

# **Final Report of DNA Stock Composition of Catch and Release Chinook Salmon in the 2008-2009 WCVI Troll Fishery**

## **Background**

DNA can provide information on stock group specific impacts of the WCVI troll fishery. This is important for managing the WCVI troll fishery since limited coded wire tag (CWT) information exists for non-summer portions of the year. In response to domestic conservation requirements in recent years, the WCVI troll fishery has shifted slightly compared to the Pacific Salmon Commission (PSC) Chinook model base period (1979-82). During the base period, fishery impacts occurred mainly from March to October, whereas recently, fishery impacts have shifted away from summer months to avoid weak stocks, and expanded further into the winter months. Additionally, catches are currently considerably lower than they were during the base period. Consequently, the current impacts of the WCVI troll fishery as determined by the PSC Chinook model (using CWT data from the base period) may not be comparable. In addition, the relatively low numbers of CWT recovered by the Mark Recovery Program (MRP) may not be sufficient to accurately identify fishery impacts from the smaller catches characteristic of winter fishery openings, especially on the monthly time scale required. The use of DNA methods provides an independent means of evaluating the impact of this fishery on chinook stocks, and is used to supplement the CWT information to provide the best available estimate of impact on stocks. In addition, WCVI troll fishery planning for Chinook requires that management objectives for weak stocks are met using limited CWT and DNA information. This project provides improved information for evaluating current impacts and avoiding future impacts on weak stocks, thereby achieving conservation objectives of the PST while minimizing economic disruption associated with elimination of fisheries.

## **Project Objectives**

The program objectives were to:

- 1) Determine the stock composition of WCVI troll chinook fisheries from April 2008 to September 2009 using DNA analysis techniques. Originally, funding was provided to collect this information from April 2008 to March 2009. In spring 2009, we requested that a portion of this unused funding be reprofiled for DNA sampling and analysis from April 2009 to September 2009, particularly to obtain representative and comparative sub-legal Chinook samples.
- 2) Determine stock composition estimates of legal versus sub-legal Chinook from representative and comparative samples.
- 3) Summarize existing DNA stock composition data collected from the WCVI Chinook troll fishery in a technical report format. The DNA based stock composition data were to be compared to CWT based stock composition data, and annual stock composition data based on DNA sampling were to be presented.

## **Results**

### *Stock Composition Estimates of the WCVI Chinook Troll Fishery Catch (Objective 1)*

All Area G troll fisheries from April 2008 to September 2009 were sampled for DNA with the exception of several small fisheries that were missed due to the lack of mandatory

offload reporting (Table 1). This recurring issue may be addressed in 2010 fisheries with a move to mandatory offload reporting. The total catch from each fishery opening (strata = month and PFMA) was sub-sampled using stratified random sampling to obtain a minimum of 100-200 DNA samples per monthly fishing area stratum, or at least a 4% sampling rate (whichever was greater). The samples were collected mainly through the existing MRP, but also opportunistically through observers/fishers at sea. A description of the DNA sampling protocol used during the project period is included in Appendix 1. A total of 14,440 Chinook DNA samples were collected from the WCVI troll fishery from April 2008 to September 2009 (Table 1). DNA samples were collected from 2% to 47% of the total catch (average of 19%) in each stratum (NWVI, SWVI) and month when fishery openings occurred.

Of samples collected, the goal was to analyse samples from approximately 2% of the total catch in each catch region and month (or a minimum of 100 plugs), totalling a projected 7100 samples for the period. DNA samples were analysed from 1% to 39% of the total catch (average of 6%) in each stratum (NWVI, SWVI) and month when fishery openings occurred. Samples were selected to be representative of the catch in each PFMA and then rolled up to the catch region (NWVI, SWVI) level. Of the 14,440 DNA samples collected, 6,714 samples were analysed by the PBS molecular genetics lab at a cost of \$20 per fish. A total of 386 samples were not processed due to sample degradation, or because they were not collected. Note that all April 2008 samples and 162 samples from May 2008, were paid for by previous year's funding. Samples were analysed with the GAPS (Genetic Analysis of Pacific Salmon; version 2.1, plus additional DFO populations submitted but not included in a new GAPS release) baseline which is based on thirteen microsatellite loci surveyed in approximately 25,000 chinook from 181 populations ranging from Russia and Alaska to California. Stock composition results by month and catch region are found in Appendix 2.

Table 1. Chinook catch, number of DNA samples collected and analysed, and percent of catch analysed, by fishery, month and catch region stratum (SWVI, NWVI), April 2008 to September 2009.

Note: NWVI = Northwest Vancouver Island; SWVI = Southwest Vancouver Island

Sampling Year	Sampling Month	Fishery Sampled	Sampling Strata	Chinook Catch	Number of DNA Plugs Collected	Actual # Plugs Analysed	Percent of Catch Collected
2008	April	Area G	SWVI	11	0	0	0
2008	April	Area G	NWVI	1,706	424	396	25%
2008	May	Area G	SWVI	8,023	248	229	3%
2008	May	Area G	SWVI	<i>sublegal</i>	186	100	n/a
2008	May	Area G	NWVI	3,481	613	214	18%
2008	May	Area G	NWVI	<i>sublegal</i>	17	0	n/a
2008	June	Area G	SWVI	13,092	1098	203	8%
2008	June	Area G	SWVI	<i>sublegal</i>	128	101	n/a
2008	June	Area G	NWVI	2,852	334	205	12%
2008	June	Area G	NWVI	<i>sublegal</i>	0	0	n/a
2008	July	Area G	SWVI	no fishery	n/a	n/a	n/a
2008	July	Area G	NWVI	no fishery	n/a	n/a	n/a
2008	July	WCVI Sport	SWVI	9,809	408	191	n/a
2008	July	WCVI Sport	NWVI	5,266	217	104	n/a
2008	August	WCVI Sport	SWVI	11,428	401	217	n/a
2008	August	WCVI Sport	NWVI	8,271	273	160	n/a
2008	August	Area G Plug	SWVI	8,590	433	155	5%
2008	August	Area G Plug	NWVI	509	151	107	30%
2008	September	Area G	SWVI	41,515	813	419	2%
2008	September	Area G	SWVI	<i>sublegal</i>	107	63	n/a
2008	September	Area G	NWVI	3,642	752	166	21%
2008	October	Area G	SWVI	1,265	not sampled	0	n/a
2008	October	Area G	NWVI	617	not sampled	n/a	n/a
2008	November	Area G	SWVI	184	0	n/a	0%
2008	November	Area G	NWVI	1,025	210	samples unusable	20%
2008	December	Area G	SWVI	52	0	n/a	0%
2008	December	Area G	NWVI	1,055	325	199	31%
2009	January	Area G	SWVI	461	0	0	0%
2009	January	Area G	NWVI	2,933	744	200	25%
2009	February	Area G	SWVI	230	0	0	0%
2009	February	Area G	NWVI	1,310	554	200	42%
2009	March	Area G	SWVI	77	0	0	0%
2009	March	Area G	NWVI	509	205	200	40%
2009	April	Area G	SWVI	289	0	0	0%
2009	April	Area G	NWVI	3,327	548	200	16%
2009	May	Area G	SWVI	14,994	639	380	4%
2009	May	Area G	NWVI	3,068	1428	400	47%
2009	June	Area G	SWVI	8,292	721	298	9%
2009	June	Area G	NWVI	<i>sublegal</i>	56	0	n/a
2009	June	Area G	NWVI	3,873	569	298	15%
2009	June	Area G	NWVI	<i>sublegal</i>	0	0	n/a
2008	July	Area G	SWVI	no fishery	n/a	n/a	n/a
2008	July	Area G	NWVI	no fishery	n/a	n/a	n/a
2009	July	WCVI Sport	SWVI	n/a	188	187	n/a
2009	July	WCVI Sport	NWVI	n/a	76	74	n/a
2009	August	WCVI Sport	SWVI	n/a	111	110	n/a
2009	August	WCVI Sport	NWVI	n/a	114	109	n/a
2009	August	Area G Plug	SWVI	7,432	603	201	8%
2009	August	Area G Plug	NWVI	2,198	738	201	34%
2009	September	Experimental	Legal	212	201	93	95%
2009	September	Experimental	Sublegal	254	231	215	91%
1998	April/May	archived scales	Legal	n/a	n/a	198	n/a
1998	April/May	archived scales	Sublegal	n/a	n/a	182	n/a
2002	April/May	archived scales	Legal	n/a	n/a	195	n/a
2002	April/May	archived scales	Sublegal	n/a	n/a	107	n/a
					<b>14,440</b>	<b>6,714</b>	<b>19%</b>

### *Stock Composition Estimates of Legal versus Sub-legal Chinook (Objective 2)*

DNA samples from a total of six time periods were taken to compare the stock composition of sublegal sized with legal sized Chinook. These include May, June and September 2008, September 2009, and May/June 1998 and 2002 (using DNA from archived scale samples). In 2008, sublegal Chinook samples were collected by a small number of volunteer trollers. These samples were contrasted against legal Chinook DNA samples collected through the dockside MRP. In 2009, (September 10-14), an Area G troller was contracted to collect both legal and sublegal Chinook DNA samples from Area 123, troll zones 8, 10, 13, 16, and 15A. A total of 212 legal, and 254 sublegal samples, were collected (Table 1). A total of 93 legal, and 215 sublegal, samples were analysed (a portion of the legal samples were degraded and could not be analysed). Stock composition results are presented in Appendix 3.

