NECHAKO AND STUART RIVERS CHINOOK CARCASS RECOVERY 2000

NECHAKO FISHERIES CONSERVATION PROGRAM
Technical Report No. M00-2

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ABSTRACT

In 2000 adult Chinook salmon *(Oncorhynchus tshawytscha)* carcasses were recovered from the Nechako and Stuart rivers in order to collect biological data on sex, size, fecundity, egg retention, life history and age. This information contributes to the database being compiled under the auspices of the Nechako Fisheries Conservation Program to monitor the Nechako Chinook population.

A total of 250 carcasses were collected on the Nechako River between September 12th and October 2nd. Nechako River Chinook carcasses recovered in 2000 exhibited similar biological characteristics to those collected from 1988 to 1999. Mean post-orbital hypural length for both males and females fell within the lower ranges observed in previous years. The spawning population was exclusively comprised of individuals with a stream-type life history, dominated by 4_2 and 5_2 age-classes, which is consistent with previous years.

On the Stuart River, 248 carcasses were sampled to collect information that could be used as a comparison to the Nechako data, to identify possible effects of flow regulation on the Nechako Chinook population. Since no obvious trends or anomalies were identified during the comparison of 2000 Nechako data to previous years, it was not necessary to use the information collected from the Stuart in this manner. However, the data are documented in this report in the event that longer-term analyses are required in the future.

INTRODUCTION

Each year since 1988 the Nechako Fisheries Conservation Program (NFCP) Technical Committee has conducted a suite of projects to monitor the population of Chinook salmon *(Oncorhynchus tshawytscha)* that spawn and rear in the Nechako River. The goal of these projects is to provide the information necessary for the NFCP to assess whether or not the Conservation Goal identified in the 1987 Settlement Agreement (Anon, 1987) is being met.

As part of this program of studies to monitor Nechako River Chinook salmon, the Technical Committee has conducted carcass recovery projects on the Nechako and Stuart rivers each year. The purpose of these projects is to gather biological data on adult spawners, including: sex, size, fecundity, egg retention, life history and age. In particular, analysis of fish age indicates the relative contribution of each brood year to the current years' spawning population, which is used to interpret the results of the annual NFCP enumeration projects. The information collected from the Nechako River is compared to similar information collected from the Stuart River, an adjacent system unaffected by flow regulation (Figure 1), to assist in identifying potential effects of flow regulation on the Nechako Chinook population.

METHODS

Sampling was conducted throughout the period of Chinook spawner die-off, from mid-September to early October.

In the Nechako River sampling was conducted from Cheslatta Falls downstream to Vanderhoof (Figure 2). In order to ensure a representative sample, recovery effort was based on spawner distribution observed during helicopter surveys conducted as part of the concurrent enumeration project. The target sample size was set at a minimum of 200 fish.

FIGURE 1 **Nechako River Drainage**

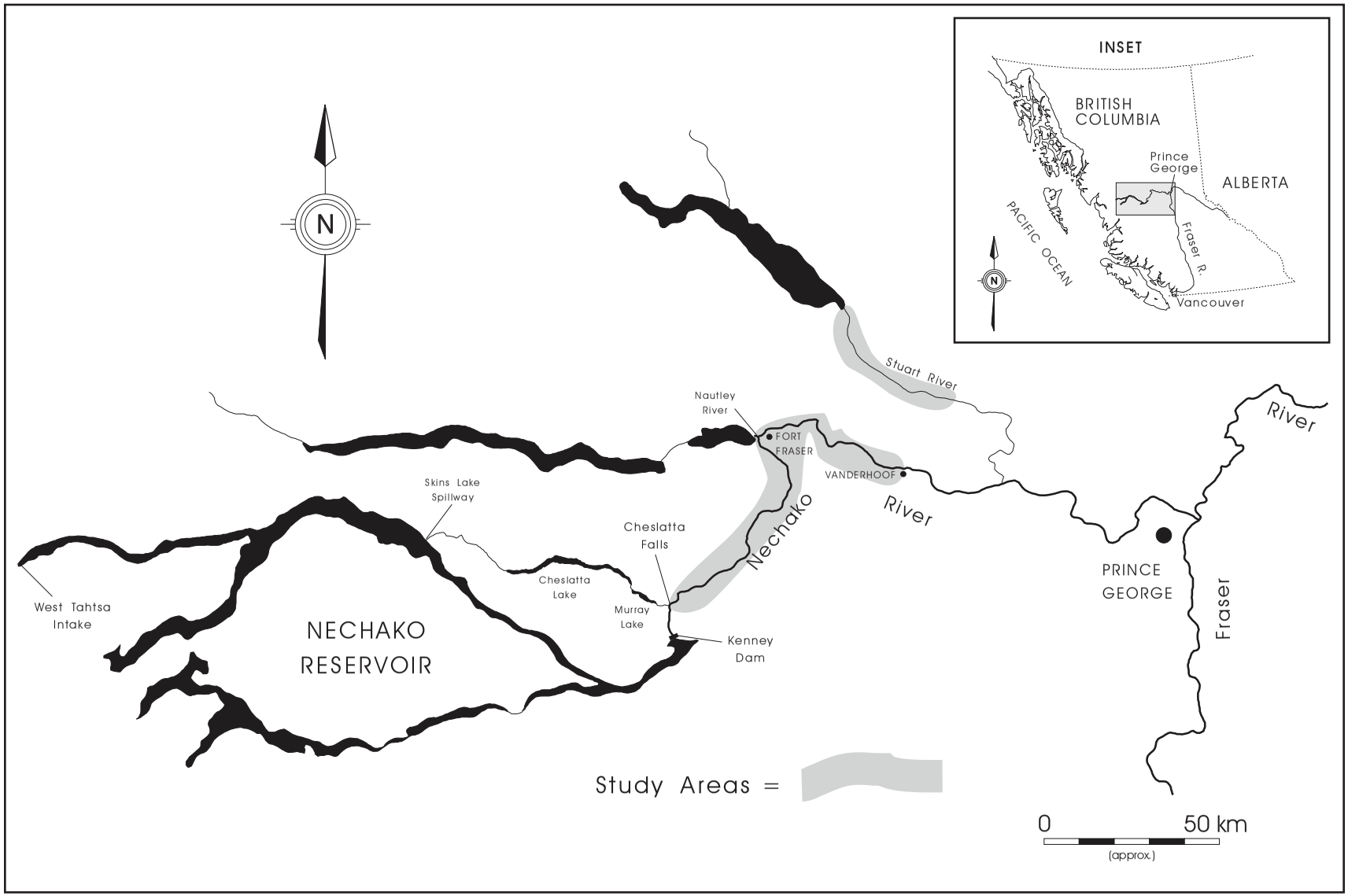


FIGURE 2 **Nechako River Chinook Spawning Study Area**

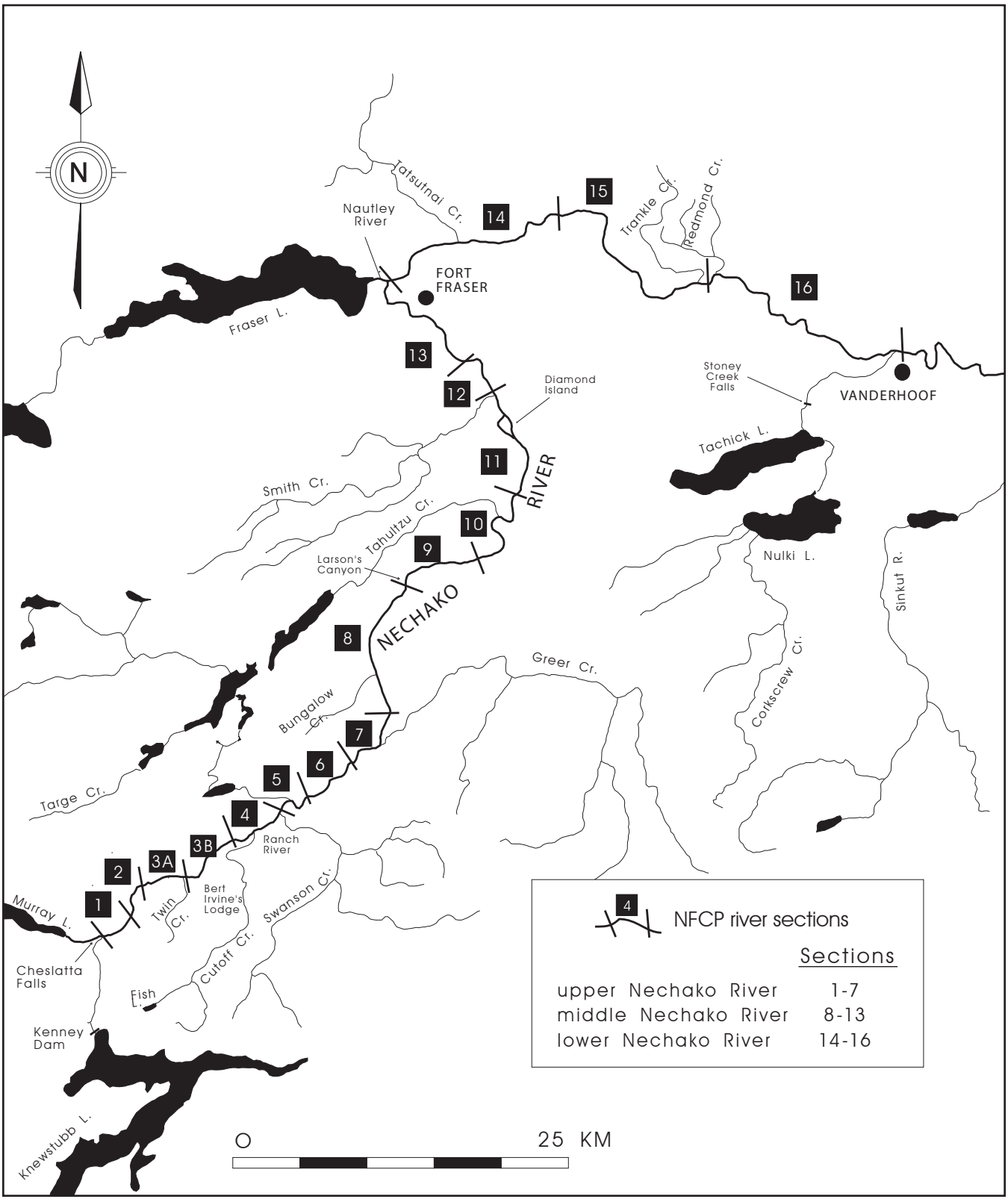
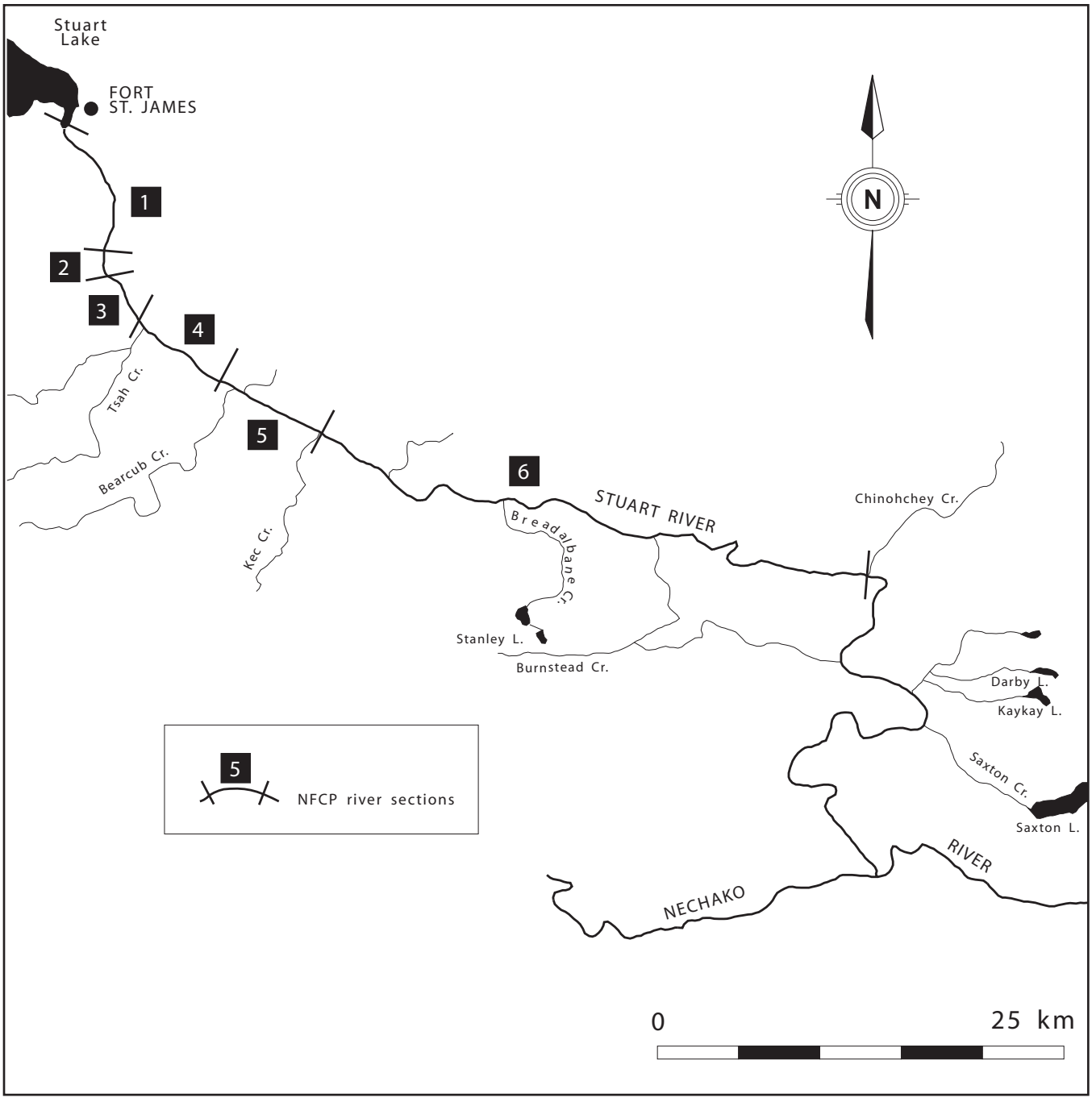


