UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

September 24, 2008

MEMORANDUM FOR: James W. Balsiger, Ph.D.
Acting Assistant Administrator for Fisheries

FROM: D. Robert Lohn
Regional Administrator D.R.L

SUBJECT: Request for Secretarial Determination of a Commercial Fishery Failure Due to a Fishery Resource Disaster for the Tribal Salmon Fishing Communities in Puget Sound, Washington –
ISSUES ADVISORY MEMORANDUM

This issues advisory concerns requests by several tribes for a determination of a commercial fishery failure due to a fisheries resource disaster in several salmon fisheries in and around Puget Sound Washington. These requests do not concern the ocean salmon fisheries associated with the Klamath and West Coast salmon disaster declarations in 2006 and 2008 respectively.. These requests and the key issues are similar to those associated with the 2002 declaration of a commercial fishery failure in the Fraser River Sockeye Fishery due to a fishery resource disaster in 1999 and 2001.

Issue I Should these separate requests be treated as a single request?

Last winter, the Lummi Tribe asked us to determine a commercial fishery failure for their salmon fisheries under section 312(a) of the Magnuson-Stevens Fishery Conservation and Management Act or section 308(d) of the Interjurisdictional Fisheries Act of 1986. This spring, four other tribes—the Swinomish, Tulalip, Lower Elwah Klallam, and Makah—also asked that a resource disaster be determined. All five requests are summarized in Attachment 1, which compares the requests. The chief differences concern years and species. Two tribes, the Tulalip and the Makah, are requesting that a disaster be determined for their 2008 fisheries in addition to their 2007 fisheries.

Issue II Should the focus of review be sockeye salmon?

Although these requests differ in nature (years and species), their central theme is the decline in the 2007 sockeye fishery. In 2002, the tribal requests also referred to other salmon species. In the 2002 declaration analysis, we stated:

> Compared to other Puget Sound salmon species, sockeye salmon are the major source of salmon catch and revenue for tribal and non-tribal fishermen. In comparison to sockeye

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salmon, harvests in the other salmon species do not show similar sharp and unexpected declines typically associated with a fishery resource failure.
Finally, in comparison to other species, scientific information and studies are available on the potential causes of the sockeye disaster.

Current trends in the harvests of sockeye, coho, pink, chum, and Chinook suggest similar findings. In terms of number of fish, except for sockeye, neither 2007 harvests (Attachment 2) nor 2007 ex-vessel revenues (Attachment 3) appear to be unusually low compared to recent years. For two of the salmon species, Chinook and chum, ex-vessel revenues in recent years have been increasing.

Issue III Should the focus of review include non-tribal fishermen?

In 2002, we determined that the sockeye fishery suffered a commercial failure in 1999 and 2001 under the MSA. The commercial fishery failure was determined to be due to a fishery resource failure from undetermined but most likely natural causes, resulting in record low-run levels and harvests. The scope of the 2002 declaration included non-tribal, Lummi Tribal Nation, and other tribal commercial sockeye fishermen.

Issue IV Are the landing and ex-vessel revenue trends supportive of a determination?

Trends in the fishery show the fishery has been suffering from low-level returns since 1995—the first year abnormal migration patterns of sockeye were revealed to the Pacific Salmon Commission (PSC). The major causes of the low sockeye harvests are attributable to the following factors: poor marine survival, low sockeye runs , and harvest limits on healthy sockeye stocks because they mix with sockeye stocks of concern. The Pacific Salmon Treaty also has had some effect. In 1999, the United States and Canada signed an annex to the Pacific Salmon Treaty to address changes in the conservation and allocation of salmon. For the Fraser River sockeye salmon, this agreement required a 3-year phased-in decrease in the share taken in U.S. fisheries. The agreement reduced this share from 26 percent (the share associated with the 1985 Pacific Salmon Treaty) to 16.5 percent by 2002. However, concurrent with this reduction, the tribal share of the U.S. commercial harvest was increased from 50 percent to 68 percent.

In the economic analysis associated with the 2002 determination, harvest trends between 1946 and 1997 were adjusted for the 4-year cycle of sockeye (2 strong years followed by 2 weak years), changes in the Treaty, and changes in ex-vessel prices. Lost revenues in the fishery were projected to be about $9.0 million in 1999 and $5.0 million in 2001).

The sockeye salmon run for 2007 is the same cycle year as that of 1999. In the economic analysis for the 2002 declaration, it was forecasted that the 1999 treaty adjusted harvest should have been about 1.2 million fish. At 2006 ex-vessel prices of about $6.50 per fish, if 2007 was an average cycle year, the fishery should have earned about $8.0 million.

In 2007, tribal and non-tribal sockeye harvests were about 13,000 fish yielding ex-vessel revenues of $87,000 (Attachment 4), this compares to 2004-2006 average annual revenues of $1.8 million—a 99.9% decline.
On August 1, 2008, we closed U.S. Fraser River Sockeye Fisheries. Approximately 43,000 fish worth about $140,000 were harvested.

Issue V **Is this a new disaster or a continuation of a previously determined disaster?**

The same problems underlying the 2002 declaration persist, as the situation in this fishery has not changed significantly. The fishery resource has not shown any major changes while the commercial fishery has been kept at low levels as a result.