### *DNA Report Compilation (Objective 3)*

A summary data report has been compiled for DNA data collected from 2002 to 2009 (73 pp.). This report is currently undergoing a preliminary review process. A copy of the report is given in Appendix 4. The report summarizes the WCVI Chinook troll DNA sampling program, numbers and locations of samples collected, and methods used. Also presented are the raw data, comparisons between CTC derived and GSI derived estimates of stock composition by month and catch region, and annual estimates of Area G troll impacts on Chinook by month and Chinook year. Our intention is to update this report with the 2009 data, allowing the comparison of CTC derived and GSI derived stock composition estimates for 3 complete years of data. Completion of this report is anticipated by spring 2010.

## Budget

The total overall allocated Southern Endowment Fund budget was \$181,700 (Canadian funds). The DFO in kind contribution was estimated at \$25,076.

Proposed and actual direct costs and DFO in-kind contributions are as follows:

<u>Direct</u>		<u>Proposed</u>	<u>Actual</u>
▪ DNA sampling (2 staff @50 days @8 hr/day @25/hr)	=	\$13,000	\$14,914.61
▪ Report compilation (contractor)	=	\$6,000	\$0.00
▪ Area G vessel costs (sublegal sampling)	=	\$6,000	\$6,000.00
▪ Observer costs for on-board sampling	=	\$11,000	\$10,336.13
▪ DNA sampling equipment	=	\$200	\$3,159.01
▪ travel expenses / shipping	=	\$3,500	\$1,285.21
▪ DNA lab analysis for 7100 samples, including labour and supplies (7100 samples x \$20/fish)	=	<u>\$142,000</u>	<u>\$134,498.93</u>
<b>TOTAL</b>	=	<b>\$181,700</b>	<b>\$170,193.89</b>
<u>DFO – In Kind</u>			
▪ Project consultation, (1 staff @5 days @7.5 hr/day @\$40/hr)	=	\$2,081	\$2,081
▪ Project management (2 staff @20 days @7.5 hr/day @\$30/hr)	=	\$11,415	\$11,415
▪ Report compilation (2 staff @25 days @7.5 hr/day @\$30/hr)	=	<u>\$11,580</u>	<u>\$11,580</u>
<b>TOTAL</b>	=	<b>\$25,076</b>	<b>\$25,076</b>
<b>TOTAL COSTS</b>	=	<b>\$206,776</b>	

DNA sampling costs similar to those proposed. Contractor services were not required for the report compilation. Area G vessel costs for sublegal Chinook sampling were as anticipated. On-board observer costs were as anticipated. DNA sampling material costs were considerably higher than anticipated due to the lab passing on their vial and ethanol costs to the program. Travel costs were lower than proposed. The DNA lab analysis cost was close to that proposed, and in-kind costs were as anticipated.

## Project Benefits

This project relates to the harvest rate indices prescribed in the PST for chinook salmon in the WCVI AABM fishery. These are management goals based on base period fishing patterns. Regional planning processes use CWT information related to base period fishing patterns as the basis for planning. In the non-summer fishing period there are few CWT data and so planning processes are compromised. The effect of changes in fishing patterns from the base period and impact on harvest rate indices is an issue. DNA information from the fisheries will improve the

knowledge base more quickly than using CWT only. Increased conservation and improved fisheries management will provide potential for increased returns of stocks of concern. Increased returns will provide more rapid rebuilding. DNA information will also provide insight into the spatial and temporal distribution of various chinook stock groups, allowing fisheries to be better shaped to avoid stocks of concern.

This project will benefit the chinook stocks, the fishery managers, the fishermen, and the local WCVI communities. Chinook stocks will benefit from increased conservation and more rapid rebuilding of weaker stocks. Fishery managers will benefit through improved fisheries management information, including the ability to avoid weaker stocks. Fishers will benefit from greater fishing opportunities made possible through avoidance of weaker stocks. Rebuilding of weaker stocks will increase TAC in future years. Local WCVI communities will benefit from greater fishing activity in their areas, improving their economic outlook.

## **Appendices**

Appendix I. WCVI Chinook Troll DNA Sampling Protocol (April 2008 to September 2009)

Appendix II. Regional DNA results from the sampling of the 2008/09 West Coast Vancouver Island Chinook troll fisheries (combined from files: WCTR\_CN\_2008DNAdata\_SEF.xls, WCTR\_CN\_2009DNAdata\_SEF.xls, and WSPT\_CN\_2009DNAdata\_SEF.xls).

Appendix III. Regional DNA results from sublegal and legal Chinook sample comparisons (combined from files: \_CN\_2008DNAdata\_SEF.xls and WCTR\_CN\_2009DNAdata\_SEF.xls).

Appendix IV. DRAFT technical data report summarizing DNA information collected from 2002 to 2008 West Coast Vancouver Island Chinook troll fisheries.

## **Data**

DNA results (raw regional data spreadsheet) are provided in hardcopy as well as on the accompanying CD.

## **Electronic Files Provided**

1. SEF 2008-09 Chinook DNA Cover Letter.doc
2. SEF 2008-09 Chinook DNA Final Rpt.doc
3. WCTR\_CN\_2008DNAdata\_SEF.xls
4. WCTR\_CN\_2009DNAdata\_SEF.xls
5. WSPT\_CN\_2008DNAdata\_SEF.xls

APPENDIX I

WCVI Chinook Troll DNA Sampling Protocol  
(April 2008 to September 2009)

**WCVI Troll Chinook DNA Sampling Protocol  
For Dockside MRP Sampling from April 2008 to September 2009**

**Objective:**

- To collect a sample of chinook DNA from each WCVI troll catch region that is representative of catch in that catch region (NWVI is 25/125-27/127, SWVI is 21/121-24/124)
- The temporal stratum is a month (samples should represent the catch over the whole length of a fishery opening within a month).
- Sample Size: objective is 4% of the catch by month and catch region (the larger the catch, the greater the number of samples). A minimum of 200 plugs should be collected for each catch region (NWVI and SWVI) barring very small catches. If any questions or concerns arise regarding any aspect of sampling, please contact Karin Mathias, (250) 756-7290.

**DNA Sampling Approach:**

- No more than 50 samples are to be put into each vial. Overpacking vials has resulted in the loss of some samples. (Need 2/3 ethanol to 1/3 samples.) If it is necessary to temporarily store more than 50 in one vial, at the earliest opportunity the samples should be split into separate vials.
- Samples and inventory/data sheets are to be submitted monthly.
- The number of DNA samples to be collected from each offload is summarized in Table 1 below.
- DNA sample collection should be spread out over the length of the month as much as possible (although collect more plugs than needed at the start of the fishery opening in case of unforeseen closures and difficulties sampling small catches).
- DNA sample collection should be taken from single vessel samples (unmixed samples) and single (unmixed) areas as priorities wherever possible. Sample the entire catch from a vessel (or vessels if the catch was graded and combined over PFMA).
- DNA sample collection should be taken from as many vessels as possible.
- Whether fish are graded or ungraded, the sample should be taken so as to be random and representative of the catch, regardless of mark.
- DNA samples should be kept separate by mark (2 bulk vials for each of adipose-on fish and adipose-off fish). Collect samples from the tail fin rather than operculum.
- Where fish caught on more than one vessel have been mixed as a result of grading (i.e. 2 boats' fish in 1 tote), these fish can be sampled as long as the boats have fished in the same catch region (NWVI or SWVI) and the areas fished are known.