FIGURE 3 **Stuart River Chinook Spawning Study Area**



Sampling in the Stuart River was conducted from the outlet of Stuart Lake downstream to the confluence of Chinohchey Creek (Figure 3) Carcass sampling was conducted as part of the recovery portion of the mark-recapture enumeration program; all marked carcasses and representative portions of unmarked carcasses from each river section were sampled. In addition to inspecting carcasses for marks and tags applied as part of the mark-recapture program, crews inspected all carcasses recovered for adipose fin clips as an indicator of the success of releases from the Fort St. James hatchery. The target sample size was set at a minimum of 250 fish, slightly higher than the target for the Nechako since Stuart escapements are typically higher.

In each river, several sampling surveys were conducted throughout the period of die-off to ensure that both early and late spawners were represented in the samples. The surveys were conducted by running a jet boat downstream at low speed and recovering carcasses with a gaff. If the carcass was too badly decomposed or eaten by animals to measure body length or take scale samples, it was cut in half to prevent recounting and returned to the river. Each carcass was assigned a number and its location and date of recovery recorded. When a sufficient number of carcasses had been collected, the crew stopped to collect the following samples and biological information:

- **sex:** The sex of each fish was determined based on morphology, and confirmed by abdominal incision and internal examination.
- **condition:** Carcass condition was recorded as: 1) fresh; 2) fair to good; 3) poor with some fungus; or 4) partially decomposed but still able to be sampled. In addition, other observations were recorded, particularly the presence of net scars or lamprey marks.
- **post-orbital hypural length (POHL):** The distance from the posterior margin of the orbit to the flexure of the hypural plate in the caudal peduncle was recorded to the nearest millimeter.
- **egg retention and fecundity:** The body cavities of females were checked for eggs. All eggs were counted unless the number was greater than 1000, in which case they were estimated volumetrically. In the case of under-developed eggs which could not be separated and counted, the sample was recorded as a pre-spawn mortality with fully skeined eggs.
- **scales and fin rays:** Ten scales were taken from each processed carcass and stored in gummed, pre-numbered scale books. Five scales were taken from each side of the body in the preferred area (several rows above the lateral line between the posterior end of the dorsal fin and the anterior insertion of the anal fin). Care was taken to avoid regenerated, resorbed and irregular shaped scales. Dorsal fins from each carcass were removed with a knife, placed in pre-labeled plastic bags and frozen. Fish age was later determined by analysis of the scales and fin rays, conducted by staff at Fisheries and Oceans Canada (DFO) laboratory facilities.
- **adipose fin:** A missing adipose fin is evidence of a hatchery raised fish with a coded-wire tag implanted in its head. If the fin was missing, the head was removed and sent to an independent laboratory for tag removal and identification.

All processed carcasses were cut in half to prevent recounting and returned to the river.

RESULTS

Data collected from each Chinook carcass sampled in the Nechako and Stuart rivers in 2000 are presented in Appendices 1 and 2, respectively. Summaries of these data are provided in the respective sections below.

Nechako River

Between September 12th and October 2nd a total of 250[1] carcasses were sampled from 11 of the 16 identified Sections representing all 3 river areas – upper, middle and lower river (Table 1). The observed sex ratio was 1.74 F/M, or 64% females and 36% males (n=250). No Chinook jacks were collected. Of the carcasses sampled, 64% were fresh or only a few days old (Table 2).

1 Any discrepancy between the total number of carcasses sampled and the reported number of carcasses for various parameters is due to the fact that only partial data were recorded for some carcasses. However, all carcasses were maintained in the dataset and any partial data that was recorded was used in the appropriate analyses.

TABLE 1 Nechako River Chinook Carcass Recovery by Section, 2000

Section	Number	Percent
UPPER NECHAKO		
Section 1	0	0.0
Section 2	0	0.0
Section 3	55	22.0
Section 4	18	7.2
Section 5	15	6.0
Section 6	35	14.0
Section 7	0	0.0
SUB-TOTAL	**123**	**49.2**
MIDDLE NECHAKO		
Section 8	0	0.0
Section 9	5	2.0
Section 10	5	2.0
Section 11	51	20.4
Section 12	25	10.0
Section 13	15	6.0
SUB-TOTAL	**101**	**40.4**
LOWER NECHAKO		
Section 14	0	0.0
Section 15	19	7.6
Section 16	7	2.8
SUB-TOTAL	**26**	**10.4**
TOTAL RIVER	**250**	**100.0**

TABLE 2 Nechako River Chinook Carcass Condition, 2000

Condition *	Number	Percent
1	48	19.2
2	113	45.2
3	79	31.6
4	10	4.0
TOTAL	**250**	**100.0**

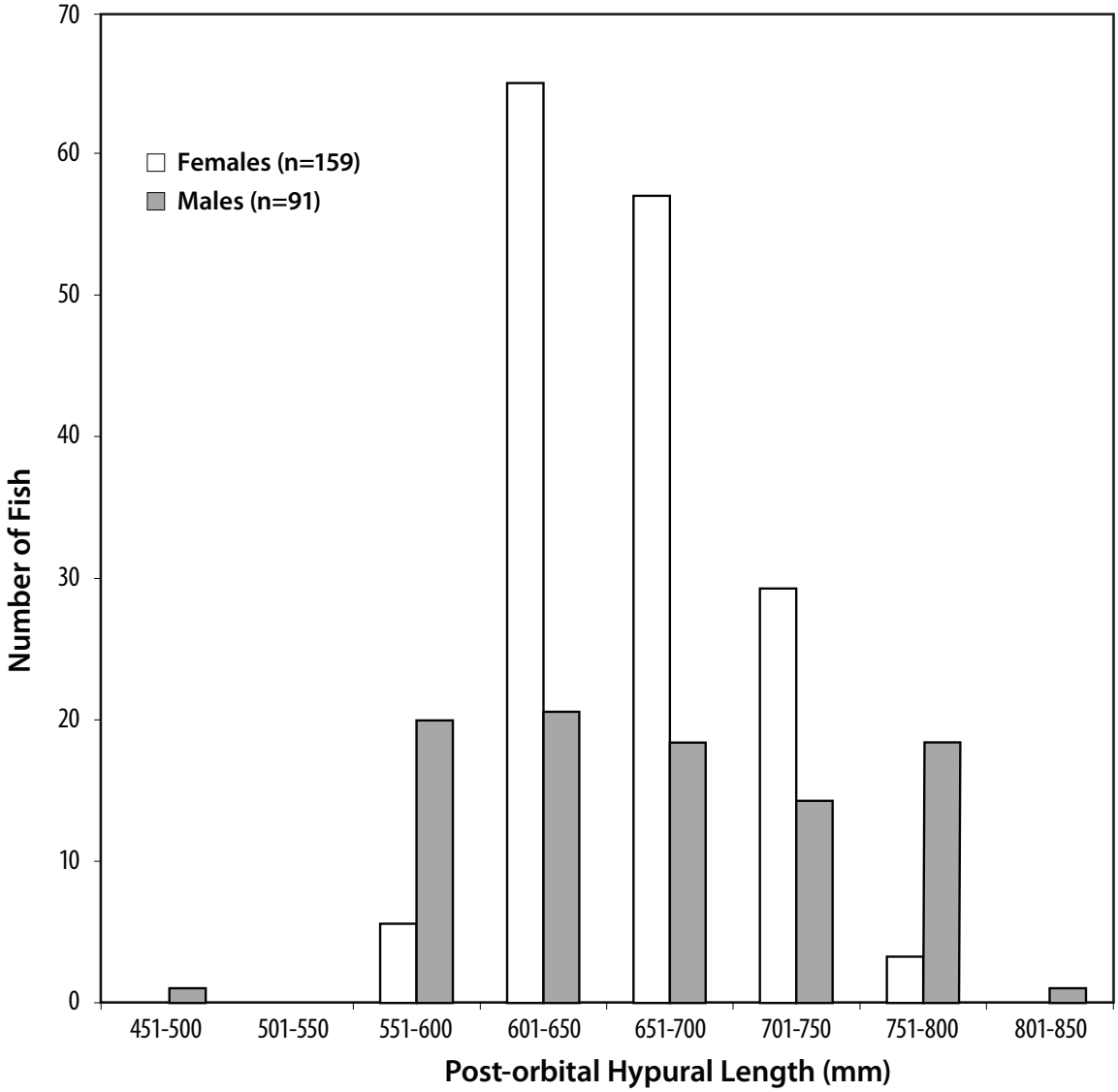
* Carcass Condition
1 - Fresh carcass
2 - Fair to good carcass (2 - 3 days old)
3 - Poor carcass condition with some fungus
4 - Very old and decomposed carcass

The length (POHL) of the fish sampled ranged from 497 to 805 mm, with a mean of 670 mm (n=91, SD=77) for males, 663 mm (n=159, SD=44) for females and 666 mm (n=250, SD=58) for all fish combined. The majority of male individuals sampled ranged in size from 551-800 mm, whereas the majority of females ranged in size from 601-750 mm (Figure 4).