Available analysis from the PSC (Attachment 5) suggests that major run ("Late Run") sockeye salmon is still having abnormal migratory patterns resulting in high levels of in-river mortality. Early entry of sockeye into the Fraser River leads to an expanded residence time in freshwater. As a result, the fish become more susceptible to a parasite that leads to kidney failure. As referenced in the analysis underlying the 2002 declaration,

> Fisheries and Oceans Canada has actively pursued the cause of the mortality over the past five years and have traced it to a microscopic organism that is found in sockeye salmon populations throughout the Fraser River watershed. While the ultimate cause of death is now known, the early entry of these fish into the Fraser River has expanded their residence time in freshwater, which appears to be the source of the problem. This sockeye salmon behavior issue could be a bellwether of larger ecosystem problems.

According to PSC analysis of the 2007 season (Attachment 5), the Pacific Salmon Commission points to all major runs of sockeye being much lower than predicted and that poor marine survival conditions in 2005 may have been a significant factor for these low run sizes. It is not clear whether the same ecosystem factors underlying the recent Klamath disaster are also affecting the sockeye salmon.

Attachment 1

Five Tribes are requesting a disaster declaration

1.1 Swinomish Tribal Community

Authorities: 312a/IJA 308(d)

Request: Swinomish Indian Tribal Community hereby requests that you declare a fishery resource disaster under 308(d) of the Interjurisdictional Fisheries Act of 1986 and a commercial fishery failure under 312a of the Magnuson- Stevens Fishery Conservation and Management Act of 1976 (MSA).

Species: Fraser River Sockeye

Years: 2007

Causes: "In light of the fact that the 2007 Fraser Sockeye Fishery was closed to commercial fishing, the Causes-- According to the Science Advisory Report 2006/043 of the Department of Fisheries and Oceans, Canadian Science Advisory Secretariat (February 2007), "The cause(s) of the recent declines in sockeye productivity is not known. Recent changes in oceanographic conditions potentially affecting salmon that spawn in southern BC (British Columbia) may have contributed to lower ocean survival. Recent high escapement for some stocks may have reduced survival through dependent processes in freshwater processes in freshwater rearing environments."

2007 Fishery: The 2007 Fraser sockeye salmon run was projected to return 6.25 million fish and provide an expected Swinomish Tribal harvest of 125,000 sockeye; however the failure of the sockeye run produced the total to 1.4 million sockeye and therefore no fish were available for a Swinomish Tribal commercial harvest after providing for escapement.

2007 Economic Impact: As a result the Swinomish Fishing Community lost an estimated $826,000 in gross revenue from closure of the sockeye fishery that year; Tribal government lost $24,780 in tax revenues.

Landings Trends: not provided

1.2 Tulalip Tribes

Authorities: 312a

Request: "I formally request you declare a fisheries resource failure pursuant to Section 312 of the Magnuson-Stevens Fishery and Conservation and Management Act (Act) so disaster assistance can be provided to the adversely impacted commercial and subsistence fishermen, communities, small business owners, and their employers of the Tulalip Tribes Reservation in the northwest corner of Washington State."

Species: Sockeye but other species referred to: "On May 14, 2008, the Board of Directors, the governing body of the Tulalip Tribes, declared a fisheries economic disaster throughout the Reservation due to collapse of the salmon returns, particularly the 2007 sockeye run."

Years: 2007 and 2008

Causes: "The exact causes of the failure are still undetermined, but are most likely linked to a number of factors including: natural conditions, such as changing ocean conditions causing poor ocean survival, and disease; continued destruction of habitat and interception in state, federal, and international waters."

2007 Fishery: 11 fish harvested

Economic Impact: not provided

Landings Trends: 1988-97-10 year average 86,445 fish; 1999-95; 1998-2007 average 22,009; 2007-11.

1.3 Lummi Indian Nation

Authorities: Section 312

Request: "I formally request you declare a fisheries resource failure pursuant to Section 312 of the Magnuson-Stevens Fishery and Conservation and Management Act (Act) so disaster assistance can be provided to the adversely impacted commercial and subsistence fishermen, communities, small business owners, and their employees on Lummi Indian Reservation in the northwest corner of Washington State"

Species: Sockeye. The cover letter speaks to collapse of salmon runs, but enclosures focus on sockeye salmon. "As described in the enclosures, the 2007 salmon returns in the disaster regions are significantly less than the 20-year average and some returns are the lowest on record" (Enclosure) "The Lummi Indian Nation has declared the reservation as an Economic Fishery Resource Disaster Area. LIBC issues this declaration in response to Sockeye fishery cancellation in 1999, and 2007 and the "limited" fishery in 2000, 2001, 2002, 2003, 2004, 2005, and 2006.

Years: 2007 and prior

Causes: "The exact causes of the failure are still undetermined, but are most likely linked to a number of factors including: changing ocean conditions causing poor ocean survival, and disease; and interception in state, federal, and international waters."

2007 Fishery: "The 2007 Fraser sockeye salmon run, projected to return at 6.25 million fish and provide an expected Lummi Nation harvest of 165,900 sockeye, the failure of the sockeye run reduced the total to 1.4 million sockeye and therefore no fish are available for a Lummi Nation commercial harvest after providing for escapement;"

Economic Impacts: Since the Lummi Nation Salmon Crisis began in 1999 prices paid for premium sockeye are 80% less and gross earnings from commercial fishing salmon harvest, in local waters, has fallen by 83%' Lummi Nation is an economically distressed community that lacks economic alternatives to provide job opportunities for its 4.500 membership which has endured a 40% drop in available jobs. (At its zenith Lummi Nation fishing industry employed approximately 2,000 members of the Lummi Nation.) Lummi Nation government suffers from a severe reduction in marine tax revenues (approximately 50%) which pay for essential community services for all members of the Lummi Nation.