**Table 1.** DNA sampling requirements for different chinook catch levels in the WCVI troll fishery.

<b>Number of Offloaded Chinook</b>	<b>DNA Sample To be Taken From:</b>
<35	Every fish
36-75	Every 2 <sup>nd</sup> fish
76-125	Every 3 <sup>rd</sup> fish
126-750	Every 5 <sup>th</sup> fish
751 or greater	Every 10 <sup>th</sup> fish

**Data Recording Requirements:**

- Sampling Date and Location
- Sampler Names
- Vessel Name (s)
- PFMA Fished
- Mark Type (adipose-on, adipose-off)
- DNA Vial #
- # plugs in each vial

## **WCVI Troll Chinook DNA Sampling Protocol for the On Board Observer Program**

### **CHINOOK (Freezer or Ice Boats)**

1. Record on the **South Coast Troll Biological Sampling** form the following data:

For the **first 25 Chinook encountered each day** (this includes legal & sublegal, marked & unmarked, retained & released), record the following for each fish:

- Date, Statistical Area, Zone
  - Approx. weight (indicate dressed or round) in lbs
  - fork length (mm) ie: 654mm
  - sexual maturity code (retained Chinook only)
  - flesh color code (retained Chinook only)
  - fin mark code
2. **DNA samples:** From the **first 25 Chinook encountered each day (retained and released)**, collect a fin (anal or tail) punch. Place in supplied individual vials. For each statistical area, keep separate vials for legal, sublegal, clipped and unclipped (ie. for Area 126 you would have 4 vials). Start another 4 vials if the vessel changes stat area. Samples from multiple days can be combined as long as the stat area is the same.
  3. **Scale samples:** Of the **first 25 Chinook encountered each day** collect 5 scales from **retained Chinook only** – from preferred area and place in scale book.
  4. There is no requirement for head label # to be recorded for this fishery.

### **Detailed Catch and Release Data Forms**

1. Fill out forms as per instruction sheets.
2. This form is a daily catch summary for each zone fished.
3. Report your daily catch summaries to 1-888-387-0007 or to an VHF operator after each days fishing. VHF channel available will be announced on-grounds. If unable to contact an operator with the daily catch info, then call Terry @ (250) 616-8217 or Lee @ (250) 756-7116.

### **Contact #'s**

1. Terry Palfrey – Fisheries Manager (250) 756-7158
2. Karin Mathias – WCVI Stock Assessment (250) 756-7290

## APPENDIX II

Regional DNA results from the sampling of the  
2008/09 West Coast Vancouver Island  
Chinook troll fisheries

Species = chinook Number of populations = 282 Baseline Description = CTC Number of loci = 13 Max missing loci = 8  
 Number of chains = 8 Number of Reps = 20000 Reps Kept = 1000

		2008 08wctdfo troll SWVI Area23/123		2008 08wctdfo troll NWVI Area125/126/26		2008 08wctdfo troll SWVI Area23/123		2008 08wctdfo troll NWVI Area125/126	
		January 100(0)		January 122(0)		February 100(0)		February 102(0)	
Code	Region1	Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)
2	MUFR	0.8	(1.0)	0.0	(0.2)	0.5	(0.9)	0.0	(0.3)
3	LWFR-F	0.0	(0.1)	0.2	(0.5)	3.4	(1.9)	7.0	(2.7)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
5	SOTH	0.0	(0.2)	2.6	(1.6)	0.0	(0.2)	0.0	(0.2)
6	LWTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
7	ECVI	3.8	(1.9)	5.5	(2.3)	1.2	(2.0)	2.1	(1.5)
8	WCVI	0.0	(0.2)	0.0	(0.2)	0.0	(0.3)	0.0	(0.2)
9	SOMN	0.0	(0.3)	0.1	(0.4)	2.0	(2.0)	0.0	(0.3)
10	NOMN	0.0	(0.4)	0.4	(0.7)	0.0	(0.3)	0.0	(0.2)
11	NASS	0.0	(0.2)	0.0	(0.2)	0.0	(0.3)	0.0	(0.4)
12	LWFR-Sp	0.7	(0.9)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
14	QCI	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.2)
20	Skeena Babine	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
22	Skeena Mid	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
23	Skeena Lower	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1001	California_Coast	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1005	Deschutes_R_fa	2.0	(1.4)	5.0	(2.8)	0.0	(0.1)	0.1	(0.6)
1006	Hood_Canal	3.0	(4.3)	16.5	(5.1)	8.2	(5.5)	2.5	(3.3)
1007	Juan_de_Fuca	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1008	Klamath_R	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	2.6	(1.7)
1009	L_Columbia_R_fa	1.3	(2.1)	6.8	(2.7)	1.4	(1.5)	4.4	(2.6)
1010	L_Columbia_R_sp	0.2	(0.6)	0.0	(0.3)	1.6	(1.4)	3.4	(2.4)
1011	Mid_and_Upper_Co	0.0	(0.3)	3.1	(2.2)	0.0	(0.3)	0.1	(0.4)
1012	Mid_Columbia_R_t	2.7	(2.4)	8.4	(2.6)	11.0	(3.2)	10.6	(3.1)
1013	Mid_Oregon_Coast	0.0	(0.3)	0.1	(0.5)	0.2	(0.9)	0.4	(1.0)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1017	N_Oregon_Coast	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	3.9	(2.1)
1018	N_Puget_Sound	50.1	(7.0)	17.8	(4.0)	43.9	(6.4)	24.6	(4.7)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)	0.0	(0.2)
1022	S_Puget_Sound	35.3	(6.6)	22.2	(5.2)	25.6	(7.2)	13.6	(4.9)
1023	Snake_R_fa	0.1	(0.5)	11.1	(3.7)	0.9	(1.0)	24.5	(4.4)
1024	Snake_R_sp/su	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	0.0	(0.3)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.1	(0.3)	0.0	(0.1)	0.0	(0.2)