Of the total number of female carcasses sampled (n=159), 3 were found to be pre-spawn mortalities with under-developed skeins. The number of eggs remaining was not determined since the skeins were under-developed, prohibiting individual egg counts. Therefore, these individuals were not included in the egg retention statistics reported below.

Of the total number of female carcasses sampled, 153 (98%) were determined to be fully spawned, based on egg retention of less than 1000. In addition, there were 3 partially spawned female carcasses (based on an egg retention of 1000-4999) with a range of 1366-3500 eggs retained. The mean egg retention of the fully and partially spawned females was 53 eggs (n=156, SD=337, range 0–3500). Removing the partially spawned carcasses from the sample drops the mean egg retention to 11 eggs (n=153, SD=80, range 0-965).

FIGURE 4 **Nechako River Chinook Length Frequency Distribution, 2000**



Scale and fin samples from all 250 carcasses recovered from the Nechako River were sent to the Pacific Biological Station in Nanaimo for age analysis. Complete ages were determined for 250 of those samples (Table 3). The results indicate that the majority of the fish sampled were of two age-classes, 5_2 (32%) and 4_2 (65%). A chi-square test was used to determine that the numbers of males and females in these age-classes were proportionate to the sex ratio of the sample (p=0.22).

TABLE 3 **Nechako River Chinook Age Contribution (%) by Sex, 2000**

	4_1	4_2	5_2	6_2	6_3	Total # Aged
Males	0.0	69.0	28.0	3.0	0.0	**91**
Females	0.0	62.0	35.0	3.0	0.0	**159**

None of the recovered Chinook had an adipose fin missing, and no other form of marking or tagging was observed.

In addition to NFCP data collection requirements, 10 sockeye salmon carcasses (5 male, 5 female) were sampled upstream of Larson's Canyon to provide information on this river spawning population. These samples were collected at the request of staff from DFO's Pacific Biological Station and are not directly related to the NFCP sampling program; therefore, the results are not documented in this report.

Stuart River

Between September 20th and October 4th a total of 248[2] carcasses were sampled from the seven Zones (1 to 7) within the study area (Table 4). The observed sex ratio was 2.02 F/M, or 67% females and 33% males (n=248). No Chinook jacks were sampled. Of the 248 carcasses with condition documented, 71% were fresh or only a few days old (Table 5).

TABLE 4 **Stuart River Chinook Carcass Recovery by Zone, 2000**

Zone	Number	Percent
1	9	3.6
2	15	6.0
3	54	21.8
4	61	24.6
5	34	13.7
6	59	23.8
7	16	6.5
TOTAL	**248**	**100.0**

TABLE 5 **Stuart River Chinook Carcass Condition, 2000**

Condition *	Number	Percent
1	3	1.2
2	174	70.2
3	62	25.0
4	9	3.6
TOTAL	**248**	**100.0**

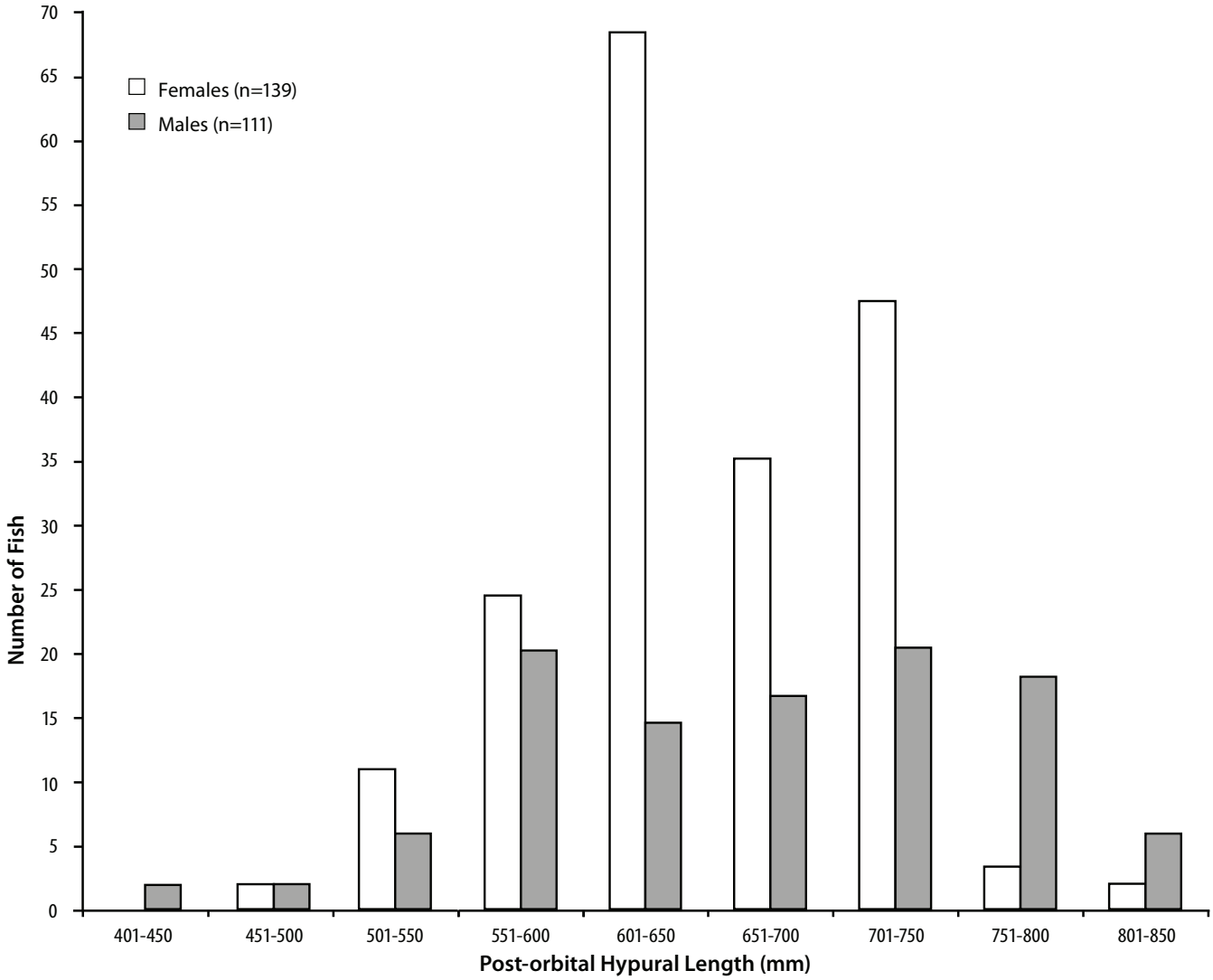
* Carcass Condition
1 - Fresh carcass
2 - Fair to good carcass (2 - 3 days old)
3 - Poor carcass condition with some fungus
4 - Very old and decomposed carcass

In addition to the carcasses sampled for this project, sex was determined for all carcasses recovered as part of the mark-recapture enumeration project, and documented in the Nechako and Stuart Rivers Chinook Enumeration report (NFCP M00-1). This information is relevant to carcass sampling results presented in this report, and given the much larger sample size (n=1095) is likely more representative of the population as a whole. In addition, using the larger dataset eliminates the potential bias associated with the practice of sampling all marked carcasses (sampling for tag application might have a sex bias). The observed sex ratio for this larger sample was 1.90 F/M, or 66% females and 34% males (n=1095, including the carcasses selected for biological sampling).

The length (POHL) of the fish sampled ranged from 450 to 820 mm, with a mean of 692 mm for males (n=82, SD=79), 664 mm for females (n=166, SD=54) and 673 mm (n=248, SD=65) for all fish combined. The majority of males were distributed across a broad range of lengths (601-800 mm), with the majority of males in the 701-750 mm range (Figure 5). Compared to the males, the majority of females were smaller in size, distributed within a narrower range of lengths (601-750 mm), with the majority of females in the 601-650 range.

2 Any discrepancy between the total number of carcasses sampled and the reported number of carcasses for various parameters is due to the fact that only partial data were recorded for some carcasses. However, all carcasses were maintained in the dataset and any partial data that was recorded was used in the appropriate analyses.

FIGURE 5 **Stuart River Chinook Length Frequency Distribution, 2000**



Of the total number of female carcasses sampled (n=166), 100% were determined to be fully spawned, based on egg retention of less than 1000. The mean egg retention of the fully spawned females was 6 eggs (n=166, SD=29, range 0–300). No partially spawned female carcasses (based on egg retention of 1000-4999) were sampled.

Scale and fin samples from all 248 carcasses recovered from the Stuart River were sent to the Pacific Biological Station in Nanaimo for age analysis. Complete ages were determined for 234 of those samples (Table 6). The results indicate that a vast majority of the fish sampled were of two age-classes, 4_2 (59%), and 5_2 (39%). The number of males and females in these age-classes was significantly disproportionate to the sex ratio of the sample (chi-square test, p=0.03).

TABLE 6 **Stuart River Chinook Age Contribution (%) by Sex, 2000**

	3_1	3_2	4_1	4_2	5_1	5_2	6_2	Total # Aged
Males	0.0	0.0	0.0	48.0	0.0	48.0	4.0	**77**
Females	0.0	0.0	0.0	64.0	0.0	34.0	2.0	**157**

Carcasses with tags applied as part of the mark-recapture program were collected. However, these tags are not relevant to the biological sampling project so those results are documented in the Nechako and Stuart Rivers Chinook Enumeration report (NFCP M00-1). No other form of marking or tagging was observed.