Landings Trends: None provided

1.4 Lower Elwha Klallam Tribe

Authorities: Sec 312 a

Request: "On behalf of the Lower Elwha Klallum Tribe (Elwha Tribe), I formally request you declare a fisheries resource failure pursuant to Section 312 of the Magnuson-Stevens Fishery and Conservation and Management Act, so disaster assistance can be provided to the adversely impacted commercial and subsistance fishermen, communities, small business owners, and their employees on the Lower Elwha Klallam Reservation and surrounding communities of the Olympic Peninsula of Washington State."

Species: Fraser River Sockeye but with reference to other species--"On May 6th 2008, the Lower Elwha Klallam Business Council, the governing body of the Elwha Tribe, declared a fisheries economic disaster throughout the Reservation due to the catastrophic collapse of the salmon runs last season and expected low returns this season, especially that of the Fraser River Sockeye fishery ".

Causes: The exact causes of the failure are undetermined but are most likely linked to a number of factors including changing ocean conditions resulting in poor survival, disease, and prior interceptions of salmon in Alaskan and Canadian waters. Combination of limited fishery openings designed to protect listed salmon stocks, poor ocean conditions, and a high diversion rate through the Strait of Georgia during the El Nino years.

Years: 2007

2007 Fishery: The 2007 Fraser River sockeye run, projected in the preseason planning process to return 6.25 million fish with expected tribal harvest of 3,500 sockeye-actually produced 1.4 million fishery making no fish available for commercial harvest after providing for escapement to spawning grounds.

2007 Economic Impact: no exvessel value provided

Landings: Late 1980's-tens of thousands; 1998-2000 average annual catch 4,332 fish; 2003-119; 2004-0; 2005-50; 2006-311; and 2007-0; Average annual sockeye landings since 2002 equals 174 fish, a 95% reduction from 10 years ago

1.5 Makah Tribal Council

Authorities: 312 (a)/IJA 308 9(d)

The Request: "The Makah tribe requests that the United States Department of Commerce declare a Commercial Fishery Failure under section 312(a) of the Magnuson- Stevens Fishery Conservation and Management Act and/or a Fisheries Resource Disaster under section 308(d) of the Interjurisdictional Fisheries Act of 1986.

Species: Coho; chinook, Sockeye salmon, pink salmon, chum salmon.

Years: 2008 and prior: 2008 catch is expected to be at its lowest level in the past 20 years. Sockeye salmon catch in the Strait of Juan de Fuca may be at or near zero this year. Total abundance of Fraser River sockeye, which drive this fishery and contribute to most of its catch, is predicted to be less than spawning escapement needs, thus leaving no harvestable surplus.

Causes: "This year's predicted low salmon catches are due to a combination of several factors that have caused widespread low stock abundances for salmon. The exact causes of these low abundances are still largely undetermined, but may be caused in part by poor ocean survival due to environmental conditions."

2007 Fishery: No information provided

2008 Fishery: "This year our salmon catch is predicted to be at its lowest level in the past 20 years."

Economic Impacts: not provided

Landings Trends: Graph provided-shows total catch –shows declines since 2004

Attachment 2

TABLE B-38. Puget Sound commercial net and troll fishery salmon catches in numbers of fish.[a] (Page 2 of 2)

Year or Average	Fishery	Chinook	Coho	Pink[b]	Chum	Sockeye
2000	Non-Indian	11,468	21,910	9	140,611	230,379
	Treaty Indian	71,551	386,714	346	159,477	315,628
	Total	83,019	408,624	355	300,088	546,007
2001	Non-Indian	18,029	28,299	463,083	824,328	85,112
	Treaty Indian	109,865	366,011	319,553	777,019	170,309
	Total	127,894	394,310	782,636	1,601,347	255,421
2002[c]	Non-Indian	17,628	24,459	7	1,117,666	141,456
	Treaty Indian	98,251	286,500	327	833,497	339,773
	Total	115,879	310,959	334	1,951,163	481,229
2003[c]	Non-Indian	8,567	18,105	683,393	764,132	90,618
	Treaty Indian	84,680	244,091	556,943	814,212	183,670
	Total	93,247	262,196	1,240,336	1,578,344	274,288
2004[c]	Non-Indian	5,042	39,481	4	1,174,295	81,031
	Treaty Indian	99,741	529,668	712	934,155	137,699
	Total	104,783	569,149	716	2,108,450	218,730
2005[c]	Non-Indian	6,236	19,694	144,567	383,127	65,931
	Treaty Indian	86,071	296,637	243,012	351,416	141,747
	Total	92,307	316,331	387,579	734,543	207,678
2006[c]	Non-Indian	13,298	9,863	6	877,758	223,980
	Treaty Indian	134,604	292,448	195	546,812	543,546
	Total	147,902	302,311	201	1,424,570	767,526
2007[c]	Non-Indian	6,785	13,435	200,687	680,250	6,266
	Treaty Indian	115,263	212,925	313,383	782,907	7,334
	Total	122,048	226,360	514,070	1,463,157	13,600

a/ Data does not reflect treaty Indian allocations. Includes U.S. and Canadian-origin salmon and fish caught in test fisheries.