Species = chinook Number of  
 Number of chains = 8 Number

		2008 08wctjot troll NWVI Area 125-126-127		2008 08wctdfo troll SWVI Area123124		2008 08wctdfo troll NWVI Area125126127		2008 08wctdfo troll SWVI Area123124	
		April 396(0)		May 229(0)		May 214(0)		June 203(5)	
Code	Region1	Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.5	(0.4)	0.0	(0.1)	2.7	(1.2)	0.3	(0.4)
2	MUFR	0.3	(0.3)	0.0	(0.1)	0.1	(0.3)	0.5	(0.8)
3	LWFR-F	4.4	(1.1)	21.0	(2.8)	8.5	(2.0)	44.2	(3.5)
4	NOTH	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)	0.8	(0.7)
5	SOTH	2.5	(0.9)	1.2	(0.8)	8.7	(2.0)	0.3	(0.7)
6	LWTH	0.0	(0.1)	0.4	(0.4)	0.9	(0.7)	0.0	(0.1)
7	ECVI	6.0	(1.3)	2.6	(1.1)	3.9	(1.4)	1.0	(0.7)
8	WCVI	1.8	(0.7)	0.0	(0.1)	1.4	(0.8)	0.0	(0.1)
9	SOMN	0.0	(0.1)	0.0	(0.1)	0.5	(0.5)	0.0	(0.1)
10	NOMN	0.9	(0.6)	0.0	(0.1)	0.1	(0.3)	0.0	(0.2)
11	NASS	1.6	(0.9)	0.0	(0.1)	0.2	(0.4)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
13	LWFR-Su	0.3	(0.3)	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.2	(0.5)	0.0	(0.2)	2.2	(1.4)	0.0	(0.1)
20	Skeena Babine	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
21	Skeena Bulkley	0.3	(0.3)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
22	Skeena Mid	0.0	(0.1)	0.1	(0.2)	2.8	(1.6)	0.0	(0.1)
23	Skeena Lower	0.5	(0.4)	0.4	(0.4)	0.1	(0.4)	0.0	(0.1)
1001	California_Coast	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	0.1	(0.3)	0.0	(0.2)	0.1	(0.7)	0.0	(0.1)
1006	Hood_Canal	5.4	(1.5)	6.4	(2.2)	5.6	(2.3)	9.3	(3.9)
1007	Juan_de_Fuca	0.0	(0.1)	0.0	(0.1)	0.5	(0.5)	0.0	(0.1)
1008	Klamath_R	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1009	L_Columbia_R_fa	9.1	(1.8)	9.0	(2.3)	6.8	(2.2)	4.5	(2.3)
1010	L_Columbia_R_sp	1.6	(0.7)	0.0	(0.1)	1.0	(1.2)	0.0	(0.1)
1011	Mid_and_Upper_Co	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	0.1	(0.3)
1012	Mid_Columbia_R_t	4.7	(1.3)	16.7	(2.7)	7.1	(2.1)	19.3	(3.2)
1013	Mid_Oregon_Coast	1.0	(0.9)	0.6	(0.7)	1.0	(1.3)	0.2	(0.5)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1015	N_Gulf_Coast_Alsea	0.0	(0.0)	0.0	(0.0)	0.1	(0.3)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.1)	0.0	(0.0)	0.5	(0.5)	0.0	(0.0)
1017	N_Oregon_Coast	0.8	(0.6)	0.0	(0.2)	1.4	(1.2)	0.4	(0.5)
1018	N_Puget_Sound	21.2	(2.5)	10.1	(2.3)	8.7	(2.3)	4.8	(2.4)
1019	NSE_Alaska_Chilk	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1022	S_Puget_Sound	9.8	(1.9)	14.4	(2.8)	11.4	(2.8)	8.0	(3.6)
1023	Snake_R_fa	26.9	(2.3)	17.0	(2.7)	23.9	(3.2)	6.2	(1.8)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2008 08wctjot troll NWVI Area126		2008 08wctdfo troll SWVI Area123		2008 08wctdfo troll NWVI Area127		2008 08wctdfo troll SWVI Area123	
		June 205(0)		Aug 155(0)		Aug 107(0)		September 419(1)	
		Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.9	(0.7)	0.4	(0.6)	0.0	(0.2)	0.0	(0.1)
2	MUFR	0.1	(0.3)	1.1	(1.4)	0.0	(0.3)	0.0	(0.1)
3	LWFR-F	5.6	(1.8)	52.3	(4.3)	10.1	(3.0)	44.2	(2.5)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
5	SOTH	6.0	(1.8)	3.5	(1.5)	36.6	(4.8)	0.0	(0.1)
6	LWTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
7	ECVI	6.0	(1.8)	0.5	(0.7)	5.1	(2.3)	1.1	(0.6)
8	WCVI	3.7	(1.4)	0.0	(0.2)	4.9	(2.1)	0.0	(0.1)
9	SOMN	0.0	(0.1)	2.0	(1.4)	0.1	(0.5)	0.2	(0.4)
10	NOMN	0.0	(0.2)	0.0	(0.2)	0.1	(0.6)	0.0	(0.1)
11	NASS	1.0	(0.7)	0.0	(0.2)	0.0	(0.3)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.0)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
20	Skeena Babine	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
21	Skeena Bulkley	1.6	(0.9)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
22	Skeena Mid	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)	0.0	(0.0)
23	Skeena Lower	0.0	(0.2)	0.0	(0.2)	0.0	(0.3)	0.0	(0.0)
1001	California_Coast	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1005	Deschutes_R_fa	2.1	(1.4)	0.0	(0.3)	2.9	(2.1)	3.3	(1.4)
1006	Hood_Canal	1.2	(1.7)	7.5	(2.9)	0.0	(0.3)	6.3	(1.4)
1007	Juan_de_Fuca	1.0	(0.7)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1008	Klamath_R	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.2	(0.3)
1009	L_Columbia_R_fa	7.7	(2.2)	7.8	(2.9)	7.3	(3.1)	11.0	(1.7)
1010	L_Columbia_R_sp	0.6	(0.6)	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)
1011	Mid_and_Upper_Co	0.0	(0.3)	0.0	(0.2)	0.0	(0.4)	0.0	(0.1)
1012	Mid_Columbia_R_t	7.2	(2.1)	4.1	(2.5)	0.5	(0.9)	6.3	(1.3)
1013	Mid_Oregon_Coast	2.4	(1.3)	0.1	(0.4)	9.0	(3.4)	2.5	(0.9)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.0)	0.3	(0.8)	0.0	(0.0)
1015	N_Gulf_Coast_Alsea	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.5	(0.5)	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1017	N_Oregon_Coast	0.0	(0.1)	1.2	(0.9)	4.8	(2.2)	0.4	(0.4)
1018	N_Puget_Sound	15.1	(3.2)	6.9	(3.0)	1.5	(2.3)	3.6	(1.3)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.0)
1022	S_Puget_Sound	11.9	(3.2)	1.7	(2.1)	0.1	(0.5)	5.0	(1.4)
1023	Snake_R_fa	23.8	(3.2)	10.8	(2.7)	15.6	(3.8)	16.0	(2.0)
1024	Snake_R_sp/su	0.0	(0.2)	0.0	(0.1)	0.7	(0.9)	0.0	(0.1)
1025	SSE_Alaska	1.3	(1.0)	0.0	(0.1)	0.0	(0.3)	0.0	(0.0)
1026	SSE_Alaska_Stikin	0.3	(0.6)	0.0	(0.1)	0.1	(0.3)	0.0	(0.0)

Species = chinook Number of  
 Number of chains = 8 Number

		2008 08wctdfo troll NWVI Area127 September 166(3)		2008 08wctdfo troll NWVI Area127 Nov-December 199(0)		2008 08wctdfo troll SWVI Area123-124 Sublegal May 100(0)		2008 08wctdfo troll SWVI Area123 Sublegal June 101(0)	
Code	Region1	Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.3)
2	MUFR	0.1	(0.4)	0.0	(0.2)	0.0	(0.3)	0.0	(0.4)
3	LWFR-F	13.8	(2.8)	8.3	(2.1)	25.3	(4.4)	38.5	(5.0)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.3)
5	SOTH	2.0	(1.2)	0.0	(0.1)	0.0	(0.2)	3.9	(2.0)
6	LWTH	0.0	(0.1)	0.0	(0.1)	2.0	(1.4)	0.1	(0.3)
7	ECVI	4.2	(1.6)	2.6	(1.2)	0.6	(1.0)	3.2	(1.8)
8	WCVI	6.1	(1.9)	0.0	(0.1)	0.0	(0.3)	0.0	(0.3)
9	SOMN	0.1	(0.5)	0.0	(0.2)	0.9	(1.4)	0.0	(0.3)
10	NOMN	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)	0.0	(0.2)
11	NASS	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.2)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.3)
20	Skeena Babine	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
22	Skeena Mid	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
23	Skeena Lower	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
1001	California_Coast	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1002	Central_Valley_fa	0.0	(0.1)	0.1	(0.3)	0.0	(0.2)	0.0	(0.1)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1005	Deschutes_R_fa	6.0	(2.3)	0.0	(0.2)	0.2	(0.7)	0.9	(1.0)
1006	Hood_Canal	0.3	(1.0)	20.6	(3.9)	15.1	(5.0)	1.9	(2.7)
1007	Juan_de_Fuca	0.0	(0.1)	0.9	(0.8)	0.0	(0.2)	0.0	(0.3)
1008	Klamath_R	0.0	(0.1)	0.0	(0.0)	0.0	(0.2)	0.0	(0.1)
1009	L_Columbia_R_fa	5.0	(2.2)	12.0	(2.7)	10.0	(3.5)	7.9	(3.0)
1010	L_Columbia_R_sp	0.1	(0.3)	1.9	(1.0)	0.0	(0.3)	0.0	(0.2)
1011	Mid_and_Upper_Co	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)	0.0	(0.3)
1012	Mid_Columbia_R_t	6.4	(2.0)	9.6	(2.4)	20.1	(4.3)	14.3	(3.5)
1013	Mid_Oregon_Coast	18.9	(3.9)	3.4	(1.7)	0.0	(0.2)	0.9	(1.1)
1014	N_California/S_Ore	0.0	(0.0)	0.8	(0.7)	0.0	(0.1)	0.0	(0.0)
1015	N_Gulf_Coast_Alsea	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1017	N_Oregon_Coast	9.8	(2.9)	0.9	(0.9)	0.0	(0.2)	0.0	(0.2)
1018	N_Puget_Sound	6.3	(2.8)	5.3	(2.4)	13.1	(4.2)	5.2	(4.1)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1021	Rogue_R	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1022	S_Puget_Sound	8.8	(2.6)	13.5	(3.9)	4.0	(4.3)	15.7	(4.5)
1023	Snake_R_fa	12.0	(3.1)	20.1	(3.0)	8.7	(2.9)	7.1	(2.9)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.2)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.2)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)	0.0	(0.3)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2008 08wctdfo troll SWVI Area123 Sublegal Sept 63(0)		1998 08wctdfo troll SWVI Area123-legal April-May 198(2)		1998 08wctdfo troll SWVI Area123-sublegal April-May 182(14)	
		Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
2	MUFR	0.0	(0.5)	0.0	(0.1)	0.1	(0.3)
3	LWFR-F	2.1	(1.9)	11.6	(2.4)	9.0	(2.2)
4	NOTH	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
5	SOTH	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
6	LWTH	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
7	ECVI	0.0	(0.3)	2.2	(1.1)	3.0	(1.4)
8	WCVI	0.0	(0.4)	0.0	(0.1)	0.0	(0.1)
9	SOMN	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
10	NOMN	0.0	(0.4)	0.0	(0.1)	0.1	(0.3)
11	NASS	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.2)	0.1	(0.2)	0.0	(0.1)
13	LWFR-Su	0.0	(0.2)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
20	Skeena Babine	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
22	Skeena Mid	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
23	Skeena Lower	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1001	California_Coast	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.2)	10.9	(2.2)	5.2	(1.8)
1003	Central_Valley_sp	0.0	(0.2)	0.0	(0.2)	0.9	(1.0)
1004	Central_Valley_wi	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	5.4	(4.4)	0.0	(0.1)	0.4	(0.5)
1006	Hood_Canal	0.3	(1.3)	14.7	(4.5)	15.6	(5.4)
1007	Juan_de_Fuca	0.0	(0.3)	0.0	(0.2)	0.0	(0.1)
1008	Klamath_R	1.6	(1.6)	0.0	(0.1)	0.5	(0.5)
1009	L_Columbia_R_fa	17.9	(5.3)	0.6	(1.0)	2.2	(1.5)
1010	L_Columbia_R_sp	0.1	(0.5)	0.2	(0.5)	0.0	(0.1)
1011	Mid_and_Upper_Co	0.0	(0.4)	0.0	(0.1)	0.0	(0.2)
1012	Mid_Columbia_R_t	10.3	(3.8)	15.2	(2.6)	13.8	(2.8)
1013	Mid_Oregon_Coast	6.3	(3.3)	0.0	(0.1)	0.0	(0.1)
1014	N_California/S_Ore	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
1018	N_Puget_Sound	12.5	(6.1)	14.6	(3.7)	5.6	(2.4)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.4	(1.1)	0.0	(0.1)	0.0	(0.1)
1022	S_Puget_Sound	18.9	(6.9)	29.6	(5.3)	43.5	(5.8)
1023	Snake_R_fa	24.2	(6.1)	0.1	(0.3)	0.1	(0.3)
1024	Snake_R_sp/su	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
1025	SSE_Alaska	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2002		2002	
		08wctdfo		08wctdfo	
		troll		troll	
SWVI Area123-legal		SWVI Area123-sublegal			
April-May		April-May			
195(0)		107(1)			
Estimate	SD	Estimate	SD		
1	UPFR	0.0	(0.1)	0.0	(0.2)
2	MUFR	0.0	(0.2)	0.9	(0.9)
3	LWFR-F	18.2	(2.8)	8.2	(2.7)
4	NOTH	0.0	(0.1)	0.0	(0.1)
5	SOTH	0.0	(0.1)	0.0	(0.3)
6	LWTH	0.0	(0.1)	0.0	(0.2)
7	ECVI	1.9	(1.1)	5.6	(2.2)
8	WCVI	0.0	(0.1)	0.8	(0.9)
9	SOMN	0.0	(0.1)	0.0	(0.2)
10	NOMN	0.0	(0.2)	0.0	(0.2)
11	NASS	0.0	(0.1)	0.0	(0.2)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.1)
19	Skeena Upper	0.0	(0.1)	0.0	(0.3)
20	Skeena Babine	0.0	(0.0)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.0)	0.0	(0.1)
22	Skeena Mid	0.0	(0.1)	0.0	(0.1)
23	Skeena Lower	0.0	(0.1)	0.0	(0.3)
1001	California_Coast	0.0	(0.0)	0.0	(0.1)
1002	Central_Valley_fa	2.1	(1.1)	1.1	(1.3)
1003	Central_Valley_sp	0.0	(0.2)	0.0	(0.2)
1004	Central_Valley_wi	0.0	(0.1)	0.0	(0.1)
1005	Deschutes_R_fa	0.0	(0.2)	0.0	(0.2)
1006	Hood_Canal	10.1	(3.2)	21.1	(5.5)
1007	Juan_de_Fuca	0.7	(0.7)	0.0	(0.2)
1008	Klamath_R	0.0	(0.1)	0.0	(0.1)
1009	L_Columbia_R_fa	6.4	(2.6)	8.7	(3.1)
1010	L_Columbia_R_sp	0.1	(0.4)	4.5	(2.1)
1011	Mid_and_Upper_Co	0.0	(0.2)	0.1	(0.5)
1012	Mid_Columbia_R_t	28.5	(3.7)	15.4	(3.6)
1013	Mid_Oregon_Coast	0.1	(0.3)	0.0	(0.4)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.1)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.1)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.1)
1017	N_Oregon_Coast	0.4	(0.5)	0.0	(0.3)
1018	N_Puget_Sound	7.1	(3.8)	10.4	(4.7)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.1)
1022	S_Puget_Sound	18.9	(4.2)	17.2	(5.0)
1023	Snake_R_fa	5.4	(1.7)	5.0	(2.1)
1024	Snake_R_sp/su	0.0	(0.1)	0.6	(0.9)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.2)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.1)

