

2616
c.1

DFO - Library / MPO - Bibliothèque



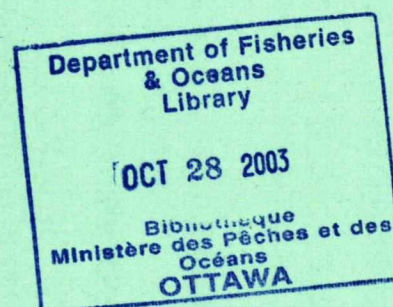
12061067

The 2000 Fishwheel Project on the Nass River, BC

Richard F. Alexander, Michael R. Link and Robert C. Bocking

Fisheries and Oceans Canada
Room 202, 417-2nd Street
Prince Rupert, BC
V8J 1G8

2002



**Canadian Manuscript Report of
Fisheries and Aquatic Sciences No. 2616**

SH
223
F55
no. 2616
c.1



Fisheries
and Oceans

Pêches
et Océans

Canada

Canadian Manuscript Report of Fisheries and Aquatic Sciences

Manuscript reports contain scientific and technical information that contributes to existing knowledge but which deals with national or regional problems. Distribution is restricted to institutions or individuals located in particular regions of Canada. However, no restriction is placed on subject matter, and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries and aquatic sciences.

Manuscript reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report is abstracted in *Aquatic Sciences and Fisheries Abstracts* and indexed in the Department's annual index to scientific and technical publications.

Numbers 1-900 in this series were issued as Manuscript Reports (Biological Series) of the Biological Board of Canada, and subsequent to 1937 when the name of the Board was changed by Act of Parliament, as Manuscript Reports (Biological Series) of the Fisheries Research Board of Canada. Numbers 1426 - 1550 were issued as Department of Fisheries and the Environment, Fisheries and Marine Service Manuscript Reports. The current series name was changed with report number 1551.

Manuscript reports are produced regionally but are numbered nationally. Requests for individual reports will be filled by the issuing establishment listed on the front cover and title page. Out-of-stock reports will be supplied for a fee by commercial agents.

Rapport manuscrit canadien des sciences halieutiques et aquatiques

Les rapports manuscrits contiennent des renseignements scientifiques et techniques qui constituent une contribution aux connaissances actuelles, mais qui traitent de problèmes nationaux ou régionaux. La distribution en est limitée aux organismes et aux personnes de régions particulières du Canada. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du ministère des Pêches et des Océans, c'est-à-dire les sciences halieutiques et aquatiques.

Les rapports manuscrits peuvent être cités comme des publications complètes. Le titre exact paraît au-dessus du résumé de chaque rapport. Les rapports manuscrits sont résumés dans la revue *Résumés des sciences aquatiques et halieutiques*, et ils sont classés dans l'index annuel des publications scientifiques et techniques du Ministère.

Les numéros 1 à 900 de cette série ont été publiés à titre de manuscrits (série biologique) de l'Office de biologie du Canada, et après le changement de la désignation de cet organisme par décret du Parlement, en 1937, ont été classés comme manuscrits (série biologique) de l'Office des recherches sur les pêcheries du Canada. Les numéros 901 à 1425 ont été publiés à titre de rapports manuscrits de l'Office des recherches sur les pêcheries du Canada. Les numéros 1426 à 1550 sont parus à titre de rapports manuscrits du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom actuel de la série a été établi lors de la parution du numéro 1551.

Les rapports manuscrits sont produits à l'échelon régional, mais numérotés à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page du titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Canadian Manuscript Report of
Fisheries and Aquatic Sciences 2616

2002

THE 2000 FISHWHEEL PROJECT ON THE NASS RIVER, BC

prepared by

Richard F. Alexander, Michael R. Link and Robert C. Bocking
LGL Limited
environmental research associates¹

for the

Nisga'a Lisims Government²

¹ 9768 Second St., Sidney, BC V8L 3Y8

² PO Box 228, New Aiyansh, BC V0J 1A0

© Minister of Supply and Services Canada 2002
Cat. No. Fs97-4/2616E ISSN 0706-6473

Correct Citation for this publication:

Alexander, R.F., M.R. Link and R.C. Bocking. 2002. The 2000 fishwheel project on the Nass River, BC. Can. Manusc. Rep. Fish. Aquat. Sci. 2616: x + 118 p.

TABLE OF CONTENTS

LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF APPENDICES	vii
ABSTRACT	ix
RÉSUMÉ	x
INTRODUCTION	1
Study Area	1
METHODS	1
Fishwheel Operation	1
Fishwheel Effort and Catch	2
Tagging	3
Genetic Stock Identification	3
Harvesting	3
Tag Recovery	4
Upper Nass Escapement Estimates	4
In-season Run-Size Estimates	4
Post-season Escapement Estimates	5
Run Reconstruction	6
Age and Length Sampling	6
RESULTS	7
Fishwheel Operation	7
Fishwheel Effort	8
Catches and Catch Per Unit Effort	8
Tagging	10
Genetic Stock Identification	10
Harvesting	11
Tag Recovery	11
Upper Nass Escapement Estimates	13
In-season Run-Size Estimates	13
Post-season Escapement Estimates	14
Run Reconstruction	14
Age and Length Sampling	15
DISCUSSION	16
Operational Evaluation	16
Upper Nass Escapement Estimates	16
Summary of Final Escapement Estimates	18
Fishwheels as a Test Fishery	19
ACKNOWLEDGMENTS	19

REFERENCES	21
TABLES	23
FIGURES	36
APPENDIX A	55
APPENDIX B	62
APPENDIX C	84
APPENDIX D	101
APPENDIX E	112

LIST OF TABLES

Table 1. Numbers of each species of salmon caught and tagged at six fishwheels on the Nass River, 2000.	24
Table 2. A summary of the number of tag recoveries by location for the tags applied at the Nass River fishwheels, 2000.	25
Table 3. Estimates of tag removals in Nisga'a domestic and individual-sale fisheries for sockeye, chinook and coho salmon on the Nass River, 2000.	26
Table 4. Estimates of time between tagging and recovery of sockeye tagged at the Nass River fishwheels and counted at the Meziadin fishway, 2000.	27
Table 5. Population estimates derived from tagging of adult sockeye and coho salmon at the Nass River fishwheels and recovery of tags at the Meziadin fishway, 2000.	28
Table 6. Summary of escapement survey data and estimated run size for chinook salmon upstream of Grease Harbour, 2000.	29
Table 7. The estimated percentages of adult chinook, sockeye, and coho captured with six fishwheels on the Nass River, 2000.	30
Table 8. Summary of age composition of chinook, sockeye, and coho salmon sampled at the Nass River fishwheels, 2000.	31
Table 9. Mean nose-fork length (cm) of salmon (by age) sampled at the Nass River fishwheels, 2000.	32
Table 10. The estimated annual catch rates (% of the run captured) of the Nass River fishwheels for chinook, sockeye and coho salmon, 1992-2000.	33
Table 11. Estimates of catch, run size and net escapement to the Nass Area for sockeye, chinook and coho salmon, 2000.	34
Table 12. Comparison of stock composition estimates for Nass River sockeye salmon (percent Meziadin) from scale, genetic and tagging methods, 1986-2000.	35

LIST OF FIGURES

Figure 1. The Nass watershed showing locations of the fishwheels, the Meziadin fishway and chinook spawning areas that were surveyed.	37
Figure 2. Fishwheel effort (hours) and speed (RPM) for six fishwheels on the Nass River, 2000.	38
Figure 3. Fishwheel CPE (catch per wheel hour) for adult chinook salmon captured with six fishwheels on the Nass River, 2000.	39
Figure 4. Fishwheel CPE (catch per wheel hour) for adult sockeye salmon captured with six fishwheels on the Nass River, 2000.	40
Figure 5. Fishwheel CPE (catch per wheel hour) for adult coho salmon captured with six fishwheels on the Nass River, 2000.	41
Figure 6. Fishwheel CPE (catch per wheel hour) for adult steelhead captured with six fishwheels on the Nass River, 2000.	42
Figure 7. Fishwheel CPE (catch per wheel hour) for adult pink salmon captured with six fishwheels on the Nass River, 2000.	43
Figure 8. Fishwheel CPE (catch per wheel hour) for adult chum salmon captured with six fishwheels on the Nass River, 2000.	44
Figure 9. The proportion of sockeye tags removed by tagging period in Nisga'a net fisheries, Grease Harbour fishwheels, and non-fishery mortalities.	45
Figure 10. Time between release and recapture for chinook salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the six fishwheels, 2000.	46
Figure 11. Time between release and recapture for sockeye salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the six fishwheels, 2000.	47
Figure 12. Cumulative proportions of the total sockeye tagged at the Nass River fishwheels and the total tags counted at the Meziadin fishway, 2000.	48
Figure 13. a) The distribution of travel times (days) to the Meziadin fishway for coho salmon tagged at the Nass River fishwheels and recovered at the Meziadin fishway, 2000; b) Mean travel time (with 95% confidence intervals) for 3-day release periods. ...	49
Figure 14. Daily counts and percent of fish with tags for sockeye and coho salmon passing through the Meziadin fishway, 2000.	50
Figure 15. The proportion of sockeye tags, after removals, that were recovered at the Meziadin fishway by tagging period, 2000.	51
Figure 16. Percent of the sockeye salmon run captured by fishwheels 1 and 2 versus estimated daily run size, 2000.	52
Figure 17. Percent of the sockeye salmon run captured by fishwheels 1 and 2 versus level of the Nass River at Gitwinksihlkw, 2000.	53
Figure 18. Weekly age composition of successfully aged sockeye salmon sampled from the Nass River fishwheel catch, 2000.	54

LIST OF APPENDICES

Appendix A. Water temperature/level data and fishwheel effort, 2000

Table A - 1. Water level and temperature collected in the Nass River near Gitwinksihlkw, 11 June to 29 September 2000.	56
Table A - 2. Summary of daily fishwheel effort (hours), effort used to calculate CPE (hours) and fishwheel speed (RPM) for six fishwheels operated on the Nass River, 2000.	57
Figure A - 1. Daily maximum water temperature and level in the Nass River near Gitwinksihlkw, 2000.	61

Appendix B. Daily catches at the Nass River fishwheels, 2000

Table B - 1. Daily catches, numbers of fish tagged, and CPE (adult catch per hour) for chinook salmon captured in the Nass River fishwheels, 2000.	63
Table B - 2. Daily catches, numbers of fish tagged, and CPE (adult catch per hour) for sockeye salmon captured in the Nass River fishwheels, 2000.	65
Table B - 3. The number of sockeye that were harvested from the six fishwheels as part of the entitlement agreement of the Nisga'a treaty, 2 July to 16 August 2000.	67
Table B - 4. Daily catches, numbers of fish tagged, and CPE (adult catch per hour) for coho salmon captured in the Nass River fishwheels, 2000.	68
Table B - 5. The number of coho that were harvested from the six fishwheels as part of the entitlement agreement of the Nisga'a treaty, 8 August to 16 August 2000.	70
Table B - 6. Daily catches, numbers of fish tagged, and CPE (adult catch per hour) for steelhead captured in the Nass River fishwheels, 2000.	71
Table B - 7. Daily catches of pink and chum salmon at the Nass River fishwheels, 2000.	73
Table B - 8. Catches of other salmonids captured in the Nass River fishwheels, 2000.	75
Table B - 9. Catches of non-salmonids captured in the Nass River fishwheels, 2000.	78
Table B - 10. Daily catches of Pacific salmon smolts captured in the Nass River fishwheels, 2000.	81

Appendix C. Summaries of recovery data for fish tagged at the Nass River fishwheels, 2000

Table C - 1. Summary statistics of travel time data for chinook, sockeye, and coho salmon tagged at the Gitwinksihlkw fishwheels, 2000.	85
Table C - 2. Summary statistics of travel time data for steelhead tagged at the Nass River fishwheels, 2000.	86
Table C - 3. Travel time information for recoveries of tagged chinook salmon by location tagged and location recovered, 2000.	87

Table C - 4. Travel time information for recoveries of tagged sockeye salmon by location tagged and location recovered, 2000.	89
Table C - 5. Number of sockeye tagged at the Nass River Fishwheels and recovered at the Meziadin fishway by release period, 11 June to 31 July 2000.....	91
Table C - 6. Number of sockeye tagged at the Nass River Fishwheels and recovered at the Meziadin fishway by release period, 1 August to 16 September 2000.	95
Table C - 7. Travel time information for recoveries of tagged coho salmon by location tagged and location recovered, 2000.	99

Appendix D. Daily counts of salmon at the Meziadin fishway and in-season sockeye run size estimates to Gitwinksihlkw, 2000

Table D - 1. Daily counts of sockeye salmon through the Meziadin fishway, 4 July to 13 October 2000.	102
Table D - 2. Daily counts of chinook, coho, steelhead and pink salmon through the Meziadin fishway, 4 July to 13 October 2000.....	106
Table D - 3. The data used to derive the in-season sockeye salmon run-size estimates for the Nass River, 2000.	109

Appendix E: Age and length data from fish captured in the Nass River fishwheels, 2000

Table E - 1. Numbers of fish by age and length for chinook salmon sampled at the Nass River fishwheels, 2000.....	113
Table E - 2. Numbers of fish by age and length for sockeye salmon sampled at the Nass River fishwheels, 2000.....	115
Table E - 3. Summary of weekly age composition of sockeye salmon sampled at the Nass River fishwheels, 2000.....	116
Table E - 4. Summary of the numbers and mean lengths (nose-fork, cm) of successfully aged sockeye salmon from the Nass River fishwheel catch, 2000.	117
Table E - 5. Numbers of fish by age and length for coho salmon sampled at the Nass River fishwheels, 2000.....	118

ABSTRACT

Alexander, R.F., M.R. Link and R.C. Bocking. 2002. The 2000 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2616: x + 118 p.

Up to six fishwheels were operated on the lower Nass River from 11 June to 29 September 2000. The fishwheels operated for a total of 11,196 h and captured 61,455 salmon. Catches of adult salmon included 33,879 sockeye, 10,206 pink, 8,529 coho, 5,003 chinook, 1,476 steelhead, and 241 chum. Of these, 6,833 sockeye, 2,078 coho, 1,907 chinook salmon, and 1,383 steelhead were tagged. Totals of 422 chinook, 1,554 sockeye and 621 coho salmon from the catch were successfully aged using scales. A total of 7,020 tagged fish were later recovered (or observed) at the Meziadin fishway, in in-river fisheries and on tributaries of the Nass River. From 2 July to 16 August, a total of 15,746 sockeye and 517 coho were selectively harvested from the fishwheels as part of the entitlement and harvest agreements of the Nisga'a Treaty that was finalized and signed in May 2000. Counts of marked and unmarked fish from the Meziadin fishway and in-river harvests were used to compute net escapement estimates for sockeye (204,392) and coho salmon (71,220). The coho estimate represented only a portion of the total coho escapement because the fishwheels did not operate through the entire coho run and recovery efforts were confined to an early run stock (Meziadin River). The net chinook escapement (18,047) was derived by a mark-recapture estimate (spawning ground surveys) minus estimated in-river harvests above Grease Harbour tagging sites. The six fishwheels combined caught an estimated 23.9% of the chinook run, 14.8% of the sockeye run, and 11.9% of the coho run. Including subsequent in-river harvests and lower Nass escapement estimates, an estimated 28,487 chinook and 275,799 sockeye salmon entered the Nass River in 2000. Daily tag release (at the fishwheels) and recovery data (at the Meziadin fishway) were used to reconstruct the sockeye abundance in the lower river and assess the within-season variation in the portion of the sockeye run caught by the fishwheels.

RÉSUMÉ

Alexander, R.F., M.R. Link and R.C. Bocking. 2002. The 2000 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2616: x + 118 p.

Jusqu'à six filets rotatifs furent en opération sur la section inférieure de la rivière Nass pour un total de 11,196 heures et ont capturé 61,455 saumon entre le 11 juin et le 29 septembre, 2000. Des saumon adultes capturés nous comptons 33,879 saumon rouge, 10,206 saumon rose, 8,529 saumon coho, 5,003 saumon quinnat, 1,476 truites arc-en-ciel anadrome et 241 saumon kéta. De ceux-ci, 6,833 saumon rouge, 2,078 saumon coho, 1,907 saumon quinnat, et 1,383 truites arc-en-ciel anadrome furent marqués. Nous avons réussi à déterminer l'âge de 422 saumon quinnat, 1,554 saumon rouge et 621 saumon coho en nous servant des écailles. Nous avons récupéré (ou observé) un total de 7,020 poissons marqués à la passe migratoire Meziadin, dans les pêches en rivière et dans les affluents de la rivière Nass. Entre le 2 juillet et le 16 août, pour satisfaire une partie des droits et des accords de récolte du traité Nisga'a qui a été finalisé et signé en mai 2000, un total de 15,746 saumon rouge et 517 saumon coho furent capturés dans les filets rotatifs en se servant de la technique de pêche sélective. Nous nous sommes basés sur le compte de poissons marqués et non marqués de la passe migratoire Meziadin et de poissons capturés dans la rivière pour calculer l'estimation de l'échappée nette pour le saumon rouge (204,392) et le saumon coho (71,220). L'estimation du saumon coho ne représentait qu'une portion de l'échappée totale car les filets rotatifs n'étaient pas en opération durant toute la remontée du saumon coho et les efforts de récupération ont été limités au stock de la montée hâtive (rivière Meziadin). L'échappée nette du saumon quinnat (18,047) fut dérivée de l'estimation de la récupération marquée (recherches de la frayère) moins l'estimation de la récolte dans la rivière en amont des sites de marquage de Grease Harbour. Les six filets rotatifs ont capturé approximativement 23.9% de la remontée du saumon quinnat, 14.8% de la remontée du saumon rouge, et 11.9% de la remontée du saumon coho. Y compris les récoltes subséquentes dans la rivière, une estimation de 28,248 saumon quinnat et 275,799 saumon rouge sont entrés dans la rivière Nass en 2000. Nous nous sommes servis de la remise à l'eau journalière des poissons étiquetés (aux filets rotatifs) et des données de récupération (à la passe migratoire Meziadin) pour reconstruire l'abondance du saumon rouge dans la section inférieure de la rivière afin de déterminer les variations qui prennent place durant la saison dans la portion de la remontée du saumon rouge capturé par les filets rotatifs.

INTRODUCTION

This report documents the results of the ninth consecutive year of a fishwheel project on the Nass River (Link et al. 1996; Link and English 1996, 1997; Link and Gurak 1997, Link 1999; Link et al. 2001; Alexander and Link 2001; Alexander 2001a; hereafter referred to as "Annual Reports"). This report documents methods, fishwheel catches and effort, tagging and mark-recapture data, population estimates, and biological and age information obtained from the 2000 season.

The objectives of the 2000 Nass River fishwheel project were to:

1. Use the fishwheels to capture, tag, and recapture sockeye (*Oncorhynchus nerka*), chinook (*O. tshawytscha*) and coho (*O. kisutch*) for use in estimating in-season escapements above Gitwinksihlkw on the Nass River;
2. Use the fishwheels to conduct a selective harvest of sockeye (and other species if permitted) as part of the entitlement and harvest agreements of the Nisga'a Treaty and if an escapement surplus to spawning requirements (ESSR) fishery is approved by Fisheries and Oceans Canada (no ESSR fishery was approved in 2000);
3. Generate post-season estimates of the escapement of chinook, sockeye, coho, pink (*O. gorbuscha*), chum (*O. keta*) and steelhead (*O. mykiss*) returning to the Nass River and document the migration timing of each species; and
4. Collect and summarize biological information from fish captured in the fishwheels.

The steelhead escapement estimates for 2000 have been summarized in Alexander (2001b).

Study Area

The Nass River drains 20,500 km², has an average annual discharge of 813 m³s⁻¹ and ranges from 24 m³s⁻¹ to 5437 m³s⁻¹ within years (Holland 1976). The river originates in the Skeena Mountains and flows south and southwest for approximately 400 km, entering the Pacific Ocean at Portland Inlet on the north coast of British Columbia (Figure 1).

METHODS

Fishwheel Operation

Up to six fishwheels (Meehan 1961; Donaldson and Cramer 1971) similar to those described by Link and English (1996) have been operated on the Nass River since 1992; two from 1992 to 1993, three in 1994, four from 1995 to 1999, and six fishwheels in 2000. In 2000, two fishwheels were operated near the village of Gitwinksihlkw (approximately 46 river km

from sea) and four fishwheels were operated 17-20 km upstream of Gitwinksihlkw near Grease Harbour (Figure 1 and Appendix A). The design of the fishwheel used on the Nass has changed significantly since 1992. Link and English (1996) document the shift in 1993 from a "Taku River" two-basket wooden fishwheel design to a three-basket design that was largely based on photographs of fishwheels used on the Columbia River about 100 years ago (Donaldson and Cramer 1971). Since 1993, there has been a gradual transition from wood to aluminium as the building material for the fishwheels (documented in the Annual Reports). Virtually all of the fishwheel components were made of aluminium by 1997.

The nylon netting which lines the fishwheel basket has varied across the years. From 1992 until 1995, all fishwheels were fitted with 9.8 cm or $3\frac{7}{8}$ " 13x16 knotted salmon seine net. In 1996, fishwheels 2 and 4 were fitted with a smaller 3.8 cm mesh ($1\frac{1}{2}$ " stretched, knotless nylon mesh, BL 210-60). Since 1997, all four of the Nass River fishwheels were fitted with the smaller 3.8 cm mesh.

Daily maximum and minimum water temperatures ($^{\circ}\text{C}$) and levels (m) at Gitwinksihlkw were recorded from a wooden staff gauge secured on the canyon wall just below fishwheel 2.

In this report, any reference to the Gitwinksihlkw fishwheels refers to fishwheel 1 and fishwheel 2 and any reference to the Grease Harbour fishwheels refers to fishwheels 3, 4, 5 and 6 (Figure 1).

Fishwheel Effort and Catch

Daily fishing effort of the fishwheels was measured in two ways. First, total effort was measured as the total time each fishwheel was fishing from midnight to midnight each day. This effort value gave an indication of the amount of down time (non-operational time) associated with each date. Second, the effort used to calculate catch per unit effort (CPE, fish per hour) was measured as the number of hours fishing that went into obtaining each day's catch. These two effort values were different on most days because the time of the last sampling session on each day varied; this affected how much effort went into a given day's catch. For example, if the last sampling session on day t finished at 2200 h, and on day $t+1$ the last sampling session ended at 2000 h (all fish were removed after each session and the fishwheel fished continuously through day t and $t+1$), only 22 h of fishing effort went into obtaining the catch on day $t+1$, whereas the total effort for day $t+1$ would be 24 h as there was no "down time". The fishing effort on day $t+1$ could also exceed 24 h if the last sampling session on day t was earlier than the last sampling session on day $t+1$.

The speed of each fishwheel was determined each day by measuring the time required for the fishwheel to complete three revolutions. This value was converted to revolutions per minute (RPM). The arithmetic mean of the measurements was used when the fishwheel speed was measured more than once in a day.

Tagging

As in previous years, spaghetti tags and operculum tags were used for marking fish from the fishwheels and for generating mark-recapture population estimates. Numbered spaghetti tags (Floy Model FT-4)³ were applied to sockeye (yellow, blue, red, pink, green, grey, orange, brown) and coho (red, blue), numbered operculum tags (Ketchum kurl-lock tag, No. 3)⁴ to chinook, and numbered anchor "T-bar" tags (Floy FD-68B; white, orange, yellow and green) were applied to steelhead. Sockeye and coho were only tagged at the Gitwinksihlkw fishwheels; chinook and steelhead were tagged at all fishwheels at Gitwinksihlkw and Grease Harbour. The spaghetti and anchor tags were applied through the dorsal musculature near the posterior end of the dorsal fin with a stainless steel needle (Floy FT-4 applicator) and a tagging gun (Dennison Mark II Regular Scissor Grip), respectively. The operculum tags were attached to the left opercle plate of chinook salmon using a Ketchum operculum plier. Pacific lamprey were marked with a single-hole paper punch by placing a 6 mm diameter hole in the dorsal area of the caudal fin (fish caught in fishwheels 1 and 2) and through the dorsal fin (fish caught in fishwheels 3, 4, 5 and 6). The handling and tagging procedures for salmon used in 2000 were the same as those used in previous years (see Annual Reports).

Genetic Stock Identification

Genetic sampling of chinook, sockeye and coho was conducted at the Gitwinksihlkw fishwheels in 2000. Approximately 30% (every third fish), 20% (every fifth fish), and 2.5% (every fourth fish from age and length samples) of the chinook, coho and sockeye catches at Gitwinksihlkw were sampled for genetic (DNA) analyses, respectively. Genetic sampling was conducted for most of the steelhead captured in the six fishwheels and recovered at the Meziadin fishway. Genetic samples from coho were also collected at the Meziadin fishway in 2000. A small piece of adipose tissue was hole-punched from fish that were sampled at the fishwheels or fishway and preserved in 95% ethanol (within small vials). The purpose of the sampling was to determine if DNA characteristics can successfully discriminate individual stocks in mixed stock samples and whether the genetic information could help define population structure and within-species diversity (i.e., conservation concerns). Samples collected at the fishwheels were to be used to estimate the stock composition of the fishwheel catch. Genetic samples were shipped to DFO Prince Rupert (chinook, sockeye, and coho) and MELP Smithers (steelhead) for analysis. Results from the analyses are not presented in this report.

Harvesting

A portion of the sockeye and coho catch in the fishwheels were harvested as part of the entitlement and harvest agreements of the Nisga'a Treaty that was finalized and signed in May 2000 (NFA 2000). Fish to be harvested were dipnetted from the holding pens in the fishwheel pontoons, bled by breaking the base of the gill arch and placed in totes of flaked ice. Harvested sockeye were transported in totes to a processing plant in New Aiyansh for heading and gutting, and then were shipped to Prince Rupert for secondary processing.

³ Floy Tag and Manufacturing Co. Inc., 4616 Union Place N.E., Seattle, WA 98105 USA

⁴ Ketchum Manufacturing Sales Ltd., 396 Berkley Ave., Ottawa, Ont., K2A 2G6, Canada

Tag Recovery

Fish tagged at the fishwheels were recovered throughout the Nass River watershed using a variety of techniques. The majority of tagged sockeye and coho salmon were counted and/or recovered at the Meziadin fishway (150 river km upstream of the fishwheels; Haugan et al. 1989; Figure 1). Tagged chinook salmon were recovered primarily during the spawning grounds surveys. Recoveries of tagged salmon were also obtained from the fishwheels (released back to the river live), in-river net and sport fisheries.

Since 1998, a reward program has been implemented to encourage fishers to return any fishwheel tags (chinook, sockeye, coho and steelhead) from fish that were captured during in-river fisheries. Each returned tag gave the returnee one chance in each of three separate draws of \$250. The draws take place in January, several months after the fishery, and a public announcement of the winners is made to all the Nisga'a communities. Posters were distributed around the Nass Valley describing the reward program and catch-monitoring interviewers encouraged fishers to return any tags that were captured during fishing activities. The information obtained from the tag recovery program was used to assess the relative participation rate of fishers returning tags from in-river fisheries and estimate tag removals.

The field crew working at the Meziadin fishway counted and recorded the colour of every tagged fish that passed through the fishway. In 2000, batch tagging of specific colours by release period at the Gitwinksihlkw fishwheels was conducted for sockeye to reduce the number of fish that had to be handled and tag numbers recorded at the fishway. Some tagged sockeye were recovered and numbers recorded to obtain some general information regarding individual travel times, but recovery was conducted without excessively delaying the migration of fish. Most of the tagged coho and steelhead were recovered and numbers recorded to obtain travel time data. Tagged fish that were recovered were diverted into a pen adjacent to the counting chute. The fish were then dipnetted out of the holding pen, the portion of the tag containing the tag number was cut off with scissors and the fish was released upstream of the fishway.

Upper Nass Escapement Estimates

In-season Run-Size Estimates

In-season population estimates for sockeye salmon were derived using two methods. The first method provided run size estimates using pre-season estimates of the combined catchability coefficient for the Gitwinksihlkw fishwheels 1 and 2. Since 1997, period-specific catchability estimates have been used. Period-specific catchability estimates account for within season changes in catch rates of the fishwheels. These factor-based run-size estimates were used in June and were based on estimated catch rates of the Gitwinksihlkw fishwheels from 1994 to 1999. We excluded catch rates from 1998 given the unusually low water levels and catch rates experienced in that year (Alexander and Link 2001). The second method used tag recovery data from the Grease Harbour fishwheels and the Nisga'a in-river fishery between Gitwinksihlkw and Grease Harbour, once sufficient numbers of tagged and untagged sockeye were recovered to derive a reliable mark-recapture estimate (Link and English 1996). In 2000, the mark-recapture estimate was considered the better of the two estimates by 11 July.

In-season population estimates for chinook and coho were estimated using two methods, the period-specific catchability estimate (1997 to 2000, excluding 1998) and the tag recovery data from the Grease Harbour fishwheels. Both of these methods were calculated as for sockeye, but using catch and tag recovery data for either chinook or coho.

Adjustments were made to the in-season estimates of sockeye and chinook to account for shutdown periods of the fishwheels. Between 1 July and 5 July, we expanded the daily catch of sockeye and chinook to account for reduced periods of operation of the Gitwinksihlkw fishwheels when substantial numbers of sockeye were passing the fishwheel sites. The daily catch was expanded by multiplying the proportion of actual hours of operation of both fishwheels 1 and 2 to a full day of operation (24 h). Between 31 July and 2 August, we estimated the daily catch of sockeye and chinook in fishwheel 2 to account for the break down of fishwheel 2 (broken axle). The daily catch of fishwheel 2 was estimated by expanding the catch in fishwheel 1 by multiplying the average proportion of fishwheel 2 vs. fishwheel 1 catch from the previous 5 days before the damage occurred. Expanded catches were not used in post-season catch or run-size reporting.

Post-season Escapement Estimates

Post-season population estimates were calculated for sockeye, coho, and chinook salmon using the tag recovery information from the Meziadin fishway and spawning ground surveys. These data were pooled to include fish tagged and examined over the entire run. The post-season escapement estimates were made using the adjusted Petersen formula (Ricker 1975). For the sockeye and coho estimates, the fish examined at the Meziadin fishway were used as the recapture sample (C in the Petersen formula; Ricker 1975). For chinook salmon, live counts (Meziadin fishway) and dead fish from the spawning ground surveys were pooled and used as the recapture sample to generate a population estimate above Grease Harbour. Confidence limits for the mark-recapture estimates were determined using Pearson's formulae (Appendix II of Ricker 1975).

For the sockeye estimate, the number of tags applied at the Gitwinksihlkw fishwheels was adjusted to account for tag losses associated with tagging-related mortality, loss of tags and selective removal of tags by the Nisga'a domestic, individual-sale and communal fisheries. Tagging-related mortality and tag loss for tagged sockeye was assumed at 10% based on Link and Gurak (1997) radio-telemetry results of Nass sockeye in 1995. Tags removed in the Nisga'a fisheries was estimated by multiplying the total catch of sockeye caught in the domestic and individual-sale fisheries by the "observed" tag rate (observed tags returned to observed catch) found in the individual-sale fishery. It is reasonable to assume a 100% tag return compliance in the sale fishery as all fish landed were individually inspected by a landing-site monitor. Estimates of tags that were removed were only from periods after the start of the fishwheel operations (i.e., 11 June). The individual-sale fishery for sockeye occurred between 1 July and 26 July (Baxter et al. 2001).

For the coho estimate, the number of tags applied at the Gitwinksihlkw fishwheels was also adjusted to account for tag losses associated with tagging-related mortality, loss of tags and

an estimated selective removal of tags within the Nisga'a in-river fisheries. Tagging-related mortality and tag loss for tagged coho was assumed the same as tagged sockeye (10%). Tags removed in the Nisga'a in-river fisheries was estimated by multiplying the domestic catch of coho by the proportion of tags returned to the reported catch in each of the Nisga'a catch stratum. It is reasonable to assume that few (if any) coho tags would be caught during the individual-sale fishery that targeted sockeye due to a later run timing of coho. No directed fisheries were conducted for coho where catch could be observed for tag returns.

For the chinook estimate, the number of tags applied at the fishwheels was also adjusted to account for tag losses associated with tagging-related mortality, loss of tags and selective removal of tags in the Nisga'a in-river fisheries. Tagging-related mortality and tag loss for tagged chinook was assumed to be 5% based on Koski et al. (1996a,b) radio-telemetry results of Nass chinook in 1992 and 1993. Tags removed in the Nisga'a fisheries were calculated by the same method that was used for sockeye with the exception that we assumed only a 90% tag return rate during the individual sale fishery as not all chinook that were landed were observed by the landing-site monitor.

A post-season index of escapement for pink and chum salmon to the upper Nass (above Gitwinksihlkw) was estimated in 2000 to aid in post-season accounting of the allocation of each species as part of the Nisga'a Final Agreement (NFA, 2000). An index of escapement was calculated for both fishwheels 1 and 2 by dividing the catch of each species by an assumed catch rate at each of the fishwheels. Catch rates at the Gitwinksihlkw fishwheels were assumed to be double and the same as sockeye for pink and chum, respectively; based on our knowledge of capture vulnerability at the fishwheels, migration behaviour differences and preliminary results from the Taku River fishwheel program. A final index of escapement was calculated by averaging the estimates from fishwheels 1 and 2 for each species.

Run Reconstruction

Daily sockeye salmon abundance at the Gitwinksihlkw fishwheels was reconstructed using tag recovery data from the fishway and each day's abundance was compared to fishwheel catches to examine the variation in the estimated portion of the run the fishwheels caught through time (Link and English 1996). This was done to assess the suitability of the fishwheels as an in-season index of the sockeye salmon run size to Gitwinksihlkw, and represented the seventh year of baseline data as an in-season index. The run reconstruction was possible because daily catch and tag totals from the fishwheels and the Meziadin fishway were known, as were the travel times for specific release groups of tagged fish (by colour) that were counted at the fishway.

Age and Length Sampling

A portion of each day's catch in the Gitwinksihlkw fishwheels was sampled for scales, length, and sex. Both fixed-size sampling and proportional sampling was done in 2000. Up to 20 chinook per day were sampled for scales and nearly all tagged chinook were measured; for sockeye, approximately 10% of the catch was sampled (scales and length). Up to 25 coho salmon per day were sampled for scales and nearly all tagged coho were measured. The majority

of the steelhead captured in the six fishwheels were sampled for scales, length, and sex. The nose-fork length was measured (to the nearest cm) using a fabric measuring tape affixed to the inside of the tagging tray. Jacks were defined as chinook salmon less than 50 cm, sockeye salmon less than 45 cm and coho salmon less than 40 cm. Two scales were taken from the preferred area for sockeye and coho, and five scales were collected from chinook and steelhead. Scales were mounted on numbered, gummed scale cards. Excluding the steelhead samples, scale samples were sent to the Department of Fisheries and Oceans Scale Lab in Nanaimo, BC. The steelhead samples were sent to the Ministry of Environment, Lands and Parks office in Smithers, BC.

Fish ages are presented using Gilbert-Rich notation where the first digit represents total age and the second digit denotes the number of winters the fish resided in fresh water since egg deposition. The daily catch of adult fish of each species at Gitwinksihlkw was used to derive species-specific daily CPE and these were used to weight the age composition data for chinook and coho. The age data for sockeye salmon were weighted with the reconstructed abundance obtained from tag recovery data. Sex was determined from visual inspection of the fish. However, because many of the fish were ocean-bright, it was difficult to differentiate between males and females. Therefore, the sex data are not considered reliable and are not summarized here.

RESULTS

Fishwheel Operation

The level of the Nass River at Gitwinksihlkw ranged from a minimum of 1.2 m in early September to a maximum of 5.4 m in mid-September 2000 (Table A - 1). During the period of operating the fishwheels, 11 June to 29 September, the average water level at Gitwinksihlkw was 2.8 m. The water level showed considerable day-to-day variability throughout the season with several high water periods occurring, in late June, early July, late July, late August, and late September (Figure A - 1). Water levels were above the average levels observed between 1992 and 1999 for most of the 2000 season with atypical peaks in August and September that affected the operation of the fishwheels (Figure A - 1). Water temperature ranged from 8.0 °C to 13.0 °C (the average was 10.3 °C) over the same period (Table A - 1; Figure A - 1).

Fishwheel 1 was operated from 11 June to 17 September in the same location since 1992. Fishwheel 2 was operated from 11 June to 18 September in the same location since 1994. Fishwheel 3 was operated from 19 June to 22 September in the same location since 1994. Fishwheel 4 was operated from 23 June to 29 September in the same location since 1994. The newly constructed fishwheel 5 was operated on the riverbank across from Seaskinnish Creek from 4 July to 14 July and approximately 300 m downstream of fishwheel 4 from 15 July to 17 September (Figure 1). The newly constructed fishwheel 6 was operated downstream of fishwheel 4 on the opposite riverbank from 9 July to 29 September. Small changes (<100 m) in the position of each fishwheel relative to the bank were common in 2000.

Fishwheel Effort

The Gitwinksihlkw fishwheels were operated from mid-June to mid-September and the Grease Harbour fishwheels from mid-June to late September for a combined total fishing time of 11,196 h (Table A - 2). Combined, the six fishwheels fished 91.1% of the time that they were in operation (Figure 2). Periods of non-operation were primarily caused by high water events (mid-June, early July, late August, and mid-September). Other non-operational periods were due to mechanical failure and high sockeye catch rates (early July). The newly built fishwheels fished less than the other fishwheels (73-79 d vs. 89-91 d). Fishwheels 1 and 2 fished generally at slower speeds (1-3 RPM) than fishwheels 3 to 6 (2-4 RPM).

Catches and Catch Per Unit Effort

A total of 61,455 salmon (59,334 adults, 2,121 jacks) were captured in the fishwheels in 2000, excluding recaptures of tagged fish (Table 1). The sockeye salmon catch was the largest (35,333), followed by pink (10,206), coho (8,896), chinook (5,303), steelhead (1,476), and chum (241). Fishwheel 2 captured the most fish (15,125), followed by fishwheel 1 (10,994), fishwheel 6 (9,133), fishwheel 4 (8,876), fishwheel 3 (8,778), and fishwheel 5 (8,549). Catches of adult salmon in fishwheels 1, 2, 3, and 4 were above their 1994 to 1999 averages for chinook (3,612 vs. 2,682), coho (4,848 vs. 4,074), and steelhead (949 vs. 425); about average for sockeye (25,184 vs. 25,897); and below average for pink (7,879 vs. 15,554 [even-year return]) and chum (205 vs. 229; Table 1). Catches of jacks in fishwheels 1, 2, 3, and 4 were below their 1994 to 1999 averages for chinook (155 vs. 271), coho (166 vs. 391), and sockeye (785 vs. 1,689; Table 1).