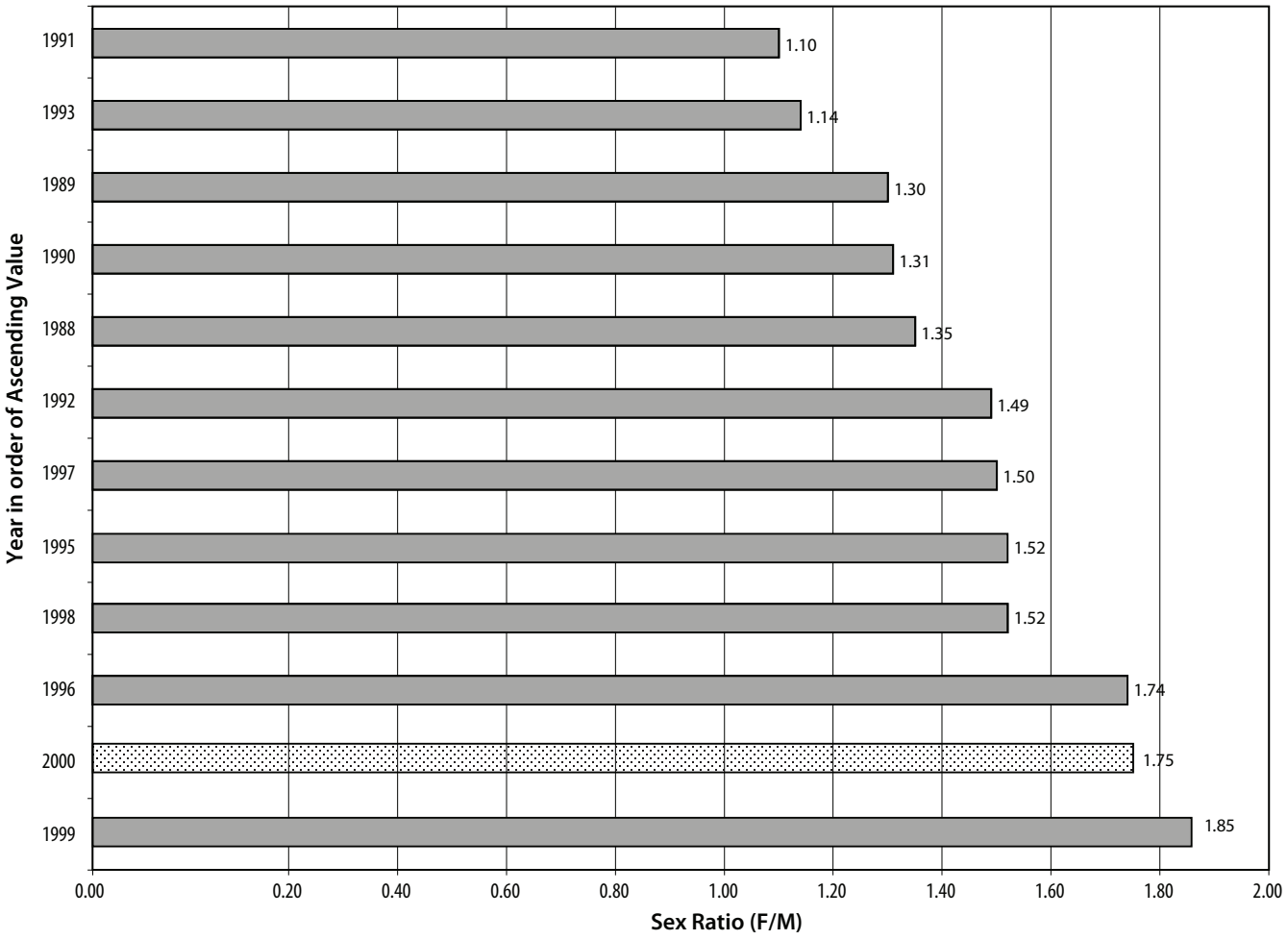
DISCUSSION - COMPARISON TO PREVIOUS YEARS

Nechako River

A comparison of 2000 Nechako River Chinook carcass recovery data was made to data collected by the NFCP each year since 1988 (NFCP M88-4 and M89-2 to M99-2). Although some limited data were collected prior to 1988 it was not deemed necessary to include these data in the comparison, since information has been collected by the NFCP for several years using standardized methods and study areas. The exception is the discussion on fecundity which includes data collected prior to the inception of the NFCP. This exception was made because the prior data adds substantially to the available dataset due to the paucity of information regarding Nechako River Chinook female fecundity.

The observed sex ratio of 1.75 F/M was within the existing range (1.10-1.85) observed from 1988-1999 (Figure 6), and significantly higher than the mean of 1.45 (n=12, SD=0.22), as indicated by 95% confidence limit of 1.32-1.57.

FIGURE 6 **Nechako River Chinook Sex Ratio, 1988-2000**



When comparing the mean length (POHL) of both males and females to observations from previous years, no obvious trends were apparent. For both sexes, the mean lengths observed in 2000 fell within the ranges observed in previous years (Figures 7 and 8).

FIGURE 7 **Nechako River Chinook Male Mean Length, 1988-2000**

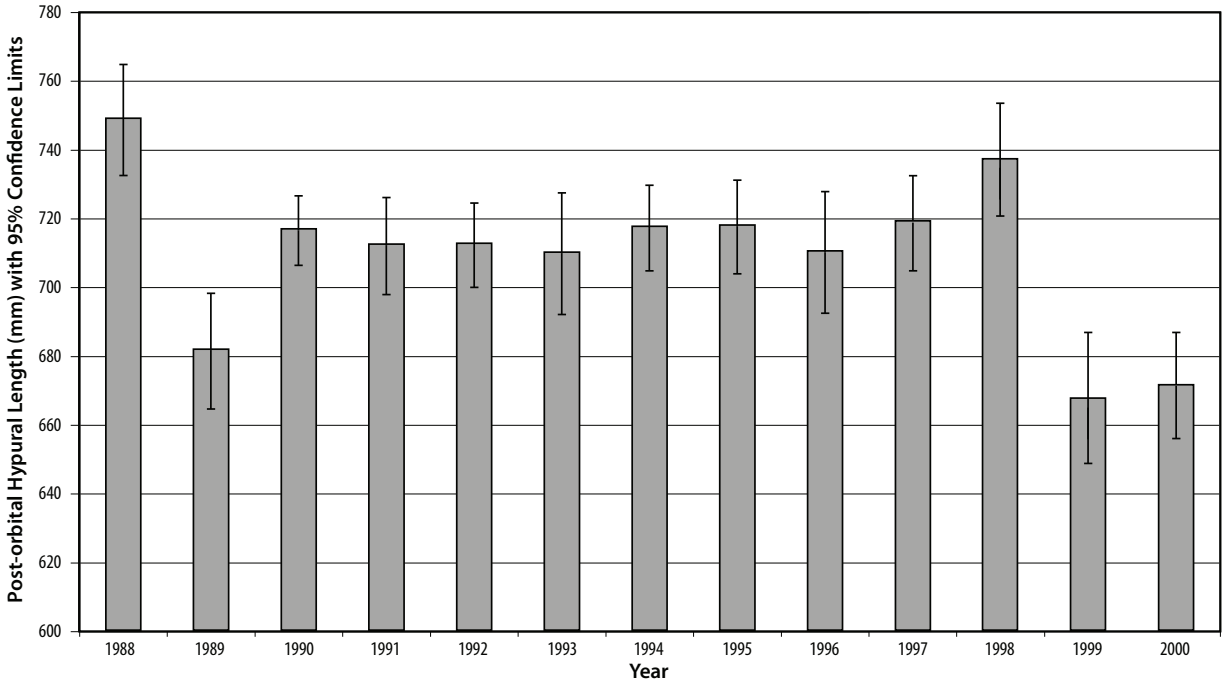
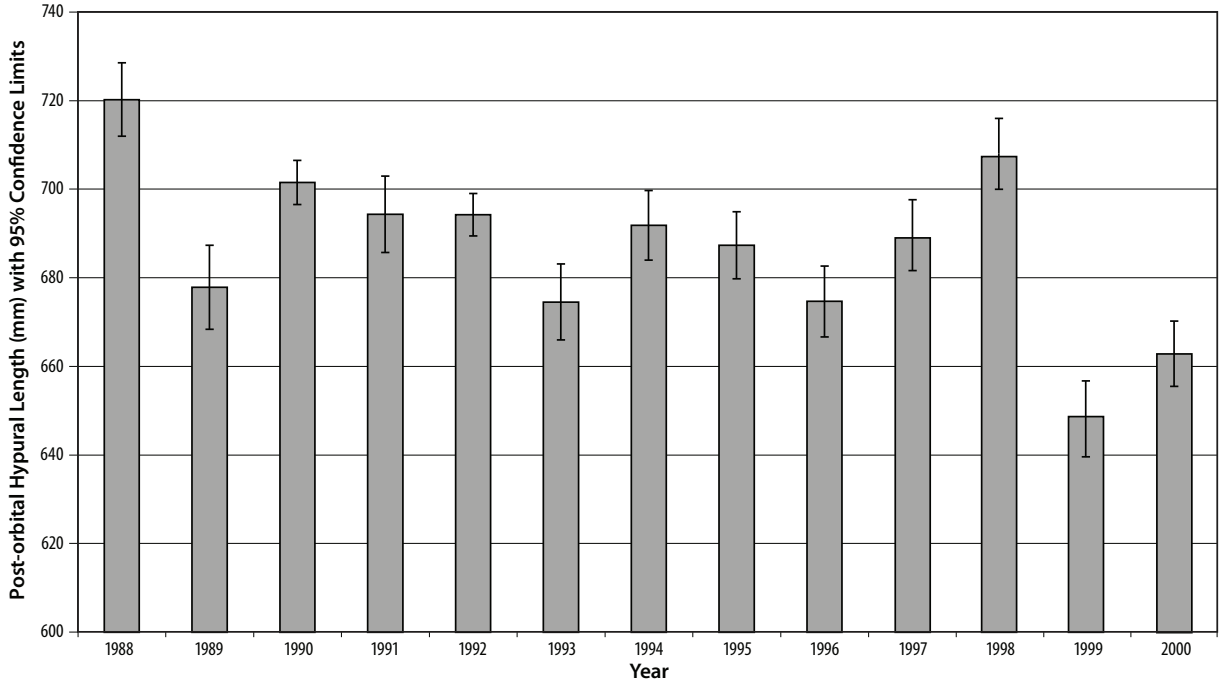


FIGURE 8 **Nechako River Chinook Female Mean Length, 1988-2000**



No female pre-spawn mortalities were sampled this year, maintaining the average fecundity of Nechako River female Chinook at an estimated 6537 eggs per fish (Table 7). Although no further analysis of this statistic is conducted for this report, this value may contribute to other aspects of the NFCP monitoring projects, particularly the estimates of egg-to-fry survival.