Species = chinook Number of populations = 180 Baseline Description = CTC Number of loci = 13 Max missing loci = 8  
 Number of chains = 10 Number of Reps = 20000 Reps Kept = 1000

2008	2008	2008	2008
08Wctdfo	08Wctdfo	08Wctdfo	08Wctdfo
Area20-24	Area20-24	Area25-26	Area25-26
SWVI	SWVI	NWVI	NWVI
sport	sport	sport	sport
July	August	July	August
191(0)	217(0)	104(0)	160(0)

Code	Region1	Estima SD	Estima SD	Estima SD	Estima SD
1	Alsek	0.0 (0.1)	0.0 (0.1)	1.1 (1.4)	0.4 (0.6)
2	California Coast	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)
3	Central BC Coast	0.0 (0.1)	0.0 (0.2)	0.0 (0.2)	0.0 (0.1)
4	Central Valley fa	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)	0.0 (0.1)
5	Central Valley sp	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)	0.0 (0.1)
6	Central Valley wi	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
7	Deschutes R. fa	0.2 (0.6)	0.0 (0.1)	0.0 (0.2)	0.0 (0.1)
8	E Vancouver Is.	0.7 (0.7)	0.1 (0.3)	1.1 (1.1)	0.0 (0.1)
9	Hood Canal	12.5 (4.2)	2.8 (2.5)	5.5 (4.0)	0.1 (0.5)
10	Juan de Fuca	0.0 (0.1)	0.5 (0.5)	0.0 (0.1)	0.0 (0.1)
11	Klamath R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)
12	L Columbia R. fa	7.7 (2.1)	9.0 (2.2)	2.8 (2.0)	4.0 (1.8)
13	L Columbia R. sp	0.0 (0.1)	0.0 (0.1)	0.0 (0.3)	0.0 (0.1)
14	L Fraser R.	18.1 (2.9)	18.0 (2.8)	8.3 (2.8)	12.0 (2.6)
15	L Skeena R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.3)	0.0 (0.1)
16	L Thompson R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)
17	Mid and Upper Coli	0.0 (0.1)	0.0 (0.2)	0.0 (0.2)	2.8 (2.0)
18	Mid Columbia R. tu	21.1 (3.0)	13.5 (2.5)	6.6 (2.5)	3.3 (1.4)
19	Mid Fraser R.	0.2 (0.5)	0.9 (0.7)	1.5 (1.5)	0.0 (0.1)
20	Mid Oregon Coast	0.1 (0.3)	0.1 (0.3)	2.5 (2.3)	12.2 (2.9)
21	N California/S Oreg	0.0 (0.0)	0.0 (0.0)	0.9 (1.1)	0.0 (0.0)
22	N Gulf Coast; Alsek	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.2 (0.5)
23	N Gulf Coast; Situk	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
24	N Oregon Coast	0.0 (0.1)	0.0 (0.1)	4.8 (2.4)	0.6 (0.9)
25	N Puget Sound	6.9 (3.2)	8.1 (2.4)	8.4 (4.2)	4.2 (1.9)
26	N Thompson R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.1 (0.4)
27	Nass R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)	0.0 (0.2)
28	NSE Alaska; King S	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.1)
29	NSE Alaska;Chilkat	0.0 (0.1)	0.0 (0.0)	0.0 (0.1)	0.0 (0.1)
30	Rogue R.	0.0 (0.2)	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)
31	S BC Mainland	0.0 (0.1)	0.0 (0.1)	0.2 (0.6)	0.0 (0.1)
32	S Puget Sound	13.1 (4.1)	10.7 (3.3)	1.2 (2.3)	0.2 (0.7)
33	S Thompson R.	5.5 (1.7)	6.3 (1.8)	23.6 (4.3)	24.1 (3.5)
34	Snake R. fa	5.2 (1.8)	5.3 (1.9)	0.2 (0.9)	0.1 (0.3)
35	Snake R. sp/su	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)	0.0 (0.1)
36	SSE Alaska	0.0 (0.2)	0.5 (0.6)	0.0 (0.3)	0.2 (0.5)
37	SSE Alaska; Stikine	0.0 (0.1)	0.0 (0.2)	0.0 (0.2)	0.0 (0.2)
38	Stikine	0.0 (0.1)	0.0 (0.1)	0.0 (0.3)	0.0 (0.3)
39	Taku	0.0 (0.1)	0.0 (0.1)	0.0 (0.2)	0.0 (0.1)
40	Taku R.	0.4 (0.9)	2.3 (1.7)	1.1 (2.4)	0.2 (0.8)
41	U Columbia R. su/f;	6.9 (2.1)	9.5 (2.4)	5.8 (2.8)	14.8 (3.4)
42	U Fraser R.	0.3 (0.7)	2.3 (1.7)	1.0 (2.2)	1.8 (1.7)
43	U Skeena R.	0.0 (0.1)	0.0 (0.1)	0.2 (0.9)	0.0 (0.1)
44	U Stikine R.	0.0 (0.1)	0.0 (0.0)	0.0 (0.1)	0.0 (0.1)
45	W Vancouver Is.	1.1 (0.7)	7.7 (1.8)	20.8 (3.9)	14.9 (2.8)
46	Washington Coast	0.0 (0.1)	2.4 (1.1)	2.4 (1.7)	3.5 (1.6)
47	Willamette R.	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)