The CPE for chinook salmon in fishwheels 1 and 2 showed the majority of the run passing Gitwinksihlkw by early July once high water in late June had receded (Figure 3 and Figure A - 1). Catches at Gitwinksihlkw peaked on 25 June with 205 adults caught (115 in fishwheel 1 and 90 in fishwheel 2; Table B - 1). The 50% point of the cumulative CPE for fishwheels 1 and 2 occurred on 26 June and 24 June, respectively; but the fishwheels had reduced periods of operation between 28 June and 7 July due to either high water (28-30 June) or high sockeye catch rates (1-7 July; Figure 2). The total catches of the four Grease Harbour fishwheels were 1.3 times higher than the total catches in fishwheels 1 and 2 (Figure 3; Table B - 1). The CPE for chinook salmon in the Grease Harbour fishwheels show three distinct peaks in abundance with the run interrupted by the high water levels or reduced periods of operation in late June and early July (Figure 3 and Figure A - 1). The largest peak in abundance occurred at fishwheels 4 and 6 in mid-July. The peak catch of adult chinook at Grease Harbour occurred on 14 July with 477 adults caught (59 in fishwheel 3, 252 in fishwheel 4, 24 in fishwheel 5 and 142 in fishwheel 6). However, the 50% point of the cumulative CPE for fishwheel 3 occurred on 2 July and suggests that chinook were delayed in passing the canyon and reaching the upper fishwheels (4 and 6) due to high water levels (Figure 3 and Figure A - 1).

The sockeye run first passed the Gitwinksihlkw fishwheels in mid-June but was interrupted by the high water in late June (Figure 4). There was a large spike in catches and CPE in early July once the high water had receded, but due to high catch rates (50 to 80 fish per hour) between 1 July and 7 July, fishwheels 1 and 2 were operated less than 24 h (Figure 2 and Figure

4; Table B - 2). The Gitwinksihlkw fishwheels were shutdown at night during the high catch rates so that overnight catches of sockeye would not be too large for processing and tagging the next day (Table A - 2). The CPE for sockeye salmon in fishwheels 1 and 2 showed the majority of the run passing Gitwinksihlkw within the first week of July (Figure 4). Catches at Gitwinksihlkw peaked on 2 July with 1,247 adults caught (630 in fishwheel 1 and 617 in fishwheel 2; Table B - 2). We estimated that if the fishwheels had operated the entire day of 2 July that almost 2,500 sockeye would have been caught. The pattern of CPE for sockeye salmon versus time was similar for the Grease Harbour fishwheels (Figure 4). The CPE at Grease Harbour peaked on 3 July at 74 fish per hour when 1,287 sockeye were captured, 689 in fishwheel 3 and 598 in fishwheel 4 (Table B - 2). However, fishwheels 3 and 4 were also shutdown at night during high sockeye catch rates (70 to 80 fish per hour) between 1 July and 4 July (Table B - 2). The 50% point of the cumulative CPE for fishwheels 3 and 4 occurred on 10 July and 9 July, respectively. Fishwheels 5 (14 July) and 6 (9 July) began fishing after a substantial proportion of the sockeye run had already passed Grease Harbour. Table B - 3 shows the number of sockeye that were harvested from each of the fishwheels as part of the Nisga'a Treaty, 2 July to 16 August.

The first adult coho salmon was captured on 18 July at Gitwinksihlkw (fishwheel 2; Table B - 4). The CPE for coho salmon showed two distinctive peaks in abundance at Gitwinksihlkw, a large peak in early August and a smaller peak in late August (Figure 5). The peaks in catches for both fishwheels 1 and 2 occurred on 4 August (207) and 7 August (97), respectively. At Grease Harbour, peak abundance of coho occurred in late August with a peak catch of 582 on 29 August; 63 in fishwheel 3, 58 in fishwheel 4, 272 in fishwheel 5 and 189 in fishwheel 6 (Table B - 4; Figure 5). The 50% point of the cumulative CPE for fishwheels 1, 2, 3, 4, 5 and 6 occurred on 10 August, 12 August, 27 August, 27 August, 28 August, and 28 August, respectively. We assumed that the fishwheels did not operate through the entire coho run and the fishwheel catches represented early-to-mid-run stocks, presumably coho stocks destined above the Cranberry River. Table B - 5 shows the number of coho that were harvested from each of the fishwheels as part of the Nisga'a Treaty, 8 August to 16 August.

The CPE for steelhead in fishwheels 1 and 2 showed two peaks in abundance, a small peak in mid-August and a larger peak in early September (Figure 6). High water in late August interrupted the run as it passed Gitwinksihlkw. The 50% point of the cumulative CPE for fishwheels 1 and 2 occurred on 13 August and 16 August, respectively, with fishwheel 2 catching more fish (281 vs. 157; Table B - 6). At Grease Harbour, the CPE for steelhead in fishwheels 4 and 6 (the two longest operating fishwheels) showed two peaks of abundance in late August and late September (Figure 6). An atypical high water event in mid-September interrupted the run (Figure A - 1). The 50% point of the cumulative CPE for fishwheels 3, 4, 5 and 6 occurred on 30 August, 22 September, 30 August, and 5 September, respectively. Fishwheel 4 caught the most fish (341), followed by fishwheel 6 (286), fishwheel 5 (241) and fishwheel 3 (170; Table B - 6). As with the coho run, we assumed that the fishwheels did not operate for the entire steelhead run.

The first pink salmon was caught on 12 July in fishwheel 1 (Table B - 7). The CPE for pink salmon at the Gitwinksihlkw fishwheels showed the majority of run passing in early to mid-August with the 50% point of the cumulative CPE occurring on 9 August for both fishwheels 1

and 2 (Figure 7). The Gitwinksihlkw fishwheels caught twice as many pinks than the Grease Harbour fishwheels. At Grease Harbour, several spikes in catches of pink occurred in August with an interruption of the run occurring during a high water event on 23 August (Figure 7 and Figure A - 1). The 50% point of the cumulative CPE for fishwheels 3, 4, 5 and 6 occurred on 14 August, 15 August, 14 August, and 16 August, respectively (Table B - 7). The largest catch of pink salmon at Gitwinksihlkw and Grease Harbour occurred on 9 August (506) and 14 August (262), respectively (Table B - 7).

The first chum salmon was caught in fishwheel 1 on 14 July (Table B - 7). The CPE for chum salmon showed a protracted run timing pattern from mid-July to mid-September (Figure 8). At the Gitwinksihlkw fishwheels, the peak abundance of chum occurred on 1 September when 25 were caught. The 50% point of the cumulative CPE for both fishwheels 1 and 2 occurred on 31 August. At the Grease Harbour fishwheels, the 50% point of the cumulative CPE occurred on 3 September (fishwheels 3, 4 and 5) and 4 September (fishwheel 6; Table B - 7). The Gitwinksihlkw fishwheels caught three times as many chum salmon than the Grease Harbour fishwheels (Table B - 7).

Catches of other salmonid species (Table B - 8) included 558 Dolly Varden (*Salvelinus malma*), 75 whitefish (*Prosopium cylindraceum*), 97 cutthroat trout (*O. clarki*), and 5 rainbow trout (*O. mykiss*). Catches of non-salmonids species (Table B - 9) included 260 Pacific lamprey, 34 longnose suckers (*Catostomus catostomus*), 53 northern pike minnows (*Ptychocheilus oregonensis*), and 14 prickly sculpin (*Cottus asper*). Fishwheel 2 captured most of the Dolly Vardens (339), whitefish (28), cutthroats (57), and pike minnows (15). Fishwheel 6 captured the majority of lampreys (100); fishwheel 5 captured the most suckers (5); and fishwheels 1 and 4 captured the most sculpins (5; Table B - 8, Table B - 9).

Fishwheel catches of Pacific salmon smolts included 42 coho, 126 steelhead, 1 chinook, and 1 sockeye (Table B - 10). The fishwheels are not operated during the majority of the smolt out-migration periods for each species. Most of the smolts captured in 2000 were recorded at the Grease Harbour fishwheels.

Tagging

Totals of 6,833 sockeye, 1,907 chinook, 2,078 coho salmon, and 1,383 steelhead were tagged at the fishwheels in 2000 (Table 1). These totals represented 20% of the sockeye (51% at Gitwinksihlkw), 38% of the chinook (75% at Gitwinksihlkw), 24% of the coho (73% at Gitwinksihlkw), and 94% of the steelhead (93% at Gitwinksihlkw) caught in the six fishwheels. The majority (89%) of the salmon and steelhead were tagged at fishwheels 1 and 2. Of the 260 Pacific lamprey captured in 2000, 39% (102) were tagged with the majority tagged at Grease Harbour (78).

Genetic Stock Identification

Totals of 523 chinook, 568 sockeye, 485 coho and 1,374 steelhead adipose tissue samples were collected at the Nass fishwheels in 2000 for genetic (DNA) analyses. Samples were primarily collected at the Gitwinksihlkw fishwheels from 11 June to 16 September with

steelhead sampling at all fishwheels to 29 September. Of the total catch at the Gitwinksihlkw fishwheels, the adipose samples represented 26%, 4%, 17%, and 92% of the chinook, sockeye, coho, and steelhead catches in fishwheels 1 and 2, respectively. An additional 141 coho and 33 steelhead adipose tissue samples were collected at the Meziadin fishway between 4 July and 13 October 2000. Salmon samples were sent to the Department of Fisheries and Oceans in Prince Rupert, and steelhead samples were sent to the Ministry of Environment, Lands and Parks, in Smithers, for analysis.

Harvesting

A total of 15,746 sockeye were selectively harvested from the fishwheels from 2 July to 16 August 2000 as part of the entitlement and allocation agreement of the Nisga'a Treaty (Table B - 3). Fishwheels 1, 2, 3, 4, 5, and 6 represented 6%, 6%, 24%, 24%, 16% and 24% of the harvested catch of sockeye, respectively. Grease Harbour accounted for 88% of the total sockeye that were harvested with most of the harvested sockeye landed downstream of fishwheel 3 (Old Aiyansh boat docking site).

A total of 517 coho were selectively harvested from the Grease Harbour fishwheels from 8 August to 16 August 2000 as part of the entitlement and allocation agreement of the Nisga'a Treaty (Table B - 5). Most of the coho were harvested in fishwheels 4 (158) and 5 (161), followed by fishwheels 3 (103) and 6 (95).

Tag Recovery

Of the 12,201 tagged fish released, 7,020 spaghetti- and operculum-tagged fish were recovered at various locations in the Nass watershed (Table 2). Most of the recoveries were at the Meziadin fishway (3,033), followed by the fishwheels (2,634), in-river fisheries (1,303) and at the spawning grounds (50).

Of the 1,303 tags returned from the in-river fisheries, 320 chinook, 950 sockeye, 25 coho and 8 steelhead tags were recovered in 2000 (Table 2). The Nisga'a Fisheries (domestic and individual sale) accounted for 98.1% (314), 99.6% (946) and 100% (25) of the chinook, sockeye and coho tag recoveries by in-river fisheries, respectively.

Of the 6,833 tags applied to sockeye at the Gitwinksihlkw fishwheels, 2,349 (34.4%) tags were eliminated to account for removals in the Nisga'a in-river fisheries (1,194; Table 3), Grease Harbour fishwheels (472), tagging-related mortality and tag loss (683, assuming a 10% mortality/tag loss rate). The highest proportions of removals occurred between 7 July and 21 July (936 tags) and represented approximately 50% of the tagging totals during that period (Figure 9). This period also corresponded with the operation of the in-river individual-sale fishery from 4 July to 26 July.

Of the 2,078 tags applied to coho at the Gitwinksihlkw fishwheels, 276 (13.3%) tags were eliminated to account for removals in the Nisga'a in-river fisheries (26; Table 3), Grease Harbour fishwheels (42), tagging-related mortality and tag loss (208, assuming a 10%

mortality/tag loss rate). Coho tags were only returned from in-river fisheries below Gitwinksihlkw.

Of the 1,907 tags applied to chinook at the fishwheels, 617 (32.5%) tags were eliminated to account for removals in the Nisga'a fisheries (522; Table 3), tagging-related mortality and tag loss (95, assuming a 5% mortality/tag loss rate).

Recaptures of tagged fish in the fishwheels indicate that on average chinook salmon exhibited the greatest time between tagging and subsequent recapture among the four tagged species (Table C - 1 and Table C - 2). Operculum-tagged chinook salmon averaged (by fishwheel recaptured) 10 to 26 d at large before recapture in one of the fishwheels ($n=429$; Table C - 1). The time at large for tagged chinook ranged from less than 1 to 73 d ($n = 495$) between tagging and subsequent recapture in one of the six fishwheels (Table C - 3; Figure 10). There were tagged chinook observed at the Meziadin fishway; however, they were not captured (and tag numbers read) in order to avoid handling and delaying the migration of the fish.

Recaptures of tagged sockeye at the fishwheels indicated that on average sockeye spend considerably less time at large than do tagged chinook (Table C - 1, Table C - 4; Figure 11). On average, tagged sockeye were recovered at fishwheels 1 and 2 within 2-4 d of being tagged, and recaptured at Grease Harbour fishwheels within 9-11 d (Table C - 1). Recoveries of fish tagged in fishwheel 1 showed a similar distribution of time at large to those fish tagged in fishwheel 2 (Figure 11). The time at large for a tagged sockeye ranged from less than 1 to 55 d ($n=995$) between tagging and subsequent recapture in one of the six fishwheels (Table C - 4). A total of 2,964 sockeye tags were counted at the Meziadin fishway and the majority were estimated to have travelled 25 d after tagging, based on time between dates of cumulative proportion tagged and 50% cumulative proportion recovered (Table 4; Figure 12). A total of 32 tagged sockeye were recovered at the Meziadin fishway and are shown in Table C - 1 and Table C - 4, but recoveries were not representative of the entire run. Numbers of sockeye tags that were recovered at the Meziadin Fishway by tagging period are shown in Table C - 5 and Table C - 6.

Recaptures of tagged coho at the fishwheels indicate that on average coho spent slightly more time at large than did tagged sockeye (Table C - 1 and Table C - 7). Tagged coho salmon averaged (by fishwheel recaptured) 4 to 14 d at large before recapture in the fishwheels. The time at large for tagged coho salmon ranged from less than 1 to 41 d ($n = 781$) between tagging and subsequent recapture in one of the fishwheels (Table C - 7). A total of 35 coho tags were counted at the Meziadin fishway with 34 tag numbers recovered and read. The average travel time from tagging to the Meziadin fishway was 35.4 d (range between 26 and 62 d; Table C - 7; Figure 13).

Recaptures of tagged steelhead at the fishwheels were similar as coho with an average (by fishwheel recaptured) 7 to 14 d at large before recapture in the fishwheels ($n=248$; Table C - 2). A total of 4 tagged steelhead were counted at the fishway with 3 tag numbers recovered and read. Of those recoveries, the travel time from tagging to the Meziadin fishway ranged from 16 to 43 d (average was 33 d; Table C - 2).

Counts of adult salmon at the Meziadin fishway included 137,042 sockeye, 1,423 coho, 416 chinook salmon and 37 steelhead from 4 July to 13 October 2000 (Table D - 1 and Table D - 2). Counts of jack salmon at the Meziadin fishway were 1,086 sockeye, 13 chinook and 9 coho (Table D - 1 and Table D - 2). Sockeye counts at the fishway peaked on 19 July with a count of 13,280 adult sockeye with other distinct smaller peaks occurring on 20 July (12,006) and 23 July (12,456; Figure 14; Table D - 1). The daily proportion of the sockeye count that was tagged ranged from 0% (early-to-mid-July) to 5.8% (5 August and 27 September) and averaged 2.2% (Figure 14; Table D - 1).

Of the 2,964 tagged sockeye observed at the Meziadin fishway, only 32 (1%) were dipnetted out and their tag numbers were recorded in order to avoid handling and delaying the migration of the fish (Table D - 1). The remainder were simply counted by tag colour as they passed through the viewing chute. The greatest proportions (over 80%) of tags that were counted at the fishway were between 1 July and 11 July tagging periods (Figure 15). Further description and analysis of the tagged sockeye recoveries at the Meziadin fishway are discussed below (see **Run Reconstruction**).

The peak count of adult coho salmon at the Meziadin fishway was 144 fish on 4 September (Figure 14; Table D - 2). A total of 35 tagged coho salmon were counted at the fishway representing 2.5% of the total count. Of the 35 tagged coho observed at the fishway, 34 (97%) were dipnetted out and their tag numbers were recorded for information regarding rates of travel from tagging to the fishway. The passage of coho was interrupted with the unusually high water levels in mid-September (Figure 14 and Figure A - 1).

The peak count of adult chinook at the Meziadin fishway was 19 fish on 16 August (Table D - 2). A total of 30 tagged chinook salmon were counted at the fishway representing 7.2% of the total count. Of the 30 tags dipnetted out, none of their tag numbers were recorded.

Small numbers of steelhead were counted at the Meziadin fishway between 4 July and 13 October (Table D - 2). The first steelhead was counted on 19 August. The majority of steelhead that were counted occurred in early September before high water between 16 and 18 September. No steelhead were counted at the fishway between 16 September and 1 October.

Upper Nass Escapement Estimates

In-season Run-Size Estimates

From mid-June to late August, sockeye run-size estimates were generated daily and provided to the Department of Fisheries and Oceans in Prince Rupert at least three times per week (Table D - 3). Before 10 July, there were insufficient tag recoveries at the Grease Harbour fishwheels to derive a reliable mark-recapture estimate, and run-size estimates were based on the average period-specific expansion factors for fishwheels 1 and 2 from 1994 to 1999, excluding 1998 (extreme low water year).

Post-season Escapement Estimates

For sockeye and coho salmon, a range of post-season Petersen population estimates were calculated assuming a range of tagging-related mortality and tag loss rates from 0% to 20%, removal of tags in the Nisga'a Fisheries and at the Grease Harbour fishwheels (Table 5). The sockeye run-size estimates ranged from 175,709 (20% tag loss rate of tagged fish) to 238,874 (0% tag loss rate of tagged fish) upstream of Grease Harbour.

The pooled Petersen coho salmon run-size estimate ranged from 63,098 (20% tag loss rate of tagged fish) to 79,537 (0% tag loss rate of tagged fish) upstream of Grease Harbour (Table 5). These estimates are based on an adjustment to the total number of coho tagged to account for tag loss/mortality and removals by in-river fisheries and 35 tags observed from 1,423 coho salmon examined at the Meziadin fishway. The tagging of the Nass coho run was incomplete because coho are caught in the Nass River from July to December (i.e., beyond the period when the fishwheels operated at Gitwinksihlkw in 2000 and beyond the time when Meziadin coho move through the lower river). Therefore, these are considered minimum estimates of the Nass coho salmon escapement.

Five surveys were conducted on two different spawning grounds (plus the Meziadin fishway counts) to obtain information to estimate the chinook salmon escapement (Table 6). A total of 492 chinook were examined and 33 tags were recovered for an estimate of 18,719 (upstream of Grease Harbour) with 95% confidence intervals of 13,441 to 25,986. This estimate is based on an adjustment to the total number of chinook tagged (1,290 adjusted vs. 1,907 tagged). The effective number of chinook that was tagged was reduced by 617 tagged fish to account for tag loss/mortality (5% or 95 fish) and removals by in-river fisheries (522 fish; Table 3).

The proportions of the chinook, sockeye, and coho salmon run captured in all the fishwheels based on the fishwheel catches and mark-recapture derived population estimates above Gitwinksihlkw were 23.9%, 14.8%, and 11.9%, respectively (Table 7). In 2000, fishwheels 3 and 4 captured the greatest proportion of the run for all species combined (3.5% each) followed by fishwheels 2 and 6 (2.9%), 5 (2.5%), and 1 (2.3%).

Run Reconstruction

Analysis of the 2,964 spaghetti tags recovered from sockeye at the Meziadin fishway revealed faster travel rates from tagging to the fishway as fish were recovered by their tagging period (Table 4; Figure 12). Travel time of fish that were recovered at the 25%, 50% and 75% cumulative proportions recovered were 23 d, 25 d and 19 d, respectively, with a range in recoveries of 16 to 36 d (Table 4). Based on the range in recoveries, the speed of travel from the fishwheels to the fishway was between 4 km and 9 km per day, much slower than observed in past years (Annual Reports). Difference in Nass River discharges in late August and mid-September affected the travel rates (Figure 12 and Figure A - 1). However, as observed in past years, travel times revealed a general pattern of decreasing travel times (increasing migration speed) through the season (Figure 12). Proportions of sockeye tags recovered by tagging period also revealed a general trend of lower recoveries from later tagging periods (Figure 15). The

lower recovery from the later tagging periods suggests that the tagged sockeye were destined to other locations other than Meziadin.

Coho salmon exhibited a similar migration pattern as sockeye with decreasing travel time by tagging period, but with overall slower travel times from the fishwheels to the fishway (mean=35.4 d [range 26 d to 62 d]; Figure 13 and Table C - 4). The tag recovery data for coho indicate an average speed from the fishwheels to the fishway of 4.2 km per day (n=34; range between 2.4 km and 5.8 km; Table C - 1). These rates are much slower than observed in past years and are probably the results of overall higher river discharge in September than compared to other years (Figure A - 1)

The reconstructed sockeye salmon abundance at Gitwinksihlkw showed that both fishwheels 1 (5.1%) and 2 (7.1%) captured a high proportion of the sockeye run at peak abundance in early-to-mid-July (Figure 16). The efficiency of the two fishwheels appeared to co-vary with general higher efficiencies in early to mid-July. However, the estimated daily efficiency of the two Gitwinksihlkw fishwheels did not show a consistent trend throughout the season. The fishwheel efficiency did not appear to be correlated with the abundance (Figure 16), suggesting density-independent catchability (fishwheel efficiency).

High water in late June and late August interrupted the sockeye run at Gitwinksihlkw (Figure 17). Moderate water levels from early July to early August produced the highest fishwheel efficiencies, while low water levels in mid-August and early September resulted in lower fishwheel efficiencies ((Figure 17). Although water levels were dropping between early July and mid-August, fishwheel 2 continued to capture sockeye at high proportions whereas the catch efficiency at fishwheel 1 was typically lower and more variable. Caution should be used in interpreting the catch efficiency data from late August and September because the estimated efficiencies observed are based on a relatively small number of fish recovered.

Age and Length Sampling

Most (89.1%) of the chinook salmon that returned to the Nass River in 2000 were 4- (45.7%) and 5- (43.4%) year-old fish; between 41.5% (5-year-old) and 45.7% (4-year-old) left freshwater during their second year of life (4_2 and 5_2) based on chinook sampled at the fishwheels and weighted using the CPE in the Gitwinksihlkw fishwheels (Table 8). The other age classes were 6_2 (7.6%), 3_2 (3.3%) and 5_3 (1.9%). The chinook salmon age and length data are presented in Table E - 1 and summarized in Table 8 and Table 9. Ages could not be determined for 16% of the chinook salmon sampled in 2000 (Table E - 1).

Sockeye salmon that returned to the Nass River in 2000 were predominantly split between 4-year-old fish (38.1%) and 5-year-old fish (39.1%; brood years 1996 and 1997, Table 8). However, a large proportion of 6-year-old fish also returned in 2000 (21.1%; brood year 1994). Weighting by weekly re-constructed abundance, the dominant age classes were 4_2 (35.9%), 5_3 (22.4%), 6_3 (21.1%) and 5_2 (16.7%; Table 8). The sockeye salmon age and length data are presented in Table E - 2 and summarized in Table E - 3, Table E - 4, Table 8 and Table 9. Ages could not be determined for 13% of the sockeye salmon sampled (Table E - 2). The 5-year-old fish dominated the run through the early part of the season (weeks 25-28) and the 4-

year-old fish dominated for the rest of the season (weeks 29-38 with the exception of week 34; Figure 18). The 6-year-old fish were in similar abundance for most of the season except for weeks 32 to 34 and week 37 where they were in lower abundance. Age class 5_2 fish dominated only from weeks 25 to 27 and 5_3 dominated from weeks 27 to 36. Low numbers of age class 5_2 were present between weeks 31 to 36 with no 5_2 present in week 35 (Figure 18).

Coho salmon that returned to the Nass River in 2000 were in equal proportions of 3- (51%) and 4-year-old fish (48%; Table 8). Weighting by CPE in the Gitwinksihlkw fishwheels, the age classes that returned in 2000 were 3_2 (51.0%), 4_3 (47.9%), 5_4 (0.9%) and 4_2 (0.2%). The coho salmon age and length data are presented in Table E - 5 and summarized in Table 8 and Table 9. Ages could not be determined for 4% of the coho salmon sampled (Table E - 5).

Mean length data by age for sockeye, chinook and coho salmon are summarized in Table 9. The most frequent mean length for sockeye, chinook and coho salmon was 59.0 cm (4_2 fish, $n=606$), 72.6 cm (4_2 fish, $n=193$), and 62.2 cm (3_2 fish, $n=316$), respectively.

DISCUSSION

Operational Evaluation

As in previous years, fishwheel 1 continued to provide the most consistent fishing effort through the entire season and captured 2.3% of the sockeye, chinook and coho runs combined (range between 2.2% and 2.5%; Table 7 and Table 10; Figure 2). However, with the exception of coho, fishwheel 1 caught less fish than fishwheel 2. The higher than average water levels from June to mid-August contributed to fishwheel 2 fishing well for chinook (5.9% of the run) and sockeye (3.3% of the run); but the lower than average water levels in the third week of August affected its catchability of coho (1.6%). Catch efficiencies at both fishwheels 1 and 2 were higher than the average levels from 1994 to 1999 (Table 10) with the exception of sockeye at fishwheel 2 and coho at both fishwheels. Fishwheels 3 and 4 fished well throughout the season and their catch rates of each species were higher (or the same) as the average levels from 1994 to 1999 with the exception of fishwheel 4 catching a lower proportion of the coho run than in other years (1.4% vs. 2.4%; Table 10). The catch rates at fishwheel 4 may have been affected by the operation of fishwheel 5 that was located 400 m downstream (Figure 1). Fishwheels 5 and 6 started fishing in mid-July and missed a proportion of the chinook and sockeye runs. Even though fishwheel 6 started later, it caught high proportions of the chinook (4.1%), sockeye (2.1%), and coho (2.2%) runs (Table 10).

Upper Nass Escapement Estimates

The in-season period-specific catchability expansion method for estimating sockeye abundance at Gitwinksihlkw provided a conservative benchmark (within 20% of the final reconstructed estimate) of the run from mid-June to 9 July before sufficient tag recoveries were obtained at the Grease Harbour fishwheels for generating the mark-recapture estimate (Table D - 3). Since higher than average water levels that occurred in early July, late August and mid-September were not typical of prior years, the period-specific catchability estimates were poorer estimates than the mark-recapture estimates. The final period-specific catchability estimate was

12% higher than the final reconstructed run at Gitwinksihlkw. The mark-recapture estimate resulted in an over-estimate (up to 20%) of the abundance at Gitwinksihlkw early in the season but improved to 1% of the final reconstructed estimate by early August (Table D - 3). The in-season mark-recapture estimates were reliable indices of abundance as in other years, providing conservative estimates during most of the season, especially during the commercial and in-river fisheries in June and July.

The in-season period-specific catchability expansion method for estimating chinook and coho abundance at Gitwinksihlkw was 17% higher and 13% lower than the final estimates, respectively. Mark-recapture data at the Grease Harbour fishwheels were not used to generate abundance estimates based on recommendations of Link and Nass (1999). They concluded that a bias, producing underestimates of abundance, will occur in any mark-recapture estimate as unmarked fish may move by the recapture fishwheels one to two weeks earlier than marked fish, that catch rates of the fishwheels can vary substantially over the season, and tagged fish often drop back below the tagging site for up to two weeks. This study found similar results; mark-recapture estimates at the Grease Harbour fishwheels in 2000 for both chinook and coho were 48% and 71% lower than our final run-size estimates, respectively. These data are based on total catches of adults (including recaptures of tagged fish) at the Grease Harbour fishwheels (3,379 chinook and 6,223 coho), recaptures of fish that were tagged at Gitwinksihlkw (306 chinook and 546 coho), removals of tagged fish to account for tagging-related mortality/tag loss (5% chinook and 10% coho), and selective removal of tags in the Nisga'a in-river fisheries below Gitwinksihlkw.

The validity of the assumptions associated with the Petersen estimation procedures that generate the mark-recapture estimates from the fishwheel program has been extensively discussed in other reports (Annual Reports). These authors concluded that some differential loss of tagged fish likely occurs each year, primarily due to handling effects and selective removal from the Nisga'a in-river fishery. The bias from this loss would result in an overestimate of the run size if one assumed equal survival between tagged and non-tagged fish.

A tag removal rate of 34% for sockeye salmon was used to derive a population estimate in 2000, assuming a tag loss rate of 10% (tagging-related mortality and tag loss) and approximately 24% of the tags were removed in the in-river fisheries (including removals in the Grease Harbour fishwheels; Table 3 and Table 5). The 10% tag loss rate was based on radio telemetry data from Link and Gurak (1997) where 11 of 118 radio-tagged sockeye were attributed to tagging-related mortality.

For coho salmon, a tag removal rate of 13% was used to derive a population estimate in 2000, assuming a tag loss rate of 10% (tagging-related mortality and tag loss) and approximately 3% of the tags were removed in the in-river fisheries (including removals in the Grease Harbour fishwheels; Table 3 and Table 5). The 10% tag loss rate was used to be comparable with sockeye but may be biased high when compared to previous years (Annual Reports).

For chinook salmon, the tag removal rate of 32% was estimated in 2000 by assuming a 5% tag loss rate (tagging-related mortality and tag loss) and approximately 27% of the tags were

removed in the in-river fisheries (Table 3 and Table 6). The 5% tag loss rate is based on data from the chinook radio-telemetry studies conducted in 1992 and 1993 (Koski et al. 1996a,b).

Summary of Final Escapement Estimates

The estimated in-river harvest of chinook salmon in the Nisga'a fishery in 2000 was 8,503 (Baxter et al. 2001) and the estimated sport fishery in-river harvest was 1,023 (JTC 2001; Baxter 2001; Table 11). The run size of chinook salmon to Gitwinksihlkw in 2000 was estimated to be 22,482 by adding the estimates of the net chinook spawning escapement (18,047) generated from upstream spawning surveys, the harvests above Grease Harbour (672), the harvests above Gitwinksihlkw (2,898) and the estimated escapement at Tseax and Seaskinnish rivers (865 or 4.792% of the estimated net escapement; Table 11). Adding in-river harvests below Gitwinksihlkw to the estimate at Gitwinksihlkw resulted in a run size estimate of 28,487 chinook salmon to the Nass River. The estimated return to Canada of Nass chinook in 2000 was 32,553 accounting for estimates of marine harvests (3,161) and coastal escapement (905; Table 11). The coastal escapement of Nass chinook was estimated by the Nisga'a Joint Technical Committee (JTC 2001).

Using the same method as above, the run size of sockeye salmon to Gitwinksihlkw in 2000 was 243,584 with a net sockeye escapement estimate of 204,392 (Table 5 and Table 11). The estimated total run size of sockeye to the Nass River (275,799) and return to Canada (541,471) was derived by adding the appropriate harvests (in-river [71,403] and marine [265,572]), lower Nass (4) and coastal escapement (100) estimates to the net escapement estimate (Table 11). Lower Nass and coastal escapements of Nass sockeye were estimated by the Nisga'a Joint Technical Committee (JTC 2001).

A minimum estimate of the net spawning escapement for Nass River coho was 71,220 (Table 11). Estimates of the coho run size to Gitwinksihlkw (72,325), the Nass River (83,009) and return to Canada (108,029) were derived by adding the appropriate harvests (in-river [2,022] and marine [3,393]), lower Nass (9,767) and coastal escapement (21,027) estimates (Table 11). Lower Nass and coastal escapements of Nass coho were estimated by Bocking (*in prep.*).

Estimates of the upper Nass index of escapement were made for pink and chum salmon in 2000 using catch and catch rate data from the Gitwinksihlkw fishwheels. First, an estimate of escapement was calculated for each species at fishwheels 1 and 2 by dividing the catch (Table 1) by assumed catch efficiencies of fishwheel 1 or 2 (Table 7). Catch efficiencies that were used for pink (4.5% [fishwheel 1] and 6.5% [fishwheel 2]) and chum (2.2% [fishwheel 1] and 3.3% [fishwheel 2]) were double and the same as sockeye, respectively, based on catchability observations from the Taku River fishwheel program (M. Link, LGL Limited BC, pers. comm.). Secondly, the results (fishwheel 1=59,466 pinks and 2,905 chum; fishwheel 2=60,491 pinks and 3,424 chum) of those calculations were averaged by fishwheel for each of the species to produce an index of upper Nass escapement of 59,978 pinks and 3,165 chum, respectively.

The Meziadin sockeye stock was estimated to be 65% of the Nass sockeye run-size estimate to Gitwinksihlkw in 2000 based on genetic (DNA) and mark-recapture results (Table 12). The tag-based estimate was 0.1% larger than the estimate derived from the microsatellite

DNA estimate and 16% smaller than the estimate derived from the traditional scale-based method (81.2%; Todd and Dickson 1970; L. Jantz, Department of Fisheries and Oceans, Prince Rupert, pers. comm.; Table 12). The tag-based estimate (65.3%) was derived by expanding the Meziadin fishway count of sockeye salmon (137,042) by the estimated harvest rate above Gitwinksihlkw (16.1% [39,192 harvest divided by 243,584 run size to Gitwinksihlkw]) and dividing the result (159,092) by the run size estimate to Gitwinksihlkw (243,584). The genetic estimate (65.4%) was derived by summing the weekly Meziadin stock estimates (percent Meziadin found in the fishwheel genetic [DNA] samples to the abundance estimate from the run reconstructed results) and dividing the result (159,241) by the run-size estimate to Gitwinksihlkw (243,584). The results of the genetic analyses of fishwheel samples were provided by the Pacific Biological Station, BC (Terry Beacham, DFO-Nanaimo, pers. comm.). The results of the tag-based and genetic estimates are similar but vary greatly from the scale-based method. Three years (1996, 1999 and 2000) of the microsatellite DNA estimates have revealed that the tag-based and genetic estimates have been similar (average difference=1.3%, range between 0.1% and 5.3%; Table 12). With the exception of 1996, the scale-based method has continually been higher (average difference of 12.4%) than the tag-based method. Additional research of the tag- and genetic-based methods should be conducted over the next three to five years to determine the best method for accurately estimating stock composition for Nass sockeye salmon.

Fishwheels as a Test Fishery

The inter-annual variability of the efficiency or catchability (q) of the Nass River fishwheels continues to be more reliable than the historical variability in the catchability of the Monkley Dump gillnet test fishery (Annual Reports). Several factors are thought to affect the fishwheel catchability at Gitwinksihlkw as abundance and water level data alone did not appear to be directly related to the catch efficiencies of fishwheels 1 and 2 in 2000 (Figure 16 and Figure 17). Abundance, migration behaviour and timing, mixing of fish species, water level and turbidity may all play factors in affecting catch efficiencies of the fishwheels as fish pass Gitwinksihlkw. Sufficient data regarding all these factors have not yet been collected to quantify their influence on the catch efficiency of the fishwheels. If a reliable relationship is determined in the future for one or more of these factors, improvements to the in-season estimates of q may be possible. Until that relationship is determined and evaluated, it is essential that the tagging and mark-recapture program remain an integral component of the fishwheel program for assessing the in-season variation in the catchability of the fishwheels.

ACKNOWLEDGMENTS

The fishwheel crew were crucial to making the 2000 project a success; Barry Stevens was the field project leader responsible for the construction, maintenance, operation of all fishwheels, and overseeing the tagging program. Barry was supported in the field by senior technicians: Tim Angus, Kevin Small and Max Wright. Other technicians were: Mike Alexander, Isaac Guno, Kirby Guno, Rick Edwards, Craig Haizimsque, Charles Morven, Michael Morgan, Glenn Robinson, Reggie Robinson, Norm Squires, Albert Stephens, and Lawrence Stephens. Niva Percival proficiently handled the in-season data entry, scale and genetic samples, and most of the administrative tasks associated with the program. Nisga'a Fisheries managers, Glenn Barner and Bruce Baxter (LGL) provided field support when needed and were integral to the success of the

fishwheel program. Thanks to Terry Morven for his invaluable assistance with the construction phase of the fishwheels, maintenance of the boats and coordinating equipment and fuel for the fishwheel program. We would like to also thank Cecilia Azak who assisted with data entry and other administrative tasks in September and October.

Thanks to Tom Brennan and Dave Morris from Canfisco, Vancouver, for their support of the fishwheel program during the harvesting period, 2 July to 16 August. Additional support was provided by Dean Miller and Jason Smith (LGL), Vincent Johnson, Dan Guno, Larry Azak and Adam Mitchell during the harvest period.

We would like to thank Ray St. Pierre, Ray Green, and Les McLean who were the primary staff at the Meziadin fishway in 2000. Their dedicated tag recovery efforts were invaluable to the analysis presented here. Thanks also to additional personnel who staffed the fishway: Tyler Munro, Tanner Dreery and Ian Bergsma. Thanks to Mike Jakowbowski, Dave Peacock, Brian Spillsted, and Dave Southgate of DFO for successfully managing the operations at Meziadin fishway in 2000.

Additional support provided to the fishwheel program and this report were from Karl English (LGL), Harry Nyce Sr. and Herb Morven (Nisga'a Tribal Council). Much thanks to Les Jantz and Dave Peacock (DFO-Prince Rupert) for commercial catch data, additional tag recoveries, Nass stock status updates, DFO population estimates, and their general support to the Nisga'a Fisheries program.

The three winners of the tag recovery program were Mitch Johnson, Chris Gillis, and Doug Clayton Sr. Thanks to all the other fishers that returned tags from the Nisga'a Fisheries stock assessment program.

Funding for this project was provided by the Canadian and Nisga'a Lisims governments as part of the Nisga'a Final Agreement.

