collapse is to determine the annual fishing effort and legal and illegal harvest. If there was no fishing, then the reasons for the decline of the stock lay elsewhere.

18. Unfortunately, there is *serious and fundamental gap* in the Commission evidentiary record that makes this task impossible. Despite repeated requests from this participant, there is no record before the Commission to determine whether overfishing is responsible for the collapse of the ES or any other run. This critical gap in evidence prevents the Commission from providing a full answer to two critical questions:

a. What was the legal and illegal directed harvest of Early Stuart sockeye on an annual basis, if any, since the decline began?

b. If there was a harvest, on an annual basis, who caught the fish?

19. Part of the post-1992 ES history can be found in various reports and court decisions such as the Provincial Court of BC ruling in *R. v. Aleck et al*, 2000 BCPC 0177. In *Alec,* at paras. 11& 12, the learned MacDonald PCJ sets out the escapement goal on ES sockeye post-1985:

> At the international level, a Treaty was signed in June 1999 between Canada and the United States covering the sharing of Fraser river sockeye over the next 12 years. The Pacific Salmon Treaty signed in 1985 provided that each country would benefit from enhancement of its own fishery. Canada then embarked on a rebuilding plan for Fraser river sockeye. The plan was to increase escapement goals and increase production over a 20-24 year period and then evaluate the results. Escapements were to be increased in gradual progressive amounts and was not to have a huge impact on fishing. The Treaty obligates Canada to increase the production of Early Stuart sockeye to a maximum escapement goal of 260,000 fish by the end of the 24 year plan.
>
> The 260,000 figure as a maximum takes into account various factors including the area of the spawning grounds, the size of the lakes that Early Stuart rear in for one year, how much food is available, marine factors and historical production.

20. In contrast to the coherent escapement goal described by MacDonald PCJ, senior DFO official Barry Rosenberger testified before this Commission about DFO's current escapement policy on Early Stuart sockeye:

> Q Okay. And what's our spawner goal for that overall?
>
> MR. ROSENBERGER: We don't have a specific goal by each of the systems. That's part of the work that we're undertaking right now with the Wild Salmon Policy establishing lower reference points and upper reference points.
>
> Q And what's the upper reference point on the good year?
>
> MR. ROSENBERGER: We don't have those established at this point.

21. Equally troublesome, as further noted by MacDonald PCJ in *Aleck* at para. 15 was the low level at which aboriginal fishing would be authorized on the Early Stuart run::

> As part of the fishing plan, DFO also considered 66,000 returning Early Stuart sockeye as the floor figure below which no fishing would be allowed. DFO biologists believe that allowing any fishing with a run size that small could cause long-term harm to the stock. In fact, the 66,000 figure was established in 1996 after consultation with many of the Indian Bands on the Fraser river and in fact the consent of many Bands (although not the Cheam Band)

22. Even more troublesome was that certain aboriginal interests wanted to fish on a run of much less than 66,000 fish. MacDonald PCJ wrote at para. 26:

> ... the Cheam disagreed with DFOs definition of conservation. DFO believed that conservation included the rebuilding of stocks (which they were required to do under the Pacific Salmon Treaty) with the goal of maximizing the resource for the benefit of all users including Aboriginal users. The Cheam Band's view was that as long as there were some fish returning to the grounds, there was not a conservation concern. As a result of that belief, the Cheam Band believed that the DFO floor figure of 66,000 fish, agreed to by 50 - 60 Bands in 1996, was too high. (emphasis in original)

23. In aid of achieving the former 260,000 maximum escapement goal and the yet to be determined current goal, the public commercial sector has *not* fished ES sockeye for 18 of the last 20 years.[12] Over-fishing by the public commercial fishing sector is not the cause of the decline of Early Stuart sockeye. There was, however, recreational and aboriginal harvesting in at least some of the years post-1990. In 1992, aboriginal harvesting in the non-tidal parts of the Lower Fraser was described by Peter Pearse in *Managing Salmon in the Fraser*[13] as:

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[12] Transcript, Rosenberger, B., July 5/11 p. 30 L27; Grout J., p108 L26; Jan 27/11, LaPointe M., p35 L21 (Note: Rosenberger is incorrect – the public commercial sector fished E.S. sockeye in 1993 and 1997 – see Fraser Panel reports for 1994 and 1995)

[13] Ex. 729, Pearse, P., *Managing Salmon in the Fraser*, p. 25

> On the upper main stem of the river, especially in the canyon, fishing was also extraordinarily intense. Not only were there more fishermen and nets, but fishing, which had traditionally been limited to four days per week in previous years, was almost continuous, unregulated and uncontrolled in 1992.

24. In 1999, in *Aleck*, MacDonald PCJ held that the Cheam, like other aboriginal groups, were eligible for limited dry rack or ceremonial licenses for ES sockeye, but the Cheam fished hard anyway (paras. 28-29):

> When the Cheam Band was advised by DFO that there would be no openings allowed for the Cheam Band to fish for Early Stuart, the Cheam Band ignored that closure. Instead, the Cheam Band led by Chief June Quipp, continued to fish for Early Stuart sockeye between July 9 and 25, 1999. Chief Quipp stated that, after conservation concerns, if anyone is allowed to fish then the Cheam are entitled to fish. Chief Quipp further stated that the Band position is that the Cheam own the fish, rather than merely having a constitutionally protected Aboriginal right to fish. Chief Quipp agreed that the Cheam Band fishing committee, decided in 1999 when and how long they would fish and in fact notices to Band members were posted, advising them when there would be openings to fish for Early Stuart.
>
> Chief Quipp said that between July 9 and July 24, the Cheam Band caught about 1,400 Early Stuart and Early Summer sockeye. However, I believe that figure is in considerable doubt bearing in mind that Chief Quipp also said that she had no idea how many chinook salmon the Band caught and that they keep no statistics on how many are caught nor do they report their catch to the DFO

25. In 1999, only 24,532 Early Stuart made it to the spawning grounds.

26. In a similar case, this time dealing with the year 2000 ES run, the learned Jardine PCJ in *R. v. Douglas*[14] noted recreational and aboriginal marine harvests on the stock at para. 50:

> The brunt of the conservation measures was obviously borne by the sports and commercial fisheries, which, combined, caught a total of 16 Early Stuarts in the in-river recreational fishery. The DFO estimated a catch of 100 for the marine fishery from July 4 to July 9, 2000. First Nations outside the Fraser River were estimated to have caught 100. Sockeye test fisheries were estimated between a catch of 9,100 to 11,000 Early Stuarts.