Species = chinook Number of populations = 282 Baseline Description = CTC Number of loci = 13 Max missing loci = 8  
 Number of chains = 8 Number of Reps = 10000 Reps Kept = 1000

Code	Region1	2009 09Wctdfo Troll NWVI Area125-127		2009 09Wctdfo Troll NWVI Area125-127		2009 09Wctdfo Troll NWVI Area125-127	
		January 200(0)		February 200(0)		March 200(0)	
		Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
2	MUFR	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
3	LWFR-F	5.4	(1.7)	6.8	(1.9)	5.2	(1.7)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
5	SOTH	1.0	(0.8)	0.0	(0.1)	1.6	(1.0)
6	LWTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
7	ECVI	2.4	(1.2)	1.9	(1.8)	0.5	(0.5)
8	WCVI	0.1	(0.3)	0.5	(0.5)	0.5	(0.5)
9	SOMN	0.0	(0.2)	2.2	(2.2)	0.0	(0.1)
10	NOMN	0.0	(0.2)	0.0	(0.1)	0.6	(0.6)
11	NASS	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.1)	0.5	(0.5)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
20	Skeena Babine	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
21	Skeena Bulkley	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)
22	Skeena Mid	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
23	Skeena Lower	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1001	California_Coast	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.1)	0.1	(0.3)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	0.3	(0.8)	1.1	(1.9)	5.8	(2.3)
1006	Hood_Canal	15.8	(3.3)	3.8	(2.4)	1.2	(1.6)
1007	Juan_de_Fuca	0.0	(0.1)	0.5	(0.5)	0.0	(0.1)
1008	Klamath_R	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
1009	L_Columbia_R_fa	14.3	(2.8)	9.4	(2.5)	14.5	(2.9)
1010	L_Columbia_R_sp	1.3	(1.0)	2.1	(1.5)	2.3	(1.2)
1011	Mid_and_Upper_Co	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
1012	Mid_Columbia_R_t	9.6	(2.3)	13.9	(2.7)	8.3	(2.1)
1013	Mid_Oregon_Coast	1.3	(0.9)	2.3	(1.5)	4.5	(1.8)
1014	N_California/S_Ore	0.0	(0.2)	0.0	(0.1)	0.0	(0.0)
1015	N_Gulf_Coast_Alsea	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	0.0	(0.2)	0.8	(0.7)	0.0	(0.1)
1018	N_Puget_Sound	9.5	(2.7)	20.5	(3.8)	14.5	(3.1)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.2)	0.0	(0.0)
1022	S_Puget_Sound	9.6	(3.1)	15.2	(3.7)	4.4	(2.2)
1023	Snake_R_fa	29.4	(3.4)	18.4	(3.3)	35.8	(3.7)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2009 09Wctdfo Troll NWVI Area125-127		2009 09Wctdfo Troll NWVI Area125-127		2009 09Wctdfo Troll NWVI Area125-127	
		April 200(0)		May 400(0)		June 298(1)	
		Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.3	(0.6)	1.6	(0.7)	1.8	(0.8)
2	MUFR	0.8	(0.8)	2.1	(0.8)	1.2	(0.7)
3	LWFR-F	14.3	(2.6)	13.7	(1.8)	11.0	(1.9)
4	NOTH	0.0	(0.1)	1.8	(0.7)	1.5	(0.7)
5	SOTH	3.1	(1.4)	7.1	(1.4)	24.1	(2.6)
6	LWTH	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
7	ECVI	2.2	(1.1)	2.7	(0.9)	2.5	(1.1)
8	WCVI	2.1	(1.0)	0.7	(0.5)	2.1	(0.9)
9	SOMN	0.0	(0.2)	0.0	(0.2)	0.2	(0.5)
10	NOMN	0.8	(0.8)	0.0	(0.2)	0.1	(0.2)
11	NASS	1.1	(0.7)	0.9	(0.6)	0.4	(0.4)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.3	(0.8)	0.1	(0.3)	2.2	(1.3)
20	Skeena Babine	0.0	(0.0)	0.0	(0.1)	0.0	(0.1)
21	Skeena Bulkley	0.4	(0.6)	1.5	(0.7)	0.0	(0.1)
22	Skeena Mid	0.2	(0.5)	1.6	(0.8)	1.2	(1.4)
23	Skeena Lower	1.1	(1.1)	0.1	(0.3)	0.0	(0.2)
1001	California_Coast	0.0	(0.0)	0.2	(0.2)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	5.2	(3.3)	2.5	(1.4)	1.4	(1.4)
1006	Hood_Canal	2.1	(1.7)	1.7	(1.3)	0.5	(1.3)
1007	Juan_de_Fuca	0.0	(0.2)	0.3	(0.3)	0.0	(0.0)
1008	Klamath_R	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1009	L_Columbia_R_fa	14.1	(3.4)	12.2	(1.9)	5.2	(1.4)
1010	L_Columbia_R_sp	0.2	(0.6)	1.0	(0.7)	2.4	(1.0)
1011	Mid_and_Upper_Co	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1012	Mid_Columbia_R_t	5.6	(2.8)	5.9	(1.3)	3.0	(1.0)
1013	Mid_Oregon_Coast	2.9	(1.5)	5.0	(1.2)	8.4	(1.9)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	1.0	(1.0)	3.7	(1.0)	7.6	(1.7)
1018	N_Puget_Sound	2.9	(1.6)	6.7	(1.6)	1.4	(1.2)
1019	NSE_Alaska_Chilk	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.0)	0.0	(0.0)	0.3	(0.5)
1022	S_Puget_Sound	7.4	(2.4)	4.7	(1.5)	5.2	(1.8)
1023	Snake_R_fa	31.8	(4.4)	20.8	(2.3)	16.3	(2.5)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1025	SSE_Alaska	0.0	(0.3)	1.3	(0.8)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2009 09Wctdfo Troll NWVI Area125-127		2009 09Wctdfo Troll SWVI Area123-124		2009 09Wctdfo Troll SWVI Area123-124	
		Estimate	SD	Estimate	SD	Estimate	SD
		August 201(0)		May 380(0)		June 298(0)	
1	UPFR	0.5	(0.5)	0.3	(0.3)	0.3	(0.4)
2	MUFR	0.8	(0.7)	0.0	(0.1)	0.3	(0.3)
3	LWFR-F	12.3	(2.4)	12.6	(1.7)	5.4	(1.4)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
5	SOTH	14.4	(2.6)	0.6	(0.4)	3.6	(1.2)
6	LWTH	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
7	ECVI	1.8	(1.0)	1.0	(0.6)	2.5	(1.3)
8	WCVI	0.5	(0.5)	0.0	(0.1)	0.7	(0.5)
9	SOMN	0.0	(0.1)	0.0	(0.1)	1.5	(1.4)
10	NOMN	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
11	NASS	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.3	(0.3)
20	Skeena Babine	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
21	Skeena Bulkley	0.0	(0.1)	0.2	(0.3)	0.6	(0.5)
22	Skeena Mid	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
23	Skeena Lower	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1001	California_Coast	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1002	Central_Valley_fa	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1003	Central_Valley_sp	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	1.5	(1.5)	2.0	(1.8)	0.0	(0.2)
1006	Hood_Canal	0.0	(0.1)	12.8	(2.5)	16.5	(3.1)
1007	Juan_de_Fuca	0.5	(0.5)	0.0	(0.0)	0.0	(0.0)
1008	Klamath_R	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1009	L_Columbia_R_fa	9.5	(2.4)	16.2	(2.2)	14.8	(2.4)
1010	L_Columbia_R_sp	1.4	(0.9)	0.9	(1.1)	1.4	(0.8)
1011	Mid_and_Upper_Co	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1012	Mid_Columbia_R_t	0.1	(0.3)	9.3	(1.7)	7.3	(1.7)
1013	Mid_Oregon_Coast	20.9	(3.4)	3.3	(1.3)	2.0	(0.9)
1014	N_California/S_Ore	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	9.9	(2.6)	0.3	(0.3)	0.4	(0.5)
1018	N_Puget_Sound	5.2	(2.1)	5.9	(2.1)	6.0	(2.0)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.0)	0.2	(0.4)	0.0	(0.1)
1022	S_Puget_Sound	2.2	(1.1)	14.5	(2.7)	12.9	(3.0)
1023	Snake_R_fa	18.5	(3.1)	19.9	(2.7)	23.5	(2.6)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1025	SSE_Alaska	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