REFERENCES

- Alexander, R.F. 2001a. The 1999 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2588: xi + 113 p.
- Alexander, R.F. 2001b. The Nass fishwheel steelhead tagging program, 2000. Data summary report prepared by LGL Limited, Sidney, BC, for the Nisga'a Lisims Government and Fisheries Renewal BC. 14 p.
- Alexander, R.F. and M.R. Link. 2001. The 1998 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2556: xi + 111 p.
- Baxter, B.E., C.Y. Stephens, G.L. Barner and R.C. Bocking. 2001. Nisga'a catch monitoring program: 2000 Nisga'a fishery. Report NF 00-04 prepared by LGL Limited, Sidney, BC, and Nisga'a Fisheries for the Nisga'a Lisims Government, New Aiyansh, BC.
- Baxter, B.E. 2001. Nass River Sport Fishery Catch Monitoring Program, 2000. Report NF 00-06 prepared by LGL Limited, Sidney, BC, for the Nisga'a Lisims Government, New Aiyansh, BC.
- Bocking, R.C. *in prep.* Habitat-based production goals for coho salmon in Area 3. Report prepared by LGL Limited, Sidney, BC, for the Department of Fisheries and Oceans, Prince Rupert, BC.
- Beacham, T.D. and C.C. Wood. 1999. Application of microsatellite DNA variation to estimation of stock composition and escapement of Nass River sockeye salmon (*Oncorhynchus nerka*). Can. J. Fish. Aquat. Sci. 56:297-310.
- Donaldson, I.J. and F.K. Cramer. 1971. Fishwheels of the Columbia. Binfords and Mort, Publishers, Portland, Oregon. 124 p.
- Haugan, D., A.L. Jantz, and B. Spilsted. 1989. Historical Review of the Meziadin River Fishway Biological Program from 1964 to 1986. Can. Data Rep. Fish. Aquat. Sci. No. 765: iii + 112p.
- Holland, S.S. 1976. Landforms of British Columbia, A physiographic outline. British Columbia Department of Mines and Petroleum Resources. Bulletin 48: 138 p.
- JTC. 2001. Nass area salmon Fisheries management report 2000. Report prepared by the Nass Joint Technical Committee for the Nass Joint Fisheries Management Committee.
- Koski, W.R., M.R. Link, and K.K. English. 1996a. Distribution, timing, fate and numbers of chinook salmon returning to the Nass River Watershed in 1992. Can. Tech. Rep. Fish. Aquat. Sci. No. 2129: xi + 141 p.

- Koski, W.R., R.F. Alexander, and K.K. English. 1996b. Distribution, timing, fate and numbers of chinook salmon returning to the Nass River Watershed in 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. No. 2371: xi + 143 p.
- Link, M.R., R.F. Alexander, and A.C. Blakley. 2001. The 1997 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2555: xi + 100 p.
- Link, M.R. 1999. The 1996 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2476: xi + 92 p.
- Link, M.R., R.F. Alexander, and K.K. English (Draft). 1999. Evaluation of the utility of using fishwheels to assess the abundance of summer-run steelhead returning to the Nass River, BC. Draft report prepared by LGL Limited for the Fisheries Branch, Ministry of Environment, Lands and Parks, Smithers, BC.
- Link, M.R. and B.L. Nass. 1999. Estimated abundance of chinook salmon returning to the Nass River, BC, 1997. Can. Manuscr. Rep. Fish. Aquat. Sci. 2475: x + 64 p.
- Link, M.R. and A.C. Gurak. 1997. The 1995 Fishwheel Project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2422: xi + 99 p.
- Link, M.R. and K.K. English. 1997. The 1994 Fishwheel Project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2421: xi + 93 p.
- Link, M.R. and K.K. English. 1996. The 1993 Fishwheel Project on the Nass River and an Evaluation of Fishwheels as an In-season Management and Stock Assessment Tool for the Nass River. Can. Tech. Rep. Fish. Aquat. Sci. 2130: xi + 103 p.
- Link, M.R., K.K. English, and R.C. Bocking. 1996. The 1992 Fishwheel Project on the Nass River and an Evaluation of Fishwheels as an In-season Management and Stock Assessment Tool for the Nass River. Can. Manuscr. Rep. Fish. Aquat. Sci. 2372: x + 82 p.
- Meehan, W.R. 1961. The use of a fishwheel in salmon research and management. Trans. Amer. Fish. Soc. 90:490-494.
- NFA. 2000. The Nisga'a Final Agreement. Publication by Canada, British Columbia and Nisga'a Lisims Governments. 252 p.
- Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish populations. Bull. Fish. Res. Bd. Can. 191:382 p.
- Todd, I.S. and F.V. Dickson. 1970. Nass River sockeye salmon a review of the commercial fishery and a summary of the 1963 to 1969 biological programs. Can. Dept. Fish. Forest. Technical Report 1970-10.

TABLES

Table 1. Numbers of each species of salmon caught and tagged at six fishwheels on the Nass River, 2000.

Location	Chinook				Sockeye			Coho			Steelhead		Pink	Chum	
	Catch			Tagged	Catch		Tagged	Catch		Tagged	Catch		Tagged	Catch	Catch
	FW	Adults ^a	Jacks		Adults ^a	Jacks		Adults ^a	Jacks		Adults ^a	Jacks		Adults	Adults
Gitwinksilhkw (GW)															
1	675	29	431	5,450	189	2,476	1,724	44	1,242	157	146	2,661	65		
2	1,334	60	1,085	7,967	247	4,357	1,128	39	836	281	261	3,957	112		
sub-total	2,009	89	1,516	13,417	436	6,833	2,852	83	2,078	438	407	6,618	177		
Grease Harbour (GH)															
3	759	24	310	6,051	169	0	958	33	0	170	159	592	22		
4	844	42	81	5,716	180	0	1,028	50	0	341	326	669	6		
5	572	55	0	3,606	308	0	2,113	126	0	241	228	1,503	25		
6	819	90	0	5,089	361	0	1,578	75	0	286	263	824	11		
sub-total	2,994	211	391	20,462	1,018	0	5,677	284	0	1,038	976	3,588	64		
Grand Total	5,003	300	1,907	33,879	1,454	6,833	8,529	367	2,078	1,476	1,383	10,206	241		
Mean Averages (94-99)															
Gitwinksilhkw	1,531	151	1,190	14,206	842	7,681	2,501	221	1,876	198	190	10,132	165		
Grease Harbour	1,152	120	764	11,693	848	na	1,573	170	992	228	272	5,422	64		
Total (FW1-4)	2,682	271	1,643	25,897	1,689	7,681	4,074	391	2,372	425	277	15,554	229		

^a Adult tallies do not include any tagged fish that were recaptured in the fishwheels. See Appendix B for complete catch and recapture data.

Table 2. A summary of the number of tag recoveries by location for the tags applied at the Nass fishwheels, 2000.

Species	Number of fish tagged	Location				Total	Percent recovered
		Meziadin fishway ^a	Spawning grounds ^b	Fishwheels ^c	Fisheries ^d		
Chinook	1,907	30	10	518	320	878	46.0
Sockeye	6,833	2,964	3	1,025	950	4,942	72.3
Coho	2,078	35	0	825	25	885	42.6
Steelhead	1,383	4	37	266	8	315	22.8
Totals	12,201	3,033	50	2,634	1,303	7,020	57.5

^a Includes all tagged fish observed but not necessarily recovered.

^b Chinook tags were recovered at Damdochax (5), Kwinageese (4), and Kincolith (1). Sockeye tags were recovered at Kwinageese (1) and Gingit (2). Steelhead tags were recovered by MELP at Cranberry (10), Meziadin (9), Kwinageese (8), Bell-Iving (4) and Damdochax (6).

^c Most of these fish were released back to the river so some of them may have been subsequently counted or recovered. A total of 472 sockeye and 42 coho tags were removed from the Grease Harbour fishwheels during harvesting (4 July to 15 August).

^d Includes recoveries in commercial (3 sockeye), sport (6 chinook, 1 sockeye, 8 steelhead) and in-river fisheries.

Table 3. Estimates of tag removals in Nisga'a domestic and individual-sale fisheries for sockeye, chinook and coho salmon on the Nass River, 2000.

Stratum	Total catch ^a	Domestic Fishery (DF)			Individual-sale Fishery (ISF)				Estimated tags removed ^d
		Tags returned	Estimated catch	% tags	Tags returned ^b	Obs. catch	% tags	Obs. return rate (%) ^c	
Sockeye									
Upper	22404	9	7570	0.1%	530	14834	3.6%	100.0%	800
Middle	17336	81	2886	2.8%	324	14450	2.2%	100.0%	389
Lower	12961	0	7366	0.0%	2	5559	0.0%	100.0%	5
Total	52701	90	17822	0.5%	856	34843	2.5%	100.0%	1194
Chinook									
Upper	2261	23	778	3.0%	100	1483	6.7%	90.0%	169
Middle	2377	92	1626	5.7%	87	751	11.6%	90.0%	306
Lower	3003	6	2643	0.2%	5	360	1.4%	90.0%	46
Total	7641	121	5047	2.4%	192	2594	7.4%	90.0%	522
Coho									
Upper	240	0	236	0.0%	0	4	0.0%		
Middle	322	25	307	8.1%	0	15	0.0%		26
Lower	568	0	542	0.0%	0	26	0.0%		
Total	1130	25	1085	2.3%	0	45	0.0%		26

^a Catch and tag removals are for periods commencing 11th June with the start of the operation of the fishwheels.

^b Tags returned for sockeye and chinook include all IS fisheries.

^c Obs. return rate (%)=100% (sockeye) and 90% (chinook).

^d Sockeye & chinook: Estimated tags removed = Total catch (all fisheries) x % tags returned in the sale fishery.

Coho: Estimated tags removed = Total catch (Middle) x % tags returned in the domestic fishery.

Table 4. Estimates of time between tagging and recovery of sockeye tagged at the Nass River fishwheels and counted at the Meziadin fishway, 2000.

Release periods	Tags			Time in days between dates of cum. proportion tagged and cum. proportion recovered		
	Application color	Applied at fishwheels	Counted at fishway			
				25%	50%	75%
June 11-27	Yellow	1652	792	29	29	29
July 1-5	Blue	1121	532	22	21	24
July 7-11	Red	879	377	21	25	26
July 12-21	Pink	855	217	26	27	28
July 22-31	Green	682	287	22	22	22
Aug 1-4	Grey	637	326	16	17	18
Aug 5-14	Orange	707	374	16	24	25
Aug 15-27	Brown	134	39	26	26	36
Aug 28 - 16 Sep	Yellow	166	20	17	24	23
All periods		6833	2,964	23	25	19

Table 5. Population estimates derived from tagging of adult sockeye and coho salmon at the Nass River fishwheels and recovery of tags at the Meziadin fishway, 2000. The best population estimates are in blocked, bolded italics.

	Sockeye	Coho
Number of fish tagged (M) at Gitwinksilkw (GW)	6,833	2,078
Number of tags removed above GW as mortality assuming a range of mortality rates		
<u>Rate</u>		
0%	0	0
5%	342	104
10%	683	208
15%	1,025	312
20%	1,367	416
Est. number of tags removed from Nisga'a fishery above GW ^a	1,666	68
Net number of tags available for recapture upstream of Grease Harbour (M₁) assuming a range of mortality rates		
<u>Rate</u>		
0%	5,167	2,010
5%	4,826	1,906
10%	4,484	1,802
15%	4,142	1,698
20%	3,801	1,594
Number fish examined for tags at Meziadin fishway (C)	137,042	1,423
Number of tagged fish observed at Meziadin Fishway (R)	2,964	35
Pooled Petersen population estimates upstream of Grease Harbour assuming a range of mortality rates (M₁, C, R)		
<u>Rate</u>		
0%	238,874	79,537
5%	223,082	75,428
10%	207,291	71,318
15%	191,500	67,208
20%	175,709	63,098
Bounds for Best Petersen estimate		
Lower 95 % CL	199,964	51,680
Upper 95 % CL	214,887	98,144

^a The estimated number of tags removed from the Nisga'a fishery include estimated tag removals in domestic and individual-sale fisheries (Table 3) and tags recovered at the fishwheels during harvesting.

Table 6. Summary of escapement survey data and estimated run size for chinook salmon upstream of Grease Harbour, 2000.

System	No. of surveys	No. of fish examined		Total fish examined	No. of tags	Mark rate (examined/tags)
		Live	Carcasses			
Kwinageese	3		49	49	3	16.3
Damdochax	2		27	27	0	
Meziadin	fishway count	416		416	30	13.9
Totals	5	416	76	492	33	14.9

Total tags applied: 1,907

^a Corrected tag total: 1,290

Total fish examined: 492

Total tags recovered: 33

Adjusted Petersen escapement estimate past the Grease Harbour fishwheels: 18,719

Lower 95% C.I.: 13,441

Upper 95% C.I.: 25,986

^a Adjusted for tag loss/differential mortality (5% or 95 fish) and removals in the in-river fisheries (522; Table 3).

Table 7. The estimated percentages of adult chinook, sockeye, and coho captured with six fishwheels on the Nass River, 2000. The percentages were derived using the Petersen escapement estimates and 95% confidence intervals (Tables 5 and 6). The estimated abundance past fishwheels 3, 4, 5 and 6 was determined by subtracting the estimated Nisga'a fishery harvest above Gitwinksihlkw from the estimated escapement above Gitwinksihlkw. The escapement above Gitwinksihlkw was used for calculating the "all fishwheels" percentages.

Species	Fishwheel 1			Fishwheel 2			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6			All fishwheels		
	Range			Range			Range			Range			Range			Range			Range		
	%	Min	Max	%	Min	Max	%	Min	Max	%	Min	Max	%	Min	Max	%	Min	Max	%	Min	Max
Sockeye	2.2	2.2	2.3	3.3	3.2	3.4	2.9	2.8	3.0	2.8	2.7	2.9	1.5	1.7	1.8	2.1	2.4	2.5	14.8	10.8	11.6
Chinook	3.0	2.6	5.0	5.9	5.1	9.9	3.8	3.2	6.9	4.2	3.6	7.7	2.9	2.4	5.2	4.1	3.5	7.5	23.9	14.6	29.6
Coho	2.4	1.7	3.3	1.6	1.1	2.2	1.3	1.0	1.9	1.4	1.0	2.0	3.0	2.2	4.1	2.2	1.6	3.1	11.9	4.9	9.3
Total	2.3	2.2	2.5	3.1	2.9	3.4	3.5	3.5	3.5	3.5	3.5	3.5	2.5	2.9	2.9	2.9	3.4	3.5	17.7	12.1	13.0

Table 8. Summary of age composition of chinook, sockeye, and coho salmon sampled at the Nass River fishwheels, 2000. Chinook and coho portions are weighted by weekly Gitwinksihlkw fishwheel CPE; sockeye composition weighted by the weekly escapement estimates generated by the mark-recapture data. A dash denotes no fish were sampled from that age class. The data underestimate the proportion of chinook under 50 cm nose-fork (32s and 43s) because these fish were not routinely sampled.

Species	Estimated percent of total run												
	Brood year / Age class												
	1997		1996			1995				1994			1993
	31	32	41	42	43	51	52	53	54	62	63	64	72
Chinook	-	3.3	-	45.7	-	-	41.5	1.9	-	7.6	-	-	-
Sockeye	1.7	-	2.2	35.9	-	-	16.7	22.4	-	-	21.1	-	-
Coho	-	51.0	-	0.2	47.9	-	-	-	0.9	-	-	-	-

Table 9. Mean nose-fork length (cm) of salmon (by age) sampled at the Nass River fishwheels, 2000.

Species	Age class	Number of fish	Mean length (cm)	Standard deviation (cm)
Sockeye	41	18	59.8	3.7
	42	606	59.0	4.8
	52	226	65.6	4.2
	53	369	61.1	3.9
	63	335	67.6	4.3
	Total	1554	62.3	5.6
Chinook	32	15	40.3	3.3
	42	193	72.6	6.6
	52	175	89.6	7.0
	53	8	76.9	5.4
	62	31	96.9	5.7
	Total	422	80.4	13.6
Coho	32	316	62.2	7.6
	42	1	65.0	
	43	300	63.6	7.0
	54	4	63.5	5.2
	Total	621	62.9	7.3

Table 10. The estimated annual catch rates (% of the run captured) of the Nass River fishwheels for chinook, sockeye and coho salmon, 1992-2000.

Year	Chinook catch rates (%)							Sockeye catch rates (%)							Coho catch rates (%)						
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total
1992 ^a	1.3	0.8					2.1	1.0	0.3					1.3	0.8	0.2					0.9
1993 ^b	1.8	0.7					2.5	1.1	0.6					1.7	0.9	0.8					1.7
1994 ^c	3.0	5.4	2.9				11.3	1.6	3.9	2.2				7.7	1.6	1.8	0.9				4.3
1995 ^d	3.2	4.8	1.4	0.4			9.8	1.8	2.8	1.8	1.2			7.6	3.4	0.5	1.0	2.2			7.2
1996 ^e	2.4	3.8	1.6	1.6			9.4	2.7	3.9	2.1	1.4			10.1	3.0	1.6	1.6	2.0			8.2
1997 ^{f,g}	5.1	5.9	3.5	4.1			18.6	1.8	3.3	2.9	2.7			10.7	3.8	2.5	1.6	2.3			10.2
1998 ^h	1.4	3.4	5.3	2.5			12.6	0.6	1.3	2.6	1.8			6.2	3.1	0.9	1.6	3.3			8.9
1999 ⁱ	2.8	7.3	8.8	9.1			28.0	2.9	5.6	4.7	4.9			18.0	2.8	2.9	1.3	2.9			9.9
2000	3.0	5.9	3.8	4.2	2.9	4.1	23.9	2.2	3.3	2.9	2.8	1.5	2.1	14.8	2.4	1.6	1.3	1.4	3.0	2.2	11.9
92-00 Mean	2.7	4.2	3.9	3.6	2.9	4.1		1.8	2.8	2.7	2.4	1.5	2.1		2.4	1.4	1.3	2.4	3.0	2.2	
94-00 Mean	3.0	5.2	3.9	3.6	2.9	4.1		2.0	3.4	2.7	2.4	1.5	2.1		2.9	1.7	1.3	2.4	3.0	2.2	
Per fishwheel avg., 94-00	3.9							2.6							2.1						

^a Link, M. R., K. K. English, and R. C. Bocking. 1996. The 1992 Fishwheel Project on the Nass River and an Evaluation of Fishwheels as an In-season Management and Stock Assessment Tool for the Nass River. Can. Manuscr. Rep. Fish. Aquat. Sci. 2372: x + 82 p.

^b Link, M. R., and K. K. English. 1996. The 1993 Fishwheel Project on the Nass River and an Evaluation of Fishwheels as an In-season Management and Stock Assessment Tool for the Nass River. Can. Tech. Rep. Fish. Aquat. Sci. 2130: xi + 103 p.

^c Link, M. R., and K. K. English. 1997. The 1994 Fishwheel Project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2421: xi + 93 p.

^d Link, M. R., and A. C. Gurak. 1997. The 1995 Fishwheel Project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2422: xi + 99 p.

^e Link, M. R. 1999. The 1996 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2476: xi + 92 p.

^f Link, M. R., and B. L. Nass. 1999. Estimated abundance of chinook salmon returning to the Nass River, BC, 1997. Can. Manuscr. Rep. Fish. Aquat. Sci. 2475: x + 64 p.

^g Link, M. R., R. F. Alexander, and A. C. Blakley. 2001. The 1997 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2555: xi + 100 p.

^h Alexander, R. F. and M.R. Link. 2001. The 1998 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2556: xi + 111 p.

ⁱ Alexander, R. F. 2001. The 1999 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2588: xi + 113 p.

Table 11. Estimates of catch, run size and net escapement to the Nass Area for sockeye, chinook and coho salmon, 2000.

		Area							
Species - Catch/Run Size	Net Escapement ¹	Above Grease Harbour (A) ²	Grease Harbour (B) ³	GW to Grease (C) ⁴	GW (D) ⁵	Mouth to GW (E) ⁶	Total to Nass R. (F) ⁷	Marine Areas (G) ⁸	Total Return to Canada (H) ⁹
Sockeye									
Catch									
Nisga'a				36,293		32,211	68,504	24,675	93,179
Other Native		2,884					2,884	1,875	4,759
Sport		15					15		15
Commercial								239,022	239,022
Catch Total		2,899		36,293		32,211	71,403	265,572	336,975
Run Size	204,392		207,291		243,584		275,799		541,471
Chinook									
Catch									
Nisga'a				2,498		6,005	8,503	823	9,326
Other Native		49					49		49
Sport		623		400			1,023	920	1,943
Commercial								1,418	1,418
Catch Total		672		2,898		6,005	9,575	3,161	12,736
Run Size	18,047		18,719		22,482		28,487		32,553
Coho									
Catch									
Nisga'a				757		917	1,674	276	1,950
Other Native		98					98		98
Sport				250			250	750	1,000
Commercial							-	2,367	2,367
Catch Total		98		1,007		917	2,022	3,393	5,415
Run Size	71,220		71,318		72,325		83,009		108,029

¹ Net Escapement=B(run size)-A(catch total).

² Other native catch is catch by the Gitanyow First Nation (Les Jantz, DFO, pers. com.) and sport catch is from the Tshitin, Cranberry, and Meziadin rivers (Baxter 2001).

³ Run size estimates for sockeye, chinook and coho are from Tables 4, 5 and 4, respectively.

⁴ Nisga'a catch estimates are from Baxter et al. (2001). Sport estimates are from Baxter 2001 for Seaskinnish and Tseax rivers.

⁵ GW=Gitwinksihlkw. Run size (D)=B (run size)+C (catch total). Run size estimate for chinook includes a proportion of Tseax and Seaskinnish to net escapement estimate (i.e., net escapement *4.792%[historical average]=865 chinook).

⁶ Nisga'a catch estimates are from Baxter et. al (2001).

⁷ Catch totals are the sum of all in-river harvests (A to E). Run size (F)=D (run size)+E (catch total). The run size estimate for sockeye includes an additional 4 sockeye that spawned in Zolzap Cr. The run size estimate for coho includes an additional 9767 coho that were estimated to have spawned below GW. The 9767 estimate is based on a model of carrying capacity (prorated based on estimates at Zolzap, Diskangieq, Ansedegan, and Ginlulak creeks (Bocking *in prep* Baxter and Bocking 2001).

⁸ Nisga'a catch estimates are from Baxter et al. (2001) and represent Kincolith harvests. Sport and commercial catch estimates are from JTC 2001.

⁹ Catch totals= Area F+Area G. Run size (H)=F(run size)+G(catch total)+coastal escapement estimates. Coastal escapement estimates of 100 sockeye, 905 chinook and 21,627 coho were made from visual surveys (Bear River), expanded counts (1.5*DFO aerial counts; JTC 2001), and model of carrying capacity (prorated based on Lachmach and Salmon Cove streams; Bocking *in prep.*), respectively.

Table 12. Comparison of stock composition estimates for Nass River sockeye salmon (percent Meziadin) from scale, genetic and tagging methods, 1986-2000.

Year	Percent Meziadin				Differences		
	^a Scale	Genetic		^b Tag	Scale-Genetic	Scale-Tag	Genetic-Tag
		GSI	DNA				
1986	61.6	63.5			-1.9		
1987	78.2	57.1			21.0		
1988	85.5	58.5			27.0		
1989	44.5	41.2			3.3		
1990	77.8	71.5			6.3		
1991	92.6	79.9			12.8		
1992	93.3	86.3		81.0	7.0	12.3	5.3
1993	86.5	76.6		73.1	9.9	13.4	3.5
1994	91.2	na		59.0	na	32.2	na
^c 1995	86.2	83.0		76.4	3.2	9.8	6.6
^d 1996	60.9	na	73.0	78.3	-12.1	-17.4	-5.3
1997	65.2	na		59.5	na	5.7	na
^e 1998	88.6	na		61.5	na	27.0	na
^f 1999	98.3	na	82.9	85.5	15.4	12.8	-2.6
^g 2000	81.2	na	65.4	65.3	15.9	15.9	0.1
Averages:							
Years 92-00	83.5	82.0	73.8	71.1	6.5	12.4	1.3
All years	79.4	68.6	73.8	71.1	9.0	12.4	1.3

^a Proportion of Meziadin adult sockeye count (2000: 137,042) to scale net escapement estimate (2000: 168,719; Les Jantz, DFO Prince Rupert, pers. com.).

^b Proportion of estimated Meziadin adult sockeye (Mez. adult count expanded by harvest rate above Gitwinksihlkw (16.1%)) to estimate of escapement at Gitwinksihlkw.

^c GSI method in 1995 includes only 5 late weeks of the run (50% of escapement), the estimate is likely biased high from the season-total percent Meziadin because first sampling week (adjacent to the bulk of the escapement) was only 68% Meziadin whereas late run weeks were composed of 95-100% Meziadin. This pattern suggests that the early-run component was less than the late-run average of 83%.

^d The microsatellite DNA estimate is the proportion of Meziadin sockeye from the 1996 Nass test fishery (Beecham and Wood 1999).

^e The 1998 Meziadin scale estimate is based on circuli counts only.

^f The 1999 scale estimate does not include Damdochax or Fred-Wright rivers. The microsatellite DNA estimate is the proportion of Meziadin sockeye from the 1999 Nass fishwheel DNA samples (n=279; Chris Wood, DFO - Nanaimo, pers. com.).

^g The microsatellite DNA estimate is the proportion of Meziadin sockeye from the 2000 Nass fishwheel DNA samples (n=560; Terry Beacham, DFO - Nanaimo, pers. com.).

FIGURES

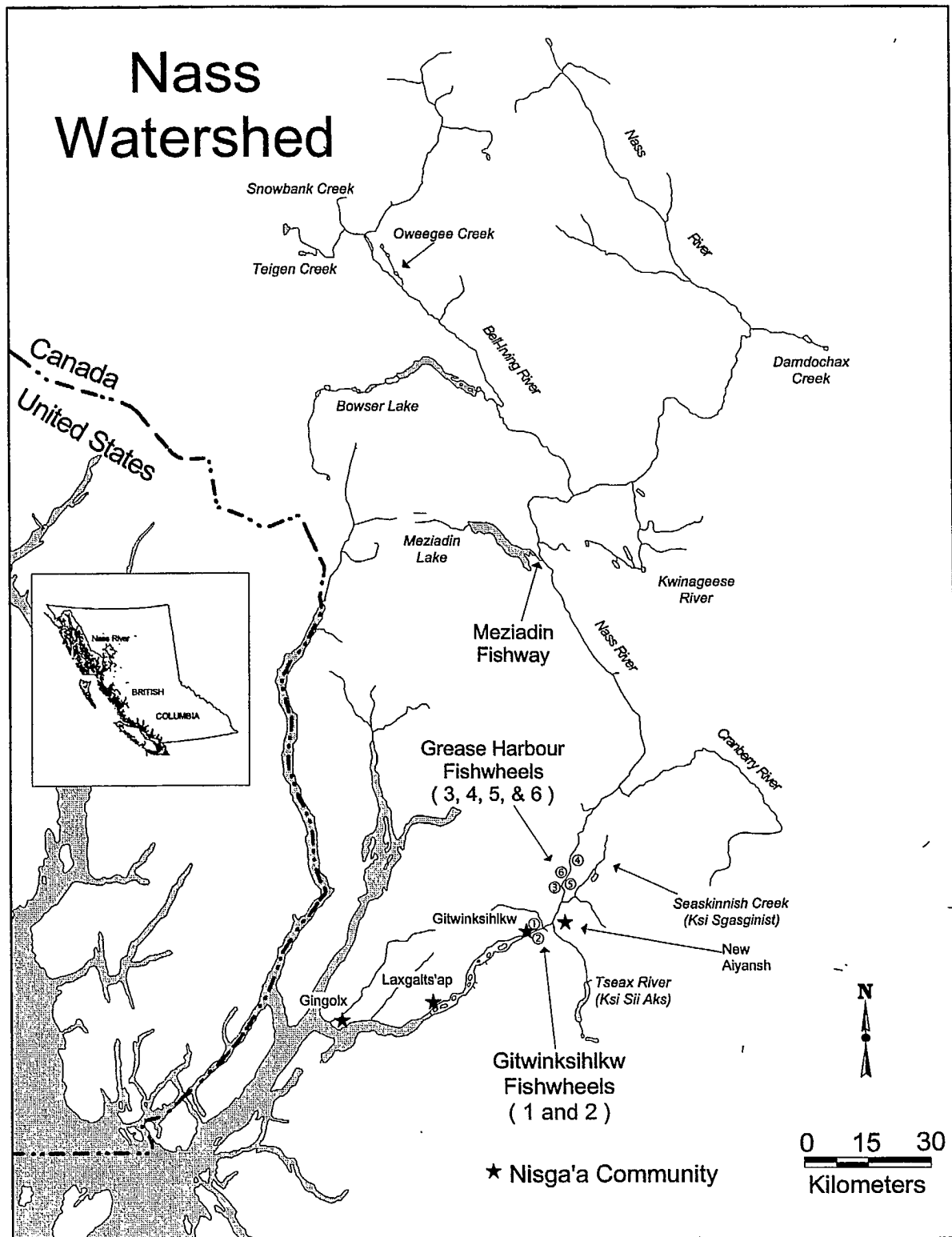


Figure 1. The Nass watershed showing locations of the fishwheels, the Meziadin fishway and chinook spawning areas that were surveyed.

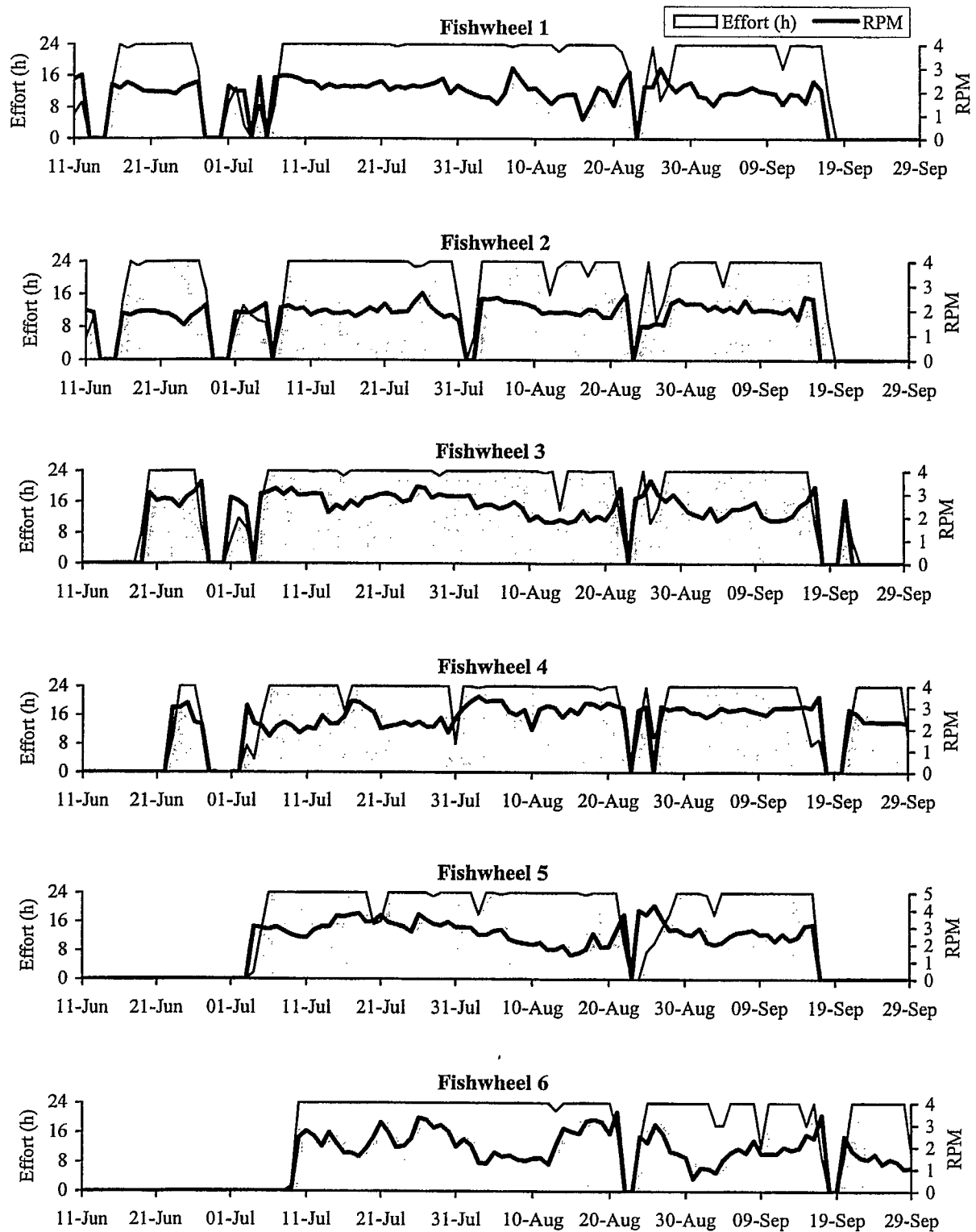


Figure 2. Fishwheel effort (hours) and speed (RPM) for six fishwheels on the Nass River, 2000.

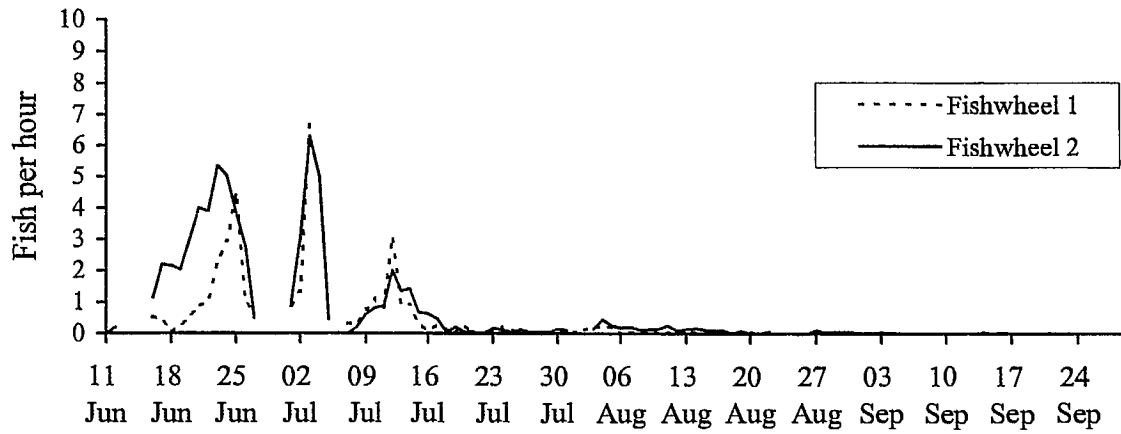
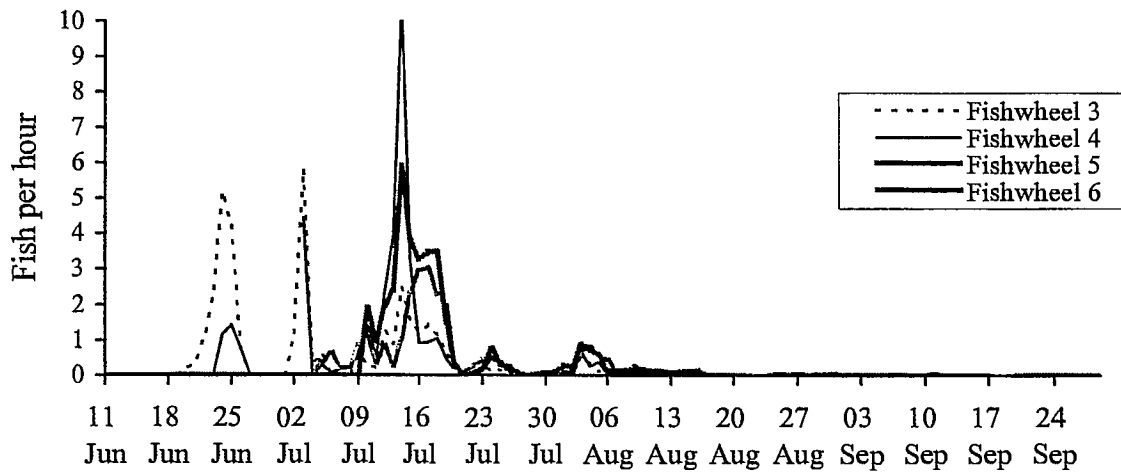
Gitwinksihlkw**Grease Harbour**

Figure 3. Fishwheel CPE (catch per wheel hour) for adult chinook captured with six fishwheels on the Nass River, 2000.