TABLE 7 **Nechako River Chinook Fecundity, 1978-2000**

Year	Post-orbital Hypural Length (mm)	Fecundity (eggs/female)	Sources*	Cumulative Mean
1978	684	5250	1	
1978	663	6305	1	
1979	703	7200	2	
1979	611	5313	2	
1979	611	5284	2	
1980	710	5000	3	
1980	710	5000	3	
1985	760	6800	4	5769
1989	733	6073		
1989	695	5831		
1989	720	5500		
1989	730	5065		5718
1990	760	8831		
1990	730	7040		6035
1991	715	7289		
1991	710	6901		
1991	670	5714		6141
1992	680	7395		
1992	705	7111		6258
1993	690	6848		
1993	630	5705		
1993	720	5575		6229
1995	706	6750		
1995	712	5109		6204
1998	751	10026		
1998	745	9473		
1998	765	8216		
1998	712	6437		6537

*Sources:

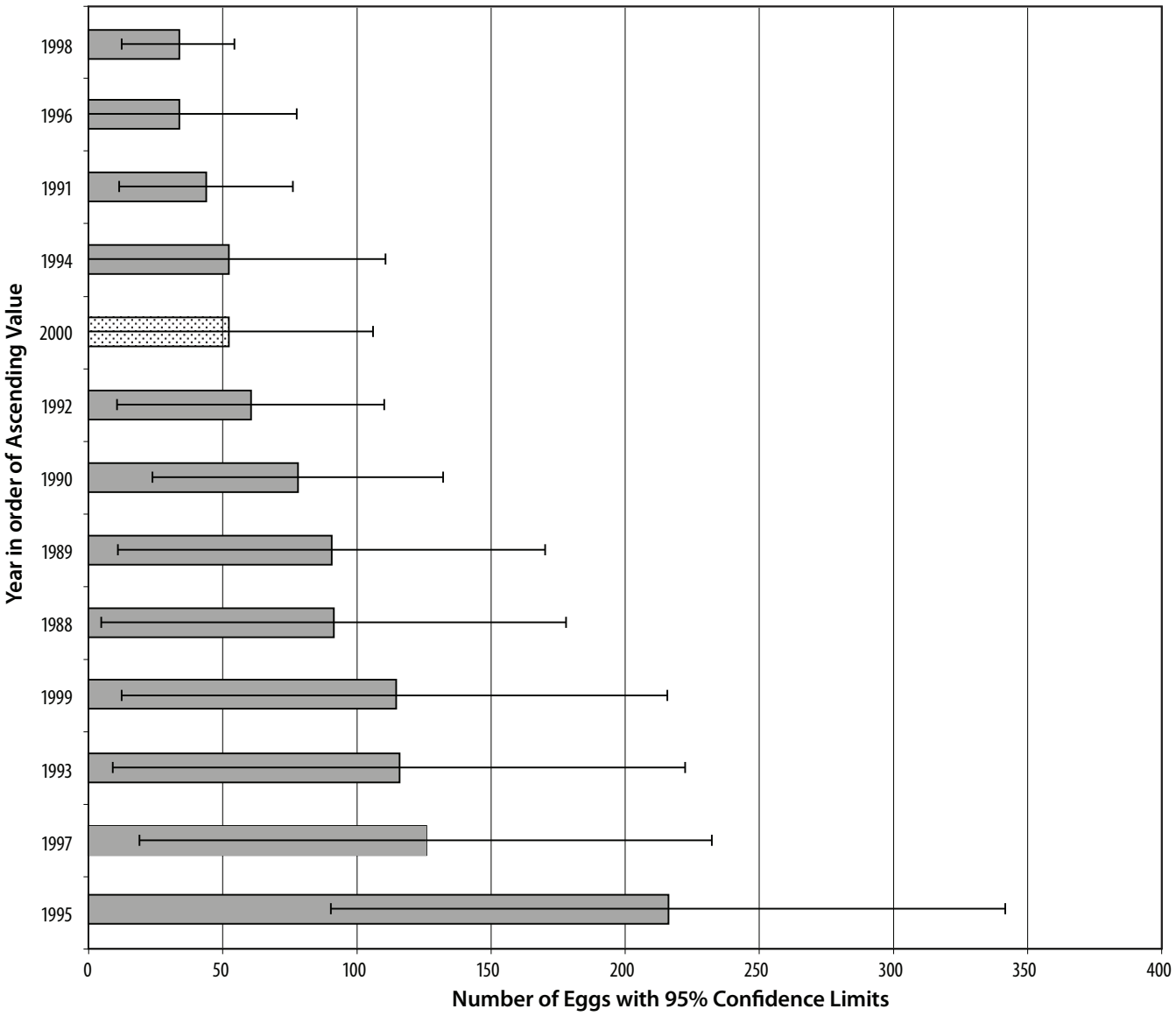
1 = Fee and Sheng (1978),
2 = Olmsted *et al.* (1980),
3 = Russell *et al.* (1983), and
4 = Jaremovic and Rowland (1988)

The mean egg retention in fully and partially spawned carcasses was compared to values from previous years (Table 8). Although the 2000 mean was within the existing range, the large confidence limits make it difficult to assign any significance to this observation (Figure 9).

TABLE 8 **Nechako River Chinook Egg Retention, 1988-2000**

	Fully Spawned			Partially Spawned		Fully + Partially
Year	n	range	mean	n	range	mean
1988	123	0-500	11.5	4	1000-4320	91.4
1989	144	0-757	21.5	3	2760-3960	90.6
1990	226	0-982	40.7	2	4066-4503	78
1991	154	0-732	22.4	2	1383-2005	43.8
1992	219	0-862	20.2	3	1484-4021	60.5
1993	100	0-529	32.8	3	1045-4686	115.8
1994	90	0-249	10.7	2	1565-2272	52.2
1995	144	0-899	38.3	8	1613-4600	216.1
1996	166	0-212	5.8	2	1100-3600	33.7
1997	127	0-326	13.1	4	2700-4081	125.5
1998	124	0-849	33.2	0	n/a	33.2
1999	129	0-389	9.2	4	3100-4000	113.5
2000	153	0-965	10.9	3	1366-3500	52.8

FIGURE 9 **Nechako River Chinook Mean Egg Retention, 1988-2000**



The Nechako River Chinook spawning population is almost exclusively comprised of individuals that spend one or more years as a fry or parr in fresh water before migrating out to the ocean (stream-type life history), and is dominated by 4_2 and 5_2 age-classes. These have been consistent observations since the inception of the NFCP monitoring program. In 2000 age-classes 4_2 and 5_2 accounted for 97% of the return, with all stream-type fish accounting for 100% (Table 9).

TABLE 9 **Percent Contribution of Stream-type Life Histories to Nechako Chinook Escapements, 1988-2000**

	% Contribution		Sample
Year	$4_2 + 5_2$	All Stream-type	Size
1988	80	99	210
1989	81	97	200
1990	80	98	225
1991	68	96	210
1992	90	99	200
1993	85	100	188
1994	88	100	172
1995	97	99	207
1996	87	99	211
1997	96	100	206
1998	97	99	207
1999	95	100	204
2000	97	100	250

In addition to identifying life history strategies, age data combined with the current years' escapement estimate are used to determine the relative success of past brood years in generating subsequent returns to the river. Since this analysis requires the results of several years, age-at-return data since the inception of the NFCP is documented in Table 10 to facilitate the discussion in the Nechako and Stuart Rivers Chinook Enumeration report (NFCP M00-1).

TABLE 10 **Percent Contribution of Age-at-Return Groupings to Nechako Chinook Escapements, 1988-2000**

	% Contribution					Sample
Year	3 years	4 years	5 years	6 years	7 years	Size
1988	0.0	9.0	72.4	18.6	0.0	210
1989	1.0	30.0	52.5	15.5	1.0	200
1990	0.0	5.3	76.0	17.3	1.3	225
1991	1.0	16.7	54.3	25.7	2.4	210
1992	1.0	7.0	84.0	8.0	0.0	200
1993	0.0	13.3	71.8	14.9	0.0	188
1994	0.0	11.0	76.7	11.0	1.2	172
1995	0.0	14.0	84.5	1.4	0.0	207
1996	0.0	40.8	49.8	9.5	0.0	211
1997	0.0	20.9	75.7	3.4	0.0	206
1998	0.0	24.6	73.4	1.9	0.0	207
1999	0.5	44.1	51.0	4.4	0.0	204
2000	0.0	64.8	32.4	2.8	0.0	250

Stuart River

Information is collected from the Stuart River as a comparison to the Nechako River, to assist in identifying potential effects of flow regulation on the Nechako Chinook population. The geographic proximity of the two rivers means that Chinook returning to the Stuart River most likely experience similar migration timing, ocean conditions and harvest rates as Nechako River Chinook. Given these assumptions, identified trends or anomalies in the Nechako population that were absent from the Stuart might be attributable to factors intrinsic to the Nechako River, but similarities would likely indicate extrinsic factors unrelated to flow regulation.

In 2000, the comparison of information collected from the Nechako to previous years did not identify any significant trends or anomalies, therefore it was not necessary to use the information collected from the Stuart to identify possible intrinsic vs. extrinsic effects. However, the data are documented in this report in the event that longer-term analyses are required in the future

ACKNOWLEDGMENTS

Dale Desrochers managed the delivery of the projects for DFO, on behalf of the NFCP Technical Committee.

Nechako River carcass recovery was conducted by Colin Barnard.

Stuart River carcass recovery was carried out by Ecofor Consulting Ltd. and members of the Nak'azdli Band.

Staff at DFO's Pacific Biological Station in Nanaimo analyzed the various samples.

Rhonda Thibeault and Liz Murphy assisted with data compilation.

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APPENDIX 1

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

APPENDIX 1

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
1	12-Sep-00	4	M	1	594		70351	1	42	
2	12-Sep-00	3B	F	1	676	skein	70351	2	42	tightly skeined / no loose eggs
3	14-Sep-00	3B	M	2	607		70351	3	42	
4	14-Sep-00	3B	M	1	612		70351	4	42	
5	14-Sep-00	3B	F	2	607	0	70351	5	42	
6	14-Sep-00	4	F	2	657	skein	70352	1	52	tightly skeined / couple of loose eggs
7	14-Sep-00	4	F	2	695	8	70352	2	52	
8	14-Sep-00	3B	F	1	696	5	70352	3	52	
9	15-Sep-00	11	M	2	738		70352	4	52	
10	15-Sep-00	11	F	3	605	79	70352	5	42	
11	15-Sep-00	11	F	1	716	2	70353	1	52	
12	15-Sep-00	11	F	3	642	177	70353	2	42	
13	15-Sep-00	11	F	1	671	1700	70353	3	42	
14	15-Sep-00	11	M	1	643		70353	4	42	
15	15-Sep-00	11	F	3	632	0	70353	5	42	
16	16-Sep-00	12	M	2	678		70354	1	42	
17	16-Sep-00	12	F	2	617	0	70354	2	42	
18	16-Sep-00	12	F	3	645	3	70354	3	42	
19	16-Sep-00	12	F	2	622	8	70354	4	42	
20	16-Sep-00	12	F	1	608	0	70354	5	42	scales difficult due to excessive digging
21	16-Sep-00	12	M	2	635		70355	1	42	
22	16-Sep-00	12	M	2	587		70355	2	42	
23	16-Sep-00	12	M	2	566		70355	3	42	
24	16-Sep-00	12	M	2	590		70355	4	42	
25	16-Sep-00	12	M	1	607		70355	5	42	
26	16-Sep-00	12	M	2	805		70356	1	52	
27	16-Sep-00	12	F	2	587	0	70356	2	42	
28	16-Sep-00	12	F	2	656	0	70356	3	42	
29	16-Sep-00	12	M	1	618		70356	4	42	
30	16-Sep-00	12	F	4	614	0	70356	5	42	
31	16-Sep-00	12	F	1	613	6	70357	1	42	
32	16-Sep-00	12	M	2	572		70357	2	42	
33	16-Sep-00	12	F	2	713	12	70357	3	52	
34	16-Sep-00	12	F	2	598	0	70357	4	42	
35	18-Sep-00	9	F	2	646	0	70357	5	42	
36	18-Sep-00	9	F	2	623	1366	70358	1	52	partially spawned

APPENDIX 1 (cont.)