Code	Region1	2009 09Wctdfo Troll SWVI Area123-124		2009 09Wctdfo Troll SWVI Area123-124		2009 09Wctdfo Troll SWVI Area123-124-Sublegal	
		August 201(0)		September 93(33)		September 215(10)	
		Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.1)	0.0	(0.3)	0.0	(0.2)
2	MUFR	1.3	(0.9)	0.0	(0.4)	0.1	(0.2)
3	LWFR-F	23.5	(3.1)	4.1	(2.3)	18.4	(2.7)
4	NOTH	0.1	(0.3)	0.0	(0.1)	0.0	(0.1)
5	SOTH	5.5	(1.7)	0.1	(0.5)	0.0	(0.1)
6	LWTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
7	ECVI	2.4	(1.1)	0.2	(0.7)	0.6	(0.6)
8	WCVI	0.0	(0.1)	0.0	(0.3)	0.0	(0.3)
9	SOMN	0.0	(0.1)	0.2	(0.8)	0.0	(0.2)
10	NOMN	0.1	(0.4)	0.1	(0.6)	0.0	(0.2)
11	NASS	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
13	LWFR-Su	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
19	Skeena Upper	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
20	Skeena Babine	0.0	(0.0)	0.0	(0.1)	0.0	(0.2)
21	Skeena Bulkley	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
22	Skeena Mid	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
23	Skeena Lower	0.0	(0.1)	0.1	(0.4)	0.0	(0.1)
1001	California_Coast	0.0	(0.0)	1.1	(1.1)	0.0	(0.1)
1002	Central_Valley_fa	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)
1003	Central_Valley_sp	0.1	(0.3)	0.0	(0.2)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1005	Deschutes_R_fa	0.2	(0.9)	4.0	(4.9)	6.7	(2.2)
1006	Hood_Canal	4.0	(2.9)	8.4	(3.5)	3.4	(1.7)
1007	Juan_de_Fuca	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1008	Klamath_R	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1009	L_Columbia_R_fa	23.2	(3.5)	14.4	(4.5)	7.9	(2.2)
1010	L_Columbia_R_sp	1.7	(1.4)	6.1	(3.0)	0.0	(0.1)
1011	Mid_and_Upper_Co	0.0	(0.2)	0.0	(0.3)	0.0	(0.2)
1012	Mid_Columbia_R_t	1.8	(1.8)	11.2	(3.5)	28.1	(3.2)
1013	Mid_Oregon_Coast	2.3	(1.3)	8.7	(3.7)	1.1	(0.8)
1014	N_California/S_Ore	0.0	(0.0)	0.1	(0.7)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	1.3	(0.9)	0.0	(0.3)	1.3	(0.9)
1018	N_Puget_Sound	3.5	(3.4)	1.4	(1.7)	3.2	(1.5)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
1020	NSE_Alaska_King	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	4.6	(2.8)	0.1	(0.2)
1022	S_Puget_Sound	8.2	(4.6)	3.9	(2.9)	12.2	(2.6)
1023	Snake_R_fa	20.7	(3.1)	31.3	(6.7)	16.8	(3.0)
1024	Snake_R_sp/su	0.0	(0.1)	0.0	(0.3)	0.0	(0.2)
1025	SSE_Alaska	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)

Species = chinook Number of  
 Number of chains = 8 Number

		2009 09Wctdfo Sport NWVI Area125-127		2009 09Wctdfo Sport NWVI Area125-127		2009 09Wctdfo Sport SWVI Area123-124		2009 09Wctdfo Sport SWVI Area123-124	
		July 74(0)		August 109(1)		July 187(0)		August 110(0)	
Code	Region1	Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.3)	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)
2	MUFR	0.8	(1.2)	0.0	(0.2)	0.0	(0.1)	1.0	(1.0)
3	LWFR-F	20.6	(4.7)	27.3	(4.3)	17.5	(2.8)	30.5	(4.5)
4	NOTH	3.9	(2.3)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
5	SOTH	8.7	(3.5)	13.4	(3.5)	4.5	(1.7)	9.9	(2.9)
6	LWTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
7	ECVI	4.1	(2.3)	1.8	(1.4)	1.4	(0.9)	3.4	(2.1)
8	WCVI	23.0	(4.8)	14.6	(3.4)	0.5	(0.5)	4.9	(2.1)
9	SOMN	0.0	(0.3)	0.0	(0.3)	0.0	(0.2)	0.1	(0.5)
10	NOMN	0.0	(0.3)	0.1	(0.4)	0.0	(0.2)	0.0	(0.3)
11	NASS	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)	0.1	(0.4)
12	LWFR-Sp	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
13	LWFR-Su	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
19	Skeena Upper	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
20	Skeena Babine	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.2)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
22	Skeena Mid	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)
23	Skeena Lower	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)	0.1	(0.4)
1001	California_Coast	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1002	Central_Valley_fa	0.0	(0.3)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1003	Central_Valley_sp	0.0	(0.4)	0.2	(0.5)	0.0	(0.1)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1005	Deschutes_R_fa	0.4	(1.5)	0.2	(0.9)	0.1	(0.3)	0.1	(0.6)
1006	Hood_Canal	0.0	(0.2)	0.0	(0.3)	11.2	(3.4)	8.7	(3.9)
1007	Juan_de_Fuca	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1008	Klamath_R	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.2	(0.6)
1009	L_Columbia_R_fa	8.8	(3.5)	6.8	(2.6)	15.5	(3.3)	13.7	(3.7)
1010	L_Columbia_R_sp	0.0	(0.2)	0.1	(0.4)	2.5	(1.3)	0.0	(0.3)
1011	Mid_and_Upper_Co	0.1	(0.7)	0.2	(0.7)	0.0	(0.1)	0.0	(0.3)
1012	Mid_Columbia_R_t	0.0	(0.3)	0.0	(0.1)	9.3	(2.6)	6.2	(2.5)
1013	Mid_Oregon_Coast	0.2	(0.8)	7.4	(3.3)	4.0	(1.8)	3.4	(2.5)
1014	N_California/S_Ore	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1016	N_Gulf_Coast_Situ	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1017	N_Oregon_Coast	4.9	(2.7)	4.6	(2.9)	0.1	(0.3)	0.7	(1.0)
1018	N_Puget_Sound	6.7	(3.1)	3.6	(2.0)	2.8	(1.6)	6.8	(3.2)
1019	NSE_Alaska_Chilk	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1021	Rogue_R	0.0	(0.1)	0.0	(0.1)	0.1	(0.3)	0.0	(0.2)
1022	S_Puget_Sound	0.1	(0.6)	0.1	(0.4)	12.8	(3.5)	3.5	(4.0)
1023	Snake_R_fa	17.6	(4.6)	19.6	(4.0)	17.8	(3.0)	6.8	(2.8)
1024	Snake_R_sp/su	0.0	(0.3)	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
1025	SSE_Alaska	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)	0.0	(0.1)
1026	SSE_Alaska_Stikin	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)

## APPENDIX III

Regional DNA results from sublegal and legal Chinook samples collected from  
2008/09 West Coast Vancouver Island  
Chinook troll fisheries

Species = chinook Number of populations = 282 Baseline Description = CTC Number of loci = 13 Max miss  
 Number of chains = 8 Number of Reps = 20000 Reps Kept = 1000

2008 08wctdfo troll SWVI Area123-124 Sublegal May 100(0)	2008 08wctdfo troll SWVI Area123124 Legal May 229(0)	2008 08wctdfo troll SWVI Area123 Sublegal June 101(0)
--	--	---