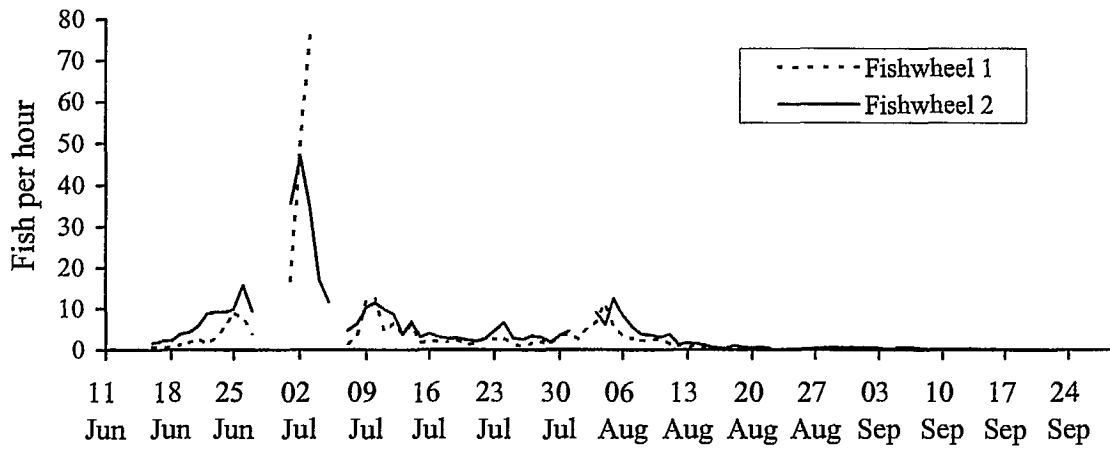
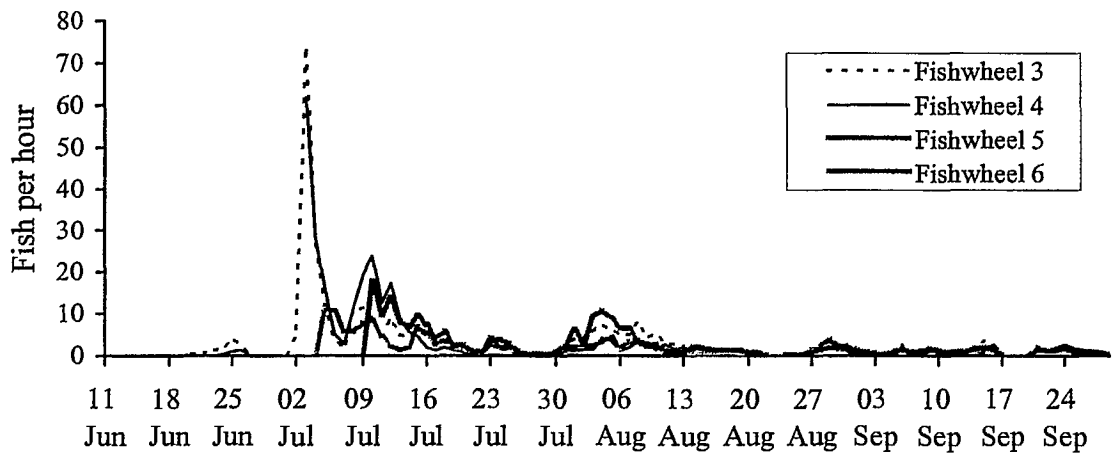
Gitwinksihlkw**Grease Harbour**

Figure 4. Fishwheel CPE (catch per wheel hour) for adult sockeye salmon captured with six fishwheels on the Nass River, 2000.

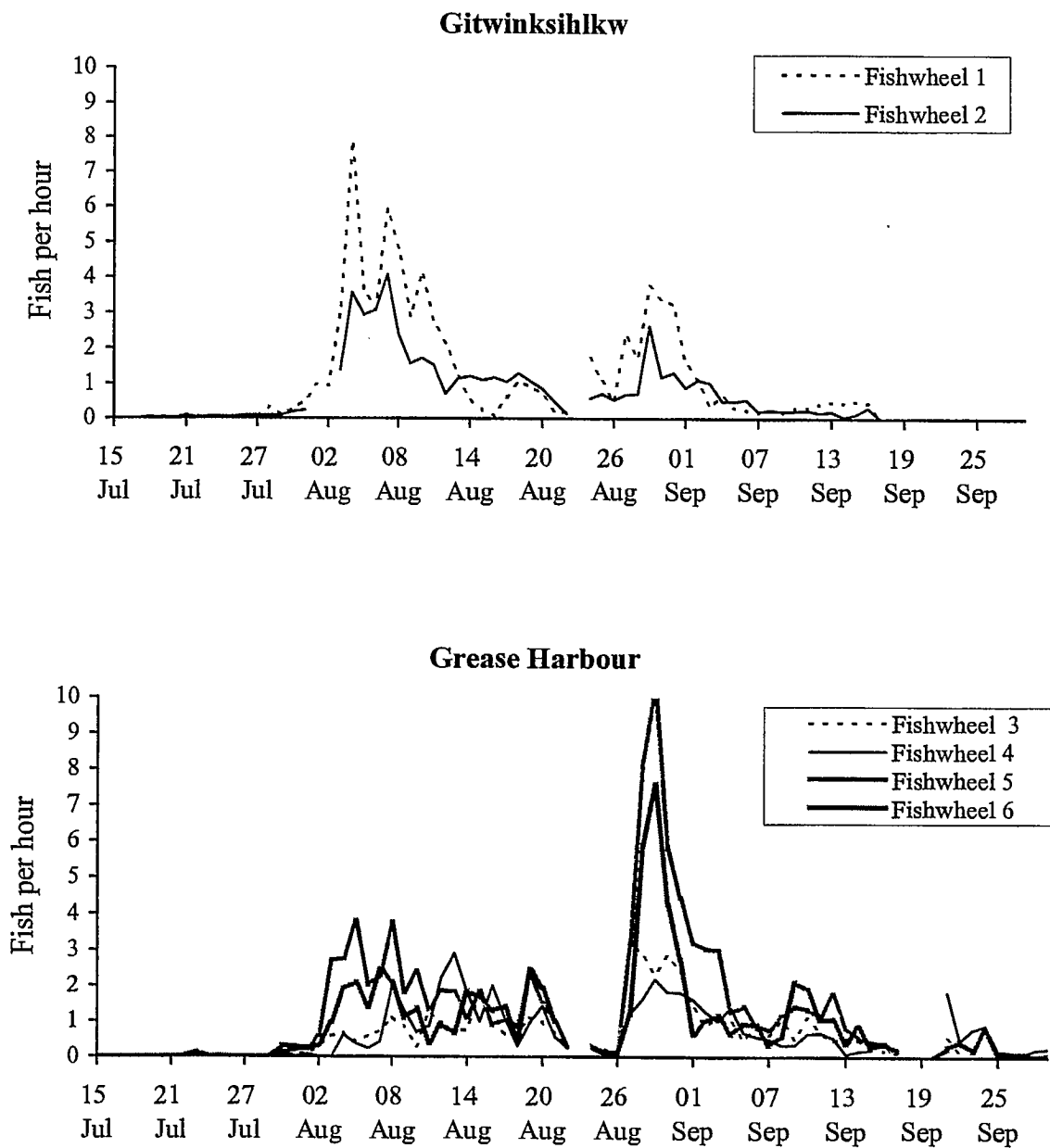


Figure 5. Fishwheel CPUE (catch per wheel hour) for adult coho salmon captured with six fishwheels on the Nass River, 2000.

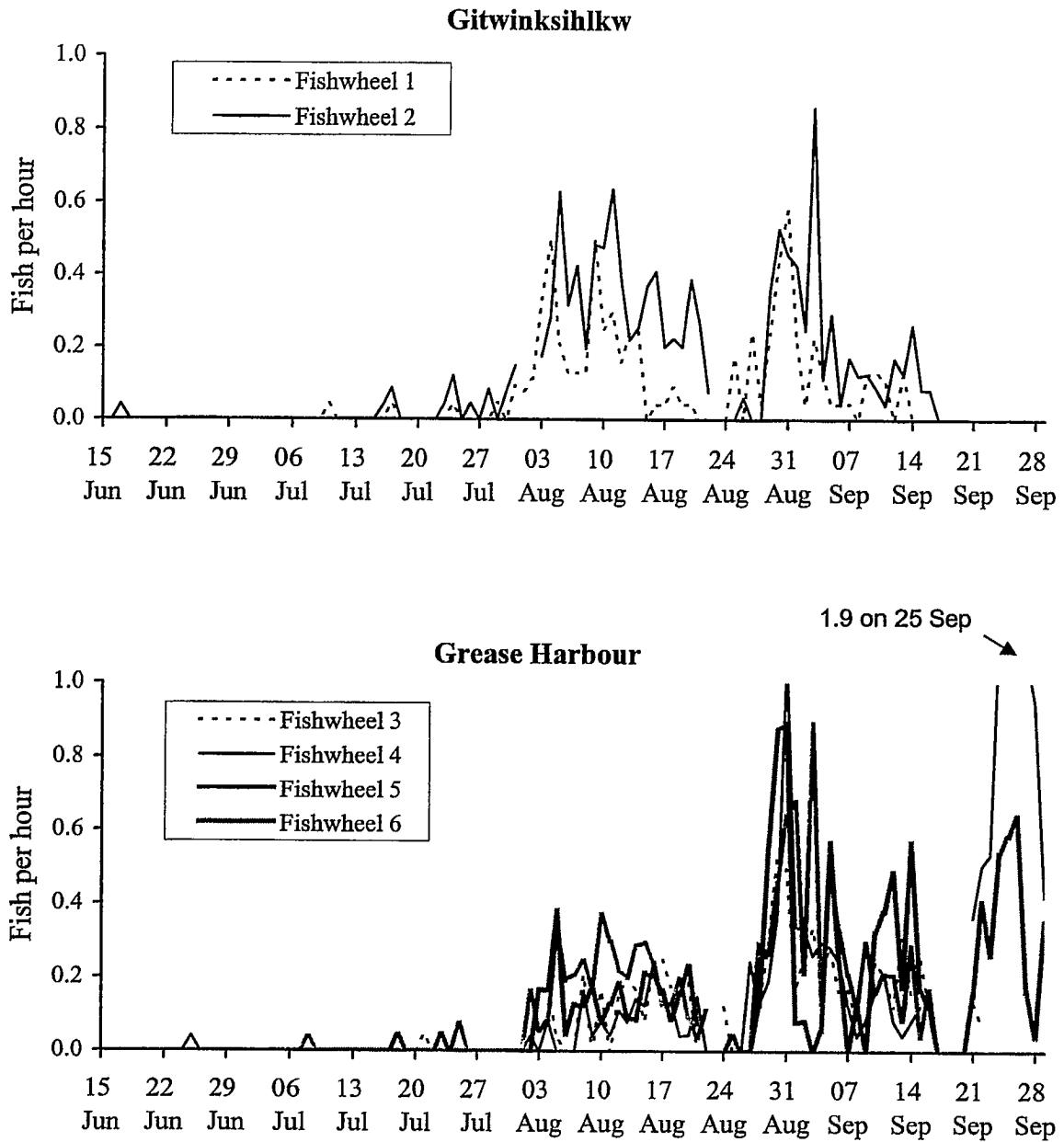


Figure 6. Fishwheel CPE (catch per wheel hour) for adult steelhead captured with six fishwheels on the Nass River, 2000.

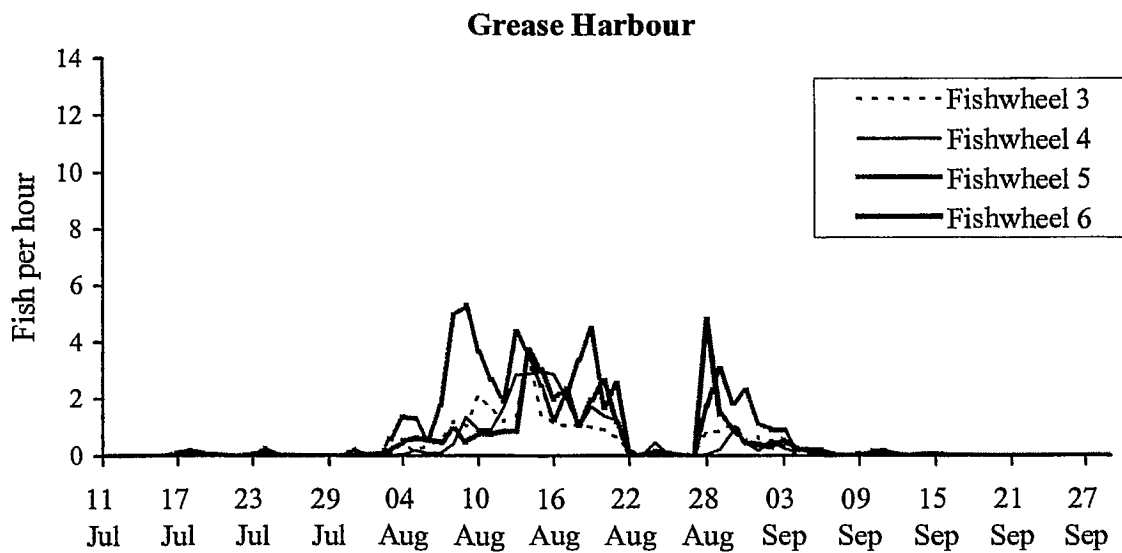
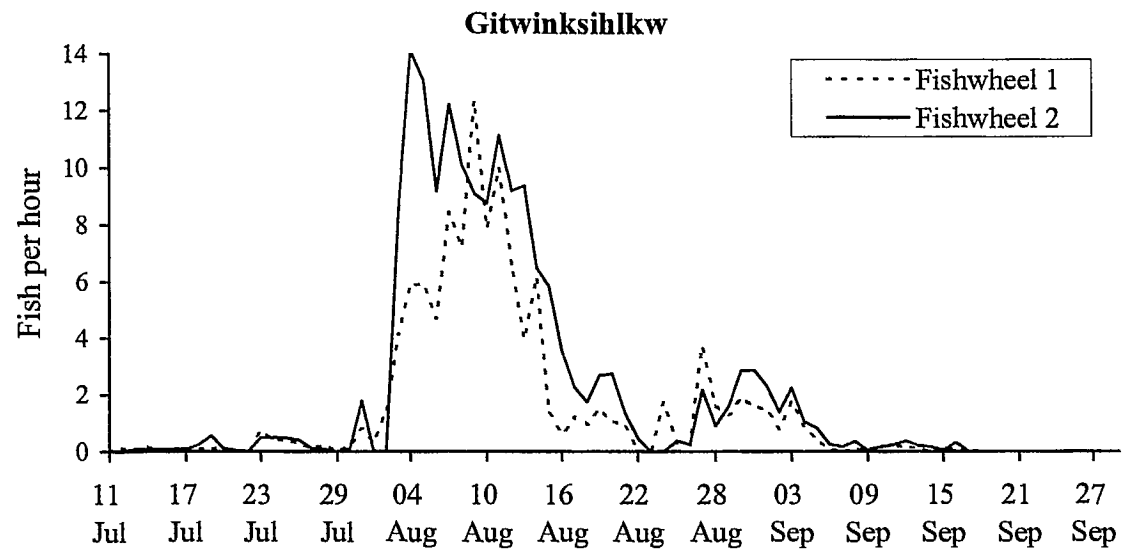


Figure 7. Fishwheel CPE (catch per wheel hour) for adult pink salmon captured with six fishwheels on the Nass River, 2000.

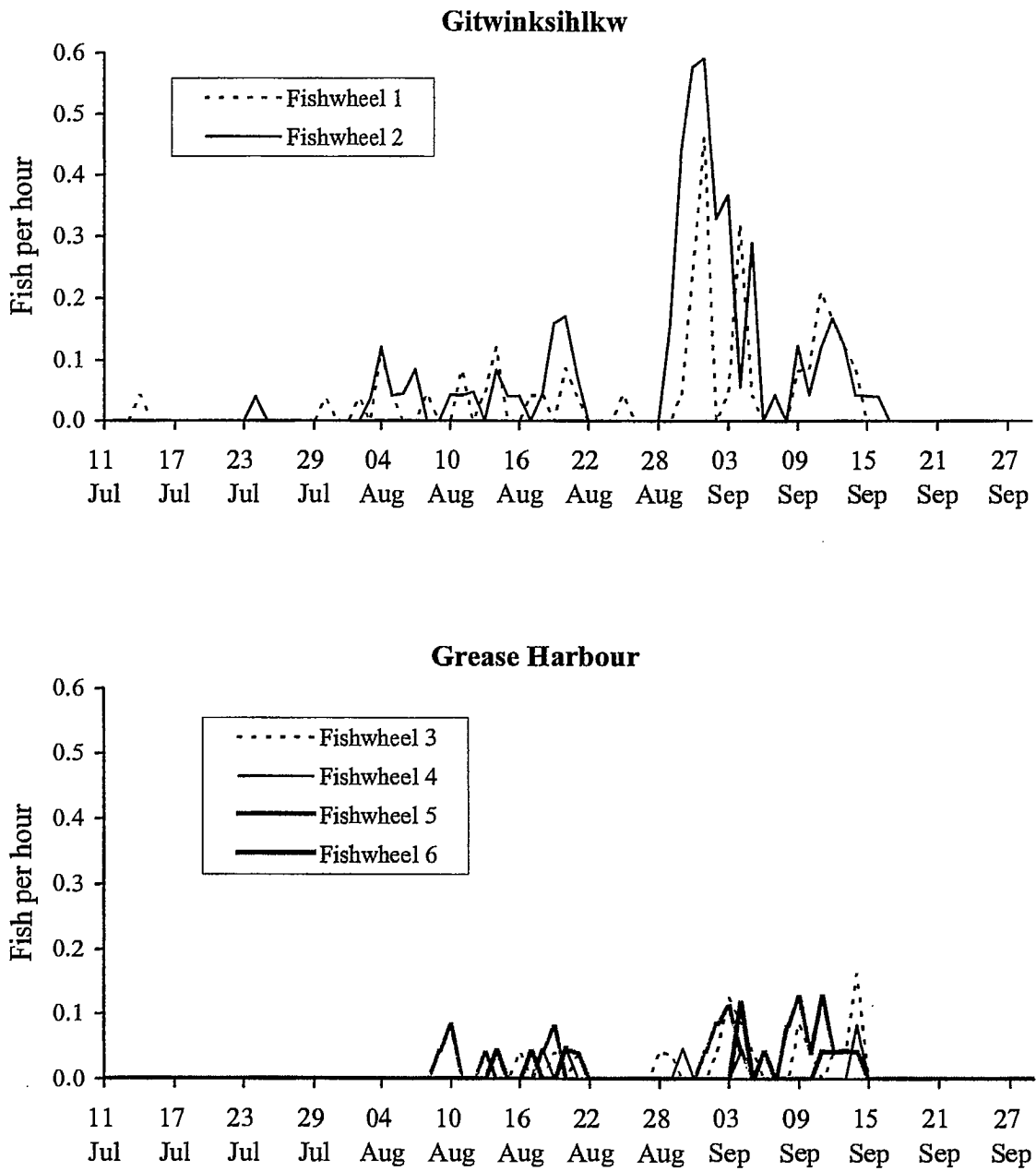


Figure 8. Fishwheel CPE (catch per wheel hour) for adult chum salmon captured with six fishwheels on the Nass River, 2000.

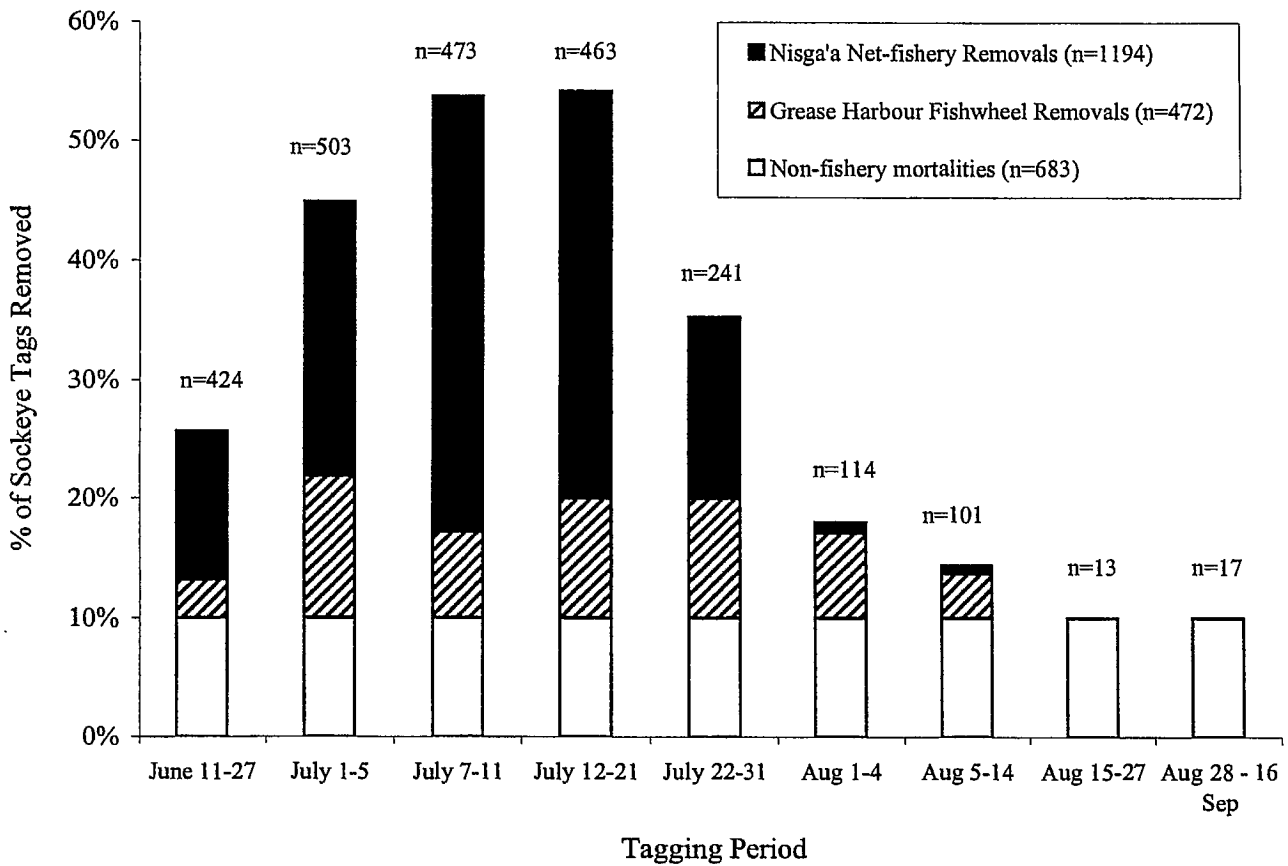
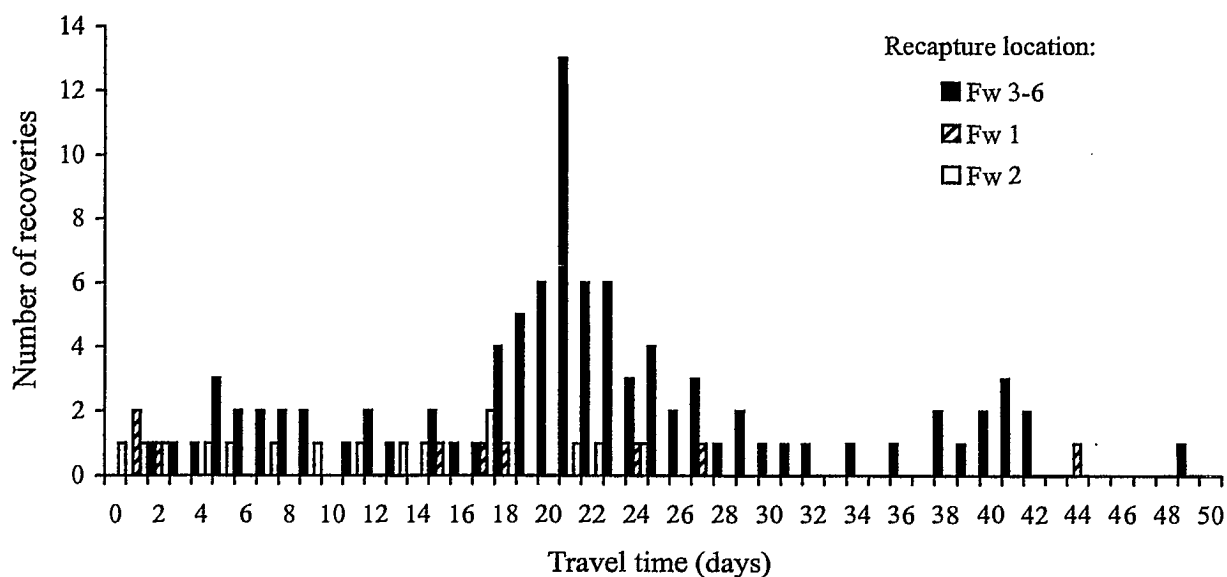


Figure 9. The proportion of sockeye tags removed by tagging period in Nisga'a net fisheries, Grease Harbour fishwheels, and non-fishery mortalities, 2000.

Chinook tagged at fishwheel 1



Chinook tagged at fishwheel 2

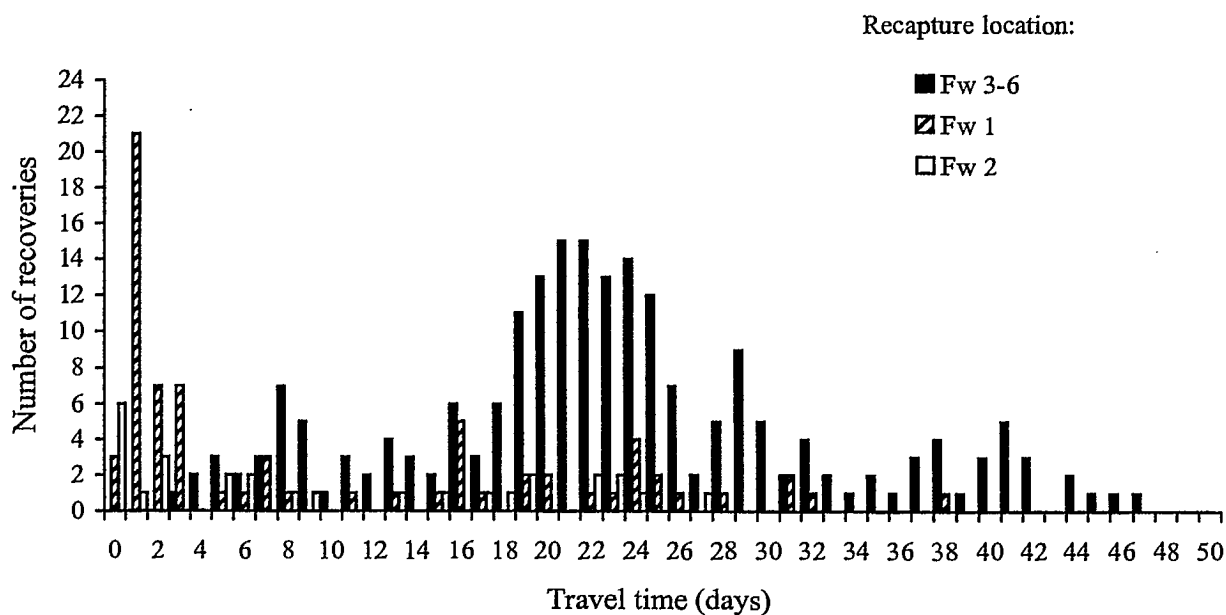
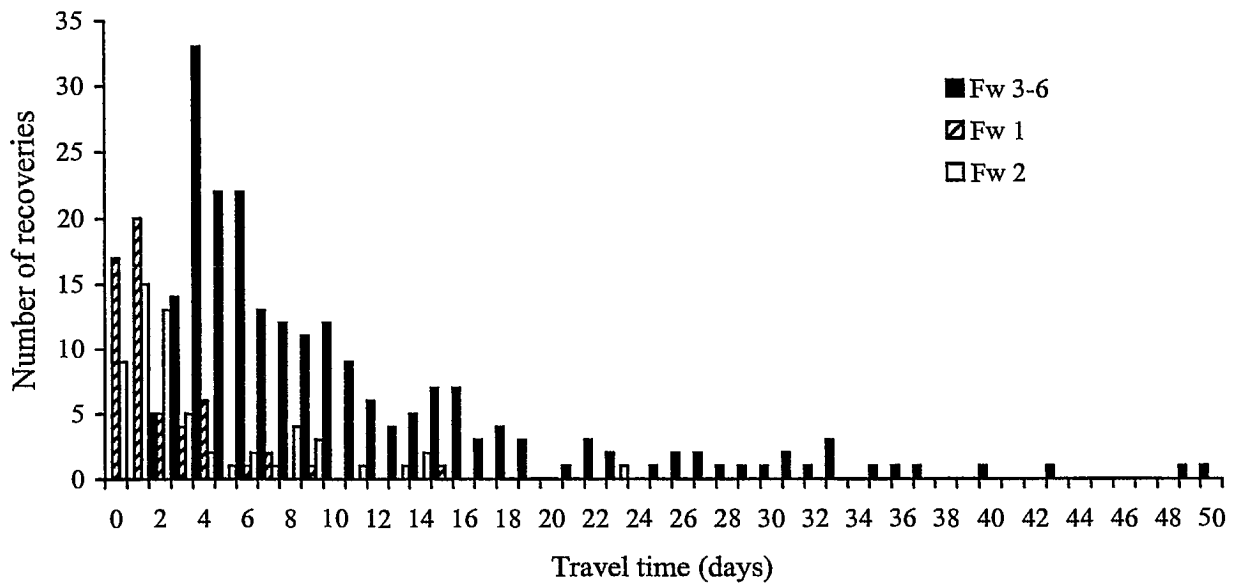


Figure 10. Time between release and recapture for chinook salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the six fishwheels, 2000. Fishwheel 3, 4, 5 and 6 were pooled for clarity.

Sockeye tagged at fishwheel 1



Sockeye tagged at fishwheel 2

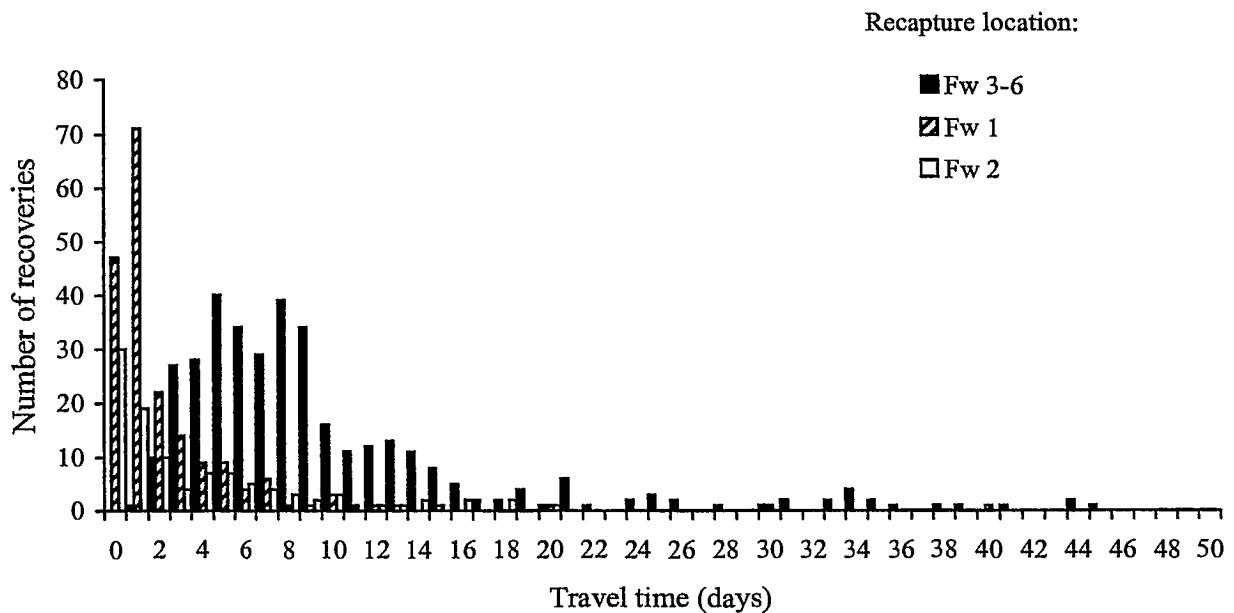


Figure 11. Time between release and recapture for sockeye salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the six fishwheels, 2000. Fishwheel 3, 4, 5 and 6 were pooled for clarity.

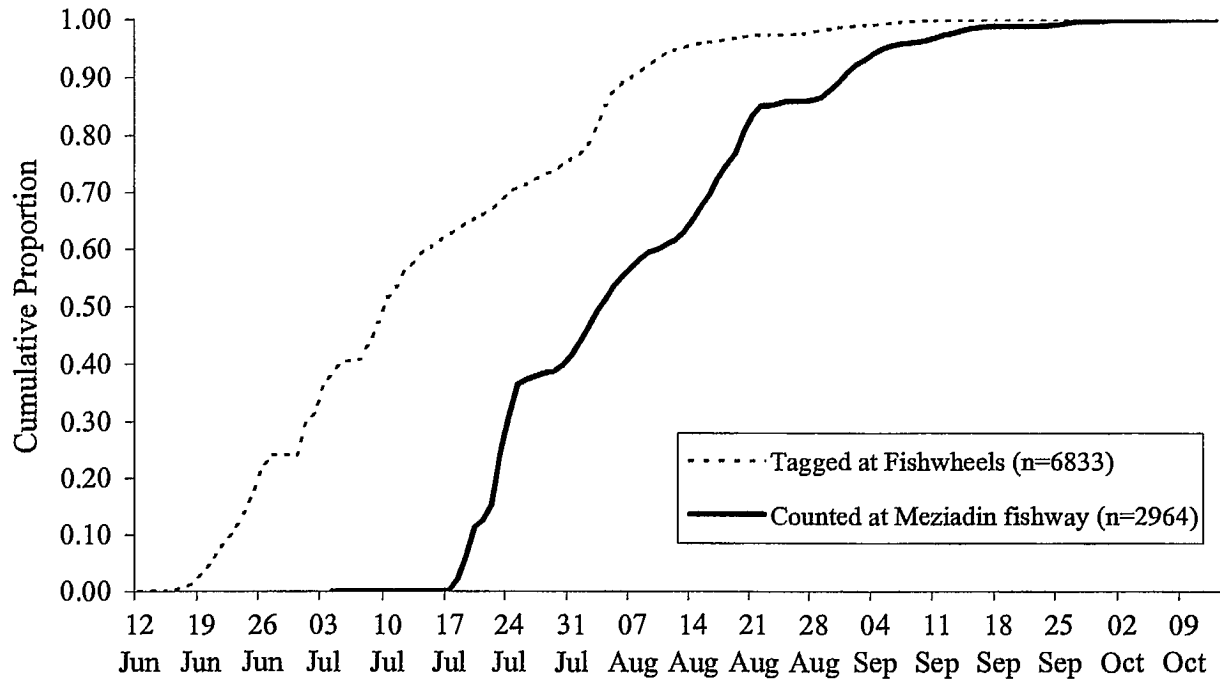


Figure 12. Cumulative proportions of the total sockeye tagged at the Nass River fishwheels and the total tags counted at the Meziadin fishway, 2000.

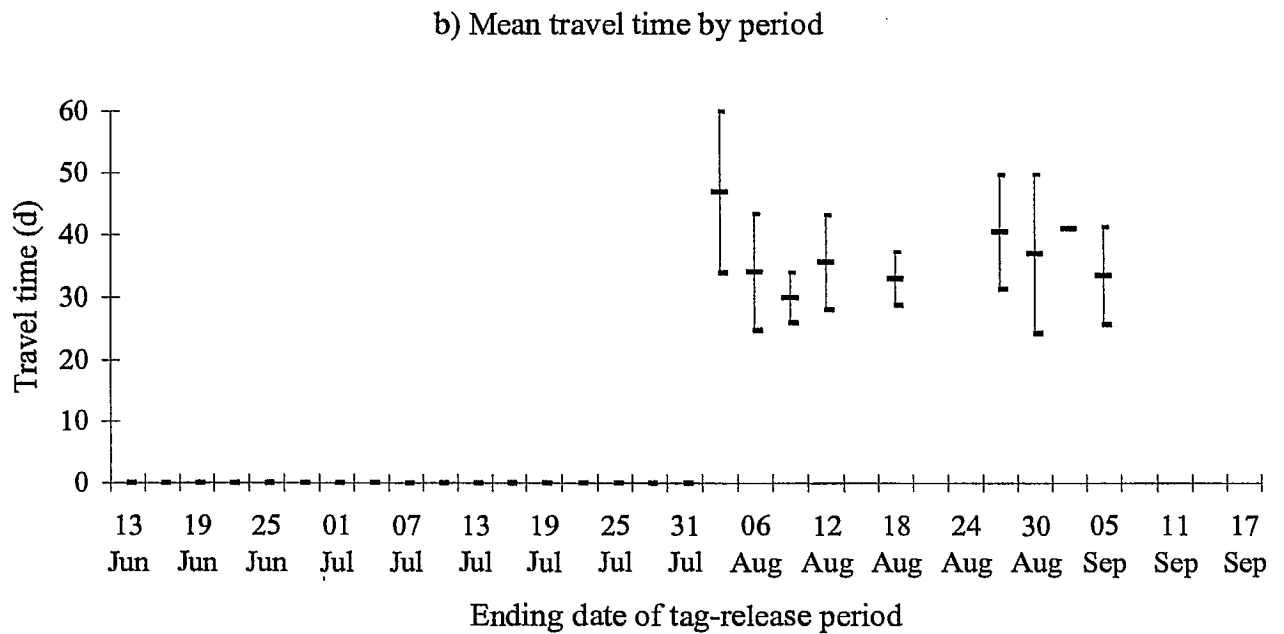
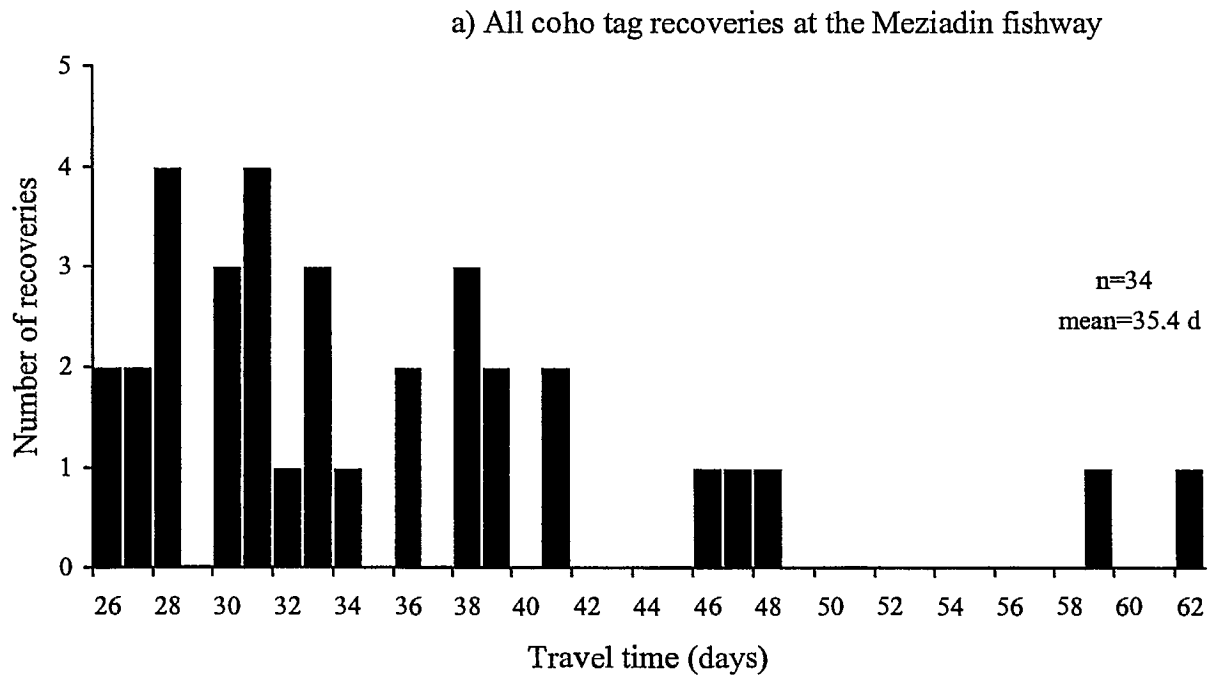


Figure 13. a) The distribution of travel times (days) to the Meziadin fishway for coho salmon tagged at the Nass River fishwheels and recovered at the Meziadin fishway, 2000. b) Mean travel time (with 95% confidence intervals) for 3-day release periods.