[14] *R. v. Douglas* et al, PCBC File No. 125032-2; upheld on appeal at *R. v. Douglas* 2007 BCCA 265

27. With respect to the illegal Cheam fishery on the ES run, Jardine PCJ held at para. 50:

> The end of season estimates left approximately 70,000 Early Stuarts as missing. DFO could not explain where they disappeared. The Court was unable to determine how many fish were caught by the Cheam but there was likely a substantial number bearing in mind that the Cheam are traditionally a fishing people and have a particularly strong and effective fishing fleet. There is no question that the Cheam Band, fishing with gillnets, either on weekends or in some cases seven days a week during the closed time, would harvest a substantial number of Early Stuarts. In addition, Mr. Quipp testified he uses a drift net because it is more efficient and enables him to catch more fish in a shorter time. (emphasis added)

28. Early Stuart escapement in the year 2000 was only 89,747 sockeye, almost a 50% drop from the previous cycle.

29. In 2004, the all-citizens commercial fishery did not fish ES sockeye, but 36,000 were caught in legal recreational and aboriginal fisheries. [15] At the end of the season, ES escapement was 90% below the target and the lowest on record since 1972.[16] In 2004, Brian Williams, the former Chief justice of the BC Supreme Court, was retained by DFO to prepare a report into the 2004 fishery.[17] At p. 34, Williams quoted June Quipp, an elder and former chief of the Cheam Band:

> June Quipp explained that in her view of the law, the Cheam have every right to catch and sell all the fish they want by any method they choose. "Sparrow says we can fish any way we are accustomed to fishing whether it be contemporary or historical, and we do..." She went on to say, I'll speak for myself. If I get the chance to sell fish I do. And if you look at food, social and ceremonial purposes, then I think you better start defining social. Because a lot of times when...they put that out that, you know, it came out in Sparrow, that social means economic needs...so I do agree that, yes, if I have the opportunity to sell fish....

30. Further information on ES harvesting is in each *Annual Report of the Fraser River Panel.* Unfortunately, only the 2001, 2002, 2004 and 2005 reports are in evidence, but in each of these years DFO allowed ES recreational and aboriginal fisheries.[18] Given the minute recreational and aboriginal marine harvests of ES sockeye, as cited in the decisions of MacDonald and Jardine PCJs, it is apparent that neither group targets ES sockeye.

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[15] Ex. 603, *Annual Report of the Fraser River Panel,* pp. 7
[16] Ex. 603, *Annual Report of the Fraser River Panel,* pp. 31 & Ex. 75, *Restoring Fraser River Salmon*, pp. 393-397
[17] Exhibit 606, *2004 Southern Salmon Fishery Post-Season Review - Part One-Fraser River Sockeye Report*, p. 34
[18] See the *Annual Report of the Fraser River Panel*: for 2005 see Ex. 74 at p. 27; for 2004 see Ex. 603 at pp. 7 & 31; for 2002 see Ex. 70 at p. 6 & 31; for 2001 see Ex. 602 at p. 7 & 38

31. The over fishing of Early Stuart sockeye rests solely with in-river aboriginal fishing interests. The "mixed stock" coastal commercial fishery is unequivocally *not* responsible for the decline. The Early Stuart run will not be restored by the *Wild Salmon Policy,* share based fisheries in the coastal commercial fleet or terminal fisheries.

B. Early Entry of Late Run Sockeye

32. DFO's primary response to the problem of early entry late-run sockeye was to close coastal commercial fisheries.[19] In imposing the closures, DFO ignored previous IPFSC practices and the expert advice of Jim Woodey, the chief biologist of the PSC (Pacific Salmon Commission). Woodey's advice was to harvest the early-entry fish because they would die without spawning and the stock could be damaged by over-escapement.[20]

33. Woodey's recommendation was overruled by DFO Fishery Managers such as Jeff Grout who testified that:

> Q. Now, Jim Woodey, in his testimony, said that in 2002 there was a lengthy dispute about how to deal with the early entry of Late run sockeye. He said that DFO was advised by himself and other people in the industry that one way to deal with the problem was to let Area E crop the early entry fish, because the vast majority of them would die before they spawned. You were in fisheries management at that time. Do you remember any of those discussions?
>
> A Yes, I do.
>
> Q And why didn't DFO take Mr. Woodey's advice?
>
> A Well, that was back when we were really coming to grips with the sort of problems we had in terms of early entry of Fraser sockeye into the Fraser River. There was certainly some evidence to suggest that some of these early entry fish may not survive to spawn, but there was no evidence that they were all not going to survive to spawn, for example. So there was a reluctance to undertake a sort of management approach where you would try and harvest all of the fish coming into the river early. There were still concerns at that time about Cultus Lake sockeye, for example.

34. When Mr. Grout made his decision to disregard Mr. Woodey's advice, he was four years out of Simon Fraser University where he did his Masters degree under Randall Peterman[21] who

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[19] Transcript, Woodey, J., February 10/11, p45 L26
[20] Transcript, Woodey, J., February 10/11, p47 L5
[21] Exhibit 316, Curriculum Vitae of Jeff Grout

also testified before the Cohen Commission. Mr. Woodey completed his Phd in 1971, had played a key role in the rebuilding if Fraser sockeye through the 1970s and 1980s and by 2002 had 31 years experience on Fraser sockeye the last 16 of which had been as chief biologist for the Pacific Salmon Commission.[22]

35. DFO closures reached ridiculous proportions. In its report, *The 2001 Fraser River Salmon Fishery*,[23] the Parliamentary Standing Committee on Fisheries stated:

> Because of the high mortality of this stock, the Area E gillnet fleet was, in effect, prevented from fishing to put perhaps 300 extra fish on the spawning beds. Thus, the gillnet fishery, which would have generated an economic benefit of around $5 million, was cancelled to put an additional 300 or so fish on the spawning grounds out of a total of 105,000 spawners. In the view of the Committee, this was an unjustifiable decision.

36. Almost all early-entry late run sockeye died before spawning[24] either en-route or on the spawning grounds.[25] These fish could have been harvested with no loss to the resource, yet the very next year, DFO repeated its error and closed the public commercial fishery in 2002 to protect what were nothing more than dead fish swimming. In 2002, of a 15.1 million sockeye, the public Canadian commercial catch was only 2.2 million or a 14.7% exploitation rate.[26]

37. Two decades previous, the IPFSC took a thoughtful approach to the problem of pre-spawning mortality.[27] On the Horsefly River, for example, pre-spawning losses had been 30 percent in 1953, 62 percent in 1961 and 47 percent in 1965. The IPFSC determined that the most critical factors were warm water (in 1961, the temperature on the Horsefly grounds reached 22^{C}) and early run timing:

> the earliest fish arriving on the spawning grounds always suffered the highest pre-spawning mortality... later timing of the run [was] favourable to reducing pre-spawning losses... it appears that late timing is very important. High pre-spawning mortality and late-timed runs seldom occur simultaneously." (p. 177)

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[22] Exhibit 414, Resume of Dr. James Woodey
[23] Ex. 604, Parliamentary Standing Committee on Fisheries, *The 2001 Fraser River Salmon Fishery*, p. 15
[24] Transcript, Woodey, J., February 10/11, p47L22
[25] Ex. 72, *Late-run Sockeye Salmon in the Fraser River...*, pp. 2-3
[26] Ex. 70, *Report of the Fraser River Panel to the Pacific Salmon Commission on the 2002 Fraser River Sockeye Salmon Fishing Season*, p. 21
[27] Ex. 75, *Restoring Fraser River Salmon*, pp. 175-178

38. The IPFSC adapted to the problem at Horsefly by completing a cold-water release facility at McKinley Creek less than one year after it recommended construction of the prototype facility.[28] With respect to fishery management:

> In general, management plans took into consideration the environmental characteristics prevalent during each year... Another example is the dominant Quesnel cycle (Horsefly). If the runs were early and if river temperatures were high, greater harvests from the early portion of the run reduced escapements and less fish were lost on the migration route or on the spawning grounds.[29] (p. 125)

39. These lessons learned and applied by the IPFSC decades earlier were not employed by DFO. Given the recommendation of Jim Woodey, it was not a case of lack of knowledge; DFO made a deliberate choice not to harvest dead fish swimming at no benefit to the resource. UBC professor Carl Walters estimates the loss was $240 million even at the low value of $10 per fish.[30] The loss to Canada is far greater when the value of a fish to the processing or retail sector is considered.