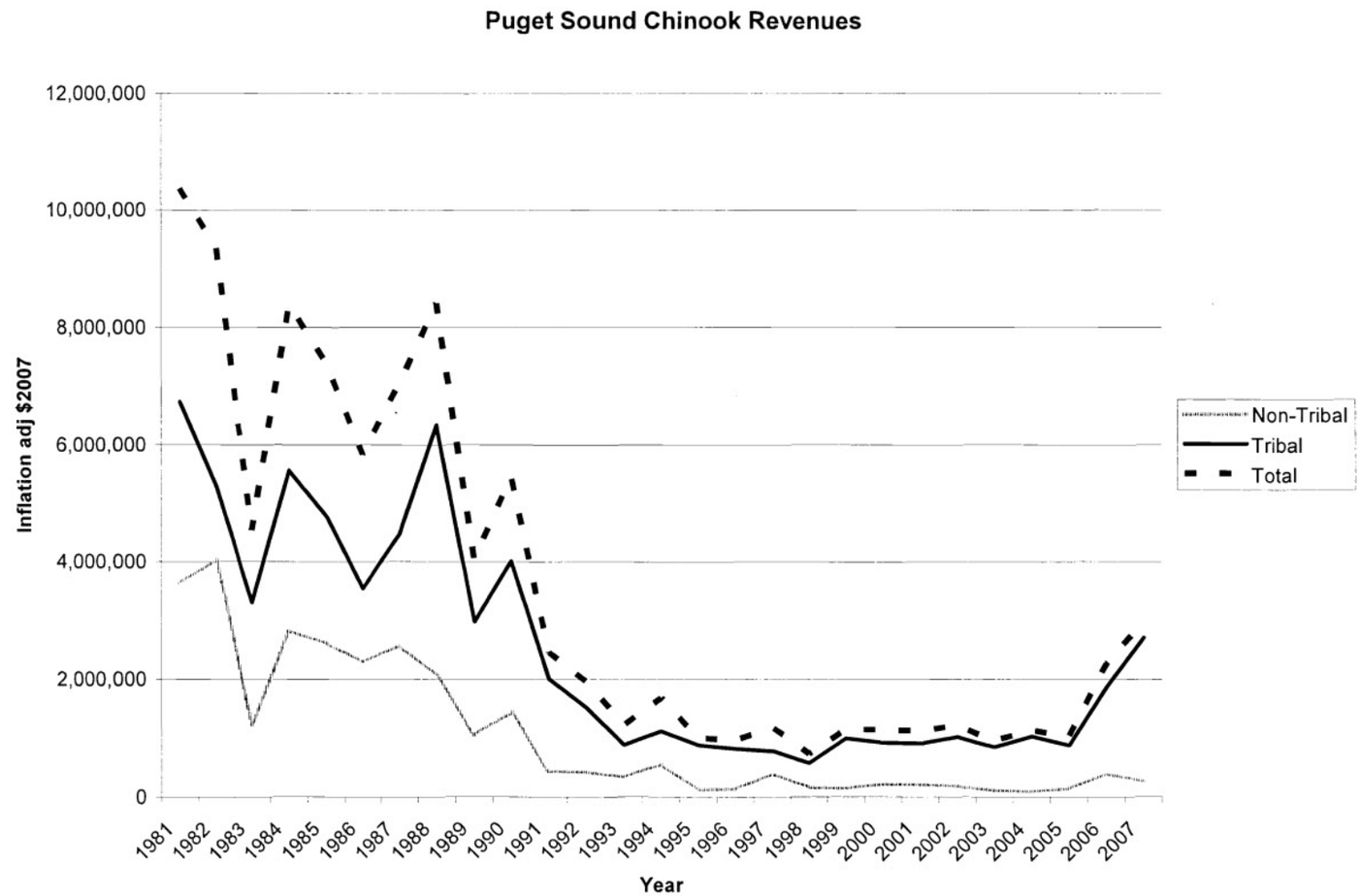
b/ Odd-year averages for pink salmon.

c/ Preliminary.

TABLE B-38. Puget Sound commercial net and troll fishery salmon catches in numbers of fish.[a] (Page 1 of 2)

Year or Average	Fishery	Chinook	Coho	Pink[b]	Chum	Sockeye
1971-1975	Non-Indian	105,332	525,867	1,172,614	331,029	2,158,784
	Treaty Indian	57,672	224,743	61,818	78,266	38,225
	Total	163,005	750,610	1,234,433	409,295	2,197,009
1976-1980	Non-Indian	103,546	413,583	1,050,560	407,859	1,095,603
	Treaty Indian	135,592	492,549	185,831	296,057	277,771
	Total	239,138	906,132	1,236,391	703,916	1,373,374
1981-1985	Non-Indian	72,934	346,125	1,154,851	368,762	928,477
	Treaty Indian	155,966	608,241	829,340	387,951	912,408
	Total	228,899	954,366	1,984,191	756,713	1,840,885
1986-1990	Non-Indian	57,550	470,494	509,445	540,843	964,690
	Treaty Indian	176,966	812,712	590,138	662,215	1,028,361
	Total	234,516	1,283,206	1,099,583	1,203,058	1,993,051
1991-1995	Non-Indian	17,519	74,371	784,067	523,396	735,834
	Treaty Indian	82,513	316,784	832,948	607,028	741,058
	Total	100,033	391,155	1,617,015	1,130,424	1,476,892
1996	Non-Indian	9,046	19,218	2	530,372	50,474
	Treaty Indian	67,061	153,748	58	264,486	286,187
	Total	76,107	172,966	60	794,858	336,661
1997	Non-Indian	21,894	10,454	869,345	229,261	690,236
	Treaty Indian	56,638	133,150	1,007,380	188,850	678,489
	Total	78,532	143,604	1,876,725	418,111	1,368,725
1998	Non-Indian	12,428	12,538	352	505,349	229,313
	Treaty Indian	43,273	148,441	512	320,122	308,446
	Total	55,701	160,979	864	825,471	537,759
1999	Non-Indian	9,512	11,902	1,109	133,404	37
	Treaty Indian	83,686	102,278	51,432	117,763	20,495
	Total	93,198	114,180	52,541	251,167	20,532