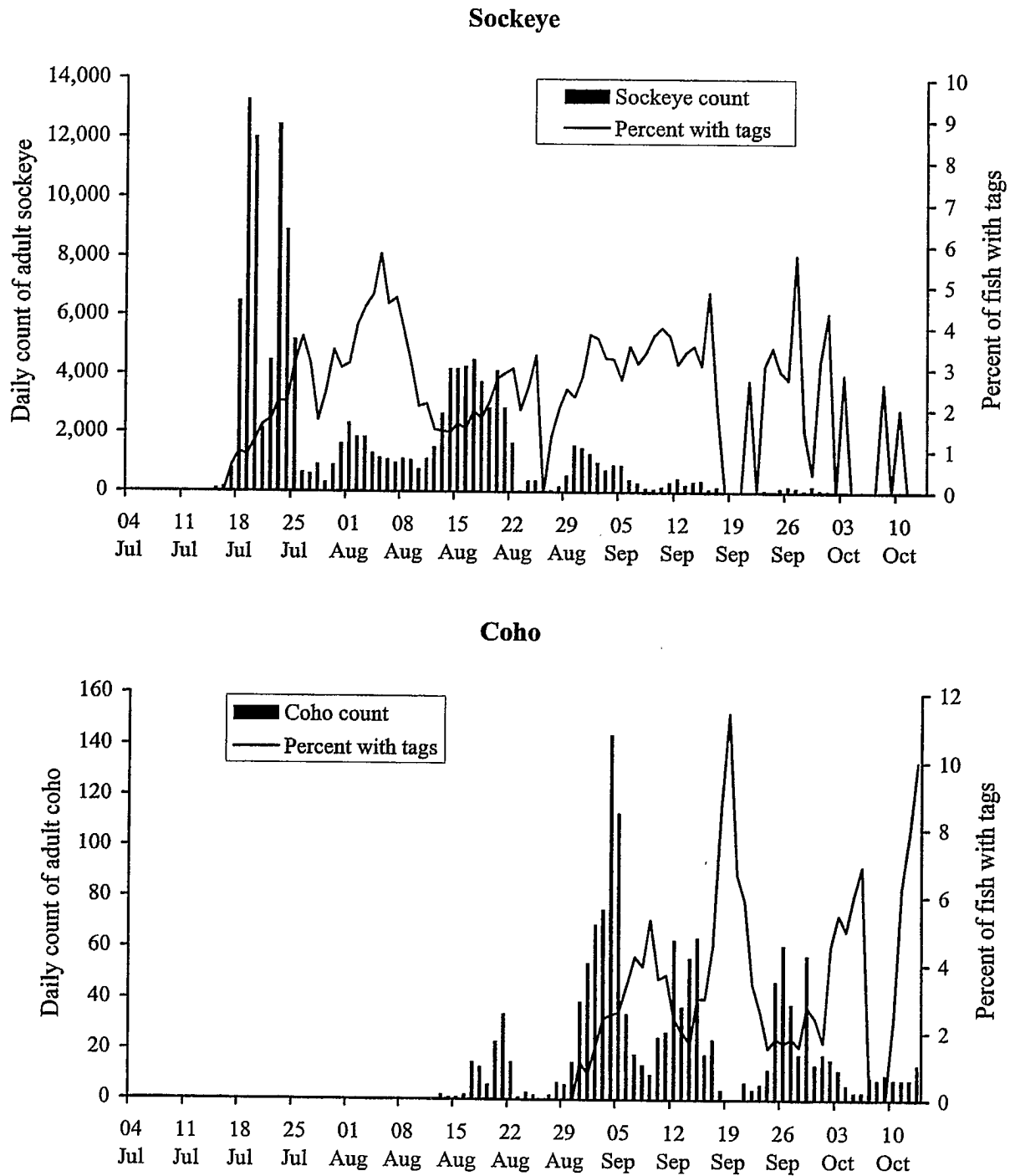


Figure 14. Daily counts and percent of fish with tags for sockeye and coho salmon passing through the Meziadin fishway, 2000. A running 5-day average was used for the percent of coho salmon with tags.

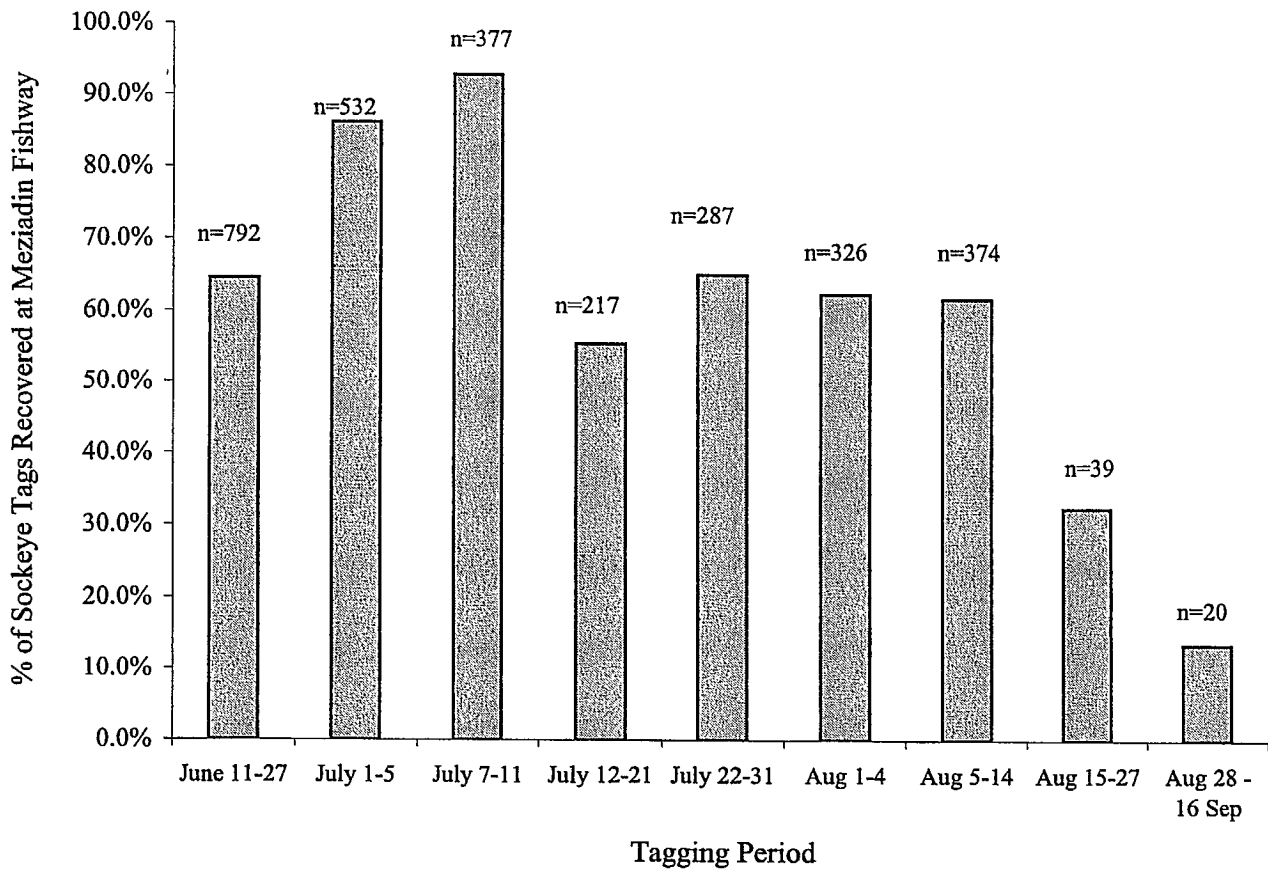
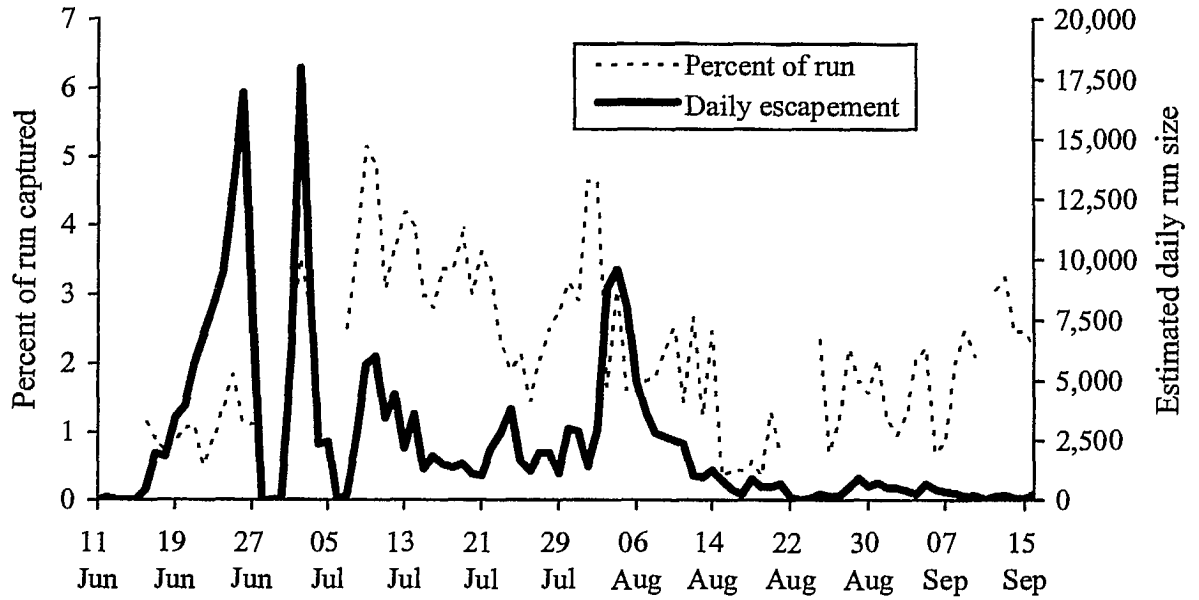


Figure 15. The proportion of sockeye tags, after removals, that were recovered at the Meziadin Fishway by tagging period, 2000.

Fishwheel 1



Fishwheel 2

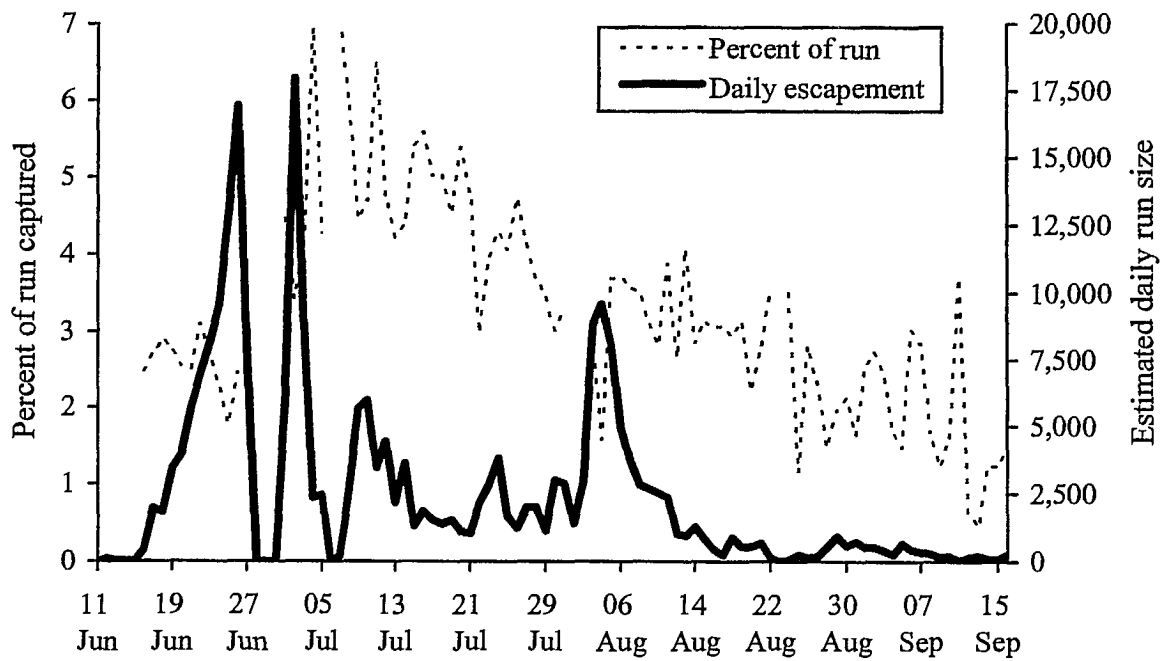


Figure 16. Percent of the sockeye salmon run captured by fishwheels 1 and 2 versus estimated daily run size, 2000.

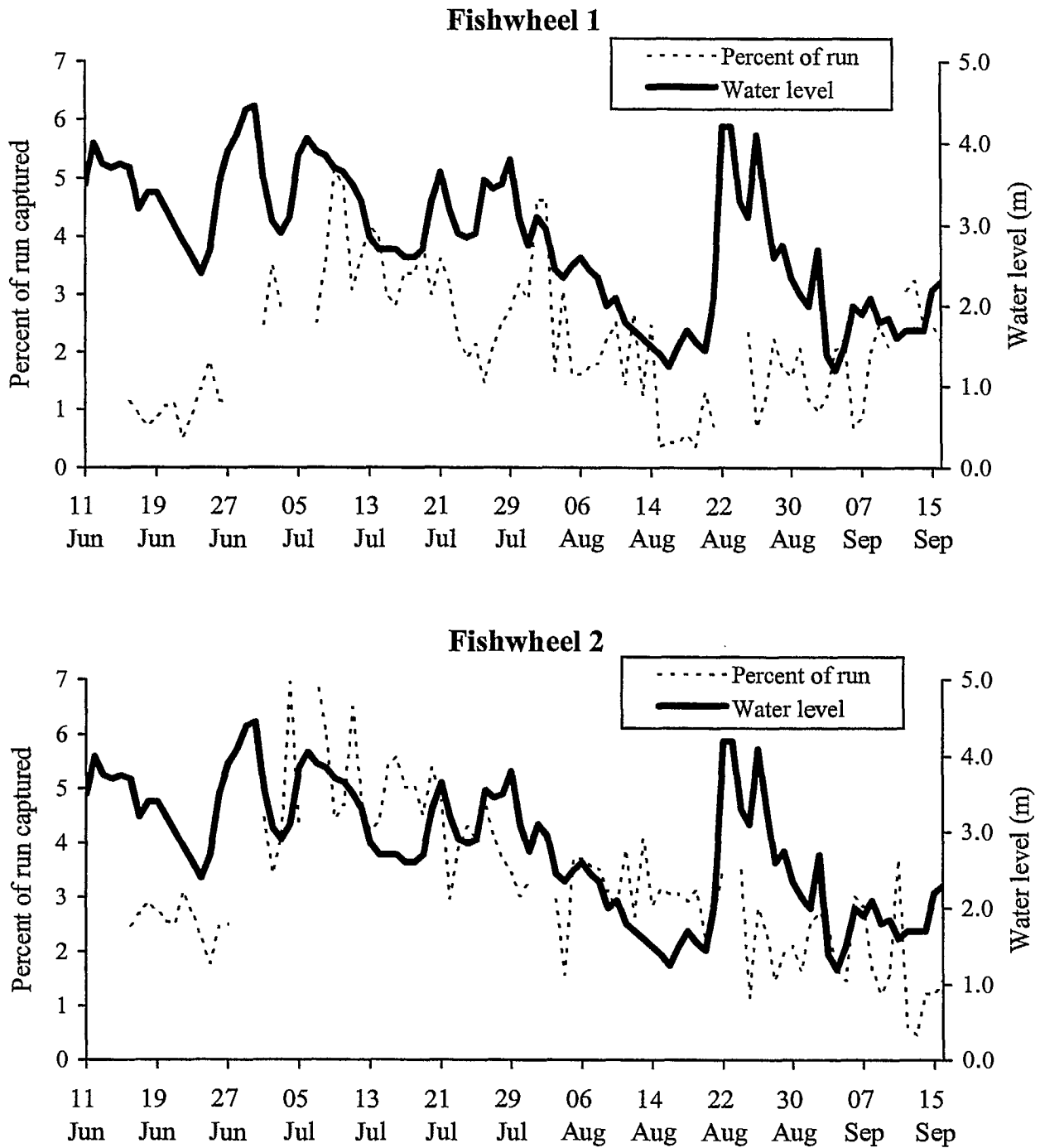


Figure 17. Percent of the sockeye salmon run captured by fishwheels 1 and 2 versus level of the Nass River at Gitwinksihlkw, 2000.

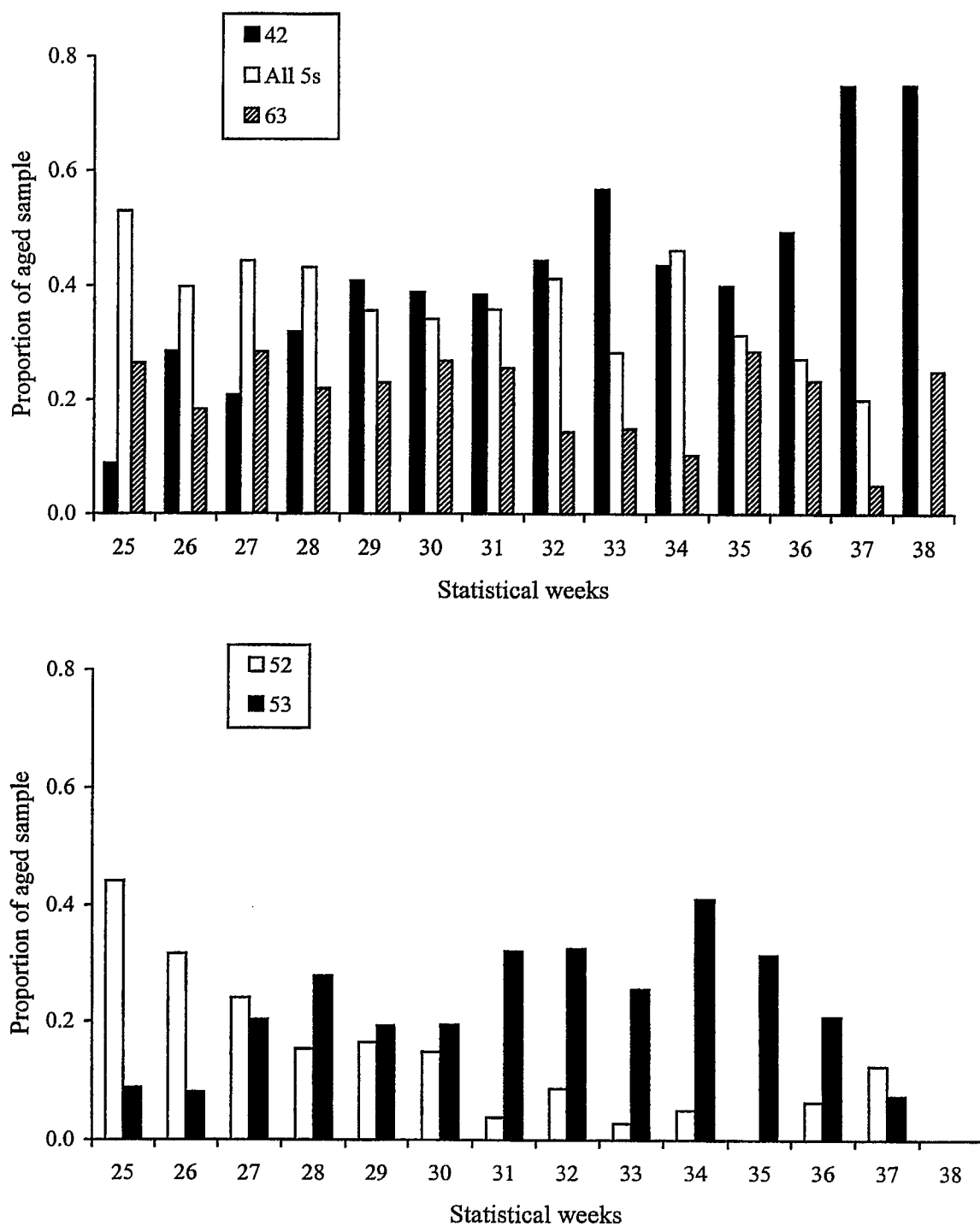


Figure 18. Weekly age composition of successfully aged sockeye salmon sampled from the Nass River fishwheel catch, 2000 (most common ages only, top: the aged-five fish were pooled for clarity).

APPENDIX A

Water temperature/level data and fishwheel effort, 2000

Table A-1. Water level and temperature collected in the Nass River near Gitwinksihlkw, 11 June to 29 September 2000.

Date	Depth (m)	Temp. (°C)	Date	Depth (m)	Temp. (°C)	Date	Depth (m)	Temp. (°C)
11-Jun	3.5	8.0	22-Jul	3.2	12.0	01-Sep	2.0	10.0
12-Jun	4.0		23-Jul	2.9	11.0	02-Sep	2.7	10.0
13-Jun	3.8		24-Jul	2.9	12.0	03-Sep	1.4	10.0
14-Jun	3.7	8.0	25-Jul	2.9	11.0	04-Sep	1.2	10.0
15-Jun	3.8	8.0	26-Jul	3.6	10.0	05-Sep	1.5	10.0
16-Jun	3.7	9.0	27-Jul	3.5	10.0	06-Sep	2.0	10.0
17-Jun	3.2	9.0	28-Jul	3.5	9.0	07-Sep	1.9	9.0
18-Jun	3.4	9.0	29-Jul	3.8	11.0	08-Sep	2.1	9.0
19-Jun	3.4	9.0	30-Jul	3.1	11.0	09-Sep	1.8	9.0
20-Jun	3.2	9.0	31-Jul	2.8	10.0	10-Sep	1.9	9.0
21-Jun	3.0	9.0	01-Aug	3.1	11.0	11-Sep	1.6	9.0
22-Jun	2.8	9.0	02-Aug	3.0	11.0	12-Sep	1.7	9.0
23-Jun	2.6	9.0	03-Aug	2.5	12.0	13-Sep	1.7	9.0
24-Jun	2.4	11.0	04-Aug	2.4	12.0	14-Sep	1.7	9.0
25-Jun	2.7	11.0	05-Aug	2.5	13.0	15-Sep	2.2	9.0
26-Jun	3.5	11.0	06-Aug	2.6	12.0	16-Sep	2.3	9.0
27-Jun	3.9	12.0	07-Aug	2.5	12.0	17-Sep	4.5	
28-Jun	4.1		08-Aug	2.4	12.0	18-Sep	5.4	
29-Jun	4.4		09-Aug	2.0	12.0	19-Sep	4.5	
30-Jun	4.5		10-Aug	2.1	12.0	20-Sep	3.4	
01-Jul	3.6	10.0	11-Aug	1.8	10.5	21-Sep	2.6	
02-Jul	3.1	9.0	12-Aug	1.7	11.0	22-Sep	2.4	
03-Jul	2.9	10.0	13-Aug	1.6	11.0	23-Sep	2.3	
04-Jul	3.1	10.0	14-Aug	1.5	12.0	24-Sep	1.9	
05-Jul	3.9	11.0	15-Aug	1.4	11.0	25-Sep	1.7	
06-Jul	4.1	9.0	16-Aug	1.3	11.0	26-Sep	1.7	
07-Jul	3.9	10.0	17-Aug	1.5	10.0	27-Sep	1.6	
08-Jul	3.9	10.0	18-Aug	1.7	11.5	28-Sep		
09-Jul	3.7	11.0	19-Aug	1.6	11.0	29-Sep		
10-Jul	3.7	11.0	20-Aug	1.5	10.0			
11-Jul	3.5	11.0	21-Aug	2.1	10.0			
12-Jul	3.3	11.0	22-Aug	4.2	10.0			
13-Jul	2.9	10.0	23-Aug	4.2	10.0			
14-Jul	2.7	10.0	24-Aug	3.3	10.0			
15-Jul	2.7	11.0	25-Aug	3.1	10.0			
16-Jul	2.7	10.0	26-Aug	4.1	9.5			
17-Jul	2.6	11.0	27-Aug	3.3	10.0			
18-Jul	2.6	10.0	28-Aug	2.6	10.0			
19-Jul	2.7	11.0	29-Aug	2.8	10.0			
20-Jul	3.3	11.0	30-Aug	2.4	11.0			
21-Jul	3.7	12.0	31-Aug	2.2	10.0			

Mean:	2.8	10.3
Median:	2.8	10.0
Max:	5.4	13.0
Min:	1.2	8.0

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculated CPE (hours) and fishwheel speed (RPM) for six fishwheels operated on the Nass River, 2000.

Date	Fishwheel 1			Fishwheel 2			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6		
	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM
11-Jun	6.3		2.5	5.5		2.0												
12-Jun	9.3	15.6	2.7	10.2	15.6	1.9												
13-Jun																		
14-Jun																		
15-Jun																		
16-Jun	13.5	7.5	2.3	14.1	7.0	1.9												
17-Jun	24.0	23.8	2.1	24.0	24.1	1.8												
18-Jun	23.0	22.3	2.4	23.0	23.6	2.0												
19-Jun	24.0	24.7	2.2	24.0	24.6	2.0	8.3											
20-Jun	24.0	24.9	2.0	24.0	23.7	2.0	24.0	26.4	3.1									
21-Jun	24.0	23.1	2.0	24.0	24.3	1.9	24.0	23.6	2.7									
22-Jun	24.0	24.4	2.0	24.0	24.7	1.9	24.0	24.5	2.8									
23-Jun	24.0	24.3	2.0	24.0	24.1	1.7	24.0	24.4	2.8	9.1		3.0						
24-Jun	24.0	22.9	1.9	24.0	23.6	1.4	24.0	24.6	2.4	24.0	27.6	3.0						
25-Jun	24.0	25.7	2.2	24.0	23.5	1.8	24.0	24.2	2.9	24.0	24.5	3.2						
26-Jun	24.0	25.7	2.3	24.0	26.5	2.0	24.0	23.3	3.1	24.0	23.1	2.3						
27-Jun	17.6	20.9	2.4	16.9	20.4	2.2	9.9	15.2	3.5	14.0	19.9	2.2						
28-Jun																		
29-Jun																		
30-Jun																		
01-Jul	8.9	8.9	2.2	7.6	7.6	1.9	6.0	6.0	2.9									
02-Jul	12.8	12.8	2.0	13.2	13.2	1.9	11.7	11.8	2.7									
03-Jul	3.3	3.3	2.0	10.8	10.8	1.9	9.3	9.3	2.4	7.3	9.7	3.1						
04-Jul				9.6	9.6	2.1	3.0	3.0		3.7	3.7	2.3	1.8	1.8	3.1			
05-Jul	8.6	8.6	2.6	9.0	9.0	2.3	15.8	6.5	3.0	15.6	7.1	2.2	13.0	5.3	3.0			
06-Jul							24.0	26.0	3.1	24.0	25.6	1.7	24.0	25.2	2.9			
07-Jul	8.2	3.0	2.6	8.4	2.9	2.1	24.0	24.6	3.2	24.0	23.7	2.1	24.0	24.7	3.0			
08-Jul	24.0	23.7	2.7	24.0	24.4	2.2	24.0	26.8	3.0	24.0	26.9	2.3	24.0	26.3	2.8			
09-Jul	24.0	25.0	2.6	24.0	24.2	2.1	24.0	23.4	3.2	24.0	26.4	2.1	24.0	23.9	2.6	1.5		
10-Jul	24.0	23.7	2.6	24.0	24.4	2.1	24.0	24.5	3.0	24.0	22.9	1.8	24.0	23.9	2.4	24.0	21.9	2.4

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculated CPE (hours) and fishwheel speed (RPM) for six fishwheels operated on the Nass River, 2000.

Date	Fishwheel 1			Fishwheel 2			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6		
	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM
11-Jul	24.0	23.2	2.4	24.0	22.6	1.8	24.0	24.4	3.0	24.0	23.0	2.1	24.0	23.8	2.4	24.0	20.8	2.7
12-Jul	24.0	24.4	2.4	24.0	24.3	2.0	23.8	25.3	3.0	24.0	25.2	2.0	24.0	26.0	2.8	24.0	28.4	2.5
13-Jul	24.0	23.5	2.1	24.0	24.4	2.0	24.0	23.4	3.0	24.0	23.5	2.6	24.0	23.5	3.0	24.0	23.4	2.0
14-Jul	24.0	24.0	2.3	24.0	23.1	1.9	23.9	23.9	2.2	24.0	23.6	2.3	24.0	23.2	3.1	24.0	24.0	2.7
15-Jul	24.0	22.3	2.2	24.0	22.4	1.9	24.0	23.3	2.5	24.0	22.9	2.3	24.0	22.7	3.7	24.0	22.7	2.2
16-Jul	24.0	25.6	2.3	24.0	25.6	1.9	22.7	22.6	2.3	17.0	17.4	2.6	24.0	24.5	3.6	24.0	24.5	1.7
17-Jul	24.0	23.4	2.2	24.0	23.4	1.8	24.0	23.4	2.7	24.0	23.5	3.3	24.0	23.4	3.7	24.0	23.3	1.7
18-Jul	24.0	24.1	2.2	24.0	25.0	1.9	24.0	23.1	2.5	24.0	21.8	3.2	24.0	22.3	3.8	24.0	22.9	1.6
19-Jul	24.0	23.5	2.2	24.0	23.8	2.1	24.0	24.3	2.8	24.0	25.2	3.0	24.0	24.8	3.3	24.0	24.4	1.9
20-Jul	24.0	24.6	2.3	24.0	24.1	2.0	24.0	24.0	2.9	24.0	24.1	2.8	15.2	15.2	3.3	24.0	23.9	2.5
21-Jul	24.0	24.2	2.4	24.0	23.6	2.3	24.0	22.7	3.0	24.0	23.0	2.0	16.0	14.6	3.7	24.0	21.7	3.1
22-Jul	24.0	23.5	2.1	24.0	23.3	1.9	24.0	25.0	3.0	24.0	25.5	2.1	24.0	25.6	3.3	24.0	26.2	2.7
23-Jul	23.5	23.7	2.2	24.0	23.9	1.9	24.0	22.9	2.9	24.0	22.0	2.2	24.0	22.5	3.2	24.0	22.8	2.0
24-Jul	24.0	24.5	2.1	24.0	24.8	2.0	24.0	24.0	2.7	24.0	23.8	2.3	24.0	23.8	3.0	24.0	23.8	2.1
25-Jul	24.0	24.1	2.3	22.8	23.0	2.4	24.0	25.9	2.7	24.0	26.0	2.2	24.0	26.0	2.7	24.0	26.0	2.4
26-Jul	24.0	23.5	2.2	23.0	23.1	2.7	24.0	21.8	3.3	24.0	22.4	2.4	24.0	22.2	3.8	24.0	22.0	3.3
27-Jul	24.0	24.5	2.3	24.0	23.8	2.2	24.0	23.6	3.3	24.0	23.4	2.1	24.0	23.5	3.4	24.0	23.5	3.2
28-Jul	24.0	23.8	2.4	24.0	24.0	1.9	24.0	24.2	2.8	24.0	23.5	2.1	23.0	23.2	3.2	24.0	24.3	2.9
29-Jul	24.0	22.4	2.6	24.0	22.2	1.8	22.8	21.7	3.0	24.0	23.3	2.5	24.0	22.6	3.1	24.0	22.5	3.0
30-Jul	24.0	27.5	1.9	24.0	25.5	1.8	24.0	24.9	2.9	24.0	25.2	1.9	24.0	25.2	3.3	24.0	25.2	2.7
31-Jul	24.0	21.7	2.3	13.5	20.2	1.6	24.0	23.9	2.9	8.0	7.7	2.5	24.0	24.6	3.0	24.0	24.8	2.0
01-Aug	24.0	24.9	2.0				24.0	25.8	2.9	24.0	25.2	3.0	24.0	24.4	3.0	24.0	24.6	2.4
02-Aug	24.0	26.6	1.9	5.5			24.0	24.1	3.0	24.0	24.1	3.3	24.0	24.3	3.0	24.0	24.1	2.1
03-Aug	24.0	21.1	1.8	24.0	28.8	2.5	24.0	24.2	2.4	23.6	22.8	3.5	18.0	17.3	2.6	24.0	23.9	1.3
04-Aug	24.0	26.3	1.8	24.0	24.7	2.5	24.0	23.7	2.5	24.0	23.8	3.3	24.0	23.8	2.6	24.0	24.0	1.3
05-Aug	24.0	23.9	1.5	24.0	23.8	2.5	24.0	26.0	2.5	24.0	26.8	3.3	24.0	27.0	2.8	24.0	26.2	1.8
06-Aug	24.0	22.9	1.9	24.0	22.1	2.4	24.0	21.8	2.4	24.0	21.3	3.3	23.5	20.8	2.9	24.0	21.5	1.6
07-Aug	23.5	23.3	3.0	24.0	23.6	2.3	24.0	23.6	2.5	24.0	23.7	2.8	24.0	23.5	2.3	24.0	23.5	1.6
08-Aug	24.0	22.6	2.6	24.0	25.5	2.3	24.0	24.2	2.7	24.0	24.3	2.7	24.0	24.4	2.2	24.0	24.2	1.4
09-Aug	24.0	24.3	2.1	24.0	22.8	2.3	24.0	22.9	2.4	24.0	23.3	2.9	24.0	23.1	2.1	24.0	23.1	1.4

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculated CPE (hours) and fishwheel speed (RPM) for six fishwheels operated on the Nass River, 2000.

Date	Fishwheel 1			Fishwheel 2			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6		
	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM
10-Aug	24.0	24.1	2.2	24.0	23.2	2.1	24.0	24.3	1.9	24.0	24.5	2.0	24.0	24.1	2.0	24.0	24.1	1.5
11-Aug	24.0	23.9	1.8	24.0	23.6	1.9	24.0	23.8	2.1	24.0	23.1	2.9	24.0	23.3	2.1	24.0	23.2	1.5
12-Aug	24.0	24.9	1.5	16.0	20.9	1.9	23.6	25.7	1.8	24.0	26.7	3.1	24.0	26.9	1.7	24.0	26.9	1.2
13-Aug	22.3	21.1	1.8	22.5	22.7	1.9	24.0	24.7	1.8	24.0	24.7	3.0	24.0	24.9	1.7	21.9	21.2	2.1
14-Aug	24.0	24.8	1.9	24.0	23.7	1.9	14.0	11.8	1.9	24.0	21.0	2.6	24.0	21.0	1.9	24.0	23.2	2.9
15-Aug	24.0	23.2	1.9	24.0	24.5	1.9	24.0	23.6	1.8	24.0	24.0	2.9	24.0	23.7	1.4	24.0	23.5	2.7
16-Aug	24.0	24.8	0.9	24.0	24.5	1.8	24.0	24.5	1.9	24.0	24.9	2.7	24.0	24.8	1.5	24.0	24.6	2.6
17-Aug	24.0	24.2	1.4	20.5	19.9	2.1	24.0	24.0	2.3	24.0	24.0	3.2	23.4	23.4	1.7	24.0	24.0	3.2
18-Aug	24.0	22.5	2.2	24.0	22.3	2.0	23.8	22.5	1.9	24.0	22.8	3.2	24.0	22.7	2.6	24.0	22.7	3.2
19-Aug	24.0	24.9	2.0	24.0	25.0	1.7	24.0	25.2	2.1	23.2	24.0	3.0	24.0	25.0	1.9	24.0	25.2	3.1
20-Aug	24.0	23.2	1.4	24.0	23.3	1.7	24.0	21.3	1.9	24.0	21.7	3.2	24.0	21.6	1.9	24.0	21.4	2.6
21-Aug	22.3	23.4	2.4	24.0	26.0	2.2	24.0	26.5	2.4	24.0	26.6	3.1	24.0	26.4	2.8	16.7	26.3	3.6
22-Aug	16.8	22.7	2.9	15.3	13.2	2.7	11.0	17.9	3.3	14.9	20.4	3.0	10.1	17.7	3.8			
23-Aug																		
24-Aug	12.5	6.4	2.2	11.8	5.1	1.4	14.2	8.2	2.8	11.2	4.4	2.9			4.0	13.1	6.3	2.5
25-Aug	23.5	23.1	2.2	24.0	23.6	1.4	24.0	23.8	3.0	23.8	21.3	3.1	7.5	0.2	3.7	24.0	23.6	2.2
26-Aug	9.9	16.4	3.0	9.5	16.6	1.5	10.6	16.8	3.6	9.7	17.9		10.0	17.4	4.3	24.0	24.2	3.0
27-Aug	13.9	8.4	2.4	14.5	8.7	1.4	14.7	8.4	3.0	14.4	8.2	3.1	14.2	7.3	3.5	24.0	24.2	2.6
28-Aug	24.0	23.8	2.0	22.6	22.3	2.3	24.0	23.4	2.7	24.0	22.9	2.9	18.0	17.1	2.9	24.0	23.4	1.8
29-Aug	24.0	25.1	2.3	24.0	25.1	2.5	24.0	27.0	3.0	24.0	26.4	3.0	24.0	26.4	2.9	24.0	24.9	1.7
30-Aug	24.0	22.4	2.4	24.0	22.8	2.3	24.0	22.4	2.6	24.0	21.4	3.0	24.0	21.8	2.6	24.0	24.0	1.5
31-Aug	24.0	24.2	1.8	24.0	24.2	2.3	24.0	24.2	2.3	24.0	25.4	2.8	24.0	24.9	2.6	24.0	22.4	0.6
01-Sep	24.0	23.9	1.8	24.0	23.7	2.3	24.0	23.0	2.1	24.0	23.5	2.8	24.0	23.6	3.0	24.0	25.2	1.1
02-Sep	24.0	24.7	1.4	24.0	24.3	2.0	24.0	24.2	2.0	24.0	24.3	2.6	23.3	23.3	2.1	24.0	24.1	1.0
03-Sep	24.0	22.4	1.9	24.0	24.5	2.2	24.0	24.0	2.4	24.0	23.0	2.7	18.0	17.9	2.0	18.0	18.0	0.8
04-Sep	24.0	25.1	2.0	18.0	17.8	2.0	24.0	23.1	1.9	24.0	23.7	3.0	24.0	23.0	2.1	18.0	17.1	1.4
05-Sep	24.0	24.2	1.9	24.0	24.2	2.2	24.0	24.5	2.1	24.0	24.7	2.9	24.0	24.7	2.5	24.0	24.6	1.8
06-Sep	24.0	23.6	2.0	24.0	23.8	2.0	24.0	24.4	2.4	24.0	24.6	2.9	24.0	24.5	2.7	24.0	24.4	1.9
07-Sep	24.0	23.5	2.2	24.0	23.5	2.4	24.0	23.8	2.4	24.0	23.9	3.0	24.0	23.8	2.7	24.0	23.7	1.7
08-Sep	24.0	24.8	2.0	24.0	24.7	2.0	24.0	24.4	2.5	24.0	24.4	2.9	24.0	24.4	2.9	24.0	24.4	2.3

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculated CPE (hours) and fishwheel speed (RPM) for six fishwheels operated on the Nass River, 2000.