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
37	18-Sep-00	9	M	1	592		70358	2	42	
38	18-Sep-00	9	M	2	800		70358	3	52	
39	18-Sep-00	9	F	2	687	0	70358	4	52	
40	19-Sep-00	16	F	2	595	21	70358	5	42	
41	19-Sep-00	16	F	3	631	3500	70359	1	42	unspawned
42	19-Sep-00	16	M	2	686		70359	2	42	
43	19-Sep-00	16	M	2	744		70359	3	52	
44	19-Sep-00	16	F	1	664	0	70359	4	42	
45	19-Sep-00	16	M	2	574		70359	5	42	
46	19-Sep-00	16	F	2	630	0	70360	1	42	
47	20-Sep-00	15	F	3	634	0	70360	2	42	
48	20-Sep-00	15	F	2	627	0	70360	3	42	
49	20-Sep-00	15	F	3	625	1	70360	4	42	
50	20-Sep-00	15	M	2	750		70360	5	52	
51	20-Sep-00	15	M	2	757		70361	1	52	
52	20-Sep-00	15	F	2	685	0	70361	2	42	
53	20-Sep-00	15	F	2	755	0	70361	3	52	
54	20-Sep-00	15	F	3	613	2	70361	4	42	
55	20-Sep-00	15	M	3	688		70361	5	42	
56	20-Sep-00	15	F	2	733	6	70362	1	52	
57	20-Sep-00	15	F	2	676	1	70362	2	52	
58	20-Sep-00	15	M	3	658		70362	3	42	
59	20-Sep-00	15	F	3	743	12	70362	4	52	
60	20-Sep-00	15	M	3	567		70362	5	42	
61	20-Sep-00	15	M	3	725		70363	1	52	
62	20-Sep-00	15	M	1	737		70363	2	52	
63	20-Sep-00	15	M	3	626		70363	3	42	
64	20-Sep-00	15	M	1	643		70363	4	42	
65	20-Sep-00	15	F	1	622	1	70363	5	42	
66	22-Sep-00	11	F	1	612	0	70364	1	42	
67	22-Sep-00	11	F	3	631	1	70364	2	42	
68	22-Sep-00	11	M	3	663		70364	3	42	
69	22-Sep-00	11	M	3	623		70364	4	42	
70	22-Sep-00	11	F	2	604	0	70364	5	42	
71	22-Sep-00	11	F	2	634	0	70365	1	42	
72	22-Sep-00	11	F	3	655	0	70365	2	42	
73	22-Sep-00	11	F	2	627	0	70365	3	42	

APPENDIX 1 (cont.)

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
74	22-Sep-00	11	M	2	574		70365	4	42	
75	22-Sep-00	11	F	3	634	0	70365	5	52	
76	22-Sep-00	11	M	1	678		70366	1	42	
77	22-Sep-00	11	F	2	676	0	70366	2	42	
78	22-Sep-00	11	M	3	750		70366	3	52	
79	22-Sep-00	11	M	3	659		70366	4	42	
80	22-Sep-00	11	F	2	666	3	70366	5	42	
81	22-Sep-00	11	M	3	671		70367	1	42	
82	22-Sep-00	11	F	3	741	0	70367	2	52	
83	22-Sep-00	11	F	2	664	2	70367	3	42	
84	22-Sep-00	11	F	2	573	0	70367	4	42	
85	22-Sep-00	11	M	2	691		70367	5	42	
86	22-Sep-00	11	M	3	667		70368	1	42	
87	22-Sep-00	11	F	1	662	4	70368	2	42	
88	22-Sep-00	11	F	2	623	1	70368	3	42	
89	22-Sep-00	11	F	2	703	5	70368	4	52	
90	22-Sep-00	11	F	2	693	1	70368	5	52	
91	22-Sep-00	11	F	2	693	12	70369	1	52	
92	22-Sep-00	11	F	2	677	84	70369	2	42	
93	22-Sep-00	11	M	3	613		70369	3	42	
94	22-Sep-00	11	M	1	633		70369	4	42	
95	22-Sep-00	11	F	2	622	2	70369	5	42	
96	22-Sep-00	12	F	2	622	0	70370	1	42	
97	22-Sep-00	12	F	1	691	19	70370	2	52	
98	22-Sep-00	12	F	2	636	7	70370	3	42	
99	22-Sep-00	12	F	2	650	1	70370	4	42	
100	22-Sep-00	12	F	2	643	2	70370	5	42	
101	24-Sep-00	3A	F	2	622	0	70371	1	42	
102	24-Sep-00	3A	M	2	706		70371	2	42	
103	24-Sep-00	3A	M	3	662		70371	3	42	
104	24-Sep-00	3A	M	1	700		70371	4	42	
105	24-Sep-00	3A	F	3	686	22	70371	5	52	
106	24-Sep-00	3A	F	1	708	0	70372	1	52	
107	24-Sep-00	3A	F	1	702	0	70372	2	52	
108	24-Sep-00	3A	F	1	667	1	70372	3	42	
109	24-Sep-00	3A	F	3	629	1	70372	4	42	
110	24-Sep-00	3A	F	2	738	4	70372	5	52	

APPENDIX 1 (cont.) **2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results**

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
111	24-Sep-00	3A	M	2	624		70373	1	52	
112	24-Sep-00	3A	F	1	688	0	70373	2	52	
113	24-Sep-00	3A	F	1	677	1	70373	3	42	
114	24-Sep-00	3A	F	2	656	0	70373	4	42	
115	24-Sep-00	3A	M	3	774		70373	5	52	
116	24-Sep-00	3B	F	1	668	0	70374	1	42	
117	24-Sep-00	3B	F	1	755	0	70374	2	52	
118	24-Sep-00	3B	F	3	653	12	70374	3	42	
119	24-Sep-00	3B	F	2	710	0	70374	4	52	
120	24-Sep-00	3B	F	1	656	965	70374	5	42	
121	24-Sep-00	3B	M	2	599		70375	1	42	
122	24-Sep-00	3B	M	1	762		70375	2	52	
123	24-Sep-00	3B	M	3	557		70375	3	42	unspawned
124	24-Sep-00	3B	F	1	606	0	70375	4	42	
125	24-Sep-00	3B	F	3	679	0	70375	5	62	
126	24-Sep-00	3B	M	2	665		70376	1	42	
127	24-Sep-00	3B	F	2	694	0	70376	2	42	
128	24-Sep-00	3B	M	3	608		70376	3	42	
129	24-Sep-00	3B	F	1	707	7	70376	4	52	
130	24-Sep-00	3B	F	2	634	4	70376	5	42	
131	25-Sep-00	4	M	4	583		70377	1	42	
132	25-Sep-00	4	F	2	644	6	70377	2	42	
133	25-Sep-00	4	F	2	732	0	70377	3	52	
134	25-Sep-00	4	F	3	627	0	70377	4	42	
135	25-Sep-00	4	F	3	632	skein	70377	5	52	eggs tightly skeined
136	25-Sep-00	4	F	2	718	0	70378	1	52	
137	25-Sep-00	4	F	3	639	0	70378	2	42	
138	25-Sep-00	4	M	1	497		70378	3	42	Jack
139	25-Sep-00	4	F	2	605	0	70378	4	42	
140	25-Sep-00	4	F	2	617	1	70378	5	42	
141	25-Sep-00	4	M	2	769		70379	1	52	
142	25-Sep-00	4	M	3	636		70379	2	42	
143	25-Sep-00	4	F	2	607	0	70379	3	42	
144	25-Sep-00	4	F	1	672	3	70379	4	62	
145	25-Sep-00	4	M	3	588		70379	5	42	
146	25-Sep-00	5	M	1	753		70380	1	52	
147	25-Sep-00	5	F	3	744	0	70380	2	52	

APPENDIX 1 (cont.)

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
148	25-Sep-00	5	F	2	675	0	70380	3	42	
149	25-Sep-00	5	M	2	593		70380	4	42	
150	25-Sep-00	5	F	2	702	1	70380	5	52	
151	25-Sep-00	5	M	3	607		70381	1	42	
152	25-Sep-00	5	F	2	644	1	70381	2	52	
153	25-Sep-00	5	F	1	639	1	70381	3	42	
154	25-Sep-00	5	M	2	616		70381	4	42	
155	25-Sep-00	5	F	2	651	0	70381	5	42	
156	25-Sep-00	5	M	1	798		70382	1	52	
157	25-Sep-00	5	M	3	606		70382	2	42	
158	25-Sep-00	5	M	3	598		70382	3	42	
159	25-Sep-00	5	F	2	758	1	70382	4	62	
160	25-Sep-00	5	M	2	795		70382	5	62	
161	26-Sep-00	6	F	3	678	0	70383	1	52	
162	26-Sep-00	6	M	2	790		70383	2	62	
163	26-Sep-00	6	M	3	782		70383	3	62	
164	26-Sep-00	6	M	3	577		70383	4	42	
165	26-Sep-00	6	F	1	709	7	70383	5	52	
166	26-Sep-00	6	F	2	686	0	70384	1	52	
167	26-Sep-00	6	F	1	635	7	70384	2	42	
168	26-Sep-00	6	M	2	595		70384	3	42	
169	26-Sep-00	6	M	3	629		70384	4	42	
170	26-Sep-00	6	F	2	684	1	70384	5	42	
171	26-Sep-00	6	M	1	562		70385	1	42	
172	26-Sep-00	6	F	4	621	0	70385	2	42	
173	26-Sep-00	6	F	2	628	0	70385	3	42	
174	26-Sep-00	6	M	1	645		70385	4	42	
175	26-Sep-00	6	M	4	585		70385	5	42	
176	26-Sep-00	6	M	2	784		70386	1	52	
177	26-Sep-00	6	F	2	688	0	70386	2	52	
178	26-Sep-00	6	M	3	764		70386	3	42	
179	26-Sep-00	6	M	3	601		70386	4	52	
180	26-Sep-00	6	F	2	686	0	70386	5	42	
181	26-Sep-00	6	F	2	712	0	70387	1	42	
182	26-Sep-00	6	M	3	792		70387	2	52	
183	26-Sep-00	6	M	3	741		70387	3	42	
184	26-Sep-00	6	M	2	687		70387	4	52	

APPENDIX 1 (cont.)