40. Mr. Walters' estimate of economic losses do not include the biological and economic costs arising from over-escapement. On the question of overescapement and density dependence, this participant adopts the positions of the participants the BC Wildlife Federation and the Area B Seine and Area D Gillnetters, but their position is nothing new or earth-shattering. Capacity limits on spawning grounds, for example, is a well-established fact. As Roos stated:[31]

> Another important challenge facing the Commission was to determine the optimum escapement numbers for each race. Historical records such as the Hudson Bay Journals, the Reports of the British Columbia Commissioner and other Canadian documents were examined to establish historical cyclical abundances and approximations of spawning escapements and the abundance of returning adults. Since the Commission itself began enumeration of many individual sockeye races in 1938, more accurate data on spawners and returns began accumulating in 1942. These escapement-return data were subsequently augmented by extensive surveys of the physical nature of the spawning grounds (Pyper and Vernon 1958). The wetted perimeter of these spawning grounds was measured and the estimated suitabilities were classified by the quality of the substrate. Information was available

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[28] Ex. 75, *Restoring Fraser River Salmon*, p. 175
[29] Ex. 75, *Restoring Fraser River Salmon*, p. 125
[30] Transcript, Walters, C., February 10/11, p37 L42; p86 L11
[31] Ex. 75, *Restoring Fraser River Salmon*, see *Optimum Escapement Determinations* at p. 122-126

> to estimate the capacity of each spawning ground... Through the years, the Commission developed estimates of optimum annual abundance for escapement of the major stocks in the watershed. (p. 122)

C. The Decline of Cultus Lake Sockeye

41. The mixed-stock public commercial fishery is often cited as the cause of the decline of Cultus Lake sockeye run. Davy Levy, the senior scientist of this Commission, concluded at p. 21 of *BC Sockeye Salmon Population Declines: Probable Causes and Recommended Response Strategies*[32] that high harvest rates caused the collapse of the Cultus run, but this ignores critical habitat factors.

42. Controlling the population of the predatory northern pike minnow is a one key factor in maintaining and enhancing the survival of Cultus sockeye smolts. DFO's report, the *Assessment of Cultus Lake Sockeye Salmon in British Columbia in 2009 and Evaluation of Recent Recovery Activities*,[33] states:

> Beginning in 2004, a program to reduce the northern pikeminnow *Ptychocheilus oregonensis* (a large predatory fish) population was initiated, following indications of the success of similar efforts conducted in the 1930s (Forester and Ricker 1941)... Considering all of the available data that extends back to the early 1920s, predator control appears to eliminate depensatory mortality in the lake, which results in an increase in sockeye smolt production for smaller broods. Thus, the predator control program may be contributing to recovery by increasing freshwater survival of juveniles...

43. The *Assessment* further states at p. 2 that the decline in the Cultus run began in the 1970s which raises the question why DFO failed to institute a predator control program. In the 1930s and 1940s, DFO, followed by the IPFSC, operated "effective"[34] predator removal programs.[35] The all-citizens commercial seine sector funded and operated another predator program in 1991 and 1992,[36] but it was not until 2006 that DFO, under pressure from this participant, the Area E Gillnetters Association, put in place a serious predator removal program. Even then, DFO

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[32] Ex. 1947, *BC Sockeye Salmon Population Declines: Probable Causes and Recommended Response Strategies*, Feb 2006 [Sierra Club] Levy does not, however, cite aboriginal overfishing as a factor in the decline of Early Stuarts
[33] Ex. 930, *Assessment of Cultus Lake Sockeye Salmon in British Columbia in 2009 and Evaluation of Recent Recovery Activities*, p. 4
[34] Transcript, June 1, 2011, p44 L4
[35] Exhibit 75, *Restoring Fraser River Sockeye Salmon*, at p. 58; Ex 925, *National Recovery Strategy for the Sockeye Salmon (Cultus Population) in BC*, 2004, p. 62;
[36] Transcript, June 1, 2011, p20 L43; p38 L36

refused to fund the program, so the public commercial fishery either raised the money or self-funded the program.[37]

44. When asked why there was no predator removal program from 1992 to 2006, DFO official Neil Shubert testified:

> But certainly during that era Cultus was not prominent in any fisheries management planning process as a potential constraint or conservation concern. I was involved, in my substantive position as head of the sockeye and pink program, in that period,[38]

45. DFO official Mike Bradford offered a different reason[39]:

> Again, I'm not an advocate of this kind of ecosystem manipulation on the whole, but this is a unique circumstance where it could be implemented to boost sockeye salmon for at least some years.

46. Although not an advocate of "ecosystem manipulation" Bradford testified at pp. 20-23 and 36-42 that:

i. building docks on spawning beds, including the docks at Lindell Beach, were not a factor in the decline of Cultus sockeye because the fish may spawn in deeper water (the Recovery Team identified lake bed depths of 1 to 20 m and Lindell Beach as critical habitat[40]);

ii. the addition of copper sulfate to Cultus Lake to kill the parasite that causes cure swimmers itch[41] would not necessarily have an impact on sockeye;

iii. letting millions of visitors into the lake, real estate developments, sewage plants, putting sand on beaches was a society preference of people over fish, but dismissed it because "you can see it evidenced everywhere you go".

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[37] Transcript, Feb 8/11, Morley R., pp. 74-75
[38] Transcript, June 1, 2011, p41 L3
[39] Transcript, June 1, 2011, p40 L45
[40] Ex 925, *National Recovery Strategy for the Sockeye Salmon (Cultus Population) in BC*, 2004, p. v
[41] Exhibit 75, *Restoring Fraser River Sockeye Salmon*, at p. 182

iv. although milfoil is an invasive species and was cited as a primary habitat problem,[42] DFO efforts to control milfoil were negligible and then abandoned.[43]

47. DFO's tentative approach to restoring Cultus sockeye was predicted by recovery team member, Bill Gazey who wrote:[44]

> In my opinion the best action plan... for the recovery of Cultus will be by enhancing freshwater survival through the removal of milfoil and northern pike minnow... Even if it turns out that freshwater survival is not as a big a problem as I fear, the survival boost would shorten the recovery time and allow for a higher exploitation rate. For the program to work in future, it will be necessary to "go big or go home". I'm not convinced that DFO are willing to make the necessary commitment to make the program work, as was demonstrated during the 1930s. DFO seems to want to portray the results of previous predator removals as equivocal, providing good justification for a "do nothing" approach. My concern is that Northern pikeminnow control, while a recommended approach in the Recovery Plan, will not be carried out very enthusiastically in the recovery plan.

48. From the 1970s to 2006, as northern pike minnow ate endangered Cultus sockeye smolts, DFO met, consulted and strategized. DFO even held two-day information sessions in Prince Rupert, [45] almost as far away on the coast from Cultus sockeye as one can go without going to Alaska.