Attachment 3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2,000,000
0
Inflation adj $2007
1981
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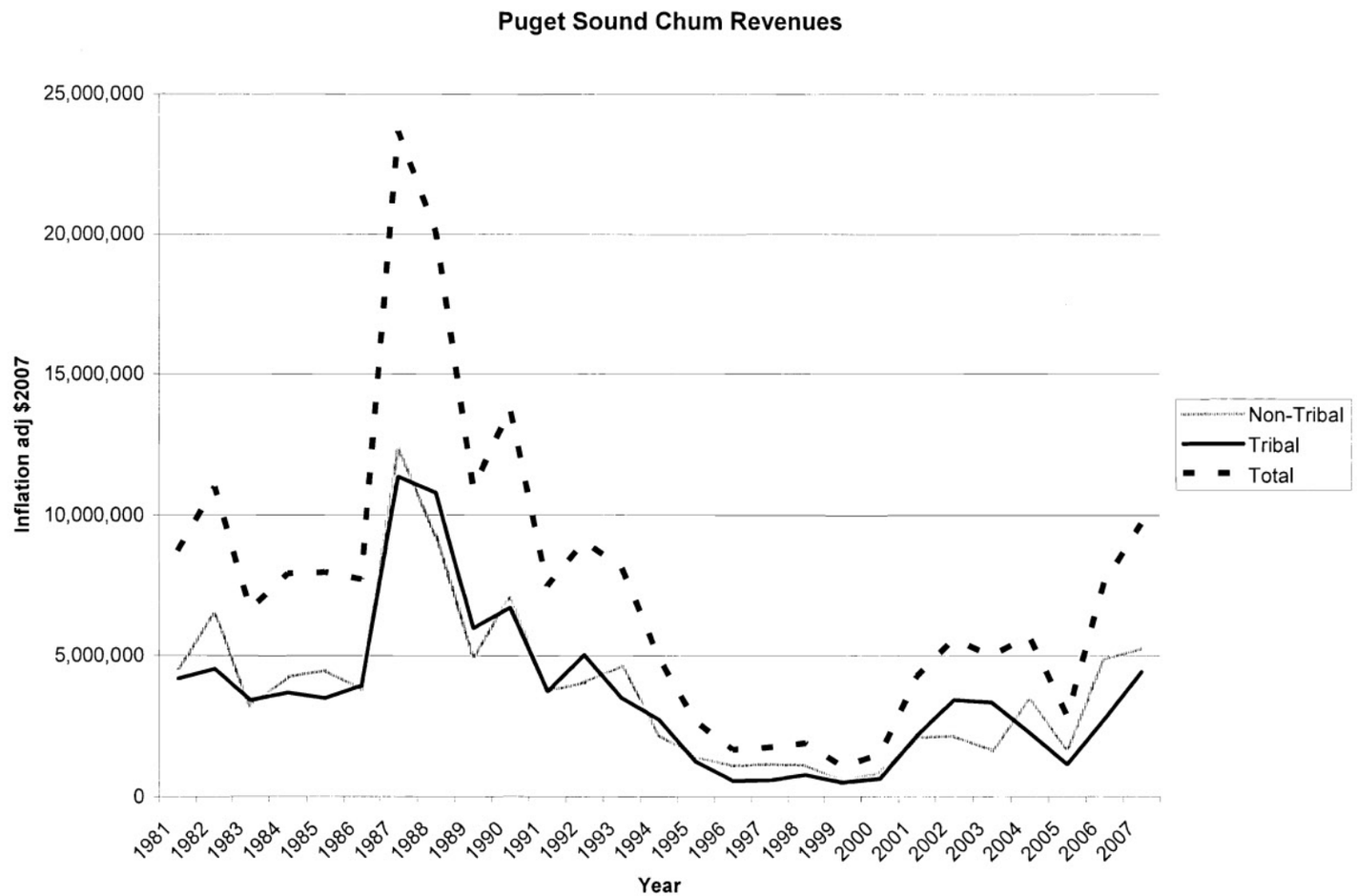
Puget Sound Chum Revenues
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20,000,000
15,000,000
10,000,000
5,000,000
0
Inflation adj $2007
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1982
1983
1984