Date	Fishwheel 1			Fishwheel 2			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6		
	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM	Effort	CPE	RPM
09-Sep	24.0	24.2	2.0	24.0	24.1	2.0	24.0	23.6	2.7	24.0	23.5	2.8	24.0	23.7	2.6	12.0	11.8	1.7
10-Sep	24.0	22.9	1.9	24.0	23.1	2.0	24.0	24.7	2.1	24.0	24.7	2.7	24.0	24.7	2.6	24.0	24.7	1.7
11-Sep	18.0	19.1	1.5	24.0	24.9	2.0	24.0	23.9	1.9	24.0	23.7	3.0	24.0	23.6	2.2	24.0	23.7	1.7
12-Sep	24.0	23.8	1.9	24.0	23.8	1.9	24.0	24.5	1.9	24.0	24.2	3.0	24.0	24.1	2.6	24.0	24.6	2.0
13-Sep	24.0	24.4	1.9	24.0	24.0	2.1	24.0	22.8	1.9	24.0	23.5	3.0	24.0	23.3	2.3	24.0	22.8	1.9
14-Sep	24.0	22.5	1.5	24.0	23.1	1.7	24.0	24.8	2.1	24.0	24.2	3.0	24.0	24.4	2.4	24.0	24.6	2.0
15-Sep	23.8	24.2	2.5	24.0	24.3	2.6	24.0	23.8	2.5	16.7	24.2	3.1	24.0	24.2	3.1	18.0	17.9	2.6
16-Sep	24.0	24.5	2.1	24.0	24.7	2.5	24.0	23.7	2.7	7.7		3.0	24.0	23.7	3.2	24.0	23.7	2.4
17-Sep	10.0	16.4		24.0	16.4		10.1	16.6	3.3	9.2	16.9	3.5		7.3		9.5	16.6	3.5
18-Sep				10.0	23.3													
19-Sep																		
20-Sep																9.7	0.7	2.5
21-Sep							14.9	7.5	2.8	12.4	5.5	2.9				24.0	25.8	1.9
22-Sep							6.0	13.4		24.0	23.8	2.7				24.0	24.5	1.6
23-Sep										24.0	22.5	2.4				24.0	22.7	1.5
24-Sep										24.0	26.2	2.4				24.0	26.0	1.7
25-Sep										24.0	24.1	2.3				24.0	23.9	1.2
26-Sep										24.0	23.4	2.3				24.0	23.4	1.5
27-Sep										24.0	23.9	2.4				24.0	24.0	1.3
28-Sep										24.0	24.3	2.3				24.0	24.1	1.0
29-Sep										9.8	16.7	2.3				10.3	17.0	1.1
Totals	1963.3	1963.3		1937.6	1937.6		1932.2	1932.2		1955.2	1955.2		1627.0	1627.0		1780.6	1780.6	
Total hours of effort all fishwheels combined:				11195.9														
Total number of days operated, all fishwheels:				512														
Overall percent operational while fishing:				91.1%														
Total number of days operated by fishwheel:																		
90				91			89			90			73			79		
Percent operational:																		
91%				89%			90%			91%			93%			94%		

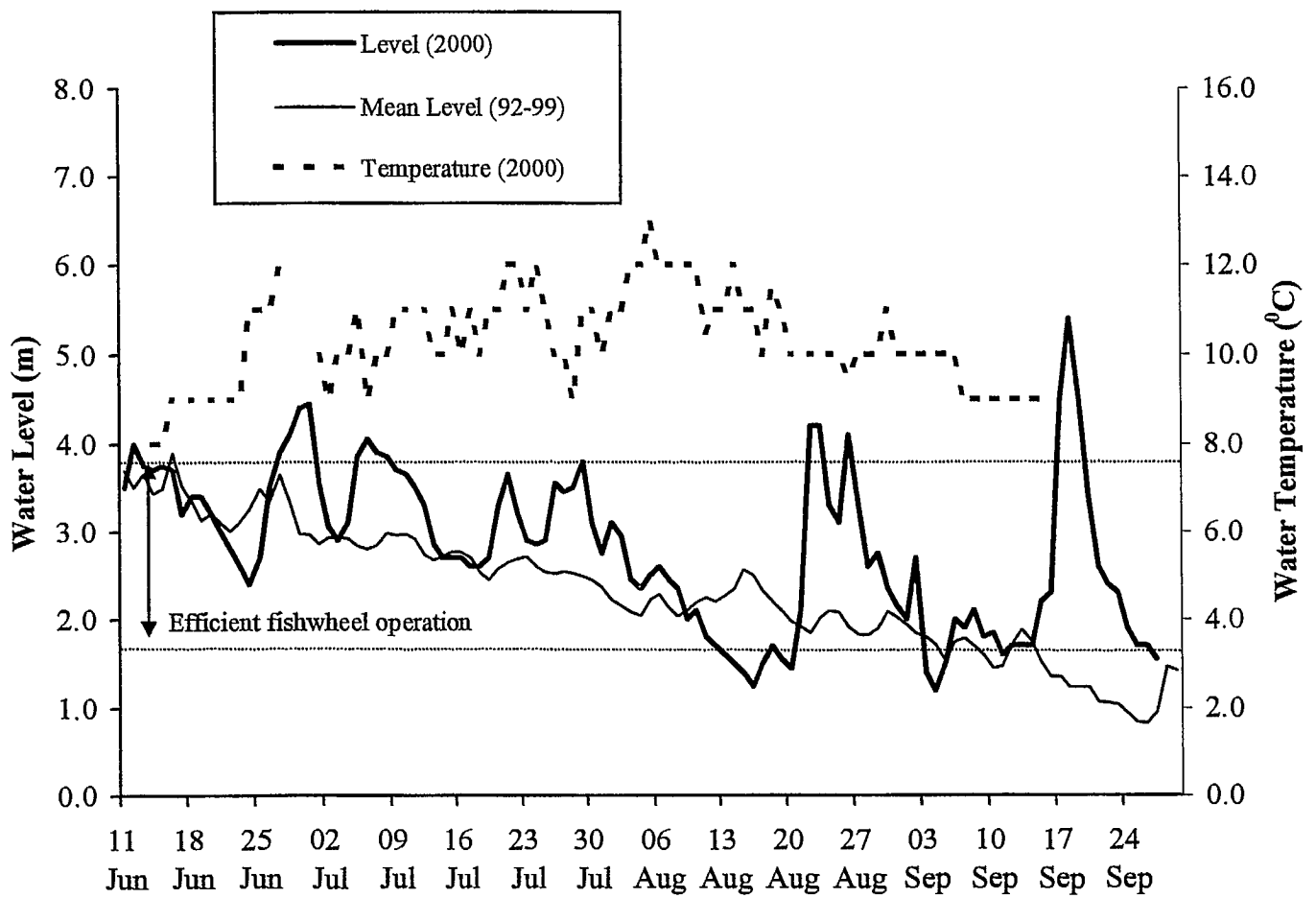


Figure A-1. Daily maximum water temperature and level in the Nass River near Gitwinksihlkw, 2000. The mean water level from 1992 to 1999 is shown for comparison.

APPENDIX B

Daily catches at the Nass River fishwheels, 2000

Table B-1. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for chinook salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3						Fishwheel 4						Fishwheel 5					Fishwheel 6				
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE
11-Jun	0	0	0	0	0		0	0	0	0	0																							
12-Jun	0	0	0	0	0	0.00	3	3	3	0	0	0.19																						
13-Jun																																		
14-Jun																																		
15-Jun																																		
16-Jun	4	4	3	0	0	0.53	8	11	8	0	0	1.15																						
17-Jun	11	15	11	0	0	0.46	53	64	47	0	0	2.20																						
18-Jun	1	16	1	0	0	0.04	51	115	50	0	0	2.16																						
19-Jun	6	22	4	0	0	0.24	50	165	44	0	0	2.03	0	0	0	0	0																	
20-Jun	14	36	13	0	0	0.56	71	236	70	0	0	3.00	5	5	4	0	0	0.19																
21-Jun	20	56	20	0	0	0.87	97	333	89	0	0	4.00	8	13	8	1	1	0.34																
22-Jun	24	80	20	0	0	0.98	96	429	92	0	0	3.89	25	38	23	0	1	1.02																
23-Jun	54	134	52	0	0	2.23	129	558	125	3	3	5.35	55	93	52	1	2	2.26	0	0	0	0	0											
24-Jun	67	201	63	0	0	2.93	119	677	109	0	3	5.04	127	220	118	0	2	5.16	32	32	30	1	1	1.16										
25-Jun	115	316	78	0	0	4.48	90	767	81	0	3	3.82	102	322	87	0	2	4.21	35	67	33	1	2	1.43										
26-Jun	28	344	23	1	1	1.09	73	840	67	1	4	2.76	18	340	18	0	2	0.77	18	85	18	1	3	0.78										
27-Jun	11	355	10	1	2	0.53	10	850	8	0	4	0.49	0	340	0	0	2	0.00	1	86	0	0	3	0.05										
28-Jun																																		
29-Jun																																		
30-Jun																																		
01-Jul	8	363	7	0	2	0.90	7	857	6	0	4	0.92	0	340	0	0	2	0.00																
02-Jul	17	380	1	3	5	1.33	40	897	3	2	6	3.04	14	354	0	1	3	1.19																
03-Jul	23	403	4	0	5	6.90	68	965	44	1	7	6.31	54	408	0	1	4	5.79	43	129	0	1	4	4.45										
04-Jul							48	1013	47	3	10	5.02	1	409	0	0	4	0.33	0	129	0	0	4	0.00	0	0	0	0	0.00					
05-Jul	11	414	11	0	5	1.29	4	1017	3	0	10	0.44	4	413	0	0	4	0.62	2	131	0	0	4	0.28	2	2	0	0	0.38					
06-Jul													1	414	0	0	4	0.04	2	133	0	0	4	0.08	16	18	0	0	0.64					
07-Jul	1	415	1	0	5	0.33	0	1017	0	0	10	0.00	0	414	0	0	4	0.00	4	137	0	0	4	0.17	5	23	1	1	0.20					
08-Jul	7	422	6	1	6	0.30	5	1022	4	1	11	0.21	1	415	0	0	4	0.04	6	143	0	0	4	0.22	6	29	1	2	0.23					
09-Jul	19	441	9	1	7	0.76	15	1037	10	1	12	0.62	14	429	0	0	4	0.60	18	161	0	0	4	0.68	21	50	1	3	0.88	0	0	0	0	
10-Jul	26	467	9	0	7	1.10	20	1057	16	1	13	0.82	7	436	0	0	4	0.29	32	193	0	0	4	1.40	27	77	1	4	1.13	42	42	2	2	1.92
11-Jul	19	486	4	2	9	0.82	20	1077	12	0	13	0.88	5	441	0	0	4	0.21	11	204	0	0	4	0.48	8	85	1	5	0.34	20	62	1	3	0.96
12-Jul	75	561	32	6	15	3.07	49	1126	47	5	18	2.02	31	472	0	0	4	1.22	59	263	0	2	6	2.34	22	107	0	5	0.85	56	118	5	8	1.97
13-Jul	22	583	22	4	19	0.93	33	1159	28	7	25	1.35	21	493	0	1	5	0.90	92	355	0	5	11	3.92	6	113	2	7	0.26	56	174	5	13	2.39
14-Jul	22	605	6	2	21	0.92	33	1192	17	9	34	1.43	59	552	0	3	8	2.47	252	607	0	10	21	10.66	24	137	1	8	1.03	142	316	5	18	5.91
15-Jul	7	612	0	0	21	0.31	15	1207	15	6	40	0.67	37	589	0	3	11	1.59	74	681	0	7	28	3.23	53	190	2	10	2.33	86	402	11	29	3.80
16-Jul	2	614	1	1	22	0.08	16	1223	14	7	47	0.63	28	617	0	1	12	1.24	16	697	0	5	33	0.92	72	262	8	18	2.94	80	482	10	39	3.27
17-Jul	7	621	4	1	23	0.30	11	1234	8	2	49	0.47	33	650	0	2	14	1.41	22	719	0	1	34	0.93	71	333	5	23	3.03	81	563	1	40	3.48
18-Jul	3	624	2	1	24	0.12	1	1235	1	4	53	0.04	27	677	0	1	15	1.17	23	742	0	0	34	1.05	51	384	1	24	2.29	80	643	6	46	3.50
19-Jul	1	625	0	0	24	0.04	5	1240	4	0	53	0.21	16	693	0	2	17	0.66	12	754	0	0	34	0.48	49	433	0	24	1.98	37	680	8	54	1.52
20-Jul	6	631	5	0	24	0.24	1	1241	1	0	53	0.04	4	697	0	1	18	0.17	3	757	0	0	34	0.12	2	435	1	25	0.13	6	686	1	55	0.25
21-Jul	0	631	0	0	24	0.00	1	1242	1	0	53	0.04	0	697	0	0	18	0.00	0	757	0	0	34	0.00	1	436	0	25	0.07	0	686	1	56	0.00
22-Jul	0	631	0	0	24	0.00	0	1242	0	0	53	0.00	1	698	0	2	20	0.04	0	757	0	0	34	0.00	7	443	2	27	0.27	1	687	1	57	0.04
23-Jul	3	634	1	0	24	0.13	4	1246	2	0	53	0.17	6	704	0	0	20	0.26	3	760	0	1	35	0.14	10	453	0	27	0.45	5	692	1	58	0.22
24-Jul	5	639	5	0	24	0.20	3	1249	3	0	53	0.12	3	707	0	2	22	0.13	12	772	0	3	38	0.50	12	465	6	33	0.50	18	710	6	64	0.76
25-Jul	3	642	2	1	25	0.12	1	1250	1	1	54	0.04	4	711	0	0	22	0.15	9	781	0	2	40	0.35	9	474	2	35	0.35	8	718	1	65	0.31
26-Jul	1	643	1	0	25	0.04	3	1253	2	0	54	0.13	1	712	0	0	22	0.05	1	782	0	0	40	0.04	0	474	0	35	0.00	5	723	2	67	0.23
27-Jul	0	643																																

Table B-1. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for chinook salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3						Fishwheel 4						Fishwheel 5					Fishwheel 6				
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE
11-Aug	1	670	0	0	29	0.04	6	1307	0	0	59	0.25	0	755	0	0	24	0.00	3	837	0	0	42	0.13	3	552	1	55	0.13	0	807	0	90	0.00
12-Aug	0	670	0	0	29	0.00	2	1309	0	0	59	0.10	1	756	0	0	24	0.04	2	839	0	0	42	0.07	4	556	0	55	0.15	3	810	0	90	0.11
13-Aug	1	671	0	0	29	0.05	3	1312	0	0	59	0.13	1	757	0	0	24	0.04	3	842	0	0	42	0.12	2	558	0	55	0.08	1	811	0	90	0.05
14-Aug	1	672	0	0	29	0.04	4	1316	0	0	59	0.17	0	757	0	0	24	0.00	1	843	0	0	42	0.05	3	561	0	55	0.14	2	813	0	90	0.09
15-Aug	0	672	0	0	29	0.00	3	1319	0	0	59	0.12	0	757	0	0	24	0.00	0	843	0	0	42	0.00	3	564	0	55	0.13	1	814	0	90	0.04
16-Aug	1	673	0	0	29	0.04	2	1321	0	0	59	0.08	1	758	0	0	24	0.04	0	843	0	0	42	0.00	4	568	0	55	0.16	1	815	0	90	0.04
17-Aug	1	674	0	0	29	0.04	2	1323	0	0	59	0.10	0	758	0	0	24	0.00	1	844	0	0	42	0.04	0	568	0	55	0.00	0	815	0	90	0.00
18-Aug	0	674	0	0	29	0.00	0	1323	0	0	59	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	815	0	90	0.00
19-Aug	0	674	0	0	29	0.00	2	1325	0	1	60	0.08	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	815	0	90	0.00
20-Aug	1	675	0	0	29	0.04	0	1325	0	0	60	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	815	0	90	0.00
21-Aug	0	675	0	0	29	0.00	0	1325	0	0	60	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	815	0	90	0.00
22-Aug	0	675	0	0	29	0.00	1	1326	0	0	60	0.08	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	815	0	90	0.00
23-Aug																																		
24-Aug	0	675	0	0	29	0.00	0	1326	0	0	60	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00						0	815	0	90	0.00
25-Aug	0	675	0	0	29	0.00	0	1326	0	0	60	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	1	816	0	90	0.04
26-Aug	0	675	0	0	29	0.00	0	1326	0	0	60	0.00	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	0	816	0	90	0.00
27-Aug	0	675	0	0	29	0.00	1	1327	0	0	60	0.11	0	758	0	0	24	0.00	0	844	0	0	42	0.00	0	568	0	55	0.00	1	817	0	90	0.04
28-Aug	0	675	0	0	29	0.00	1	1328	0	0	60	0.04	1	759	0	0	24	0.04	0	844	0	0	42	0.00	0	568	0	55	0.00	0	817	0	90	0.00
29-Aug	0	675	0	0	29	0.00	1	1329	0	0	60	0.04	0	759	0	0	24	0.00	0	844	0	0	42	0.00	1	569	0	55	0.04	0	817	0	90	0.00
30-Aug	0	675	0	0	29	0.00	1	1330	0	0	60	0.04	0	759	0	0	24	0.00	0	844	0	0	42	0.00	1	570	0	55	0.05	0	817	0	90	0.00
31-Aug	0	675	0	0	29	0.00	1	1331	0	0	60	0.04	0	759	0	0	24	0.00	0	844	0	0	42	0.00	1	571	0	55	0.04	1	818	0	90	0.04
01-Sep	0	675	0	0	29	0.00	0	1331	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
02-Sep	0	675	0	0	29	0.00	0	1331	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
03-Sep	0	675	0	0	29	0.00	1	1332	0	0	60	0.04	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
04-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
05-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
06-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
07-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	571	0	55	0.00	0	818	0	90	0.00
08-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	1	572	0	55	0.04	0	818	0	90	0.00
09-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	818	0	90	0.00
10-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	818	0	90	0.00
11-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	1	819	0	90	0.04
12-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	819	0	90	0.00
13-Sep	0	675	0	0	29	0.00	0	1332	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	819	0	90	0.00
14-Sep	0	675	0	0	29	0.00	1	1333	0	0	60	0.04	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	819	0	90	0.00
15-Sep	0	675	0	0	29	0.00	0	1333	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	819	0	90	0.00
16-Sep	0	675	0	0	29	0.00	1	1334	0	0	60	0.04	0	759	0	0	24	0.00							0	572	0	55	0.00	0	819	0	90	0.00
17-Sep	0	675	0	0	29	0.00	0	1334	0	0	60	0.00	0	759	0	0	24	0.00	0	844	0	0	42	0.00	0	572	0	55	0.00	0	819	0	90	0.00
18-Sep							0	1334	0	0	60	0.00																						
19-Sep																																		
20-Sep																																		
21-Sep													0	759	0	0	24	0.00	0	844	0	0	42	0.00						0	819	0	90	0.00
22-Sep													0	759	0	0	24	0.00	0	844	0	0	42	0.00						0	819	0	90	0.00
23-Sep																			0	844	0	0	42	0.00						0	819	0	90	0.00
24-Sep																			0	844	0	0	42	0.00						0	819	0	90	0.00
25-Sep																			0	844	0	0	42	0.00						0	819	0	90	0.00
26-Sep																			0	844	0	0	42	0.00										

Table B-2. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for sockeye salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3					Fishwheel 4					Fishwheel 5					Fishwheel 6				
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE
11-Jun	0	0	0	0	0		0	0	0	0	0																					
12-Jun	0	0	0	0	0	0.00	4	4	4	0	0	0.26																				
13-Jun																																
14-Jun																																
15-Jun																																
16-Jun	5	5	2	0	0	0.66	11	15	7	0	0	1.58																				
17-Jun	18	23	14	0	0	0.76	53	68	25	0	0	2.20																				
18-Jun	13	36	6	0	0	0.58	53	121	39	0	0	2.24																				
19-Jun	30	66	28	0	0	1.22	95	216	72	1	1	3.86	0	0	0	0																
20-Jun	42	108	35	0	0	1.69	102	318	77	1	2	4.30	7	7	0	0	0.27															
21-Jun	63	171	44	0	0	2.73	144	462	114	0	2	5.93	10	17	0	0	0.42															
22-Jun	36	207	34	0	0	1.48	216	678	132	3	5	8.76	19	36	0	0	0.78															
23-Jun	73	280	31	0	0	3.01	223	901	122	1	6	9.25	31	67	0	0	1.27	0	0	0	0											
24-Jun	130	410	69	1	1	5.69	216	1117	104	6	12	9.14	42	109	0	0	1.71	11	11	0	0	0	0.40									
25-Jun	238	648	128	0	1	9.27	232	1349	111	2	14	9.86	99	208	0	0	4.09	26	37	0	0	0	1.06									
26-Jun	197	845	131	0	1	7.66	416	1765	174	7	21	15.71	61	269	0	0	2.61	31	68	0	0	0	1.34									
27-Jun	86	931	57	0	1	4.12	193	1958	92	1	22	9.46	4	273	0	0	0.26	2	70	0	0	0	0.10									
28-Jun																																
29-Jun																																
30-Jun																																
01-Jul	151	1082	141	0	1	16.93	270	2228	242	2	24	35.60	2	275	0	0	0.33															
02-Jul	630	1712	19	1	2	49.41	617	2845	98	9	33	46.86	55	330	0	0	4.67															
03-Jul	253	1965	42	0	2	75.90	373	3218	285	6	39	34.59	689	1019	1	1	73.82	598	668	0	0	61.86										
04-Jul							163	3381	145	6	45	17.04	80	1099	0	1	26.67	104	772	0	0	28.11	0	0	0	0	0.00					
05-Jul	65	2030	61	0	2	7.60	105	3486	88	1	46	11.67	74	1173	0	1	11.44	111	883	0	0	15.67	59	59	0	0	11.24					
06-Jul													103	1276	0	1	3.96	132	1015	0	0	5.15	268	327	0	0	10.65					
07-Jul	5	2035	5	0	2	1.65	14	3500	13	0	46	4.80	39	1315	0	1	1.58	64	1079	0	0	2.70	144	471	0	0	5.84					
08-Jul	92	2127	63	0	2	3.88	155	3655	101	2	48	6.37	302	1617	0	1	11.29	316	1395	0	0	11.74	150	621	0	0	5.70					
09-Jul	290	2417	149	4	6	11.62	251	3906	125	0	48	10.36	263	1880	0	1	11.23	511	1906	0	0	19.34	185	806	1	1	7.74	0	0	0	0	
10-Jul	293	2710	153	1	7	12.38	281	4187	145	5	53	11.50	219	2099	1	2	8.94	545	2451	1	1	23.78	201	1007	0	1	8.40	390	390	0	0	17.79
11-Jul	107	2817	23	1	8	4.62	225	4412	102	1	54	9.95	99	2198	0	2	4.06	289	2740	1	2	12.57	109	1116	0	1	4.57	204	594	2	2	9.82
12-Jul	162	2979	61	4	12	6.64	210	4622	135	7	61	8.65	228	2426	1	3	9.01	435	3175	0	2	17.27	65	1181	5	6	2.50	393	987	1	3	13.84
13-Jul	91	3070	49	2	14	3.87	92	4714	49	5	66	3.77	119	2545	2	5	5.09	209	3384	4	6	8.91	30	1211	1	7	1.28	193	1180	3	6	8.24
14-Jul	145	3215	67	3	17	6.05	159	4873	55	11	77	6.87	106	2651	1	6	4.44	138	3522	8	14	5.84	51	1262	3	10	2.20	167	1347	7	13	6.95
15-Jul	39	3254	3	1	18	1.75	71	4944	59	8	85	3.17	147	2798	5	11	6.32	105	3627	7	21	4.59	155	1417	8	18	6.83	215	1562	14	27	9.49
16-Jul	52	3306	4	4	22	2.03	103	5047	73	5	90	4.03	108	2906	4	15	4.78	35	3662	2	23	2.01	128	1545	6	24	5.24	180	1742	14	41	7.36
17-Jul	51	3357	29	5	27	2.18	76	5123	38	3	93	3.25	86	2992	3	18	3.68	34	3696	6	29	1.44	65	1610	11	35	2.78	95	1837	6	47	4.08
18-Jul	46	3403	11	3	30	1.91	69	5192	47	4	97	2.76	81	3073	0	18	3.51	42	3738	1	30	1.93	83	1693	11	46	3.72	131	1968	12	59	5.72
19-Jul	59	3462	30	2	32	2.51	69	5261	56	0	97	2.90	41	3114	5	23	1.69	35	3773	0	30	1.39	45	1738	7	53	1.82	60	2028	12	71	2.46
20-Jul	33	3495	16	1	33	1.34	59	5320	32	6	103	2.45	27	3141	2	25	1.13	21	3794	1	31	0.87	28	1766	2	55	1.84	62	2090	3	74	2.59
21-Jul	37	3532	17	2	35	1.53	49	5369	24	2	105	2.08	4	3145	0	25	0.18	3	3797	0	31	0.13	6	1772	1	56	0.41	22	2112	1	75	1.01
22-Jul	69	3601	31	6	41	2.94	64	5433	33	2	107	2.75	23	3168	1	26	0.92	8	3805	0	31	0.31	13	1785	7	63	0.51	27	2139	8	83	1.03
23-Jul	64	3665	29	6	47	2.70	112	5545	60	6	113	4.69	65	3233	3	29	2.84	55	3860	8	39	2.50	94	1879	13	76	4.19	78	2217	11	94	3.43
24-Jul	73	3738	35	4	51	2.98	164	5709	86	6	119	6.60	56	3289	3	32	2.34	39	3899	3	42	1.64	51	1930	12	88	2.14	93	2310	18	112	3.90
25-Jul	35	3773	13	3	54	1.45	67	5776	39	2	121	2.92	65	3354	3	35	2.51	42	3941	5	47	1.61	52	1982	10	98	2.00	72	2382	11	123	2.77
26-Jul	18	3791	5	6	60	0.77	58	5834	40	3	124	2.51	11	3365	0	35	0.51	2	3943	1	48	0.09	14	1996	0	98	0.63	21	2403	3	126	0.96
27-Jul	41	3832	18	3	63	1.67	82	5916	42	3	127																					

Table B-2. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for sockeye salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3						Fishwheel 4						Fishwheel 5						Fishwheel 6					
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE				
13-Aug	12	5255	6	2	155	0.57	39	7649	23	0	204	1.72	58	5005	4	108	2.35	48	4677	4	124	1.94	24	2866	5	261	0.96	16	4008	0	292	0.75				
14-Aug	31	5286	17	0	155	1.25	36	7685	20	1	205	1.52	5	5010	1	109	0.42	31	4708	5	129	1.48	15	2881	1	262	0.72	52	4060	12	304	2.25				
15-Aug	3	5289	3	1	156	0.13	26	7711	18	1	206	1.06	49	5059	6	115	2.08	37	4745	2	131	1.54	16	2897	6	268	0.68	42	4102	5	309	1.79				
16-Aug	2	5291	1	1	157	0.08	14	7725	12	2	208	0.57	25	5084	4	119	1.02	34	4779	9	140	1.37	10	2907	0	268	0.40	32	4134	4	313	1.30				
17-Aug	1	5292	1	0	157	0.04	7	7732	5	1	209	0.35	26	5110	1	120	1.08	15	4794	1	141	0.62	19	2926	0	268	0.81	30	4164	1	314	1.25				
18-Aug	5	5297	4	0	157	0.22	26	7758	21	2	211	1.17	28	5138	1	121	1.24	23	4817	1	142	1.01	21	2947	3	271	0.93	29	4193	0	314	1.28				
19-Aug	2	5299	2	1	158	0.08	17	7775	11	1	212	0.68	18	5156	3	124	0.71	20	4837	1	143	0.84	16	2963	1	272	0.64	37	4230	2	316	1.47				
20-Aug	7	5306	7	2	160	0.30	12	7787	11	5	217	0.52	27	5183	2	126	1.27	14	4851	3	146	0.65	8	2971	1	273	0.37	15	4245	2	318	0.70				
21-Aug	5	5311	3	2	162	0.21	19	7806	16	2	219	0.73	28	5211	1	127	1.06	32	4883	2	148	1.20	17	2988	0	273	0.64	14	4259	0	318	0.53				
22-Aug	0	5311	0	0	162	0.00	5	7811	4	0	219	0.38	3	5214	0	127	0.17	7	4890	0	148	0.34	4	2992	0	273	0.23									
23-Aug																																				
24-Aug	0	5311	0	1	163	0.00	2	7813	2	0	219	0.39	3	5217	0	127	0.37	3	4893	0	148	0.68						2	4261	0	318	0.32				
25-Aug	6	5317	3	1	164	0.26	3	7816	1	0	219	0.13	7	5224	1	128	0.29	2	4895	0	148	0.09	0	2992	0	273	0.00	6	4267	1	319	0.25				
26-Aug	1	5318	1	1	165	0.06	4	7820	2	1	220	0.24	4	5228	0	128	0.24	2	4897	0	148	0.11	5	2997	0	273	0.29	3	4270	0	319	0.12				
27-Aug	2	5320	2	0	165	0.24	4	7824	4	1	221	0.46	9	5237	1	129	1.08	8	4905	0	148	0.98	13	3010	1	274	1.79	12	4282	3	322	0.50				
28-Aug	12	5332	8	3	168	0.50	8	7832	6	0	221	0.36	60	5297	2	131	2.57	27	4932	1	149	1.18	23	3033	0	274	1.34	56	4338	3	325	2.40				
29-Aug	16	5348	11	5	173	0.64	18	7850	14	4	225	0.72	63	5360	3	134	2.33	49	4981	1	150	1.86	53	3086	2	276	2.01	97	4435	3	328	3.90				
30-Aug	9	5357	8	7	180	0.40	12	7862	6	4	229	0.53	42	5402	7	141	1.87	53	5034	4	154	2.48	31	3117	5	281	1.42	52	4487	4	332	2.17				
31-Aug	15	5372	8	3	183	0.62	12	7874	9	1	230	0.50	70	5472	4	145	2.90	60	5094	4	158	2.36	31	3148	7	288	1.24	30	4517	2	334	1.34				
01-Sep	6	5378	3	0	183	0.25	13	7887	7	2	232	0.55	38	5510	0	145	1.65	28	5122	2	160	1.19	36	3184	0	288	1.53	12	4529	0	334	0.48				
02-Sep	5	5383	4	2	185	0.20	14	7901	10	1	233	0.58	29	5539	3	148	1.20	24	5146	1	161	0.99	21	3205	2	290	0.90	21	4550	1	335	0.87				
03-Sep	5	5388	0	1	186	0.22	10	7911	5	3	236	0.41	24	5563	4	152	1.00	23	5169	4	165	1.00	10	3215	2	292	0.56	4	4554	2	337	0.22				
04-Sep	5	5393	4	0	186	0.20	4	7915	0	0	236	0.22	17	5580	0	152	0.74	14	5183	0	165	0.59	12	3227	3	295	0.52	1	4555	3	340	0.06				
05-Sep	15	5408	7	0	186	0.62	10	7925	4	1	237	0.41	28	5608	2	154	1.14	22	5205	0	165	0.89	28	3255	3	298	1.14	12	4567	0	340	0.49				
06-Sep	3	5411	1	1	187	0.13	13	7938	11	5	242	0.55	64	5672	4	158	2.63	30	5235	0	165	1.22	46	3301	0	298	1.88	44	4611	0	340	1.80				
07-Sep	3	5414	3	1	188	0.13	10	7948	7	1	243	0.43	30	5702	0	158	1.26	20	5255	1	166	0.84	18	3319	1	299	0.76	13	4624	0	340	0.55				
08-Sep	6	5420	3	0	188	0.24	5	7953	3	0	243	0.20	32	5734	0	158	1.31	16	5271	1	167	0.66	33	3352	1	300	1.35	17	4641	0	340	0.70				
09-Sep	4	5424	4	0	188	0.17	2	7955	2	0	243	0.08	33	5767	0	158	1.40	23	5294	0	167	0.98	33	3385	0	300	1.40	21	4662	2	342	1.78				
10-Sep	4	5428	4	0	188	0.17	3	7958	2	1	244	0.13	33	5800	2	160	1.34	27	5321	1	168	1.10	26	3411	2	302	1.05	31	4693	8	350	1.26				
11-Sep	0	5428	0	0	188	0.00	1	7959	1	0	244	0.04	12	5812	2	162	0.50	23	5344	3	171	0.97	22	3433	2	304	0.93	20	4713	1	351	0.85				
12-Sep	5	5433	3	0	188	0.21	1	7960	0	0	244	0.04	18	5830	5	167	0.74	17	5361	0	171	0.70	26	3459	0	304	1.08	24	4737	3	354	0.98				
13-Sep	7	5440	3	0	188	0.29	1	7961	0	3	247	0.04	30	5860	0	167	1.32	15	5376	0	171	0.64	24	3483	0	304	1.03	20	4757	1	355	0.88				
14-Sep	2	5442	1	0	188	0.09	1	7962	1	0	247	0.04	31	5891	1	168	1.25	23	5399	0	171	0.95	22	3505	1	305	0.90	47	4804	0	355	1.91				
15-Sep	2	5444	0	1	189	0.08	1	7963	0	0	247	0.04	83	5974	0	168	3.48	20	5419	3	174	0.83	48	3553	3	308	1.99	34	4838	1	356	1.90				
16-Sep	6	5450	2	0	189	0.25	4	7967	1	0	247	0.16	36	6010	0	168	1.52						53	3606	0	308	2.24	37	4875	0	356	1.56				
17-Sep	0	5450	0	0	189	0.00	0	7967	0	0	247	0.00	5	6015	1	169	0.30						0	3606	0	308	0.00	2	4877	0	356	0.12				
18-Sep							0	7967	0	0	247	0.00																								
19-Sep																																				
20-Sep																																				
21-Sep													18	6033	0	169	2.40	10	5429	0	174	1.82						0	4877	0	356	0.00				
22-Sep													18	6051	0	169	1.35	31	5460	2	176	1.30						42	4919	0	356	1.63				
23-Sep																		43	5503	1	177	1.92						30	4949	0	356	1.23				
24-Sep																		71	5574	2	179	2.71						29	4978	2	358	1.28				
25-Sep																		46	5620	1	180	1.91						49	5027	1	359	1.89				
26-Sep																		32	5652	0	180	1.37						20	5047	0	359</					

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

Table B-3. The number of sockeye that were harvested from the six fishwheels as part of the entitlement agreement of the Nisga'a treaty, 2 July to 16 August 2000.