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
185	26-Sep-00	6	F	2	662	1	70387	5	52	
186	26-Sep-00	6	F	1	617	0	70388	1	52	
187	26-Sep-00	6	F	4	633	0	70388	2	62	
188	26-Sep-00	6	F	2	638	0	70388	3	42	
189	26-Sep-00	6	F	3	684	0	70388	4	42	
190	26-Sep-00	6	M	3	699		70388	5	42	
191	26-Sep-00	6	F	3	667	0	70389	1	42	
192	26-Sep-00	6	F	3	671	5	70389	2	42	
193	26-Sep-00	6	F	2	675	0	70389	3	42	
194	26-Sep-00	6	M	3	629		70389	4	42	
195	26-Sep-00	6	M	2	743		70389	5	52	
196	28-Sep-00	10	F	3	717	2	70390	1	52	
197	28-Sep-00	10	M	3	596		70390	2	42	
198	28-Sep-00	10	F	2	650	5	70390	3	42	
199	28-Sep-00	10	F	3	562	0	70390	4	42	
200	28-Sep-00	10	M	2	675		70390	5	42	
201	28-Sep-00	11	F	2	629	1	70391	1	52	
202	28-Sep-00	11	F	2	678	0	70391	2	42	
203	28-Sep-00	11	M	3	765		70391	3	52	
204	28-Sep-00	11	F	2	691	4	70391	4	52	
205	28-Sep-00	11	F	3	665	0	70391	5	42	
206	28-Sep-00	11	F	2	775	0	70392	1	52	
207	28-Sep-00	11	F	2	683	0	70392	2	42	
208	28-Sep-00	11	F	3	723	0	70392	3	52	
209	28-Sep-00	11	F	2	551	0	70392	4	42	
210	28-Sep-00	11	F	2	722	1	70392	5	52	
211	28-Sep-00	11	F	2	736	1	70393	1	52	
212	28-Sep-00	11	F	3	618	0	70393	2	42	
213	28-Sep-00	11	F	4	651	0	70393	3	42	
214	28-Sep-00	11	F	2	676	1	70393	4	42	
215	28-Sep-00	12	F	2	644	0	70393	5	42	
216	29-Sep-00	13	F	2	691	47	70394	1	42	
217	29-Sep-00	13	M	2	774		70394	2	42	
218	29-Sep-00	13	M	4	799		70394	3	42	
219	29-Sep-00	13	F	3	617	0	70394	4	42	
220	29-Sep-00	13	M	3	692		70394	5	52	
221	29-Sep-00	13	F	4	701	0	70395	1	52	

APPENDIX 1 (cont.)

2000 Nechako River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
222	29-Sep-00	13	F	4	688	0	70395	2	42	
223	29-Sep-00	13	F	3	634	6	70395	3	52	
224	29-Sep-00	13	F	3	687	1	70395	4	52	
225	29-Sep-00	13	F	3	727	3	70395	5	52	
226	29-Sep-00	13	M	3	682		70396	1	42	
227	29-Sep-00	13	F	3	637	1	70396	2	42	
228	29-Sep-00	13	F	3	733	0	70396	3	52	
229	29-Sep-00	13	F	3	612	0	70396	4	42	
230	29-Sep-00	13	F	2	668	6	70396	5	42	
231	1-Oct-00	3B	M	3	785		70397	1	52	
232	1-Oct-00	3B	F	3	682	14	70397	2	52	
233	1-Oct-00	3B	M	1	757		70397	3	52	
234	1-Oct-00	3B	F	3	630	1	70397	4	42	
235	1-Oct-00	3B	M	3	743		70397	5	42	
236	1-Oct-00	3B	F	2	632	0	70398	1	42	
237	1-Oct-00	3B	M	3	747		70398	2	52	
238	1-Oct-00	3B	F	3	677	0	70398	3	42	
239	1-Oct-00	3B	F	2	736	1	70398	4	42	
240	1-Oct-00	3B	F	3	639	0	70398	5	42	
241	1-Oct-00	3B	F	4	605	0	70399	1	42	
242	1-Oct-00	3B	F	3	702	0	70399	2	52	
243	2-Oct-00	3A	F	2	744	1	70399	3	52	
244	2-Oct-00	3A	F	2	627	10	70399	4	52	
245	2-Oct-00	3A	F	2	687	2	70399	5	52	
246	2-Oct-00	3A	F	1	732	0	70400	1	52	
247	2-Oct-00	3A	F	1	651	0	70400	2	42	
248	2-Oct-00	3A	M	2	647		70400	3	42	
249	2-Oct-00	3A	F	1	642	1	70400	4	42	
250	2-Oct-00	3A	F	1	725	18	70400	5	52	