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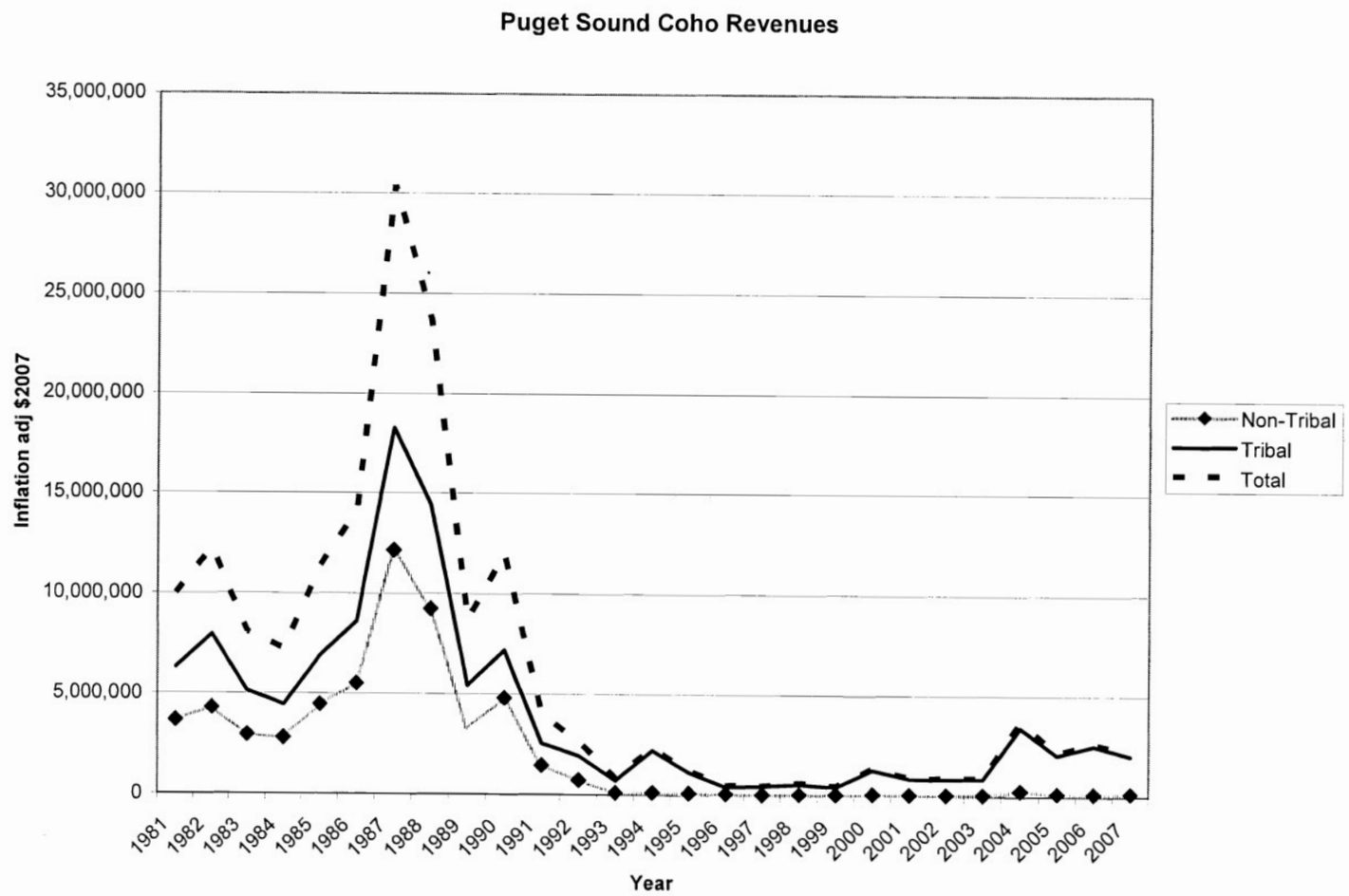
Year
Non-Tribal
Tribal
Total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30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
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Inflation adj $2007
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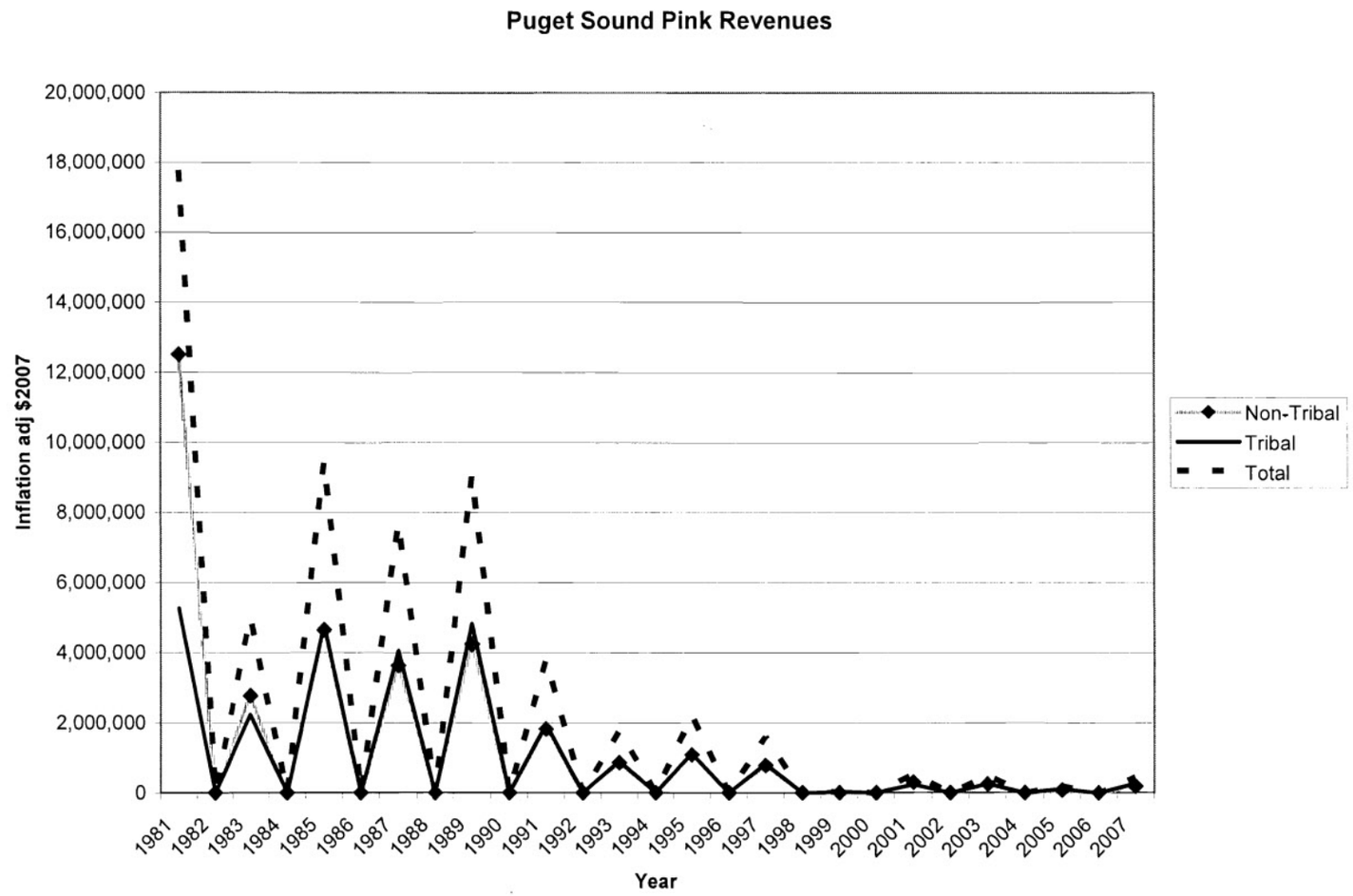
Year
Non-Tribal
Tribal
Total