49. DFO's drive to "obtain consensus" [46] became a substitute for action. In any event, given Bradford's negative response to what were deemed critical issues by the Recovery Team (predator removal, protecting beach spawning areas and milfoil removal), any consensus was largely ignored by DFO in its implementation of the recovery plan.

D. Conclusion on Early Stuart, Early Entry and Cultus

50. The IPFSC showed DFO how to rebuild Early Stuarts and Cultus and to minimize the impact of pre-spawn mortality while protecting the healthy part of the run. Instead of building

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[42] Ex 925, *National Recovery Strategy for the Sockeye Salmon (Cultus Population) in BC*, 2004,
[43] Transcript, June 1, 2011, p22 L4
[44] Ex. 933, *Memo from Bill Gazey to Harvesters Association*, May 4, 2004
[45] Exhibit 772, *National Conservation Strategy for Cultus Lake Sockeye Salmon, 2009*, pp. 45-46
[46] Transcript, June 1, 2011, p43 L8

on the IPFSC's success, DFO officials deliberately chose a different path that failed the fish and the people who depend the fishery.

51. Despite the failed management of the last twenty years, not one DFO official has offered a substantive reason for abandoning the IPFSC management model which was, at the time, the most successful management model for salmon fisheries anywhere in the world.

IV. ENFORCEMENT

52. DFO's primary enforcement problem is the aboriginal fishery. The scale of aboriginal poaching (illegal fishing and illegal sales of fish) has been set out in numerous previous reports and in testimony before this Commission. What was not properly detailed before this Commission is:

a. How long has aboriginal poaching been a serious problem?

b. How widespread is the poaching and how is it done?

c. Why has it been a serious problem for at least 25 years?

d. What will it take to stop the poaching?

A. How Long has Aboriginal Poaching Been a Serious Problem?

53. A 1987 memo written by G.E. Jones, Regional Director of the Fisheries Branch[47] illustrates that illegal sales of FSC fish on the Fraser was a serious problem even in 1986:

> ...The number of sockeye salmon allocated to the IFF up to and including 1986 was based on a "Natural" growth factor which was allowed to occur as a reflection of demand even though it is known that some significant illegal selling occurred.

54. In 1992, DFO legalized the sale of "food" fish on the Lower Fraser. In *R. v. Kapp et al* 2003 BCPC 0279, Kitchen PCJ reviewed DFO's reasons for doing so and at para. 47 found:

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[47] Exhibit 1277, Memo, Jones, G.E., April 14, 1987, p. 9

> ... on May 6, 1993, Fisheries and Oceans Minister John Crosbie, speaking to the Standing Committee on Forestry and Fisheries, gave a somewhat different rationale for the Aboriginal fishing strategy - the prevention of poaching:
>
> > With respect to these experiments, the three experiments with reference to the sale of fish, they are not dictated by the *Sparrow Case*. We are not saying that we have to do this because of *Sparrow*. We're doing this because we think it's the best public policy, because we know that for years and years in British Columbia and elsewhere there's been poaching of fish. We call it poaching. The Aboriginals say they have a right to do it. The Aboriginals have been taking fish and selling the fish illegally in great quantities...

55. Twelve years later, the investigation headed by former Chief Justice of the BC Supreme Court Brian Williams[48] heard from Fishery Officer Supervisor Randy Nelson:

> After reminding the Committee that an earlier DFO random survey of restaurants and fish retailers in the Okanagan area found that amongst 64 places surveyed, there had been 89 attempts to sell them illegal fish, Mr. Nelson said:
>
> > Due to budget concerns I directed officers to not work illegal sales in both 2003 and 2004...The amount of fish moving into Alberta is amazing.

56. Two years later, Fishery Officers concluded in *Project Ice Storm*[49]:

Key points:

1. The FSC First Nations Fishery on the Lower Fraser River is largely out of control and should be considered in all contexts, a Commercial Fishery.
2. Various levels of sophistication exist in the laundering of FSC Salmon into Commercial markets.
3. Door to door sales of FSC Salmon account for a large portion of the illegal sales of Salmon.
4. Back door sales to restaurants and fish sale establishments are widespread throughout the province.
5. The Department of Fisheries and Oceans are unable to effectively control the illegal sales of FSC Salmon at all levels of sophistication.
6. A major change is needed in Fisheries laws to effectively deal with the commercial processing and storage of FSC fish.
7. The opening of EO fisheries provides greater opportunities to launder FSC Salmon.
8. Intelligence Assessments are not being reviewed, and no deliverables including briefings are taking place. Briefings that may take place are managerial in nature and not intelligence based or part of this process.
9. Resources identified in the Project management Plan were not made available

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[48] Exhibit 606, *2004 Southern Salmon Fishery Post-Season Review,* p. 36

[49] Exhibit 870, *Operational Intelligence Assessment - Project Ice Storm*, Nov 27 2006, p. 3

57. Fishery Officer Coultish testified that at a meeting of senior Fishery Officers in 2010[50], they discussed the question of how much food fish was sold illegally. They concluded that 97% of the fish caught under the guise of aboriginal FSC fisheries is sold illegally. Illegal sales of FSC fish have been a serious problem for at last 25 years.

B. How Widespread is the Poaching and How is it Done?

58. In *R. v. Fraser* [1994] B.C.J. No. 438, Hoy PCJ outlined one illegal scheme at para. 3:

> The facts giving rise to this charge are not in dispute. From September 15th, 1987 to October 17th, 1987, the Department of Fisheries and Oceans had established a surveillance team on a number of individuals which included the defendant. Non-natives from Alberta were arranging for the purchase and transportation of fresh salmon from various native fishermen in the Hope and Chilliwack area. The defendant's residence was at times used as a centre of exchange for the salmon. These fish were destined for processing plants in Alberta after which the finished product was to be sent to Texas for sale.

59. Across Canada, giant trucks deliver thousands of tons of food to the loading docks at the back of every Safeway store every week. Thousands of individuals carry this food out the front doors of each Safeway a few pounds at time in little plastic bags. As noted in *Project Ice Storm*, "door to door sales of FSC salmon account for a large portion of the illegal sales of salmon." One individual selling ten sockeye at a time cannot move lots of fish, but hundreds or thousands of people selling ten fish at a time creates the Safeway Effect.

60. Peter Pearse noted the Safeway Effect in his 1992 report into the missing fish sockeye: [51]

> Some argue that hundreds of thousands of fish in excess of the reported number could not have been handled and disposed of without attracting attention. The evidence leaves little room for concern on this point, however. In 1990, when only about half as much gear was used, the reported catch on the river was almost double the estimated catch in 1992. Most of it is believed to have been sold.