APPENDIX 2

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

APPENDIX 2

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
1	20-Sep-00	1	M	3	790		70350	1	62	
2	20-Sep-00	2	F	3	730	0	70350	2	42	
3	20-Sep-00	2	F	2	640	0	70350	3	42	
4	20-Sep-00	2	F	2	740	15	70350	4	52	
5	20-Sep-00	2	F	2	730	75	70350	5	52	
6	20-Sep-00	3	F	2	605	0	70301	1	n/a	
7	20-Sep-00	3	M	2	704		70301	2	n/a	
8	20-Sep-00	3	M	3	704		70301	3	n/a	
9	20-Sep-00	3	M	3	702		70301	4	n/a	
10	20-Sep-00	3	F	2	705	0	70301	5	n/a	
12	20-Sep-00	3	M	2	801		70302	1	52	70302 scales = 1-10
13	21-Sep-00	4	M	2	650		70303	2	42	
14	20-Sep-00	3	F	2	603	0	70302	2	42	
15	20-Sep-00	3	M	2	706		70302	3	52	
16	20-Sep-00	3	F	2	607	10	70302	4	42	
17	20-Sep-00	3	F	2	706	0	70302	5	52	
18	21-Sep-00	3	M	3	802		70303	1	52	
19	21-Sep-00	4	M	2	760		70303	3	52	
20	21-Sep-00	4	F	3	650	0	70303	4	42	
21	21-Sep-00	4	F	3	730	0	70303	5	3M	
22	21-Sep-00	4	M	3	750		70304	1	62	
23	21-Sep-00	4	M	2	740		70304	2	52	
24	21-Sep-00	4	F	2	680	0	70304	3	42	
25	21-Sep-00	4	M	2	780		70304	4	52	
26	21-Sep-00	4	F	2	670	5	70304	5	3M	
27	21-Sep-00	4	F	2	710	2	70305	1	52	
28	21-Sep-00	4	M	2	770		70305	2	52	
29	21-Sep-00	4	M	2	620		70305	3	42	
30	21-Sep-00	4	F	2	690	8	70305	4	52	
31	21-Sep-00	4	F	2	710	12	70305	5	42	
32	21-Sep-00	4	F	2	650	10	70306	1	42	
33	21-Sep-00	4	F	3	730	8	70306	2	52	
34	21-Sep-00	4	M	1	750		70306	3	52	Tag ripped out
35	21-Sep-00	4	F	2	710	1	70306	4	52	
36	21-Sep-00	5	F	2	640	1	70306	5	42	
37	21-Sep-00	5	F	2	720	5	70307	1	52	
38	21-Sep-00	5	F	2	710	5	70307	2	62	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
39	21-Sep-00	5	F	2	590	2	70307	3	42	
40	22-Sep-00	5	F	2	745	0	70308	1	52	
41	22-Sep-00	5	M	2	680		70308	2	42	
42	22-Sep-00	5	F	2	690	1	70308	3	52	
43	22-Sep-00	5	M	2	670		70308	4	42	
44	22-Sep-00	1	F	2	720	2	70308	5	42	
45	22-Sep-00	5	M	3	740		70309	1	42	Tag ripped out
46	22-Sep-00	5	F	2	706	1	70309	2	42	
47	22-Sep-00	5	M	2	720		70309	3	42	
48	22-Sep-00	5	F	2	600	22	70309	4	42	
49	23-Sep-00	1	F	2	570	10	70309	5	42	
50	23-Sep-00	1	F	3	560	0	70310	1	42	
51	23-Sep-00	2	F	3	650	0	70310	2	42	
52	23-Sep-00	2	F	2	625	10	70310	3	42	
53	23-Sep-00	2	F	2	727	0	70311	3	52	
54	23-Sep-00	2	M	2	608		70311	2	42	
55	23-Sep-00	2	F	2	708	0	70311	1	52	
56	23-Sep-00	3	M	2	632		70310	4	42	
57	23-Sep-00	3	M	2	519		70310	5	42	
58	25-Sep-00	3	F	2	734	0	70311	4	42	
59	25-Sep-00	3	F	2	647	12	70311	5	42	
60	25-Sep-00	3	F	2	704	0	70312	1	52	
61	25-Sep-00	3	F	2	648	10	70312	2	52	
62	25-Sep-00	3	F	2	651	10	70312	3	42	
63	25-Sep-00	3	M	2	746		70312	4	42	
64	25-Sep-00	3	F	2	697	5	70312	5	42	
65	25-Sep-00	3	F	2	659	0	70313	1	42	
66	25-Sep-00	3	F	2	722	20	70313	2	52	
67	25-Sep-00	3	M	3	766		70313	3	52	
68	25-Sep-00	3	F	2	673	8	70313	4	42	
69	25-Sep-00	3	F	2	697	0	70313	5	52	
70	25-Sep-00	3	F	2	744	5	70314	1	52	
71	25-Sep-00	3	M	2	638		70314	2	42	
72	25-Sep-00	3	F	2	611	0	70314	3	42	
73	25-Sep-00	3	M	2	653		70314	4	42	
74	25-Sep-00	3	F	2	678	15	70314	5	42	
75	25-Sep-00	3	F	2	706	0	70315	1	62	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
76	25-Sep-00	3	F	2	721	10	70315	2	42	
77	25-Sep-00	3	F	2	734	20	70315	3	52	
78	25-Sep-00	3	M	2	758		70315	4	42	
79	25-Sep-00	3	M	2	790		70315	5	52	
80	25-Sep-00	3	F	3	820	0	70316	1	62	
81	25-Sep-00	3	F	1	620	0	70316	2	42	
82	25-Sep-00	3	M	2	820		70316	3	52	
83	25-Sep-00	3	F	2	700	0	70316	4	52	
84	25-Sep-00	3	F	2	726	2	70316	5	52	
85	26-Sep-00	3	F	2	750	0	70317	1	52	
86	26-Sep-00	3	F	2	660	3	70317	2	42	
87	26-Sep-00	3	F	2	613	2	70317	3	42	
88	26-Sep-00	3	F	2	709	0	70317	4	52	
89	26-Sep-00	3	F	2	705	10	70317	5	52	
90	26-Sep-00	4	F	2	646	0	70318	1	42	
91	26-Sep-00	4	F	2	622	0	70318	2	42	
92	26-Sep-00	4	F	2	655	0	70318	3	42	
93	26-Sep-00	4	F	2	740	0	70318	4	52	
94	26-Sep-00	4	F	2	730	10	70318	5	42	
95	26-Sep-00	4	F	3	750	10	70319	1	42	
96	26-Sep-00	4	F	2	725	3	70319	2	MF	
97	26-Sep-00	4	M	2	580		70319	3	42	
98	26-Sep-00	4	F	3	635	0	70319	4	2M	
99	26-Sep-00	4	M	2	660		70319	5	2M	
100	26-Sep-00	4	F	2	690	1	70320	1	42	
101	26-Sep-00	4	F	2	640	0	70320	2	42	
102	26-Sep-00	4	M	3	710		70320	3	52	
103	26-Sep-00	4	F	2	670	0	70320	4	52	
104	26-Sep-00	4	M	3	670		70320	5	52	
105	26-Sep-00	4	F	1	610	0	70321	1	42	
106	26-Sep-00	4	F	2	650	0	70321	2	52	
107	26-Sep-00	4	M	2	710		70321	3	42	
108	26-Sep-00	4	F	2	605	0	70321	4	42	
109	26-Sep-00	4	F	2	610	0	70321	5	42	
110	26-Sep-00	4	F	2	640	0	70322	1	42	10 scales from same side
111	26-Sep-00	4	F	2	655	0	70322	2	52	
112	26-Sep-00	4	F	2	615	0	70322	3	42	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
113	26-Sep-00	4	F	3	635	0	70322	4	42	
114	26-Sep-00	4	F	2	620	300	70322	5	42	
115	26-Sep-00	4	F	2	650	0	70323	1	42	
116	26-Sep-00	4	F	2	660	0	70323	2	42	
117	26-Sep-00	4	F	2	640	0	70323	3	42	
118	26-Sep-00	4	F	2	740	0	70323	4	3M	
119	26-Sep-00	4	M	2	680		70323	5	42	
120	26-Sep-00	4	F	2	710	0	70324	1	MF	
121	26-Sep-00	4	F	2	645	2	70324	2	42	
122	26-Sep-00	4	F	2	680	0	70324	3	52	
123	26-Sep-00	4	F	2	650	0	70324	4	42	
124	26-Sep-00	4	F	2	750	0	70324	5	52	
125	26-Sep-00	4	F	2	500	0	70325	1	42	Jill
126	26-Sep-00	4	F	2	625	0	70325	2	42	
127	26-Sep-00	4	F	2	654	0	70325	3	52	
128	27-Sep-00	5	F	2	615	0	70325	4	42	
129	27-Sep-00	5	F	2	720	7	70325	5	52	
130	27-Sep-00	5	F	2	540	0	70326	1	42	
131	27-Sep-00	5	M	2	690		70326	2	52	
132	27-Sep-00	5	F	2	625	0	70326	3	42	
133	27-Sep-00	5	M	3	680		70326	4	52	
134	27-Sep-00	5	M	2	655		70326	5	52	
135	27-Sep-00	5	F	2	650	0	70327	1	42	
136	27-Sep-00	5	F	2	610	0	70327	2	42	
137	27-Sep-00	5	M	3	630		70327	3	42	
138	27-Sep-00	5	F	2	620	0	70327	4	42	
139	27-Sep-00	5	F	2	730	0	70327	5	52	Tag ripped out
140	27-Sep-00	5	F	2	655	1	70328	1	42	
141	27-Sep-00	5	M	2	610		70328	2	42	
142	27-Sep-00	5	M	2	630		70328	3	42	
143	27-Sep-00	5	M	2	760		70328	4	52	
144	27-Sep-00	5	M	2	740		70328	5	52	
145	27-Sep-00	5	M	2	670		70329	1	42	
146	27-Sep-00	5	M	2	770		70329	2	52	
147	27-Sep-00	5	M	2	700		70329	3	52	
148	27-Sep-00	6	M	2	620		70329	4	42	
149	27-Sep-00	6	F	2	649	1	70329	5	42	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
150	27-Sep-00	6	F	2	652	0	70330	1	42	
151	27-Sep-00	6	M	2	797		70330	2	52	
152	27-Sep-00	6	M	3	593		70330	3	42	all scales from l side (rotten)
153	27-Sep-00	6	F	2	610	0	70330	4	42	
154	27-Sep-00	6	F	2	736	0	70330	5	52	
155	27-Sep-00	6	M	2	804		70331	1	52	
156	27-Sep-00	6	F	2	660	0	70331	2	42	
157	27-Sep-00	6	M	2	754		70331	3	52	
158	27-Sep-00	6	M	2	744		70331	4	62	
159	27-Sep-00	6	M	2	715		70331	5	52	tag ripped out
160	27-Sep-00	6	F	2	657	0	70332	1	42	
161	27-Sep-00	6	M	3	652		70332	2	42	
162	27-Sep-00	6	M	2	704		70332	3	52	tag ripped out
163	27-Sep-00	6	F	2	684	0	70332	4	52	
164	27-Sep-00	6	M	2	720		70332	5	52	tag ripped out
165	27-Sep-00	6	F	2	618	0	70333	1	42	
166	27-Sep-00	6	F	2	644	3	70333	2	42	
167	27-Sep-00	6	F	2	684	0	70333	3	52	
168	27-Sep-00	6	F	2	685	200	70333	4	42	
169	27-Sep-00	6	M	2	646		70333	5	42	
170	27-Sep-00	6	M	2	598		70334	1	42	
171	27-Sep-00	6	F	2	666	0	70334	2	52	
172	27-Sep-00	6	F	3	568	0	70334	3	42	
173	27-Sep-00	6	F	3	698	0	70334	4	52	
174	27-Sep-00	6	F	2	645	0	70334	5	42	
175	27-Sep-00	6	F	2	640	0	70335	1	42	
176	27-Sep-00	6	F	2	639	0	70335	2	42	
177	27-Sep-00	6	F	2	642	5	70335	3	42	
178	27-Sep-00	6	F	2	615	0	70335	4	42	
179	27-Sep-00	6	F	2	720	0	70335	5	52	tag ripped out
180	27-Sep-00	6	M	2	628		70336	1	42	
181	27-Sep-00	6	F	2	608	0	70336	2	42	
182	27-Sep-00	6	F	3	605	0	70336	3	42	
183	27-Sep-00	6	F	2	720	0	70336	4	52	
184	27-Sep-00	6	M	3	568		70336	5	42	
185	28-Sep-00	6	M	4	598		70337	1	42	all scales from 1 side (rotten)
186	28-Sep-00	6	M	3	524		70337	2	52	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
187	28-Sep-00	6	F	3	718	0	70337	3	52	
188	28-Sep-00	6	M	2	695		70337	4	52	
189	28-Sep-00	6	F	3	705	0	70337	5	52	
190	28-Sep-00	6	M	3	670		70338	1	42	
191	28-Sep-00	6	M	4	660		70338	2	42	
192	28-Sep-00	6	M	3	450		70338	3	S2	Jack
193	28-Sep-00	6	M	3	470		70338	4	42	Jack
194	28-Sep-00	6	M	2	760		70338	5	52	
195	28-Sep-00	6	F	3	631	0	70339	1	42	
196	28-Sep-00	6	M	3	791		70339	2	52	
197	28-Sep-00	6	F	3	762	0	70339	3	52	
198	28-Sep-00	6	F	3	755	0	70339	4	53	
199	28-Sep-00	7	F	3	760	0	70339	5	52	
200	28-Sep-00	7	F	3	690	2	70340	1	42	
201	28-Sep-00	7	F	3	730	0	70340	2	52	
202	28-Sep-00	7	M	3	720		70340	3	42	
203	28-Sep-00	7	M	2	705		70340	4	42	
204	28-Sep-00	7	M	2	745		70340	5	52	
205	29-Sep-00	1	F	2	690	0	70341	1	52	
206	29-Sep-00	1	F	3	595	0	70341	2	42	all scales from 1 side (rotten)
207	29-Sep-00	1	F	4	640	0	70341	3	52	all scales from 1 side (rotten)
208	29-Sep-00	1	F	2	570	14	70341	4	42	
209	29-Sep-00	1	F	2	575	0	70341	5	42	
210	29-Sep-00	2	F	2	643	14	70342	1	42	
211	29-Sep-00	2	F	2	607	30	70342	2	42	
212	29-Sep-00	2	F	2	632	0	70342	3	42	
213	29-Sep-00	2	F	3	646	15	70342	4	52	
214	29-Sep-00	2	F	3	623	0	70342	5	42	
215	29-Sep-00	2	F	3	654	2	70343	1	52	
216	30-Sep-00	3	F	3	620	60	70343	2	42	
217	30-Sep-00	3	F	3	640	0	70343	3	42	
218	30-Sep-00	3	M	3	755		70343	4	52	
219	30-Sep-00	3	F	3	625	0	70343	5	42	
220	2-Oct-00	3	F	3	675	0	70344	1	52	
221	2-Oct-00	3	F	3	705	20	70344	2	52	
222	2-Oct-00	3	F	3	620	0	70344	3	42	
223	2-Oct-00	3	F	3	580	1	70344	4	42	

APPENDIX 2 (cont.)

2000 Stuart River Chinook Carcass Recovery Project: Field Data and Ageing Results

Carcass #	Date	Reach	Sex	Condition	POHL (mm)	# Eggs	Scale Samples		Age (G-R)	Comments
							Book	Spaces		
224	2-Oct-00	3	F	3	645	1	70344	5	42	
225	2-Oct-00	4	F	2	640	0	70345	1	42	
226	2-Oct-00	4	F	3	615	0	70345	2	42	
227	2-Oct-00	4	F	2	525	0	70345	3	42	
228	2-Oct-00	4	F	2	630	2	70345	4	42	
229	2-Oct-00	4	F	2	575	0	70345	5	42	
230	4-Oct-00	5	F	2	732	0	70346	1	52	
231	4-Oct-00	5	F	2	617	0	70346	2	42	
232	4-Oct-00	6	F	2	657	0	70346	3	52	
233	4-Oct-00	6	F	2	650	0	70346	4	42	
234	4-Oct-00	6	M	3	618		70346	5	42	all scales from 1 side (rotten)
235	4-Oct-00	6	F	2	639	0	70347	1	42	
236	4-Oct-00	6	F	2	648	15	70347	2	42	
237	4-Oct-00	6	F	2	675	10	70347	3	42	
238	4-Oct-00	6	M	3	738		70347	4	52	
239	4-Oct-00	6	M	3	638		70347	5	42	
240	4-Oct-00	7	M	3	801		70348	1	52	all scales from 1 side (rotten)
241	4-Oct-00	7	M	3	790		70348	2	52	
242	4-Oct-00	7	M	4	760		70348	3	52	
243	4-Oct-00	7	F	4	798	0	70348	4	42	
244	4-Oct-00	7	F	4	615	0	70348	5	42	
245	4-Oct-00	7	F	3	575	0	70349	1	32	
246	4-Oct-00	7	M	3	752		70349	2	52	
247	4-Oct-00	7	F	4	710	0	70349	3	52	
248	4-Oct-00	7	M	4	690		70349	4	42	all scales from 1 side (rotten)
249	4-Oct-00	7	M	4	580		70349	5	42	