Puget Sound Pink Revenues
Inflation adj $2007
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
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6,000,000
4,000,000
2,000,000
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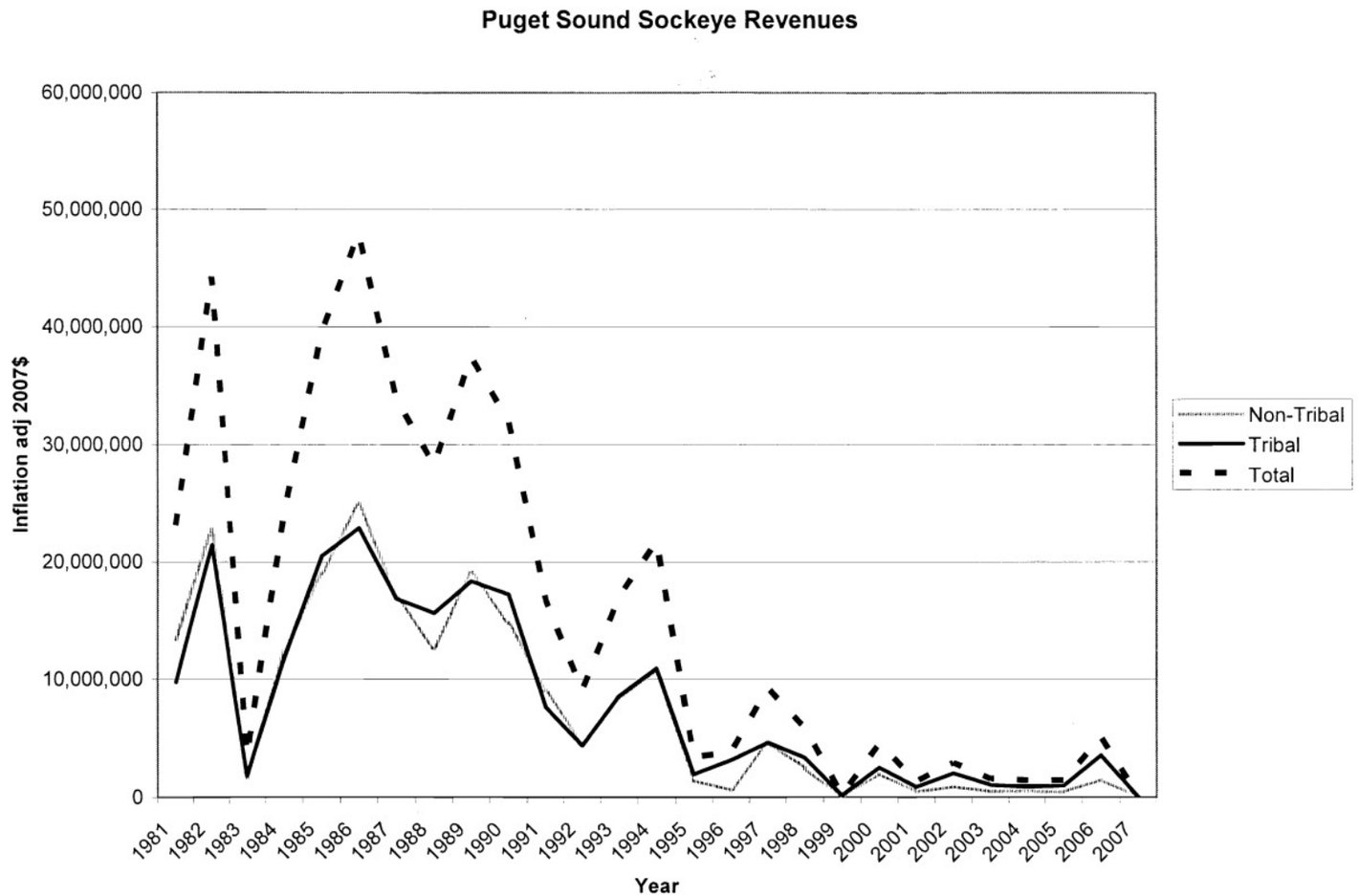
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Non-Tribal
Tribal
Total