Date	Gitwinksilkw fishwheels			Grease Harbour fishwheels					Total	Cum.
	1	2	Total	3	4	5	6	Total		
02-Jul	543	288	831					0	831	831
3-4-Jul			0					0	0	831
05-Jul			0	69	110	59		238	238	1069
06-Jul			0	100	131	257		488	488	1557
07-Jul			0	39	64	137		240	240	1797
08-Jul			0	292	309	140		741	741	2538
09-Jul			0	254	494	171		919	919	3457
10-Jul			0	212	512	180	360	1264	1264	4721
11-Jul			0	93	274	91	187	645	645	5366
12-Jul			0	216	408	62	370	1056	1056	6422
13-Jul			0	114	195	27	177	513	513	6935
14-Jul			0	102	117	35	143	397	397	7332
15-Jul			0	135	95	144	193	567	567	7899
16-Jul			0	105	29	110	169	413	413	8312
17-Jul			0	80	33	55	82	250	250	8562
18-Jul			0	72	42	71	89	274	274	8836
19-Jul			0	40	33	40	54	167	167	9003
20-Jul			0	25	16	27	56	124	124	9127
21-Jul			0	3		6	11	20	20	9147
22-Jul			0					0	0	9147
23-Jul			0	66	54	91	84	295	295	9442
24-Jul			0	54	36	44	80	214	214	9656
25-Jul			0	62	39	44	65	210	210	9866
26-Jul			0	7	2	11	17	37	37	9903
27-29-Jul			0	0	0	0	0	0	0	9903
30-Jul	54	32	86	15	3	6	17	41	127	10030
31-Jul	46	57	103	59	9	54	64	186	289	10319
01-Aug			0	103	28	52	144	327	327	10646
02-Aug			0	97	32	54	70	253	253	10899
03-Aug	71	115	186	138	33	37	214	422	608	11507
04-Aug	61	107	168	171	99	71	249	590	758	12265
05-Aug	51	154	205	162	95	105	224	586	791	13056
06-Aug	24	110	134	106	25	35	131	297	431	13487
07-Aug	30	74	104	116	43	78	153	390	494	13981
08-Aug	11	48	59	196	87	81	79	443	502	14483
09-Aug			0	90	67	59	51	267	267	14750
10-Aug			0	120	38	59	61	278	278	15028
11-Aug			0	65	73	21	22	181	181	15209
12-Aug			0	62	34	42	18	156	156	15365
13-Aug			0	52	46	17	9	124	124	15489
14-Aug			0	5	29	15	47	96	96	15585
15-Aug			0	33	35	13	36	117	117	15702
16-Aug			0	10	17	4	13	44	44	15746
Total	891	985	1876	3740	3786	2605	3739	13870	15746	

Table B-4. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for coho salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3					Fishwheel 4					Fishwheel 5					Fishwheel 6				
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE
15-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
16-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
17-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
18-Jul	0	0	0	0	0	0.00	1	1	0	1	1	0.04	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
19-Jul	1	1	0	1	1	0.04	0	1	0	1	2	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
20-Jul	0	1	0	0	1	0.00	0	1	0	2	4	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
21-Jul	0	1	0	0	1	0.00	2	3	0	0	4	0.08	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
22-Jul	1	2	1	0	1	0.04	0	3	0	0	4	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
23-Jul	0	2	0	0	1	0.00	1	4	1	1	5	0.04	0	0	0	0	0.00	1	1	0	0	0.05	1	1	1	1	0.04	3	3	1	1	0.13
24-Jul	1	3	1	0	1	0.04	1	5	1	0	5	0.04	1	1	0	0	0.04	0	1	0	0	0.00	0	1	0	1	0.00	0	3	0	1	0.00
25-Jul	0	3	0	0	1	0.00	1	6	1	0	5	0.04	1	2	1	1	0.04	1	2	0	0	0.04	1	2	1	2	0.04	0	3	0	1	0.00
26-Jul	2	5	2	1	2	0.09	2	8	2	0	5	0.09	0	2	0	1	0.00	0	2	0	0	0.00	0	2	0	2	0.00	0	3	0	1	0.00
27-Jul	1	6	0	0	2	0.04	2	10	1	1	6	0.08	1	3	0	1	0.04	0	2	0	0	0.00	0	2	0	2	0.00	0	3	0	1	0.00
28-Jul	8	14	7	0	2	0.34	2	12	2	0	6	0.08	0	3	1	2	0.00	0	2	0	0	0.00	0	2	0	2	0.00	0	3	3	4	0.00
29-Jul	2	16	2	0	2	0.09	2	14	2	0	6	0.09	0	3	0	2	0.00	1	3	0	0	0.04	0	2	0	2	0.00	0	3	0	4	0.00
30-Jul	8	24	8	3	5	0.29	5	19	5	3	9	0.20	0	3	0	2	0.00	3	6	0	0	0.12	3	5	0	2	0.12	8	11	0	4	0.32
31-Jul	11	35	4	1	6	0.51	5	24	2	1	10	0.25	2	5	0	2	0.08	0	6	0	0	0.00	5	10	0	2	0.20	7	18	0	4	0.28
01-Aug	24	59	22	0	6	0.97							2	7	0	2	0.08	2	8	0	0	0.08	5	15	6	8	0.21	6	24	1	5	0.24
02-Aug	25	84	22	6	12	0.94							7	14	0	2	0.29	0	8	1	1	0.00	14	29	7	15	0.58	8	32	3	8	0.33
03-Aug	64	148	58	4	16	3.04	40	64	34	5	15	1.39	14	28	0	2	0.58	0	8	0	1	0.00	47	76	15	30	2.72	23	55	1	9	0.96
04-Aug	207	355	87	3	19	7.89	88	152	47	2	17	3.57	16	44	0	2	0.67	15	23	3	4	0.63	66	142	12	42	2.78	46	101	6	15	1.92
05-Aug	86	441	66	2	21	3.60	70	222	52	2	19	2.94	11	55	2	4	0.42	10	33	1	5	0.37	103	245	3	45	3.82	55	156	1	16	2.10
06-Aug	71	512	53	0	21	3.10	68	290	31	1	20	3.07	13	68	0	4	0.60	5	38	1	6	0.24	42	287	4	49	2.02	30	186	2	18	1.39
07-Aug	138	650	28	2	23	5.93	96	386	60	1	21	4.07	17	85	2	6	0.72	10	48	0	6	0.42	54	341	1	50	2.30	58	244	3	21	2.47
08-Aug	109	759	45	2	25	4.83	61	447	8	0	21	2.39	27	112	1	7	1.12	49	97	2	8	2.02	92	433	8	58	3.78	51	295	5	26	2.11
09-Aug	70	829	64	1	26	2.89	36	483	29	1	22	1.58	19	131	2	9	0.83	30	127	2	10	1.29	42	475	9	67	1.82	25	320	6	32	1.08
10-Aug	100	929	85	1	27	4.16	40	523	36	0	22	1.73	7	138	0	9	0.29	17	144	0	10	0.69	58	533	0	67	2.40	33	353	0	32	1.37
11-Aug	65	994	51	3	30	2.73	36	559	33	0	22	1.53	30	168	4	13	1.26	20	164	3	13	0.87	31	564	5	72	1.33	9	362	0	32	0.39
12-Aug	54	1048	48	0	30	2.17	15	574	13	2	24	0.72	21	189	1	14	0.82	60	224	7	20	2.25	50	614	12	84	1.86	25	387	5	37	0.93
13-Aug	26	1074	24	1	31	1.23	26	600	25	1	25	1.14	18	207	1	15	0.73	72	296	6	26	2.91	46	660	8	92	1.85	14	401	2	39	0.66
14-Aug	14	1088	13	0	31	0.56	29	629	26	0	25	1.23	9	216	2	17	0.76	38	334	2	28	1.81	23	683	3	95	1.10	43	444	2	41	1.86
15-Aug	6	1094	2	1	32	0.26	27	656	26	1	26	1.10	43	259	3	20	1.82	24	358	5	33	1.00	44	727	3	98	1.86	39	483	3	44	1.66
16-Aug	2	1096	2	0	32	0.08	29	685	24	0	26	1.18	22	281	2	22	0.90	50	408	1	34	2.01	22	749	0	98	0.89	32	515	1	45	1.30
17-Aug	15	1111	15	0	32	0.62	21	706	19	1	27	1.06	15	296	0	22	0.63	26	434	1	35	1.08	25	774	1	99	1.07	34	549	1	46	1.42
18-Aug	24	1135	23	0	32	1.07	29	735	26	0	27	1.30	15	311	0	22	0.67	7	441	1	36	0.31	19	793	3	102	0.84	10	559	0	46	0.44
19-Aug	23	1158	20	0	32	0.92	27	762	23	2	29	1.08	28	339	0	22	1.11	23	464	1	37	0.96	59	852	2	104	2.36	62	621	1	47	2.46
20-Aug	17	1175	16	0	32	0.73	20	782	19	0	29	0.86	21	360	0	22	0.99	31	495	0	37	1.43	33	885	0	104	1.53	42	663	1	48	1.96
21-Aug	5	1180	5	0	32	0.21	13	795	10	0	29	0.50	18	378	0	22	0.68	15	510	0	37	0.56	26	911	1	105	0.98	27	690	0	48	1.03
22-Aug	4	1184	3	0	32	0.18	2	797	2	0	29	0.15	5	383	0	22	0.28	5	515	0	37	0.24	6	917	0	105	0.34					
23-Aug																																
24-Aug	11	1195	9	0	32	1.73	3	800	3	0	29	0.59	2	385	0	22	0.24	1	516	0	37	0.23						2	692	0	48	0.32
25-Aug	25	1220	20	1	33	1.08	17	817	15	0	29	0.72	5	390	0	22	0.21	1	517	0	37	0.05	0	917	0	105	0.00	2	694	1	49	0.08
26-Aug	8	1228	7	0	33	0.49	9	826	8	0	29	0.54	1	391																		

Table B-4. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for coho salmon captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1						Fishwheel 2						Fishwheel 3						Fishwheel 4						Fishwheel 5						Fishwheel 6					
	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Tagged	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE	Adults	Cum.	Jacks	Cum.	CPE				
06-Sep	6	1642	6	0	41	0.25	13	1080	9	0	33	0.55	20	807	1	31	0.82	14	865	0	45	0.57	22	1878	0	121	0.90	22	1336	0	62	0.90				
07-Sep	4	1646	3	1	42	0.17	5	1085	5	0	33	0.21	15	822	0	31	0.63	12	877	0	45	0.50	18	1896	0	121	0.76	8	1344	0	62	0.34				
08-Sep	6	1652	5	0	42	0.24	6	1091	5	0	33	0.24	25	847	0	31	1.02	8	885	0	45	0.33	28	1924	0	121	1.15	15	1359	0	62	0.62				
09-Sep	4	1656	4	0	42	0.17	5	1096	5	0	33	0.21	12	859	0	31	0.51	8	893	0	45	0.34	34	1958	2	123	1.44	25	1384	0	62	2.12				
10-Sep	7	1663	7	1	43	0.31	5	1101	5	2	35	0.22	27	886	1	32	1.09	16	909	1	46	0.65	33	1991	2	125	1.34	47	1431	0	62	1.90				
11-Sep	6	1669	6	0	43	0.31	6	1107	4	1	36	0.24	17	903	0	32	0.71	16	925	1	47	0.68	27	2018	0	125	1.14	25	1456	1	63	1.06				
12-Sep	10	1679	6	0	43	0.42	4	1111	4	1	37	0.17	11	914	0	32	0.45	13	938	0	47	0.54	43	2061	1	126	1.78	26	1482	1	64	1.06				
13-Sep	12	1691	8	0	43	0.49	5	1116	1	0	37	0.21	12	926	0	32	0.53	2	940	0	47	0.09	20	2081	0	126	0.86	9	1491	3	67	0.40				
14-Sep	10	1701	7	0	43	0.44	1	1117	1	0	37	0.04	12	938	0	32	0.48	4	944	0	47	0.17	13	2094	0	126	0.53	21	1512	0	67	0.85				
15-Sep	12	1713	12	0	43	0.50	3	1120	3	1	38	0.12	8	946	0	32	0.34	5	949	0	47	0.21	10	2104	0	126	0.41	5	1517	1	68	0.28				
16-Sep	11	1724	8	1	44	0.45	8	1128	5	1	39	0.32	4	950	1	33	0.17							9	2113	0	126	0.38	9	1526	1	69	0.38			
17-Sep	0	1724	0	0	44	0.00	0	1128	0	0	39	0.00	2	952	0	33	0.12							0	2113	0	126	0.00	3	1529	4	73	0.18			
18-Sep							0	1128	0	0	39	0.00																								
19-Sep																																				
20-Sep																																				
21-Sep													4	956	0	33	0.53	10	959	1	49	1.82							0	1529	0	73	0.00			
22-Sep													2	958	0	33	0.15	11	970	0	49	0.46							7	1536	0	73	0.27			
23-Sep																			17	987	0	49	0.76							4	1551	0	74	0.18		
24-Sep																			23	1010	1	50	0.88							20	1571	0	74	0.77		
25-Sep																			4	1014	0	50	0.17							2	1573	0	74	0.08		
26-Sep																			3	1017	0	50	0.13							2	1575	1	75	0.09		
27-Sep																			2	1019	0	50	0.08							2	1577	0	75	0.08		
28-Sep																			5	1024	0	50	0.21							0	1577	0	75	0.00		
29-Sep																			4	1028	0	50	0.24							1	1578	0	75	0.06		
Totals	1724		1242	44		1.17	1128		836	39		0.79	958		33		0.64	1028		50		0.64	2113		126		1.51	1578		75		0.95				

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

Table B-5. The number of coho that were harvested from the six fishwheels as part of the entitlement agreement of the Nisga'a treaty, 8 August to 16 August 2000.

Date	Gitwinksilhkw fishwheels			Grease Harbour fishwheels					Total	Cum.
	1	2	Total	3	4	5	6	Total		
08-Aug			0	0	0	0	0	0	0	0
09-Aug			0	14	33	39	26	112	112	112
10-Aug			0	0	0	0	0	0	0	112
11-Aug			0	30	20	32	10	92	92	204
12-Aug			0	0	0	0	0	0	0	204
13-Aug			0	20	76	48	15	159	159	363
14-Aug			0	0	0	0	0	0	0	363
15-Aug			0	39	29	42	44	154	154	517
16-Aug			0	0	0	0	0	0	0	517
Total	0	0	0	103	158	161	95	517	517	

Table B-6. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for steelhead captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1					Fishwheel 2					Fishwheel 3					Fishwheel 4					Fishwheel 5					Fishwheel 6					Total
	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	
11-Jun	0	0	0	0		0	0	0	0																						0
12-Jun	0	0	0	0	0.00	0	0	0	0	0.00																					0
13-Jun																															0
14-Jun																															0
15-Jun																															0
16-Jun	0	0	0	0	0.00	0	0	0	0	0.00																					0
17-Jun	0	0	0	0	0.00	1	0	0	0	0.04																					1
18-Jun	0	0	0	0	0.00	0	0	0	0	0.00																					0
19-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0																	0
20-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00																0
21-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00																0
22-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00																0
23-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	0	0	0												0
24-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00											0
25-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	1	0	0	0	0.04											1
26-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00											0
27-Jun	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00											0
28-Jun																															0
29-Jun																															0
30-Jun																															0
01-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00																0
02-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00																0
03-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00											0
04-Jul						0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00						0
05-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00						0
06-Jul											0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00						0
07-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00						0
08-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	1	0	0	0	0.04						1
09-Jul	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00						0
10-Jul	1	1	0	0	0.04	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	1
11-Jul	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
12-Jul	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
13-Jul	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
14-Jul	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
15-Jul	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
16-Jul	0	1	0	0	0.00	1	1	0	0	0.04	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	1
17-Jul	1	2	0	0	0.04	2	1	0	0	0.09	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	3
18-Jul	0	2	0	0	0.00	0	2	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	1	0	0	0	0.04	1
19-Jul	0	2	0	0	0.00	0	4	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	0	0	0	0.00	0
20-Jul	0	2	0	0	0.00	0	4	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0
21-Jul	0	2	0	0	0.00	0	4	0	0	0.00	1	0	0	0	0.04	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	1
22-Jul	0	2	0	0	0.00	0	4	0	0	0.00	0	0	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0
23-Jul	0	2	0	0	0.00	1	4	0	0	0.04	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	1	1	0	0	0.04	2
24-Jul	1	3	0	0	0.04	3	4	0	0	0.12	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	4
25-Jul	0	3	0	0	0.00	0	5	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	2	1	0	0	0.08	0	2	0	0	0.00	2
26-Jul	1	4	1	0	0.04	1	8	1	0	0.04	0	1	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	2	0	0	0.00	2
27-Jul	0	4	0	0	0.00	0	8	0	0	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	0
28-Jul	0	4	0	1	0.00	2	9	2	1	0.08	0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	2
29-Jul	1	5	1	1	0.04	0	9	0	1	0.00	0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	1
30-Jul	0	5	0	1	0.00	2	11	2	3	0.08	0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	2
31-Jul	2	7	2	2	0.09	3	11	3	3	0.15	0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	5
01-Aug	2	9	2	2	0.08						0	1	0	0	0.00	0	1	0	0	0.00	0	3	0	0	0.00	0	2	0	0	0.00	2
02																															

Table B-6. Daily catches, numbers of fish tagged and CPE (adult catch per hour) for steelhead captured in the Nass River fishwheels, 2000.

Date	Fishwheel 1					Fishwheel 2					Fishwheel 3					Fishwheel 4					Fishwheel 5					Fishwheel 6					Total	
	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE	Adults	Cum.	Tagged	Cum.	CPE		
13-Aug	5	80	3	62	0.24	5	102	4	91	0.22	5	19	5	18	0.20	2	12	2	11	0.08	5	54	5	48	0.20	2	36	2	31	0.09	24	
14-Aug	6	86	6	66	0.24	6	110	6	99	0.25	2	23	2	22	0.17	3	15	3	14	0.14	6	60	5	54	0.29	2	41	2	36	0.09	25	
15-Aug	0	86	0	69	0.00	9	115	8	103	0.37	2	28	2	27	0.08	3	17	3	16	0.13	7	65	7	59	0.30	5	43	4	38	0.21	26	
16-Aug	1	87	1	75	0.04	10	121	10	109	0.41	6	30	6	29	0.25	6	20	6	19	0.24	6	71	6	64	0.24	5	45	5	40	0.20	34	
17-Aug	1	88	1	75	0.04	4	130	3	117	0.20	6	32	6	31	0.25	3	23	3	22	0.12	3	78	2	71	0.13	4	50	4	44	0.17	21	
18-Aug	2	90	2	76	0.09	5	140	5	127	0.22	4	38	3	37	0.18	3	29	3	28	0.13	3	84	3	77	0.13	2	55	2	49	0.09	19	
19-Aug	1	91	1	77	0.04	5	144	5	130	0.20	5	44	4	43	0.20	1	32	1	31	0.04	5	87	5	79	0.20	4	59	4	53	0.16	21	
20-Aug	1	92	1	79	0.04	9	149	9	135	0.39	4	48	4	46	0.19	1	35	1	34	0.05	2	90	2	82	0.09	5	61	4	55	0.23	22	
21-Aug	0	92	0	80	0.00	7	154	6	140	0.27	0	53	0	50	0.00	4	36	4	35	0.15	1	95	1	87	0.04	2	65	2	59	0.08	14	
22-Aug	0	92	0	81	0.00	1	163	1	149	0.08	0	57	0	54	0.00	0	37	0	36	0.00	2	97	2	89	0.11						3	
23-Aug																																0
24-Aug	0	92	0	81	0.00	0	171	0	156	0.00	1	57	1	54	0.12	0	41	0	40	0.00						0	72	0	65	0.00	1	
25-Aug	4	96	4	81	0.17	0	171	0	156	0.00	0	57	0	54	0.00	0	41	0	40	0.00	0	100	0	92	0.00	1	72	1	65	0.04	5	
26-Aug	0	96	0	81	0.00	1	171	1	156	0.06	0	58	0	55	0.00	0	41	0	40	0.00	0	100	0	92	0.00	0	72	0	65	0.00	1	
27-Aug	2	98	2	85	0.24	0	171	0	156	0.00	0	58	0	55	0.00	2	41	2	40	0.24	0	100	0	92	0.00	0	73	0	66	0.00	4	
28-Aug	1	99	1	85	0.04	0	172	0	157	0.00	3	58	3	55	0.13	3	41	3	40	0.13	5	100	5	92	0.29	3	73	2	66	0.13	15	
29-Aug	6	105	6	87	0.24	9	172	8	157	0.36	8	58	8	55	0.30	5	43	5	42	0.19	7	100	6	92	0.26	14	73	14	66	0.56	49	
30-Aug	10	115	10	88	0.45	12	172	12	157	0.53	12	61	12	58	0.54	8	46	7	45	0.37	10	105	10	97	0.46	21	76	21	68	0.87	73	
31-Aug	14	129	14	94	0.58	11	181	9	165	0.45	12	69	10	66	0.50	27	51	25	50	1.06	16	112	15	103	0.64	20	90	18	82	0.89	100	
01-Sep	5	134	5	104	0.21	10	193	10	177	0.42	4	81	4	78	0.17	8	59	7	57	0.34	16	122	16	113	0.68	2	111	2	103	0.08	45	
02-Sep	1	135	1	118	0.04	6	204	5	186	0.25	6	93	4	88	0.25	8	86	8	82	0.33	5	138	3	128	0.21	2	131	2	121	0.08	28	
03-Sep	5	140	5	123	0.22	21	214	20	196	0.86	8	97	8	92	0.33	6	94	6	89	0.26	16	154	15	144	0.89	0	133	0	123	0.00	56	
04-Sep	3	143	3	124	0.12	2	220	2	201	0.11	5	103	5	96	0.22	7	102	7	97	0.30	3	159	3	147	0.13	1	135	1	125	0.06	21	
05-Sep	1	144	1	129	0.04	7	241	7	221	0.29	7	111	6	104	0.29	7	108	7	103	0.28	12	175	12	162	0.49	14	135	13	125	0.57	48	
06-Sep	1	145	1	132	0.04	1	243	1	223	0.04	4	116	4	109	0.16	6	115	6	110	0.24	8	178	8	165	0.33	6	136	6	126	0.25	26	
07-Sep	1	146	1	133	0.04	4	250	4	230	0.17	4	123	4	115	0.17	3	122	3	117	0.13	5	190	5	177	0.21	0	150	0	139	0.00	17	
08-Sep	0	146	0	134	0.00	3	251	3	231	0.12	2	127	2	119	0.08	1	128	1	123	0.04	3	198	3	185	0.12	3	156	3	145	0.12	12	
09-Sep	3	149	3	135	0.12	3	255	3	235	0.12	1	131	1	123	0.04	2	131	2	126	0.09	7	203	7	190	0.30	0	156	0	145	0.00	16	
10-Sep	3	152	3	135	0.13	2	258	2	238	0.09	6	133	5	125	0.24	4	132	2	127	0.16	4	206	4	193	0.16	8	159	8	148	0.32	27	
11-Sep	2	154	2	138	0.10	1	261	1	241	0.04	5	134	4	126	0.21	5	134	5	129	0.21	5	213	5	200	0.21	9	159	8	148	0.38	27	
12-Sep	0	154	0	141	0.00	4	263	4	243	0.17	3	140	3	131	0.12	2	138	2	131	0.08	5	217	5	204	0.21	12	167	12	156	0.49	26	
13-Sep	3	157	3	143	0.12	3	264	3	244	0.13	7	145	7	135	0.31	1	143	1	136	0.04	2	222	2	209	0.09	4	176	4	164	0.18	20	
14-Sep	0	157	0	143	0.00	6	268	6	248	0.26	4	148	4	138	0.16	2	145	2	138	0.08	7	227	7	214	0.29	14	188	11	176	0.57	33	
15-Sep	0	157	0	146	0.00	2	271	2	251	0.08	6	155	6	145	0.25	3	146	3	139	0.12	1	229	1	216	0.04	3	192	3	180	0.17	15	
16-Sep	0	157	0	146	0.00	2	277	2	257	0.08	3	159	3	149	0.13						4	236	4	223	0.17	3	206	3	191	0.13	12	
17-Sep	0	157	0	146	0.00	0	279	0	259	0.00	0	165	0	155	0.00	0	151	0	144	0.00	0	237	0	224	0.00	0	209	0	194	0.00	0	
18-Sep						0	281	0	261	0.00																						0
19-Sep																																0
20-Sep																																0
21-Sep											1	168	1	158	0.13	2	151	2	144	0.36							0	212	0	197	0.00	0
22-Sep											1	168	0	158	0.07	12	151	12	144	0.50						10	212	10	197	0.41	23	
23-Sep																12	153	11	146	0.53						6	216	6	201	0.26	18	
24-Sep																30	165	30	158	1.15						14	226	11	211	0.54	44	
25-Sep																45	177	42	169	1.87						14	232	12	217	0.59	59	
26-Sep																33	207	32	199	1.41						15	246	14	228	0.64	48	
27-Sep																26	252	26	241	1.09						4	260	3	240	0.17	30	
28-Sep																23	285	20	273	0.95						1	275	0	254	0.04	24	
29-Sep																7	311	7	299	0.42						6	279	6	257	0.35	13	
Totals ^a	157		146		0.08	281		261		0.15	170		159		0.09	341		326		0.17	241		228		0.15	286		263		0.16	1476	
Totals ^b	157		146		0.09	280		261		0.17	170		159		0.10	340		326		0.18	241		228		0.15	286		263		0.16	1474	

^a Total from 11 June to 29 September.^b Total from 1 July to 29 September (excludes winter-run fish and kelts).

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

Table B-7. Daily catches of pink and chum salmon at the Nass River fishwheels, 2000.

Date	Pink														Chum													
	FW1	Cum.	FW2	Cum.	FW3	Cum.	FW4	Cum.	FW5	Cum.	FW6	Cum.	Total	Cum.	FW1	Cum.	FW2	Cum.	FW3	Cum.	FW4	Cum.	FW5	Cum.	FW6	Cum.	Total	Cum.
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jul	3	3	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-Jul	1	4	2	2	0	0	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Jul	4	8	2	4	0	0	1	1	0	0	0	0	7	13	1	1	0	0	0	0	0	0	0	0	0	0	1	1
15-Jul	1	9	2	6	0	0	0	1	0	0	0	0	3	16	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16-Jul	2	11	2	8	0	0	1	2	0	0	0	0	5	21	0	1	0	0	0	0	0	0	0	0	0	0	0	1
17-Jul	3	14	2	10	1	1	0	2	0	0	2	2	8	29	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18-Jul	2	16	6	16	0	1	0	2	0	0	4	6	12	41	0	1	0	0	0	0	0	0	0	0	0	0	0	1
19-Jul	3	19	13	29	1	2	0	2	1	1	2	8	20	61	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20-Jul	2	21	3	32	0	2	0	2	1	2	0	8	6	67	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21-Jul	0	21	1	33	0	2	0	2	0	2	0	8	1	68	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22-Jul	0	21	0	33	0	2	0	2	0	2	0	8	0	68	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23-Jul	17	38	12	45	0	2	0	2	0	2	1	9	30	98	0	1	0	0	0	0	0	0	0	0	0	0	0	1
24-Jul	10	48	12	57	0	2	0	2	7	9	1	10	30	128	0	1	1	1	0	0	0	0	0	0	0	0	1	2
25-Jul	10	58	11	68	1	3	0	2	0	9	1	11	23	151	0	1	0	1	0	0	0	0	0	0	0	0	0	2
26-Jul	6	64	9	77	0	3	0	2	1	10	0	11	16	167	0	1	0	1	0	0	0	0	0	0	0	0	0	2
27-Jul	3	67	2	79	0	3	0	2	0	10	0	11	5	172	0	1	0	1	0	0	0	0	0	0	0	0	0	2
28-Jul	5	72	2	81	0	3	0	2	0	10	0	11	7	179	0	1	0	1	0	0	0	0	0	0	0	0	0	2
29-Jul	0	72	0	81	0	3	0	2	0	10	0	11	0	179	0	1	0	1	0	0	0	0	0	0	0	0	0	2
30-Jul	6	78	3	84	0	3	0	2	0	10	0	11	9	188	1	2	0	1	0	0	0	0	0	0	0	0	1	3
31-Jul	17	95	36	120	2	5	2	4	6	16	0	11	63	251	0	2	0	1	0	0	0	0	0	0	0	0	0	3
01-Aug	8	103			1	6	0	4	0	16	1	12	10	261	0	2			0	0	0	0	0	0	0	0	0	3
02-Aug	36	139			0	6	0	4	0	16	1	13	37	298	1	3			0	0	0	0	0	0	0	0	1	4
03-Aug	87	226	244	364	7	13	0	4	10	26	4	17	352	650	0	3	1	2	0	0	0	0	0	0	0	0	1	5
04-Aug	155	381	348	712	9	22	1	5	32	58	12	29	557	1207	3	6	3	5	0	0	0	0	0	0	0	0	6	11
05-Aug	141	522	311	1023	4	26	5	10	35	93	16	45	512	1719	1	7	1	6	0	0	0	0	0	0	0	0	2	13
06-Aug	108	630	203	1226	8	34	2	12	11	104	12	57	344	2063	0	7	1	7	0	0	0	0	0	0	0	0	1	14
07-Aug	196	826	288	1514	13	47	2	14	41	145	11	68	551	2614	0	7	2	9	0	0	0	0	0	0	0	0	2	16
08-Aug	163	989	258	1772	28	75	10	24	120	265	22	90	601	3215	1	8	0	9	0	0	0	0	0	0	0	0	1	17
09-Aug	299	1288	207	1979	24	99	31	55	122	387	11	101	694	3909	0	8	0	9	0	0	0	0	1	1	0	0	1	18
10-Aug	190	1478	203	2182	51	150	22	77	88	475	19	120	573	4482	0	8	1	10	0	0	0	0	2	3	0	0	3	21
11-Aug	238	1716	262	2444	39	189	21	98	62	537	17	137	639	5121	2	10	1	11	0	0	0	0	0	3	0	0	3	24
12-Aug	166	1882	192	2636	31	220	45	143	51	588	23	160	508	5629	0	10	1	12	0	0	0	0	0	3	0	0	1	25
13-Aug	84	1966	213	2849	35	255	70	213	109	697	18	178	529	6158	1	11	0	12	1	1	0	0	1	4	0	0	3	28
14-Aug	153	2119	154	3003	41	296	60	273	75	772	86	264	569	6727	3	14	2	14	0	1	0	0	0	4	1	1	6	34
15-Aug	31	2150	143	3146	34	330	71	344	58	830	71	335	408	7135	0	14	1	15	0	1	0	0	0	4	0	1	1	35
16-Aug	16	2166	87	3233	28	358	71	415	31	861	49	384	282	7417	0	14	1	16	1	2	0	0	0	4	0	1	2	37
17-Aug	29	2195	45	3278	25	383	49	464	50	911	56	440	254	7671	1	15	0	16	0	2	0	0	0	4	1	2	2	39
18-Aug	22	2217	39	3317	24	407	23	487	76	987	24	464	208	7879	1	16	1	17	0	2	1	1	1	5	0	2	4	43
19-Aug	37	2254	67	3384	25	432	41	528	112	1099	49	513	331	8210	0	16	4	21	1	3	0	1	2	7	0	2	7	50
20-Aug	25	2279	64	3448	19	451	30	558	36	1135	56	569	230	8440	2	18	4	25	0	3	1	2	0	7	1	3	8	58
21-Aug	22	2301	36	3484	17	468	33	591	67	1202	31	600	206	8646	1	19	2	27	1	4	0	2	0	7	1	4	5	63
22-Aug	1	2302	6	3490	2	470	4	595	2	1204			15	8661	0	19	0	27	0	4	0	2	0	7			0	63
23-Aug																												
24-Aug	11	2313	0	3490	1	471	2	597			1	601	15	8676	0	19	0	27	0	4	0	2			0	4	0	63
25-Aug	7	2320	9	3499	0	471	1	598	0	1204	2	603	19	8695	1	20	0	27	0	4	0	2	0	7	0	4	1	64
26-Aug	4	2324	4	3503	0	471	0	598	0	1204	0	603	8	8703	0	20	0	27	0	4	0	2	0	7	0	4	0	64
27-Aug	31	2355	19	3522	1	472	0	598	0	1204	0	603	51	8754	0	20	0	27	0	4	0	2	0	7	0	4	0	64

Table B-7. Daily catches of pink and chum salmon at the Nass River fishwheels, 2000.

Date	Pink													Chum															
	FW1	Cum.	FW2	Cum.	FW3	Cum.	FW4	Cum.	FW5	Cum.	FW6	Cum.	Total	Cum.	FW1	Cum.	FW2	Cum.	FW3	Cum.	FW4	Cum.	FW5	Cum.	FW6	Cum.	Total	Cum.	
28-Aug	39	2394	20	3542	19	491	1	599	30	1234	112	715	221	8975	0	20	0	27	1	5	0	2	0	7	0	4	1	65	
29-Aug	33	2427	40	3582	23	514	6	605	81	1315	36	751	219	9194	0	20	4	31	1	6	0	2	0	7	0	4	5	70	
30-Aug	42	2469	65	3647	26	540	18	623	40	1355	23	774	214	9408	1	21	10	41	0	6	1	3	0	7	0	4	12	82	
31-Aug	39	2508	70	3717	13	553	12	635	57	1412	10	784	201	9609	6	27	14	55	0	6	0	3	0	7	0	4	20	102	
01-Sep	35	2543	55	3772	15	568	4	639	27	1439	10	794	146	9755	11	38	14	69	0	6	0	3	1	8	0	4	26	128	
02-Sep	20	2563	34	3806	7	575	13	652	21	1460	7	801	102	9857	0	38	8	77	1	7	0	3	2	10	0	4	11	139	
03-Sep	39	2602	55	3861	8	583	6	658	16	1476	10	811	134	9991	1	39	9	86	3	10	0	3	2	12	0	4	15	154	
04-Sep	23	2625	19	3880	0	583	3	661	4	1480	4	815	53	10044	8	47	1	87	2	12	1	4	1	13	2	6	15	169	
05-Sep	10	2635	20	3900	0	583	6	667	6	1486	4	819	46	10090	1	48	7	94	1	13	0	4	0	13	0	6	9	178	
06-Sep	2	2637	6	3906	3	586	0	667	5	1491	2	821	18	10108	0	48	0	94	0	13	0	4	0	13	1	7	1	179	
07-Sep	0	2637	4	3910	1	587	0	667	1	1492	0	821	6	10114	0	48	1	95	0	13	0	4	0	13	0	7	1	180	
08-Sep	2	2639	9	3919	0	587	0	667	0	1492	0	821	11	10125	0	48	0	95	0	13	0	4	2	15	0	7	2	182	
09-Sep	2	2641	1	3920	3	590	1	668	0	1492	0	821	7	10132	2	50	3	98	2	15	0	4	3	18	0	7	10	192	
10-Sep	4	2645	4	3924	0	590	0	668	4	1496	1	822	13	10145	2	52	1	99	1	16	0	4	1	19	0	7	5	197	
11-Sep	4	2649	6	3930	0	590	0	668	4	1500	0	822	14	10159	4	56	3	102	0	16	0	4	3	22	1	8	11	208	
12-Sep	4	2653	9	3939	0	590	0	668	1	1501	0	822	14	10173	4	60	4	106	1	17	0	4	1	23	1	9	11	219	
13-Sep	3	2656	5	3944	0	590	0	668	0	1501	0	822	8	10181	3	63	3	109	1	18	0	4	1	24	1	10	9	228	
14-Sep	0	2656	4	3948	1	591	0	668	0	1501	1	823	6	10187	2	65	1	110	4	22	2	6	1	25	1	11	11	239	
15-Sep	2	2658	1	3949	1	592	0	668	2	1503	1	824	7	10194	0	65	1	111	0	22	0	6	0	25	0	11	1	240	
16-Sep	2	2660	8	3957	0	592	0	668	0	1503	0	824	10	10204	0	65	1	112	0	22	0	6	0	25	0	11	1	241	
17-Sep	1	2661	0	3957						0	1503			1	10205	0	65	0	112								0	241	
18-Sep			0	3957										0	10205			0	112								0	241	
19-Sep											0	824	0	10205												0	11	0	241
20-Sep											0	824	0	10205												0	11	0	241
21-Sep					0	592	0	668			0	824	0	10205				0	22	0	6			0	11	0	241		
22-Sep					0	592	0	668			0	824	0	10205				0	22	0	6			0	11	0	241		
23-Sep							1	669			0	824	1	10206						0	6			0	11	0	241		
24-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
25-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
26-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
27-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
28-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
29-Sep							0	669			0	824	0	10206						0	6			0	11	0	241		
Totals	2661		3957		592		669		1503		824		10206		65		112		22		6		25		11		241		

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

75

Page 1 of 3

Table B-8. Catches of other salmonids captured in the Nass River fishwheels, 2000.

Date	Dolly Varden							Cutthroat trout							Rainbow trout							Whitefish						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
29-Jul	1	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
30-Jul	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
31-Jul	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01-Aug	1		0	0	0	0	1	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0
02-Aug	0		0	0	0	0	0	1		0	0	0	0	1	0		0	0	0	0	0	0		0	0	0	0	0
03-Aug	3	14	0	0	0	0	17	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04-Aug	0	25	0	0	0	2	27	1	3	0	0	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	1
05-Aug	0	18	0	0	1	1	20	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	1	0	0	1	2
06-Aug	0	6	0	0	0	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07-Aug	0	13	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
08-Aug	4	7	0	0	0	0	11	2	5	0	0	0	0	7	1	0	0	0	0	0	1	0	0	0	0	0	0	0
09-Aug	6	8	0	0	0	0	14	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Aug	5	1	1	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
11-Aug	9	7	0	1	0	1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
12-Aug	4	15	1	0	0	0	20	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2	4
13-Aug	9	7	2	0	0	0	18	1	1	0	1	0	0	3	0	0	0	0	0	0	0	0	3	0	0	2	3	8
14-Aug	10	3	0	0	0	0	13	1	1	1	0	0	0	3	0	0	0	0	0	0	0	2	1	0	0	1	0	4
15-Aug	6	13	1	0	0	0	20	2	2	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1
16-Aug	6	12	0	0	0	0	18	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Aug	5	5	0	0	0	0	10	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Aug	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
19-Aug	0	8	0	0	1	0	9	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Aug	1	7	0	1	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
21-Aug	1	1	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Aug	0	4	0	0	0		4	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0
23-Aug																												
24-Aug	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0		0	0	0
25-Aug	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Aug	4	0	0	0	0	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Aug	7	2	0	1	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Aug	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Aug	7	5	0	1	0	4	17	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1
31-Aug	5	5	0	0	0	0	10	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	2
01-Sep	5	6	0	0	0	0	11	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02-Sep	3	6	0	0	0	1	10	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
03-Sep	5	15	0	0	0	0	20	1	5	0	0	0	0	6	1	0	0	0	0	0	1	0	3	1	0	0	1	5
04-Sep	4	4	1	0	0	2	11	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
05-Sep	10	13	0	0	0	1	24	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	6	0	0	0	0	6
06-Sep	2	5	0	0	0	0	7	2	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-Sep	2	3	0	0	0	0	5	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08-Sep	3	4	0	1	1	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
09-Sep	2	6	0	0	0	1	9	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1
10-Sep	3	4	1	0	0	0	8	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Sep	3	11	0	1	1	1	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	4
12-Sep	3	7	0	1	0	0	11	1	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	1
13-Sep	4	7	0	0	0	0	11	0	4	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	1
14-Sep	3	11	0	0	0	0	14	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	3	1	0	0	0	6

Table B-8. Catches of other salmonids captured in the Nass River fishwheels, 2000.

Date	Dolly Varden							Cutthroat trout							Rainbow trout							Whitefish						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
15-Sep	4	0	0	1	1	0	6	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Sep	4	3	0		0	0	7	1	0	0		0	0	1	0	0	0		0	0	0	3	1	0		0	0	4
17-Sep	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18-Sep		0					0	0	0			0		0	0	0			0		0	0	0			0		0
19-Sep							0	0	0			0		0	0	0			0		0	0	0			0		0
20-Sep						0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	0	0
21-Sep			0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Sep			1	0		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Sep				0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24-Sep				0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Sep				0		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Sep				0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
27-Sep				0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Sep				0		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Sep				1		1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	171	339	9	9	10	20	558	35	57	3	1	1	0	97	2	2	0	1	0	0	5	14	28	6	4	5	18	75

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

Table B-9. Catches of non-salmonids captured in the Nass River fishwheels, 2000.