61. An example of this type of sale was reviewed by the BC Court of Appeal in *R. v. Van der Peet* [1993] 5 WWR 459. The facts were set out at paras. 115-116:

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[50] Exhibit 871, *Record of Meeting, I&IS Work Planning*, p. 6

[51] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser - Report to the Minister on the Fraser River Salmon Investigation*, Nov 1992, p. 27

> Charles Robert Jimmie and Stephen Benjamin Jimmie caught some sockeye salmon at an Indian fishing site near Yale, about a hundred miles up the Fraser River and well beyond the limits of tide water at Mission. When they caught the fish, Charles Robert Jimmie and Stephen Benjamin Jimmie were each the holder of a valid Indian Food Fish Licence. They were fishing in accordance with their licences and in accordance with the Fisheries Act and with all applicable Fisheries regulations.
>
> Charles Robert Jimmie took the fish, or at least his share of them, home to the Jimmie reserve in Chilliwack. He lived there with Dorothy Marie Van der Peet. Mrs. Van der Peet is a status Indian and a member of the Tzeachten Band of the Sto:lo Nation. Mr. Jimmie cleaned the fish and Mrs. Van der Peet put them in the freezer. Later that day Marie Lugsdin, who is not an Indian, came to the house where Mrs. Van der Peet lived with Mr. Charles Robert Jimmie. Mrs. Van der Peet sold ten of the fish to Mrs. Lugsdin for a price of $50.00. As a result of that transaction, both Mrs. Van der Peet and Mrs. Lugsdin were charged, though this appeal relates only to Mrs. Van der Peet.

62. On a larger scale were the events described in *R. v. Q.M.P. Fisheries Ltd* 2001 BCPC 0210. Ltwynn PCJ outlined at paras.14-38 what can be legally done with aboriginal food fish. He summarized key evidence at para. 85 and noted that a commercial fish buyer off-loaded FSC fish from Tsawwassen vessels, transported it to a processing plant, processed it and then stored it in the name of the QMP Fisheries. DFO could only stand and watch because none of this was illegal. In the absence of proving the sale of the fish, DFO could do nothing. The slim chance of proving sale of the FSC fish through a review of QMP's financial records became impossible when Ltwynn PCJ quashed the search warrant.

63. In *R. v. Butterworth*, PCBC File No. 48070-1 (unreported) Chen PCJ convicted fish broker James Butterworth for selling roe from 25,000 chum caught under a communal food fishing licence issued to the Cowichan Tribes. Maintaining the chain of evidence was extremely difficult for the prosecution because as detailed at paras. 6-7:

a. The fish were caught in November 2003 by Western King
b. The chums were unloaded at the Steveston Seafood Auction
c. The chums were transported by Keep it Cool refrigeration to Leader Cold Storage in Richmond
d. Leader headed and gutted the chum and set the roe aside

e. The roe was picked up by Standard Exports which processed the into ikura which has high value in markets in Japan
f. Standard Exports returned the roe to Leader Cold Storage.

64. In addition to proving that the roe processed by Standard Exports came from the harvest of the Western King, the Crown had to prove that the ikura that was sold and that the defendant authorized the sale (paras. 9-12). Once again, the fact that the Cowichan did not have a commercial fishery on chums in 2003 was instrumental in the Crown obtaining the conviction (paras. 21-23). If the Cowichan had a commercial fishery the Crown's case would have collapsed.

65. In *R. v. Baird* [1997] B.C.J. No. 3210, Mike Baird, a member and fisheries negotiator for the Tsawwassen Band and their liaison with DFO (para. 48) was convicted of illegally selling chinook salmon caught under an FSC licence. The Crown set out the facts at paras. 33 to 38. Baird sold chinook salmon to two fish stores in Steveston, but was caught only because one of the sales:

> was witnessed by a commercial fisherman who happened to be out with his girlfriend out for lunch and observed this transaction, and he reported it to the Department of Fisheries and Oceans. (para. 35)

66. Even if the chinook in the store was proved to have been Baird's fish, possession of the fish by the two stores would not have been illegal. In the absence of the commercial fisherman witnessing Baird selling the fish, Baird never would have been charged.

67. In *R. v. Alex*, [2002] PCBC File No. 34313 (unreported), Moss PCJ convicted Sto:lo member Anthony Alex, of illegally trying to sell 2,147 cases or 100,472 (p3 L35) cans of sockeye caught in a Sto:lo food fishery in 1998. Moss PCJ summarized the evidence at pp. 1-3:

i. on August 7, 1998, a North Vancouver salmon canning company received 12 totes of cannery cut salmon containing about 18,000 pounds of fish from Alex

ii. Alex advised the company that the fish had been caught in a native gillnet fishery on the Fraser River - there were no commercial openings in August of 1998

iii. it cost $40,500 to can the fish and the company extended credit to Alex to process the fish

iv. Alex asked a broker to sell the fish for him and a third company, Calkins and Burke agreed to buy the fish, but the broker became suspicious of the origins of the fish and contacted DFO

v. Alex testified that upwards of 25 fishermen from various bands contributed to the pool of fish.

68. In summary, a group of Sto:lo fishermen caught the fish and illegally sold it to Alex. Alex transported the sockeye from the Chilliwack area to the first processing plant which headed, gutted and cut the fish into pieces suitable for canning. The fish were then transported to a second processing plant which canned and boxed the fish. Nothing to this point is illegal.

69. Only after an honest fish broker called and cooperated with C&P was DFO able to collect the evidence of sale and obtain a conviction. Had the broker sold the fish without advising DFO, DFO would never have known about the sale or been able to collect the necessary evidence to prosecute.

70. If there had have been a legal commercial fishery for the Sto:lo or the public commercial sector in early August 1998, it would have been difficult, if not impossible, to prove with the required certainty that the 2,147 cases of canned salmon came from fish caught in a Sto:lo food fishery in August 1998. Real or forged sales slips from any commercial fishery would have made it almost impossible to prove that cases of canned salmon in a warehouse in North Vancouver came from a Sto:lo fishery in Chilliwack on , for example, August 10, 1998 when a Sto:lo commercial fishery opened on August 12, 1998.

71. In *R. v. Mid-Island Tribal Council et al* [1996] B.C.J. No. 3203, Ehrcke PCJ set out the facts at para. 18:

> With respect to the sentencing, I reviewed the facts of this case in detail in my reasons for judgement, and I won't repeat them today, except as necessary for sentencing. Each defendant has been found guilty of selling approximately twenty thousand pounds of sockeye salmon contrary to section 35(2) of the Fishery General Regulations. The Mid-Island Tribal Council received fifty-three thousand dollars for the fish and was due to receive several thousand more, depending on the precise weight of the fish. The fish were caught pursuant to licences for use for food, social and ceremonial purposes. Many of the fish were distributed for those purposes. The sale was of the remainder, which had required processing and cold storage.

72. At para. 19, the learned trial judge noted that the six individual defendants were officers of the tribal council "who participated in the commission of the offence." One was a Chief of the Chemainus band, another was the Chemainus band manager and another was the Chief of the Penalkut Indian Band (paras. 40-42)

73. These few cases illustrate the widespread nature of illegal sales of FSC fish. Those convicted include grandmothers, tribal councils, band chiefs and band officials with responsibilities for fishery management. The number of fish in each sale runs from a few fish to thousands of fish. In terms of dollar value, there was $50 for Ms. Van der Peet and canning costs alone of $40,000 for Anthony Alex.