Attachment 4

U.S. Sockeye Harvests
1000's Fish

	Fraser River			Puget Sound			%Fraser	Ex-vessel Revenues		$1,000
	Tribal	Non-Tribal	Total	Tribal	Non-Tribal	Total	Total	Total	Tribal	Non-Tribal
1986	1350	1388	2738	1358	1394	2752	99%	$28,132	$13,882	$14,250
1987	958	966	1924	971	975	1946	99%	$21,071	$10,514	$10,557
1988	374	298	672	501	348	849	79%	$17,363	$10,246	$7,117
1989	1120	1114	2234	1124	1128	2252	99%	$24,669	$12,313	$12,356
1990	1181	967	2148	1184	983	2167	99%	$21,859	$11,943	$9,916
1991	842	920	1762	845	983	1828	96%	$11,873	$5,488	$6,385
1992	291	313	604	292	316	608	99%	$6,529	$3,136	$3,393
1993	1365	1325	2690	1365	1329	2694	100%	$12,693	$6,431	$6,262
1994	959	879	1838	956	879	1835	100%	$16,335	$8,510	$7,825
1995	242	163	405	244	171	415	98%	$2,669	$1,569	$1,100
1996	224	33	257	286	51	337	76%	$3,016	$2,560	$456
1997	657	680	1337	661	682	1343	100%	$7,163	$3,525	$3,638
1998	293	229	522	310	229	539	97%	$4,770	$2,743	$2,027
1999	20	0	20	20	0	20	100%	$152	$152	$0
2000	264	230	494	315	230	545	91%	$3,869	$2,236	$1,633
2001	161	79	240	170	85	255	94%	$1,244	$829	$415
2002	298	136	434	340	141	481	90%	$2,645	$1,870	$775
2003	159	84	243	184	91	275	88%	$1,594	$1,067	$527
2004	116	81	197	138	81	219	90%	$1,423	$897	$526
2005	136	65	201	142	66	208	97%	$1,397	$954	$443
2006	485	216	701	544	224	768	91%	$4,995	$3,538	$1,457
2007	0	0	0	7	6	13	0%	$87	$47	$40

1986-98 Average	$13,703.23	$7,143.15	$6,560.08
2005-2006 Average	$2,605	$1,796	$809
2007	$87	$47	$40

Not adjusted for inflation

Attachment 5

The same underlying problems underlying the 2002 Declaration still persist:

Pacific Salmon Commission News Release No. 1 July 13, 2007

2007 Management Plan

The problem of early entry of Late-run sockeye stocks has continued every year since 1996 and it continues to adversely impact their productivity and substantially reduce harvest opportunities on these stocks and on co-migrating Summer-run sockeye and Fraser River pink salmon. The in-river mortality rate of Late-run sockeye has varied substantially since 1996 and was estimated from radio-tagged fish to be 31% in 2006. However, a consistent pattern has been observed since 1996; Late-run sockeye that enter the river prior to mid-August have a very low chance of surviving to reach their spawning grounds and of the small fraction of fish that do successfully reach the spawning grounds, most females die un-spawned. The Panel remains concerned about this phenomenon and the 2007 management plan was developed under the assumption that this abnormal upstream migratory behavior of Late-run sockeye will continue and that substantial in-river mortality will occur. Research is continuing on identifying the cause(s) of the early entry behavior, however though substantial progress has been made documenting the behavior and understanding the causes of mortality, the causes of the behavior are still unknown. Further background information about this problem and the research being conducted is available on the Pacific Salmon Commission website at www.psc.org. Management objectives and actions implemented in 2007 will place high priority on conserving Fraser River Late-run sockeye (which include Cultus Lake sockeye).

Pacific Salmon Commission News Release No. 61 July 17, 2007

The Fraser River Panel met today to review reports from the Pacific Salmon Commission staff on the status of the Fraser River sockeye and pink salmon runs. The total return of Fraser River sockeye this season is presently tracking an abundance level approximately 25% of that expected during pre-season fishery planning. Current assessment data indicates that the trend of very low Fraser River sockeye returns is occurring across all four of the Fraser sockeye runs (Early Stuart, Early Summer-run, Summerrun, and Late-run). Poor marine survival conditions in 2005 during the juvenile life-stage of four-year old adult Fraser sockeye returning this season may have been a significant factor in their very low run sizes. Although Fraser sockeye runs are weak this season relative to pre-season expectations, Fraser River discharge levels and water temperatures have been generally favorable for Fraser sockeye migrating to their spawning grounds.