Code	Region1	Estimate	SD	Estimate	SD	Estimate	SD
1	UPFR	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)
2	MUFR	0.0	(0.3)	0.0	(0.1)	0.0	(0.4)
3	LWFR-F	25.3	(4.4)	21.0	(2.8)	38.5	(5.0)
4	NOTH	0.0	(0.1)	0.0	(0.1)	0.0	(0.3)
5	SOTH	0.0	(0.2)	1.2	(0.8)	3.9	(2.0)
6	LWTH	2.0	(1.4)	0.4	(0.4)	0.1	(0.3)
7	ECVI	0.6	(1.0)	2.6	(1.1)	3.2	(1.8)
8	WCVI	0.0	(0.3)	0.0	(0.1)	0.0	(0.3)
9	SOMN	0.9	(1.4)	0.0	(0.1)	0.0	(0.3)
10	NOMN	0.0	(0.3)	0.0	(0.1)	0.0	(0.2)
11	NASS	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
12	LWFR-Sp	0.0	(0.1)	0.0	(0.1)	0.0	(0.2)
13	LWFR-Su	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
14	QCI	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
19	Skeena Upper	0.0	(0.2)	0.0	(0.2)	0.0	(0.3)
20	Skeena Babine	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
21	Skeena Bulkley	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
22	Skeena Mid	0.0	(0.1)	0.1	(0.2)	0.0	(0.2)
23	Skeena Lower	0.0	(0.2)	0.4	(0.4)	0.0	(0.1)
1001	California_Coast	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1002	Central_Valley_fa	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)
1003	Central_Valley_sp	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
1004	Central_Valley_wi	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1005	Deschutes_R_fa	0.2	(0.7)	0.0	(0.2)	0.9	(1.0)
1006	Hood_Canal	15.1	(5.0)	6.4	(2.2)	1.9	(2.7)
1007	Juan_de_Fuca	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)
1008	Klamath_R	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
1009	L_Columbia_R_fa	10.0	(3.5)	9.0	(2.3)	7.9	(3.0)
1010	L_Columbia_R_sp	0.0	(0.3)	0.0	(0.1)	0.0	(0.2)
1011	Mid_and_Upper_Ci	0.0	(0.3)	0.0	(0.2)	0.0	(0.3)
1012	Mid_Columbia_R_t	20.1	(4.3)	16.7	(2.7)	14.3	(3.5)
1013	Mid_Oregon_Coast	0.0	(0.2)	0.6	(0.7)	0.9	(1.1)
1014	N_California/S_Ore	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
1015	N_Gulf_Coast_Alse	0.0	(0.0)	0.0	(0.0)	0.0	(0.1)
1016	N_Gulf_Coast_Situ	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1017	N_Oregon_Coast	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)
1018	N_Puget_Sound	13.1	(4.2)	10.1	(2.3)	5.2	(4.1)
1019	NSE_Alaska_Chilk	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1020	NSE_Alaska_King	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
1021	Rogue_R	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
1022	S_Puget_Sound	4.0	(4.3)	14.4	(2.8)	15.7	(4.5)
1023	Snake_R_fa	8.7	(2.9)	17.0	(2.7)	7.1	(2.9)
1024	Snake_R_sp/su	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
1025	SSE_Alaska	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
1026	SSE_Alaska_Stikin	0.0	(0.2)	0.0	(0.1)	0.0	(0.3)

sing loci = 8

2008 08wctdfo troll SWVI Area123124 Legal June 203(5)		2008 08wctdfo troll SWVI Area123 Sublegal September 63(0)		2008 08wctdfo troll SWVI Area123 Legal September 419(1)		1998 08wctdfo troll SWVI Area123-sublegal Sublegal April-May 182(14)	
Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
0.3	(0.4)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.5	(0.8)	0.0	(0.5)	0.0	(0.1)	0.1	(0.3)
44.2	(3.5)	2.1	(1.9)	44.2	(2.5)	9.0	(2.2)
0.8	(0.7)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.3	(0.7)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
1.0	(0.7)	0.0	(0.3)	1.1	(0.6)	3.0	(1.4)
0.0	(0.1)	0.0	(0.4)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.3)	0.2	(0.4)	0.0	(0.1)
0.0	(0.2)	0.0	(0.4)	0.0	(0.1)	0.1	(0.3)
0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	5.2	(1.8)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.9	(1.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	5.4	(4.4)	3.3	(1.4)	0.4	(0.5)
9.3	(3.9)	0.3	(1.3)	6.3	(1.4)	15.6	(5.4)
0.0	(0.1)	0.0	(0.3)	0.0	(0.0)	0.0	(0.1)
0.0	(0.1)	1.6	(1.6)	0.2	(0.3)	0.5	(0.5)
4.5	(2.3)	17.9	(5.3)	11.0	(1.7)	2.2	(1.5)
0.0	(0.1)	0.1	(0.5)	0.0	(0.2)	0.0	(0.1)
0.1	(0.3)	0.0	(0.4)	0.0	(0.1)	0.0	(0.2)
19.3	(3.2)	10.3	(3.8)	6.3	(1.3)	13.8	(2.8)
0.2	(0.5)	6.3	(3.3)	2.5	(0.9)	0.0	(0.1)
0.0	(0.0)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.4	(0.5)	0.0	(0.3)	0.4	(0.4)	0.0	(0.1)
4.8	(2.4)	12.5	(6.1)	3.6	(1.3)	5.6	(2.4)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.4	(1.1)	0.0	(0.0)	0.0	(0.1)
8.0	(3.6)	18.9	(6.9)	5.0	(1.4)	43.5	(5.8)
6.2	(1.8)	24.2	(6.1)	16.0	(2.0)	0.1	(0.3)
0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.0	(0.2)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.0)	0.0	(0.1)

1998		2002		2002		2009	
08wctdfo		08wctdfo		08wctdfo		09Wctdfo	
troll		troll		troll		Troll	
SWVI Area123-legal		SWVI Area123-sublegal		SWVI Area123-legal		SWVI Area123-124-Sublegal	
Legal		Sublegal		Legal		Sublegal	
April-May		April-May		April-May		September	
198(2)		107(1)		195(0)		215(10)	

Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
0.0	(0.1)	0.9	(0.9)	0.0	(0.2)	0.1	(0.2)
11.6	(2.4)	8.2	(2.7)	18.2	(2.8)	18.4	(2.7)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
2.2	(1.1)	5.6	(2.2)	1.9	(1.1)	0.6	(0.6)
0.0	(0.1)	0.8	(0.9)	0.0	(0.1)	0.0	(0.3)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.2)
0.0	(0.1)	0.0	(0.2)	0.0	(0.2)	0.0	(0.2)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
0.1	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.2)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.3)	0.0	(0.1)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.1)
10.9	(2.2)	1.1	(1.3)	2.1	(1.1)	0.0	(0.1)
0.0	(0.2)	0.0	(0.2)	0.0	(0.2)	0.0	(0.1)
0.0	(0.0)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
0.0	(0.1)	0.0	(0.2)	0.0	(0.2)	6.7	(2.2)
14.7	(4.5)	21.1	(5.5)	10.1	(3.2)	3.4	(1.7)
0.0	(0.2)	0.0	(0.2)	0.7	(0.7)	0.0	(0.0)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)
0.6	(1.0)	8.7	(3.1)	6.4	(2.6)	7.9	(2.2)
0.2	(0.5)	4.5	(2.1)	0.1	(0.4)	0.0	(0.1)
0.0	(0.1)	0.1	(0.5)	0.0	(0.2)	0.0	(0.2)
15.2	(2.6)	15.4	(3.6)	28.5	(3.7)	28.1	(3.2)
0.0	(0.1)	0.0	(0.4)	0.1	(0.3)	1.1	(0.8)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.0)	0.0	(0.1)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.3)	0.4	(0.5)	1.3	(0.9)
14.6	(3.7)	10.4	(4.7)	7.1	(3.8)	3.2	(1.5)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.0)
0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.1	(0.2)
29.6	(5.3)	17.2	(5.0)	18.9	(4.2)	12.2	(2.6)
0.1	(0.3)	5.0	(2.1)	5.4	(1.7)	16.8	(3.0)
0.0	(0.1)	0.6	(0.9)	0.0	(0.1)	0.0	(0.2)
0.0	(0.1)	0.0	(0.2)	0.0	(0.1)	0.0	(0.1)
0.0	(0.1)	0.0	(0.1)	0.0	(0.1)	0.0	(0.1)

2009  
09Wctdfo  
Troll  
SWVI Area123-124  
Legal  
September  
93(33)

Estimate	SD
0.0	(0.3)
0.0	(0.4)
4.1	(2.3)
0.0	(0.1)
0.1	(0.5)
0.0	(0.1)
0.2	(0.7)
0.0	(0.3)
0.2	(0.8)
0.1	(0.6)
0.0	(0.2)
0.0	(0.1)
0.0	(0.1)
0.0	(0.1)
0.0	(0.2)
0.0	(0.1)
0.0	(0.1)
0.0	(0.2)
0.1	(0.4)
1.1	(1.1)
0.0	(0.2)
0.0	(0.2)
0.0	(0.1)
4.0	(4.9)
8.4	(3.5)
0.0	(0.1)
0.0	(0.1)
14.4	(4.5)
6.1	(3.0)
0.0	(0.3)
11.2	(3.5)
8.7	(3.7)
0.1	(0.7)
0.0	(0.1)
0.0	(0.0)
0.0	(0.3)
1.4	(1.7)
0.0	(0.1)
0.0	(0.1)
4.6	(2.8)
3.9	(2.9)
31.3	(6.7)
0.0	(0.3)
0.0	(0.2)
0.0	(0.2)

## APPENDIX IV

DRAFT technical data report summarizing  
DNA information collected from  
2002 to 2008 West Coast Vancouver Island  
Chinook troll fisheries

Entitled:

“Summary and Analysis of  
Chinook Genetic Stock Identification Data  
Collected from the West Coast Troll Fishery (2002-2008)”