C. Why has Aboriginal Poaching Been a Serious Problem for at Least 25 Years?

74. Setting aside the financial incentives to poach (an overnight catch of 100 sockeye sold for $10 each is $1,000 per day), the important question is why has DFO not stopped, or at least controlled, aboriginal poaching. As set out below, there are several key factors:

The Race of the Poacher

75. When a fisherman in the public commercial or recreational fisheries is caught poaching, the race of the fisherman is not usually relevant because participation in either fishery is not dependent the race of the fishermen. However, as Bastarache J. stated at para. 114 in *Kapp* in reference to commercial fisheries on the Lower Fraser restricted to select aboriginal organizations, "The fact that the program is race-based is established beyond doubt."

76. An enforcement crackdown on poaching in the public commercial or recreational sectors is directed at commercial or recreational fishermen. There is no racial factor.

77. In contrast, because participation in aboriginal FSC and commercial fisheries is defined by race, an enforcement crackdown on poaching in aboriginal fisheries is just that: an enforcement crackdown on a minority race of Canadians with all of its accompanying sensitivities. The racial component of aboriginal poaching makes enforcement much more problematic for enforcement authorities, courts, DFO bureaucrats and Ministers of Fisheries.

Support for Poaching Aboriginal Leaders and Communities

78. Wide-spread support for poaching in many aboriginal communities and by a substantial portion of the aboriginal leadership is also a serious problem. The testimony of Sto:lo native Anthony Alex illustrates the problem. As noted by Moss PCJ in *R. v. Alex*, Alex "felt it was, from his perspective, socially acceptable within his community, to sell fish as part of his heritage. That is his real argument."[52]

79. Mr. Ernie Crey, a Sto:lo leader involved with the management and monitoring of the Sto:lo fishery[53] expressed an identical view:[54]

> Q Fishing during a closed time, fish caught under a licence that does not authorize sale. How big an issue are those issues, fishing during a time when DFO has not opened a fishery, and I'm talking the Lower Fraser Aboriginal Fishery, and sales of fish when sale is not authorized. Are those issues of concern in the Lower Fraser?
>
> MR. CREY: Well, they appear to be issue of concern to some folks but I don't think those folks are in our community; they appear to be outside the community.

80. Grand Chief Saul Terry, CEO and Coordinator of Northern St'at'mic fisheries and the President of the Union of BC Indian Chiefs[55] also expressed broad support in his community for illegal sales of food fish:

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[52] *R. v. Alex* [2002] PCBC, File No. 34313 (p. 5 L4)
[53] Exhibit 1274, Bio of Ernie Crey
[54] Transcript, July 5, 2010, Ernie Crey, p. 3, L12
[55] Exhibit

> GRAND CHIEF TERRY: And in my determination, the matter would be irrelevant in terms of trying to charge an Aboriginal person, a St'at'imx especially, in my territory, because we do have the right to take the fish, and what we do with it is to be determined by us. ... But for us, I think it's a right that we have. And in terms of enforcement, our people know what is right and what is wrong, and we carry out our practices accordingly.
>
> Q Maybe I can have one follow-up, with reference to say the illegal sale of fish caught for food purposes, or fishing during a closed time.
>
> GRAND CHIEF TERRY: Really, we don't really accept that, and a lot of our folks feel that that is wrongful to say that we are doing wrong by selling, you know. Whose rules are we working under, and I think that that's a question that continues to fester or continues to need dealing with.

81. Mr. Todd, a fisheries consultant working for the Nicola Tribal Council and the Fraser Valley Aboriginal Fisheries Secretariat[56] responded:

> MR. TODD: Thank you. I've heard a lot of nonsense over the years about illegal sales of fish. What almost never comes up is the fact that the fish in question are caught in a fishery where the Minister has determined there is an allowable catch. The Minister has opened the fishery. People have fished that fishery. They were legally harvested. So I don't think that in the vast majority of cases or instances where what is termed "illegal sales of fish", has anything to do with calling into question the sustainable or the sustainability of the sockeye salmon runs in the Fraser River.

Equivocal Responses by Investigators

82. Although aboriginal poaching has been a major enforcement issue for at least twenty-five years, investigators such as Peter Pearse in 1992 and John Fraser in 2004 largely ducked this issue despite being entrusted with a responsibility to make recommendations to prevent the collapse of the Fraser River.

83. In 1992, Pearse[57] refused to write that Sto:lo poachers in the Lower Fraser were the primary source of the poaching problem and instead wrote at p. 28:

> We cannot say who took the unrecorded catch, whether they were Indians or no, what portion was taken in the Agreement area, how they were disposed of, or where they went. Nor can we say whether they were caught illegally. We can only say with confidence that considerably more fish were taken than estimated, many more died

[56] Exhibit 1180, Curriculum Vitae of Neil Todd
[57] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser*, p. 28

> as a result of intense fishing activity and much of the catch was sold illegally so far as no sales slips were issued for them.

84. Though he stated that he was unable to determine whether Sto:lo poachers were responsible for a single missing fish in 1992, Pearse apparently had sufficient evidence to conclude that there was no or limited poaching in the Musqueam/Tsawwassen fishery and wrote: "In the Musqueam and Tsawwassen area, things went surprisingly smoothly."[58]

85. Even worse, in 1992, Pearse wrote that "...1992 was by no means a disaster. Sockeye returns were the largest on this cycle in more than 80 years."[59] Pearse failed to note that Early Stuart escapement, for example, was less than half the escapement on the previous cycle."[60] Pearse's failure to deal with the issues in a direct and unequivocal manner laid the foundation for the 1994 disaster, the collapse of the fishery and the need for this Commission.

86. Pearse in 1992 was followed by Fraser in 1994 who with respect to poaching wrote:

> Almost every group that appeared before the Board, Native and non-Native, commercial and recreational admitted that *members of their group* had been guilty of poaching.

87. No group is free of poachers, but 97% of the harvest in the recreational or public commercial fishery is *not* sold illegally. Fraser likely refused to discuss the scale of illegal sales in the aboriginal sector because of the racial sensitivities noted above, but the result of ducking the issue is that 17 years after his report aboriginal poaching is still a distressing problem.

88. Equivocation is also an apt description of the recommendations of previous recommendations. There is limited in Pearse in 1992 recommending "strong enforcement",[61] or Fraser in 1994 recommending that enforcement be made an "essential element" of DFO and Williams in 2004 advising that DFO must "properly enforce"[62] the *Fisheries Act*.

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[58] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser*, p. 17
[59] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser*, p. 29
[60] see above at p. 7
[61] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser*, p. 33
[62] Exhibit 606, *2004 Southern Salmon Fishery Post-Season Review - Part One-Fraser River Sockeye Report*, p. 41

89. These recommendations only allow senior DFO officials to apply their view of what is strong, essential or proper enforcement. Tellingly, no DFO official more senior than a Regional Director General who appeared before this Commission testified that DFO's enforcement capabilities were inadequate or that now-repealed regulations which would make enforcement easier should be reinstated. There is obviously little understanding of the value of effective enforcement at DFO's highest levels.

Inadequate and Counterproductive DFO Responses to Poaching

90. An example of the DFO's counterproductive response to aboriginal poaching was the recommendation of Mr. Huber, DFO's aboriginal affairs advisor for the BC interior,[63] who testified:

> Chief Terry has, you know, passed on how it is with his community, and many are like that... One that we've really invested in heavily with the Department is restorative justice or community justice. So the idea there is that you do establish rules, if they are, and you try to make sure the community understands them and have bought them when they're jointly developed, and when you have community support, of course, you have less offenders. And also the idea with restorative justice, community justice, is that you change the person's attitude, and you're not going through courts, you save money, and you change behaviour, and you build relationships with the community members.

91. Huber supports delegating the prevention and enforcement of illegal sales to the very communities who support illegal sales.

92. In an extension of Huber's approach, DFO has often ordered Fishery Officers not to enforce the law against aboriginal poaching. Pearce noted this in his 1992 report *Managing Salmon in the Fraser*. He concluded[64] that Fishery Officers were ordered:

> ...not to lay any charges while the sensitive negotiations were continuing. They were instructed, instead, to merely observe, record and report offenses. Except for the most flagrant offenses, enforcement became impossible and non-compliance was the order of the day.

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[63] Exhibit 1178, Curriculum Vitae of Barry Huber

[64] Exhibit 729, Pearse, P., *Managing Salmon in the Fraser*, p. 16

93. Twelve years later, in 2004, Brian Williams noted the effect of the no-charges policy in the *2004 Southern Salmon Fishery Post-Season Review* at p. 35:

> It seems perverse that the policy decision not to enforce the laws against illegal sales undoubtedly encouraged both clandestine harvest and inflation of the legal FSC catch by those who wished to profit from the sale of some of their Section 35 fish.

94. William's analysis displays the fog that descends on aboriginal fishing issues: if police were told to stop enforcing speeding laws, it would *not* be "perverse" to expect an increase in the number of speeders.

95. In addition to general "no charges" orders, the repeal of certain laws have made illegal sales easier. Fraser noted in his 1994 report, [65] for example, that:

> DFO's ability to deal with the illegal sale of salmon was seriously compromised by the repeal of a prohibition on the possession of Native food fish by non-Natives.

96. When asked about the loss of this regulation, Mr. Randy nelson, DFO's Regional Director of C&P stated:

> MR. NELSON: At the time it was -- the laws were changed. Prior to that you could not be in possession of food fish unless you were a First Nation. So obviously it made it much more complicated to try and prove.[66]

97. An earlier repeal of a regulation requiring the marking of salmon caught as food fish by cutting off the dorsal fin and snout immediately after harvest also compromised enforcement. DFO Assistant Deputy Minister David Bevan agreed that this is still a problem:[67]

> Q So when these fish caught on your FSc, a separate fishery versus a commercial fishery, are put in a cold storage plant, if I walk into the plant, pull one fish out of one tote and one fish out of the other tote, can you tell the difference between the two fish?
>
> Mr. Bevan: No, exactly.

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[65] Exhibit 77, *Fraser River Sockeye 1994 - Problems & Discrepancies,* p. 59
[66] Transcript, May 18/11, Nelson, R., p34 L19.
[67] Transcript, Sept 27/11, Bevan D., p53 L 32; see also p65 L24 to p65 L39

98. If these regulations remained in place, it would not be necessary for Fishery Officers to witness or otherwise prove the illegal sale of FSC fish to non-Native individuals or businesses. Any non-Native in possession of food fish could be successfully prosecuted. Any restaurant with Native food fish in their freezer or sink could be prosecuted without having to prove illegal sale. Any aboriginal transporting salmon that were not properly identified could also be prosecuted. Nelson confirmed the effectiveness of these regulations:

> Q No. In the -- prior to about 1984 there was a regulation required the marking of aboriginal food fish by cutting the snout and the dorsal fin off. If that regulation was still in place, you could pick that fish out and right away tell it's a food fish; is that correct?
>
> MR. NELSON: Yeah, you could, but, I mean, it would give you a much greater degree of likelihood, I mean, it would seem that a commercial fisherman could cut them -- you'd still have to prove where it came from, but it was a tool that was very valuable for us at the time.
>
> Q If you went down to a commercial processing plant and there was a tote full of food fish that were marked versus the tote stored in by John Smith, commercial fisherman, you could tell the difference and right now you can't; is that correct?
>
> MR. NELSON: That's correct. Marking fish product in any means would benefit. I don't know if that's a possibility.
>
> Q Now, if there was a regulation like that and a truck operated by a person who had food fish on board, caught under a food fish licence, didn't have the snout and dorsal fin cut off, charges could be laid for that and were in the past; is that correct?
>
> MR. NELSON: They were in the past, yes.

D. What Will it Take to Control Aboriginal Poaching?

99. The first step in controlling aboriginal poaching is to recognize the difference between fishing for food and fishing for commercial purposes. In *R. v. Gladstone*, [1996] 2 S.C.R. 723, Lamer C. J. noted that *Sparrow* was about food fisheries at paras 58-60:

> The only circumstance contemplated by Sparrow was where the aboriginal right was internally limited; the judgment simply does not consider how the priority standard should be applied in circumstances where the right has no such internal limitation.

100. In *R. v. Van der Peet* [1993] 5 WWR 459, Wallace J. at para. 77 explained the difference between a priority for food purposes and a priority for commercial purposes which are limited by the amount of fish that can be consumed whereas financial needs can be inexhaustible.

> Of course, the nature of a commercial fishery, with its inherent objective of satisfying a practically inexhaustible demand for salmon, would make the aboriginal commercial priority limitless.

101. The change from a food to a commercial fishery is a radical change. The quantity of fish needed for food purposes is internally limited by what one can eat whereas financial needs can be inexhaustible.

102. If DFO is to control illegal sales of FSC fish, regulatory change is a priority. A regulation requiring the marking of food fish from the harvest to the table so that it can always be separated from lawful to sell fish. It must also be illegal for a non-Native to possess FSC fish.

103. This are two key regulations, but it is only part of the package that is required to enforce the FSC fishery. Senior DFO enforcement officials Randy Nelson and Scott Coultish properly advised this Commission on the point that it is possible to properly enforce the FSC fishery:

> Q Suffice to say if you had the will, the budget, and the regulatory tools, you could enforce this fishery properly.
>
> MR. NELSON: We could enforce all fisheries properly.
>
> MR. COULTISH: More effectively anyway.

V. THE LIMITS AND CONFLICTS OF SCIENCE

A. The Limits on Science

104. This Commission hired a small army of consultants and produced thousands of pages of reports in the search for an answer to the collapse of the 2009 Fraser sockeye fishery. Science issues consumed months of hearing time and millions of dollars of Commission resources. The end result of the Commission's science exercise was contained within the Executive Summary in *Technical Report 6 - FRSS: Data Synthesis and Cumulative Impacts*[68].

> Based on plausible mechanisms, exposure, consistency with observed sockeye productivity changes, and other evidence, **marine conditions** and **climate change**

[68] Exhibit 1896, *Technical Report 6 - FRSS: Data Synthesis and Cumulative Impacts,* PDF p. 7

> are considered *likely* contributors to the long-term decline of Fraser River sockeye salmon. It is also *very likely* that poor **marine conditions** during the coastal migration life stage in 2007 contributed to the poor returns observed in 2009. Marine conditions were much better in 2008 (much cooler temperatures), which benefited returns in 2010.

105. The limits on the value of science in fishery management are demonstrated by comparing the exhausting Commission efforts with the *1961 Annual Report of the IPFSC.*[69] The year 1961 had much in common with 2009:

> The sockeye run to the Fraser River in 1961 was a disappointment to both the fishing industry and the Commission. While the total pack was the third highest for the cycle year since 1917, the basic potential of the run was much greater than that which occurred. The known productivity in fresh water, if followed by average survival in the sea, could have resulted in a run of several million more fish than actually returned.

106. Unlike DFO in 2009, the IPFSC asked whether its management could be responsible:

> The failure of the 1961 sockeye run to approach normally expected numbers raises an important question as to whether this failure was due to errors in management of the fishery or to unusual natural conditions beyond control.

107. Like this Commission, but in a much more abbreviated form, the *IPFSC* ruled out management as a cause:

> Fortunately, the Commission has available a large amount of information on Fraser River sockeye and critical analysis of these data has made it possible, by the process of elimination, to fix the approximate period in the fish's life history when adverse influences had their effect on the 1961 run. ... It is an obvious conclusion that the management of the fishery in 1957 was not in any way at fault. The cyclical escapement was the best since 1917, fry production was normal, the condition of the seaward migrants was excellent and the number of migrants was sufficient to return a sockeye run considerably larger than that of any year since 1913 - even larger than the record-breaking Adams River run in 1958.

108. The *IPFSC* concluded:

> The extreme fluctuations in the marine survival of salmon apparently occur during the estuarial transfer of the young salmon from their river of birth to their oceanic pastures, regardless of their age or size.
>
> The anomalies in the runs of Fraser River sockeye and pink salmon, apparently related to unusual fluctuations in marine environment, have occurred with alarming

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[69] Exhibit 608, *Annual Report of the IPFSC, 1961*, pp. 3-5

> frequency during the past ten years. These anomalies were discussed in the 1959 Annual Report and have been individually referenced for several years. Whi1e similar anomalies occurred prior to 1950, it appears that they occurred with far less frequency although the data for prior years is meagre and confused by other factors such as the Hell's Gate obstruction.

109. Having determined where the problem was, the IPFSC reviewed whether their management practices were proper in light of this new problem:

> As long as fresh water production is satisfactory the isolation of the marine environment, principally that in the inshore area as an apparent cause of highly variable mortality, justifies the management principles used regardless of whether the returning run is large or small. A return to more stable meteorological conditions would certainly tend to stabilize the production of Fraser River sockeye and pink salmon.

110. Unlike DFO's response to early-entry fish, the IPFSC did not make radical changes to the management of the fishery. In a few years, the problem disappeared, the coastal fishing industry continued and the Fraser River sockeye run was rebuilt to near historical levels by the time the IPFSC ended operations in 1985.

B. Flaws in the Conduct of Science

111. One ongoing problem in science – the over-reliance on computer models that do not incorporate events in the field – was well-demonstrated by the testimony of David Marmorek who wrote and submitted the Commission Cumulative Impacts Report. In his report, Mamorek argued that climate change is a key factor in the drop in productivity of Fraser River sockeye and supported his thesis by referring to the decline in production in certain other areas of the BC coast.[70] One of the areas he cited was Barclay Sound, but under questioning he testified[71]:

> Q Well, let's look at Barclay Sound. In the 1990s and early 2000s, we had a tremendous problem with mackerel. They ate a huge amount of smolts; is that correct?
>
> A I wasn't familiar with that, but I take --
>
> Q Not familiar with that.
>
> A -- your word for it.

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[70] Exhibit 1896, Technical Report 6 - FRSS: Data Synthesis and Cumulative Impacts, April 2011, p. 34
[71] Transcript, Sept. 20/11, Mamorek, D., p54 L11

112. RDG Sue Farlinger was aware of the problem:[72]

> Q Thank you. Were you aware, in the late 1990s and kind of early 2000s, of a pretty serious mackerel predation problem on Vancouver Island, Barkley Sound? Do you remember that, the "big mack attack?"
>
> MS. FARLINGER: I'm generally aware of that, yes.
>
> Q Yeah, it even caused some grief in the test fishery because there were so many test boats were catching so many mackerel? Are you that familiar with it?
>
> MS. FARLINGER: I'm certainly familiar with the fact that it was a challenge. The specifics of it, I can't say. I'm not familiar with it.

113. Mamorek was unaware that mackerel was a key factor in the crash of Barclay Sound sockeye, but Marmorek relied upon the Barclay crash for his theory that climate change decimated the 2009 Fraser River run.

114. A similar and even more important problem in how fisheries science is performed was the lack of DFO and Commission research into the problem of drop-outs in set nets. In a 1996 memo, DFO biologist Ken Wilson dismissed a request from PSARC to conduct a study on salmon drop-out rates in set nets. According to Wilson's memo,[73] PSARC requested that initial steps be undertaken to evaluate drop-outs because research on the Stikine River showed that a set-net unpicked for 24 hours caught only half the fish it killed. Wilson recommended that the study not be undertaken for reasons ranging from seals, to his conclusion that not all fish that drop out of a set-net die, to not wanting to add to speculation "by individuals with an axe to grind" (p. 3).

115. In its report, *Here We Go Again... Or The 2004 Fraser River Salmon Fishery*, the Parliamentary Standing Committee on Fisheries and Oceans noted that Peter Pearse raised the drop-out issue in 1992:[74]

> Catches on the lower river and up through the canyon probably exceeded estimates by 200,000 fish. Significant losses can also be attributed to fishing-induced mortality — dead fish dropping out of nets and fish dying of stress after escaping from nets.

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[72] Transcript, Sept. 27/11, Farlinger S., p49 L35
[73] Exhibit 1738, Memo from F Dickson to B Graham re Salmon Drop-Out Rates, May 17, 1996. PDF p. 3
[74] Exhibit 695, *Here We Go Again... Or The 2004 Fraser River Salmon Fishery,* p. 6

116. The Committee also relied upon testimony by Mr. Bob Gould whose research found: [75]

> The issue of net entanglement and its impact was raised by Mr. Bob Gould who performed independent research in this field for several years. Mr. Gould's research shows that because of a "drop-out" phenomenon, a set net left unattended in the water for 24 hours will land only one sixth of what would have been landed if the net had been checked every two hours.
>
> Mr. Gould assumed that the remaining five-sixth of the catch dies, falls from the net, is swept downstream, and is unaccounted for. Mr. Gould argued that set nets are extremely destructive and their use was a major contributing factor to the missing fish in 2004.

117. Even if Gould's research was off by an extreme factor and only one fish was lost for every six caught, aboriginal catches in the Fraser Canyon are in the millions fish; the potential drop-outs could account for a substantial portion of the missing fish.

118. The Parliamentary Committee recommended that DFO study the drop-out issues met with the same fate as the REMEC/PSARC recommendation.

119. These two issues show serious failures in the scientific process at DFO and in this Commission. They beg the question: Why has DFO and the Commission failed to give these important issues proper consideration?

120. The evidence before this Commission is insufficient to answer this question, but a Commission review of why both DFO and the Commission failed to study such important issues will reveal more than the flaws in the way fisheries science is conducted.

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[75] Exhibit 695, *Here We Go Again... Or The 2004 Fraser River Salmon Fishery,* p. 32

ALL OF WHICH IS RESPECTFULLY SUBMITTED:

Date: October 17, 2011

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TABLE OF CASES