Date	Pacific Lamprey							Long nose sucker							Northern pike minnow							Prickley Sculpin						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
11-Jun	0	0					0	0	0					0	0	0					0	0	0					0
12-Jun	0	0					0	0	0					0	0	0					0	0	0					0
13-Jun							0							0							0							0
14-Jun							0							0							0							0
15-Jun							0							0							0							0
16-Jun	0	0					0	0	0					0	0	0					0	0	0					0
17-Jun	0	1					1	0	0					0	0	0					0	1	0					1
18-Jun	0	1					1	0	0					0	0	0					0	0	0					0
19-Jun	0	2	0				2	0	0	0				0	0	0	0				0	0	0	0				0
20-Jun	0	1	0				1	0	0	0				0	0	0	0				0	0	0	0				0
21-Jun	0	1	0				1	0	0	0				0	0	0	0				0	0	0	0				0
22-Jun	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
23-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0
24-Jun	0	0	0	0			0	0	0	0	0			0	0	1	0	0			1	0	0	0	0	0		0
25-Jun	0	1	0	0			1	0	0	0	0			0	1	0	0	0			1	0	0	0	0	0		0
26-Jun	0	1	0	0			1	0	0	0	0			0	0	0	0	0			0	0	0	0	0	0		0
27-Jun	1	0	0	0	0		1	0	0	0	0	0		0	0	0	0	0			0	0	0	0	0	0		0
28-Jun							0							0							0							0
29-Jun							0							0							0							0
30-Jun							0							0							0							0
01-Jul	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
02-Jul	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
03-Jul	0	1	0	1			2	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0
04-Jul		0	0	0	0	0	0		0	0	0	0		0		0	0	0	0		0		0	0	0	0		0
05-Jul	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0			0
06-Jul			0	0		3	3			0	0	0		0			0	0	0		0			0	0	0		0
07-Jul	0	0	0	0	1		1	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
08-Jul	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
09-Jul	0	1	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Jul	0	0	0	2	4	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Jul	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jul	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
13-Jul	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Jul	0	0	0	2	3	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Jul	0	0	1	4	0		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Jul	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Jul	0	0	0	4	1	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Jul	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
20-Jul	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Jul	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Jul	0	1	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
23-Jul		0	0	0	0	0	4		0	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0
24-Jul	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Jul	0	0	1	3	1	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Jul	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Jul	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B-9. Catches of non-salmonids captured in the Nass River fishwheels, 2000.

Date	Pacific Lamprey							Long nose sucker							Northern pike minnow							Prickley Sculpin						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31-Jul	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
01-Aug	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02-Aug	0	0	1	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
03-Aug	0	0	1	0	0	9	10	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	
04-Aug	0	1	0	9	2	4	16	0	0	0	0	0	0	0	0	0	0	1	5	2	8	0	0	0	0	0	0	
05-Aug	1	2	2	13	2	11	31	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	
06-Aug	0	1	1	3	0	12	17	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	
07-Aug	0	0	0	0	2	4	6	0	1	0	1	0	0	2	0	2	0	0	1	1	4	0	0	0	0	0	0	
08-Aug	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	
09-Aug	0	0	0	1	0	1	2	0	0	0	0	2	3	5	0	1	0	0	0	1	2	0	0	0	0	0	0	
10-Aug	0	1	2	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11-Aug	0	0	1	2	1	0	4	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
12-Aug	0	0	0	0	0	0	0	0	0	0	1	3	1	5	1	1	0	0	1	0	3	0	0	0	0	0	0	
13-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	
14-Aug	0	0	0	1	0	0	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	4	0	0	0	1	1	2	
16-Aug	0	0	0	2	0	0	2	0	0	0	0	1	0	1	1	0	0	1	0	0	2	0	0	0	0	0	0	
17-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	
18-Aug	0	0	0	2	0	0	2	0	3	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
19-Aug	0	1	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	
20-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
21-Aug	0	0	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22-Aug	0	5	2	3	0	0	10	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
23-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24-Aug	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25-Aug	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27-Aug	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	1	
28-Aug	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29-Aug	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30-Aug	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	
31-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	3	0	0	0	0	0	0	
01-Sep	0	3	1	1	0	0	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
02-Sep	0	0	1	5	0	1	7	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	
03-Sep	0	0	0	2	0	1	3	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
04-Sep	0	0	1	1	0	0	2	0	0	0	0	0	1	1	2	1	0	0	0	0	3	0	0	0	0	0	0	
05-Sep	0	0	0	1	0	1	2	1	1	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
06-Sep	0	0	2	3	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
07-Sep	1	0	0	1	0	6	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
08-Sep	0	1	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	
09-Sep	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	1	
10-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
11-Sep	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
12-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	4	0	0	0	0	0	0	
13-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table B-9. Catches of non-salmonids captured in the Nass River fishwheels, 2000.

Date	Pacific Lamprey							Long nose sucker							Northern pike minnow							Prickley Sculpin						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
14-Sep	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
16-Sep	0	0	0		0	1	1	0	0	0		0	0	0	0	0	0		0	0	0	2	0	0		0	0	2
17-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Sep	0						0	0						0	0						0							0
19-Sep							0							0							0							0
20-Sep						0	0						0	0						0	0						0	0
21-Sep		0	0			1	1		0	0			0	0			0	0		0	0		0	0			0	0
22-Sep		0	0			0	0		0	0			0	0			0	0		0	0		0	0			0	0
23-Sep			0			0	0				0		0	0				0		0	0			0			0	0
24-Sep			0			1	1			0			0	0			0			0	0			0			0	0
25-Sep				1		1	2				0		0	0			0			0	0			1		0	1	
26-Sep				0		0	0				0		0	0			0			0	0			1		1	2	
27-Sep				0		0	0				1		0	1			0			0	0			0		0	0	
28-Sep				1		2	3				0		0	0			1			0	1			1		0	1	
29-Sep				0		0	0				1		0	1			0			0	0			0		0	0	
Totals	3	27	20	79	31	100	260	2	7	2	6	9	8	34	12	15	2	6	9	9	53	5	1	0	5	2	1	14

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

Table B-10. Daily catches of Pacific salmon smolts captured in the Nass River fishwheels, 2000

Date	Chinook							Sockeye							Coho							Steelhead						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
11-Jun	0	0					0	0	0					0	0	0					0	0	0					0
12-Jun	0	0					0	0	0					0	0	0					0	0	0					0
13-Jun							0							0							0							0
14-Jun							0							0							0							0
15-Jun							0							0							0							0
16-Jun	0	0					0	0	0					0	1	1					2	0	0					0
17-Jun	0	0					0	0	0					0	1	0					1	0	0					0
18-Jun	0	0					0	0	0					0	1	0					1	0	0					0
19-Jun	0	0	0				0	0	0	0				0	1	1	0				2	0	1	0				1
20-Jun	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
21-Jun	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
22-Jun	0	0	0				0	0	0	0				0	0	0	0				0	2	0	1				3
23-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	0	1	0	0			1
24-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	1	0	0	0			1
25-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0
26-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0
27-Jun	0	0	0	0			0	0	0	0	0			0	0	0	0	0			0	2	0	0	0			2
28-Jun							0							0							0							0
29-Jun							0							0							0							0
30-Jun							0							0							0							0
01-Jul	0	0	0				0	0	0	0				0	0	0	0				0	0	0	0				0
02-Jul	0	0	0				0	0	0	0	0			0	0	0	0				0	0	0	0				0
03-Jul	0	0	0	0			0	0	0	0	0			0	0	0	0				0	0	0	0				0
04-Jul		0	0	0	0		0		0	0	0	0		0		0	0	0	0		0		0	0	0	0		0
05-Jul	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	1		1	0	0	0	0	0		0
06-Jul			0	0	1		1			0	0	0		0			0	0	0		0			0	0	0		0
07-Jul	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
08-Jul	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0
09-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jul	0	0	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	1
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	2	2
23-Jul		0	0	0	0	0	0		0	0	0	0	0	0		0	0	1	0	1	2		0	0	0	0	0	0
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Jul	0	0	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	1
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B-10. Daily catches of Pacific salmon smolts captured in the Nass River fishwheels, 2000

[illegible]

Table B-10. Daily catches of Pacific salmon smolts captured in the Nass River fishwheels, 2000

Date	Chinook							Sockeye							Coho							Steelhead						
	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total	FW1	FW2	FW3	FW4	FW5	FW6	Total
15-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0	0	2	1	0	0	3
16-Sep	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	1	0		1	3	5
17-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Sep		0					0	0						0	0						0	0						0
19-Sep							0							0							0							0
20-Sep						0	0						0	0					0	0	0						0	0
21-Sep			0	0		0	0			0	0		0	0			0	0		0	0			0	1		3	4
22-Sep			0	0		0	0			0	0		0	0			0	0		0	0			0	1		0	1
23-Sep				0		0	0				0		0	0				0		0	0				2		2	4
24-Sep				0		0	0				0		0	0				0		0	0				2		2	4
25-Sep				0		0	0				0		0	0				0		0	0				2		1	3
26-Sep				0		0	0				0		0	0				0		0	0				2		2	4
27-Sep				0		0	0				0		0	0				0		0	0				2		1	3
28-Sep				0		0	0				0		0	0				0		0	0				2		1	3
29-Sep				0		0	0				0		0	0				0		0	0				1		0	1
Totals	0	0	0	0	1	0	1	0	0	0	0	0	1	1	7	4	3	7	11	10	42	13	21	15	33	15	29	126

Note 1: Fishwheel 1, 2, 3, 4, 5, and 6 were started on 11 June, 11 June, 19 June, 23 June, 4 July and 9 July, respectively.

Note 2: Shaded regions indicate periods of non-operation of fishwheels due to high water, high fish catch rates or mechanical failure.

Note 3: Fishwheel 1-2 were operated less than 0.5 d between 1 July and 7 July due to high catch rates or water levels; fishwheels 3-5 (and 6) were operated less than 0.5 d from 1 July to 4 July.

APPENDIX C

Summaries of recovery data for fish tagged at the Nass River fishwheels, 2000

Table C-1. Summary statistics of travel time data for chinook, sockeye and coho salmon tagged at the Gitwinksihlkw fishwheels, 2000.

Recapture Location	Fish tagged at fishwheel 1									Fish tagged at fishwheel 2									Both fishwheels combined								
	Chinook			Sockeye			Coho			Chinook			Sockeye			Coho			Chinook			Sockeye			Coho		
	N	Mean	SD ^a	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Fishwheel 1	9	16.6	14.2	57	1.9	2.7	89	4.5	5.1	71	9.7	10.5	194	2.5	4.5	77	4.2	4.2	80	10.5	11.1	251	2.4	4.1	166	4.3	4.7
Fishwheel 2	15	11.1	7.9	60	3.7	4.5	64	4.2	5.8	28	10.3	9.4	103	3.7	4.7	34	4.9	4.6	43	10.6	8.8	163	3.7	4.6	98	4.4	5.4
Fishwheel 3	9	17.1	10.7	45	9.3	7.8	49	14.2	8.6	31	17.8	8.2	102	8.9	8.1	46	13.0	8.1	40	17.7	8.6	147	9.0	8.0	95	13.6	8.3
Fishwheel 4	20	16.8	7.4	58	11.7	10.9	64	10.5	7.4	45	24.9	11.0	91	11.4	8.0	39	11.7	6.8	65	22.4	10.7	149	11.5	9.2	103	11.0	7.1
Fishwheel 5	27	26.6	8.9	51	11.0	10.5	109	11.5	6.7	63	25.3	11.7	71	9.7	8.3	70	13.4	7.1	90	25.7	10.9	122	10.2	9.3	179	12.2	6.9
Fishwheel 6	37	22.2	10.5	67	12.3	10.4	81	13.2	8.4	74	23.4	9.0	96	9.7	6.9	59	13.6	8.5	111	23.0	9.4	163	10.7	8.6	140	13.4	8.4
Meziadin ^b	NR	NR	NR	14	33.9	15.8	12	36.8	10.3	NR	NR	NR	18	35.1	10.9	22	34.7	7.9	NR	NR	NR	32	34.6	13.1	34	35.4	8.7
Totals	117			352			468			312			675			347			429			1027			815		

^a Standard deviation

^b Few or no tag recoveries were made for sockeye and chinook, respectively, at the Meziadin fishway in 2000.

Table C-2. Summary statistics of travel time data for steelhead tagged at the Nass River fishwheels, 2000.

Recapture Location	Tagged at Gitwinksilkhw fishwheels									Tagged at Grease Harbour fishwheels									All fishwheels								
	Fishwheel 1			Fishwheel 2			Total			Fishwheel 3			Fishwheel 4			Fishwheel 5			Fishwheel 6			Total			Fishwheel 1-6		
	N	Mean	SD ^a	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Fishwheel 1	1	6		11	6.7	5.8	12	6.7	5.5																12	6.7	5.5
Fishwheel 2	8	5.6	5.9	13	10.8	9.7	21	8.8	8.6	2	30.0	5.7							2	30.0	5.7				23	10.7	10.3
Fishwheel 3	2	7.5	3.5	9	17.4	5.3	11	15.6	6.3	8	10.4	10.8	7	9.3	8.1	7	11.4	6.5	4	6.5	6.0	26	9.8	8.1	37	11.5	8.0
Fishwheel 4	10	21.0	7.1	11	17.0	6.4	21	18.9	6.8	8	16.3	5.6	20	8.3	11.5	9	15.6	7.1	15	9.3	10.6	52	11.1	10.2	73	13.3	10.0
Fishwheel 5	9	13.0	10.5	10	14.3	6.7	19	13.7	8.5	7	16.7	10.7	5	7.4	9.7				3	17.7	14.0	15	13.8	11.3	34	13.7	9.6
Fishwheel 6	16	14.4	7.7	17	18.0	7.3	33	16.3	7.6	3	10.7	3.1	7	8.6	6.9	17	13.2	7.0	9	4.7	6.5	36	10.0	7.3	69	13.0	8.0
Meziadin				1	43.0		1	43.0		2	28	17										2	28.0	17.0	3	33.0	14.8
Totals	46			72			118			30			39			33			31			133			251		

^a Standard deviation

Table C-3. Travel time information for recoveries of tagged chinook salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1						Fish tagged at fishwheel 2						Fish tagged at fishwheel 3					Fish tagged at fishwheel 4						Grand Total		
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw3	Fw4	Fw5		Fw6	Total
<1		1					1	3	6					9	1				1			1			1	12
1	2	1					3	21	1					22		1			1						0	26
2	1	1		1			3	7	3					10		1			1						0	14
3						1	1	7				1		8		1			1						0	10
4		1				1	2			1		1		2					0						0	4
5		1	1	2			4	1	2	2	1			6					0						0	10
6						2	2	1	2	1	1			5					0						0	7
7		1	1	1			3	3					3	6					0						0	9
8						2	2	1	1	1		3	3	9					0						0	11
9		1	1	1			3		1	4			1	6					0						0	9
10							0				1			1					0						0	1
11		1			1		2	1		1	1	-	1	4					0						0	6
12			1			1	2					2		2					0						0	4
13		1		1			2	1	1		2	1	1	6					0						0	8
14		1					1				1	2		3					0						0	4
15	1		1			1	3	1	1			1	1	4		1		1	2						0	9
16					1		1	5		1		1	4	11			1		1						0	13
17	1	2				1	4	1	1	1	1		1	5				1	1						0	10
18	1			3		1	5		1	1		1	4	7		1	1		2				1		1	15
19				2	1	2	5	2	2		6	2	3	15	1	2	2	2	7			3		1	4	31
20				1	3	2	6	2		2	1	1	9	15		3	1	2	6			2	1		3	30
21		1	1	4	3	5	14			4	4	5	2	15		2	1	2	5		1		1	1	3	37
22		1		2	4		7	1	2	3	4	4	4	18		1	3	2	6				2	1	3	34
23			2			4	6	1	2	3	1	4	5	16			2	1	3						0	25
24	1	1			1	2	5	4	1	2	2	5	5	19	1		2	1	4		1				1	29
25				1	2	1	4	2		1	3	5	3	14				1	1						0	19
26						2	2	1			3	3	1	8					0						0	10
27	1				1	2	4		1			1	1	3			1		1						0	8
28					1		1	1		1	2	1	1	6					0						0	0
29				1	1		2					3	6	9					0						0	0
30					1		1				1	3	1	5					0						0	0
31					1		1	2		1	1			4			1		1						0	0
32						1	1	1			1	2	1	5					0						0	0

Table C-3. Travel time information for recoveries of tagged chinook salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1							Fish tagged at fishwheel 2							Fish tagged at fishwheel 3						Fish tagged at fishwheel 4						Grand Total
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Total	Fw3	Fw4	Fw5	Fw6	Total	Fw1	Fw3	Fw4	Fw5	Fw6	Total		
33							0					1	1	2					0						0	0	
34					1		1						1	1					0						0	0	
35							0			1			1	2					0						0	0	
36					1		1						1	1					0						0	0	
37							0					1	2	3					0				1		1	2	
38						2	2	1			1	1	2	5					0						0	0	
39			1				1				1			1					0						0	0	
40						2	2				1	1	1	3					0	1					1	2	
41					2	1	3					3	2	5				1	1						0	0	
42					1	1	2					1	2	3			1		1				1		1	2	
43							0							0				1	1						0	0	
44	1						1				2			2					0						0	0	
45							0					1		1					0						0	0	
46							0				1			1					0						0	0	
47							0				1			1					0						0	0	
48							0							0					0						0	0	
49					1		1							0					0						0	0	
50							0							0					0						0	0	
54							0					1		1					0						0	0	
55							0							0					0						0	0	
56							0				1			1					0						0	0	
73							0					1		1					0						0	0	
Totals	9	15	9	20	27	37	117	71	28	31	45	63	74	312	3	13	16	15	47	1	2	6	7	3	19	495	

Table C-4. Travel time information for recoveries of tagged sockeye salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1								Fish tagged at fishwheel 2								Grand Total
	Location recovered																
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	
<1	17	9						26	47	30						77	103
1	20	15						35	71	19	1					91	126
2	5	13	1	1	1	2		23	22	10	5	1	3	1		42	65
3	4	5	3	3	5	3		23	14	4	8	2	12	5		45	68
4	6	2	8	7	8	10		41	9	7	10	4	3	11		44	85
5		1	5	8	6	3		23	9	7	17	7	6	10		56	79
6	1	2	4	3	7	8		25	4	5	12	5	6	11		43	68
7	2	1	5	4		4		16	6	4	9	10	5	5		39	55
8		4	3	4	3	2		16	1	3	9	13	8	9		43	59
9	1	3	3	4	1	3		15	1	2	8	10	6	10		37	52
10			4	3	1	4		12	3	3	2	5	3	6		22	34
11		1		3	3	3		10	1		3	1	3	4		12	22
12			1	1	1	3		6	1	1	2	6	2	2		14	20
13		1	1	1	2			5	1	1		7	2	4		15	20
14		2		3	2			7		2	2	6	1	2		13	20
15	1			1	2	4		8	1		2		1	5	2	11	19
16			2	2		3	1	8		2	2	1		2		7	15
17				1	1	1	2	5					1	1		2	7
18				1		3		4		2	1	1				4	8
19				1	1	1		3				1	2	1		4	7
20								0	1	1				1		3	3
21						1		1			2	2	1	1		6	7
22			1	1	1			3			1					1	4
23		1		1		1	2	5								0	5
24								0				1	1			2	2
25						1		1				2		1		3	4
26					1	1		2				2			1	3	5
27			1	1			2	4							1	1	5
28					1			1						1		1	2
29							1	1								0	1
30			1					1	1					1	4	6	7
31						1	1	2					2			2	4
32			1	1				2							1	1	3
33			1					1			1	1				2	3
34					3			3			2		1	1		4	7
35								0			1	1				2	2
36						1		1					1			1	2
37								0								1	1
38						1		1			1				1	2	3
39						1		1					1			1	2
40								0	1						1	2	2
41								0				1				1	1
42						1		1								1	2
43				1				1							1	1	2
44							1	1			1			1		2	3

Table C-4. Travel time information for recoveries of tagged sockeye salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1								Fish tagged at fishwheel 2								Grand Total
	Location recovered																
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	
45								0								0	0
46								0				1			1	2	2
47								0							1	1	1
48								0								0	0
49							1	1								0	1
50				1				1							1	1	2
51							1	1								0	1
53							1	1							1	1	2
55				1	1		1	3								0	3
62							1	1								0	1
Totals	57	60	45	58	51	67	14	352	194	103	102	91	71	96	18	675	1027

Table C-5. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 11 June to 31 July 2000.

Date	Release Period																			
	11-27 June				1-5 July				7-11 July				12-21 July				22-31 July			
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %
12-Jun	4	0			0	0			0	0			0	0			0	0		
13-Jun	0	0			0	0			0	0			0	0			0	0		
14-Jun	0	0			0	0			0	0			0	0			0	0		
15-Jun	0	0			0	0			0	0			0	0			0	0		
16-Jun	9	1			0	0			0	0			0	0			0	0		
17-Jun	39	3			0	0			0	0			0	0			0	0		
18-Jun	45	6			0	0			0	0			0	0			0	0		
19-Jun	100	12			0	0			0	0			0	0			0	0		
20-Jun	112	19			0	0			0	0			0	0			0	0		
21-Jun	158	28			0	0			0	0			0	0			0	0		
22-Jun	166	38			0	0			0	0			0	0			0	0		
23-Jun	153	48			0	0			0	0			0	0			0	0		
24-Jun	173	58			0	0			0	0			0	0			0	0		
25-Jun	239	73			0	0			0	0			0	0			0	0		
26-Jun	305	91			0	0			0	0			0	0			0	0		
27-Jun	149	100			0	0			0	0			0	0			0	0		
28-Jun	0	100			0	0			0	0			0	0			0	0		
29-Jun	0	100			0	0			0	0			0	0			0	0		
30-Jun	0	100			0	0			0	0			0	0			0	0		
01-Jul	0	100	0	0	383	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02-Jul	0	100	0	0	117	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03-Jul	0	100	0	0	327	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04-Jul	0	100	0	0	145	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05-Jul	0	100	0	0	149	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06-Jul	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-Jul	0	100	0	0	0	100	0	0	18	2	0	0	0	0	0	0	0	0	0	0
08-Jul	0	100	0	0	0	100	0	0	164	21	0	0	0	0	0	0	0	0	0	0
09-Jul	0	100	0	0	0	100	0	0	274	52	0	0	0	0	0	0	0	0	0	0
10-Jul	0	100	0	0	0	100	0	0	298	86	0	0	0	0	0	0	0	0	0	0
11-Jul	0	100	0	0	0	100	0	0	125	100	0	0	0	0	0	0	0	0	0	0
12-Jul	0	100	0	0	0	100	0	0	0	100	0	0	196	23	0	0	0	0	0	0
13-Jul	0	100	0	0	0	100	0	0	0	100	0	0	98	34	0	0	0	0	0	0
14-Jul	0	100	0	0	0	100	0	0	0	100	0	0	122	49	0	0	0	0	0	0
15-Jul	0	100	0	0	0	100	0	0	0	100	0	0	62	56	0	0	0	0	0	0
16-Jul	0	100	0	0	0	100	0	0	0	100	0	0	77	65	0	0	0	0	0	0
17-Jul	0	100	5	1	0	100	0	0	0	100	0	0	67	73	0	0	0	0	0	0
18-Jul	0	100	59	8	0	100	4	1	0	100	0	0	58	80	0	0	0	0	0	0
19-Jul	0	100	94	20	0	100	24	5	0	100	0	0	86	90	0	0	0	0	0	0

Table C-5. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 11 June to 31 July 2000.

Date	Release Period																			
	11-27 June				1-5 July				7-11 July				12-21 July				22-31 July			
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %
20-Jul	0	100	101	33	0	100	50	15	0	100	0	0	48	95	0	0	0	0	0	0
21-Jul	0	100	28	36	0	100	7	16	0	100	0	0	41	100	0	0	0	0	0	0
22-Jul	0	100	49	42	0	100	30	22	0	100	0	0	0	100	0	0	64	9	0	0
23-Jul	0	100	153	62	0	100	115	43	0	100	4	1	0	100	0	0	89	22	0	0
24-Jul	0	100	87	73	0	100	88	60	0	100	20	6	0	100	0	0	121	40	0	0
25-Jul	0	100	58	80	0	100	64	72	0	100	41	17	0	100	0	0	52	48	0	0
26-Jul	0	100	15	82	0	100	5	73	0	100	5	19	0	100	0	0	45	54	0	0
27-Jul	0	100	4	82	0	100	11	75	0	100	4	20	0	100	0	0	60	63	0	0
28-Jul	0	100	4	83	0	100	4	76	0	100	8	22	0	100	0	0	61	72	0	0
29-Jul	0	100	3	83	0	100	1	76	0	100	4	23	0	100	0	0	35	77	0	0
30-Jul	0	100	6	84	0	100	11	78	0	100	14	27	0	100	0	0	90	90	0	0
31-Jul	0	100	12	86	0	100	20	82	0	100	17	31	0	100	0	0	65	100	0	0
01-Aug	0	100	19	88	0	100	21	86	0	100	30	39	0	100	3	1	0	100	0	0
02-Aug	0	100	19	90	0	100	16	89	0	100	37	49	0	100	3	3	0	100	0	0
03-Aug	0	100	18	93	0	100	17	92	0	100	43	60	0	100	5	5	0	100	0	0
04-Aug	0	100	13	94	0	100	13	94	0	100	32	69	0	100	5	7	0	100	0	0
05-Aug	0	100	12	96	0	100	12	96	0	100	34	78	0	100	9	12	0	100	0	0
06-Aug	0	100	8	97	0	100	5	97	0	100	25	84	0	100	12	17	0	100	0	0
07-Aug	0	100	5	97	0	100	5	98	0	100	19	89	0	100	17	25	0	100	0	0
08-Aug	0	100	7	98	0	100	2	99	0	100	17	94	0	100	17	33	0	100	1	0
09-Aug	0	100	6	99	0	100	3	99	0	100	9	96	0	100	14	39	0	100	1	1
10-Aug	0	100	2	99	0	100	1	99	0	100	2	97	0	100	10	44	0	100	1	1
11-Aug	0	100	2	100	0	100	0	99	0	100	4	98	0	100	16	51	0	100	2	2
12-Aug	0	100	0	100	0	100	1	100	0	100	3	99	0	100	11	56	0	100	8	5
13-Aug	0	100	2	100	0	100	1	100	0	100	0	99	0	100	17	64	0	100	18	11
14-Aug	0	100	0	100	0	100	0	100	0	100	1	99	0	100	20	73	0	100	36	23
15-Aug	0	100	1	100	0	100	1	100	0	100	0	99	0	100	20	82	0	100	37	36
16-Aug	0	100	0	100	0	100	0	100	0	100	3	100	0	100	8	86	0	100	36	49
17-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	8	90	0	100	36	61
18-Aug	0	100	0	100	0	100	0	100	0	100	1	100	0	100	1	90	0	100	14	66
19-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	91	0	100	10	70
20-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	2	92	0	100	18	76
21-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	5	94	0	100	13	80
22-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	8	83
23-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	0	83
24-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	1	84
25-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	3	85
26-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	0	85

Table C-5. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 11 June to 31 July 2000.

Date	Release Period																			
	11-27 June				1-5 July				7-11 July				12-21 July				22-31 July			
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	Cum.	
	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%
27-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	0	85
28-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	0	85
29-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	5	86
30-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	94	0	100	4	88
31-Aug	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	94	0	100	7	90
01-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	95	0	100	6	92
02-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	95	0	100	3	93
03-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	95	0	100	2	94
04-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	96	0	100	2	95
05-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	3	97	0	100	5	97
06-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	98	0	100	1	97
07-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	98	0	100	2	98
08-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	98	0	100	2	98
09-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	98	0	100	0	98
10-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	98	0	100	1	99
11-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	99	0	100	0	99
12-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	1	99	0	100	1	99
13-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	99	0	100	1	99
14-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	99	0	100	0	99
15-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	99	0	100	0	99
16-Sep	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0	99	0	100	0	99
17-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	99
18-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	99
19-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	99
20-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	99
21-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	1	100
22-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	100
23-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	100
24-Sep		100	0	100		100	0	100		100	0	100		100	0	99		100	0	100
25-Sep		100	0	100		100	0	100		100	0	100		100	1	100		100	0	100
26-Sep		100	0	100		100	0	100		100	0	100		100	1	100		100	0	100
27-Sep		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100
28-Sep		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100
29-Sep		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100
30-Sep		100	0	100		100	0	100		100	0	100		100	0	100		100	1	100
01-Oct		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100
02-Oct		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100
03-Oct		100	0	100		100	0	100		100	0	100		100	0	100		100	0	100

Table C-5. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 11 June to 31 July 2000.

Date	Release Period															
	11-27 June				1-5 July				7-11 July				12-21 July			
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %
04-Oct		100	0	100		100	0	100		100	0	100		100	0	100
05-Oct		100	0	100		100	0	100		100	0	100		100	0	100
06-Oct		100	0	100		100	0	100		100	0	100		100	0	100
07-Oct		100	0	100		100	0	100		100	0	100		100	0	100
08-Oct		100	0	100		100	0	100		100	0	100		100	0	100
09-Oct		100	0	100		100	0	100		100	0	100		100	0	100
10-Oct		100	0	100		100	0	100		100	0	100		100	0	100
11-Oct		100	0	100		100	0	100		100	0	100		100	0	100
12-Oct		100	0	100		100	0	100		100	0	100		100	0	100
13-Oct		100	0	100		100	0	100		100	0	100		100	0	100
Total	1652		792		1121		532		879		377		855		217	

Table C-6. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 1 August to 16 September 2000.

Date	Release Period																All Periods			
	1-4 August				5-14 August				15-27 August				28 August - 16 September							
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.	
	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%
12-Jun	0	0			0	0			0	0			0	0			4	0		
13-Jun	0	0			0	0			0	0			0	0			0	0		
14-Jun	0	0			0	0			0	0			0	0			0	0		
15-Jun	0	0			0	0			0	0			0	0			0	0		
16-Jun	0	0			0	0			0	0			0	0			9	0		
17-Jun	0	0			0	0			0	0			0	0			39	1		
18-Jun	0	0			0	0			0	0			0	0			45	1		
19-Jun	0	0			0	0			0	0			0	0			100	3		
20-Jun	0	0			0	0			0	0			0	0			112	5		
21-Jun	0	0			0	0			0	0			0	0			158	7		
22-Jun	0	0			0	0			0	0			0	0			166	9		
23-Jun	0	0			0	0			0	0			0	0			153	12		
24-Jun	0	0			0	0			0	0			0	0			173	14		
25-Jun	0	0			0	0			0	0			0	0			239	18		
26-Jun	0	0			0	0			0	0			0	0			305	22		
27-Jun	0	0			0	0			0	0			0	0			149	24		
28-Jun	0	0			0	0			0	0			0	0			0	24		
29-Jun	0	0			0	0			0	0			0	0			0	24		
30-Jun	0	0			0	0			0	0			0	0			0	24		
01-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	383	30	0	0
02-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	31	0	0
03-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	327	36	0	0
04-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145	38	0	0
05-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	41	0	0
06-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0
07-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	41	0	0
08-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164	43	0	0
09-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	274	47	0	0
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	298	52	0	0
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	53	0	0
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196	56	0	0
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	58	0	0
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122	60	0	0
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	60	0	0

Table C-6. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 1 August to 16 September 2000.

Date	Release Period																All Periods			
	1-4 August				5-14 August				15-27 August				28 August - 16 September							
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered					
	Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.					
	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%
16-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	62	0	0
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	63	5	0
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	63	63	2
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	65	118	6
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	65	151	11
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	66	35	13
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	67	79	15
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	68	272	24
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	70	195	31
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	71	163	36
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	71	25	37
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	72	19	38
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	73	16	38
29-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	74	8	39
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	75	31	40
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	76	49	41
01-Aug	58	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	77	73	44
02-Aug	118	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	79	75	46
03-Aug	193	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193	81	83	49
04-Aug	268	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	268	85	63	51
05-Aug	0	100	0	0	179	25	0	0	0	0	0	0	0	0	0	0	179	88	67	54
06-Aug	0	100	0	0	87	38	0	0	0	0	0	0	0	0	0	0	87	89	50	55
07-Aug	0	100	0	0	57	46	0	0	0	0	0	0	0	0	0	0	57	90	46	57
08-Aug	0	100	0	0	71	56	0	0	0	0	0	0	0	0	0	0	71	91	44	58
09-Aug	0	100	0	0	73	66	0	0	0	0	0	0	0	0	0	0	73	92	33	59
10-Aug	0	100	0	0	76	77	0	0	0	0	0	0	0	0	0	0	76	93	16	60
11-Aug	0	100	0	0	68	86	0	0	0	0	0	0	0	0	0	0	68	94	24	61
12-Aug	0	100	0	0	30	91	0	0	0	0	0	0	0	0	0	0	30	95	23	62
13-Aug	0	100	1	0	29	95	0	0	0	0	0	0	0	0	0	0	29	95	39	63
14-Aug	0	100	3	1	37	100	1	0	0	0	0	0	0	0	0	0	37	96	61	65
15-Aug	0	100	10	4	0	100	0	0	21	16	0	0	0	0	0	0	21	96	69	67
16-Aug	0	100	19	9	0	100	0	0	13	25	0	0	0	0	0	0	13	96	66	70
17-Aug	0	100	39	19	0	100	5	2	6	30	0	0	0	0	0	0	6	96	88	73
18-Aug	0	100	50	33	0	100	1	2	25	49	0	0	0	0	0	0	25	97	67	75

Table C-6. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 1 August to 16 September 2000.

Date	Release Period																All Periods			
	1-4 August				5-14 August				15-27 August				28 August - 16 September							
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %	Daily	Cum. %
19-Aug	0	100	39	43	0	100	12	6	13	58	0	0	0	0	0	0	13	97	62	77
20-Aug	0	100	54	57	0	100	40	18	18	72	0	0	0	0	0	0	18	97	114	81
21-Aug	0	100	41	68	0	100	24	25	19	86	0	0	0	0	0	0	19	97	83	84
22-Aug	0	100	27	76	0	100	15	30	4	89	0	0	0	0	0	0	4	97	50	85
23-Aug	0	100	1	76	0	100	0	30	0	89	0	0	0	0	0	0	0	97	1	85
24-Aug	0	100	2	76	0	100	7	32	2	90	0	0	0	0	0	0	2	97	10	86
25-Aug	0	100	4	78	0	100	6	34	4	93	0	0	0	0	0	0	4	97	13	86
26-Aug	0	100	0	78	0	100	0	34	3	96	0	0	0	0	0	0	3	97	0	86
27-Aug	0	100	1	78	0	100	0	34	6	100	0	0	0	0	0	0	6	98	1	86
28-Aug	0	100	3	79	0	100	1	34	0	100	0	0	14	8	0	0	14	98	4	86
29-Aug	0	100	4	80	0	100	5	36	0	100	0	0	25	23	0	0	25	98	14	87
30-Aug	0	100	8	82	0	100	25	44	0	100	0	0	14	32	0	0	14	98	37	88
31-Aug	0	100	13	85	0	100	21	50	0	100	0	0	17	42	0	0	17	99	42	89
01-Sep	0	100	18	90	0	100	25	58	0	100	0	0	10	48	0	0	10	99	50	91
02-Sep	0	100	6	92	0	100	28	66	0	100	0	0	14	57	0	0	14	99	38	92
03-Sep	0	100	3	93	0	100	20	72	0	100	0	0	5	60	0	0	5	99	25	93
04-Sep	0	100	4	94	0	100	23	79	0	100	0	0	4	62	0	0	4	99	30	94
05-Sep	0	100	6	95	0	100	8	82	0	100	3	8	11	69	0	0	11	99	25	95
06-Sep	0	100	2	96	0	100	9	85	0	100	2	13	12	76	0	0	12	99	15	95
07-Sep	0	100	2	96	0	100	6	87	0	100	0	13	10	82	0	0	10	100	10	96
08-Sep	0	100	1	97	0	100	1	87	0	100	0	13	6	86	0	0	6	100	5	96
09-Sep	0	100	1	97	0	100	3	88	0	100	1	15	6	89	0	0	6	100	5	96
10-Sep	0	100	1	97	0	100	5	89	0	100	1	18	6	93	0	0	6	100	8	96
11-Sep	0	100	1	97	0	100	4	90	0	100	7	36	1	93	0	0	1	100	13	97
12-Sep	0	100	2	98	0	100	7	93	0	100	3	44	3	95	1	5	3	100	15	97
13-Sep	0	100	0	98	0	100	6	94	0	100	1	46	3	97	1	10	3	100	9	98
14-Sep	0	100	1	98	0	100	5	96	0	100	6	62	2	98	1	15	2	100	13	98
15-Sep	0	100	4	99	0	100	4	97	0	100	2	67	0	98	2	25	0	100	12	99
16-Sep	0	100	1	99	0	100	1	98	0	100	2	72	3	100	1	30	3	100	5	99
17-Sep		100	1	100		100	2	98		100	1	74		100	0	30	0	100	4	99
18-Sep		100	0	100		100	0	98		100	0	74		100	0	30	0	100	0	99
19-Sep		100	0	100		100	0	98		100	0	74		100	0	30	0	100	0	99
20-Sep		100	0	100		100	0	98		100	0	74		100	0	30	0	100	0	99
21-Sep		100	0	100		100	0	98		100	0	74		100	0	30	0	100	1	99

Table C-6. Number of sockeye tagged at the Nass River fishwheels and recovered at the Meziadin fishway by release period, 1 August to 16 September 2000.

Date	Release Period																All Periods			
	1-4 August				5-14 August				15-27 August				28 August - 16 September							
	Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered		Tagged		Recovered	
	Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.		Cum.	
	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%	Daily	%
22-Sep		100	0	100		100	0	98		100	0	74		100	0	30	0	100	0	99
23-Sep		100	0	100		100	1	98		100	0	74		100	1	35	0	100	2	99
24-Sep		100	0	100		100	1	99		100	0	74		100	1	40	0	100	2	99
25-Sep		100	0	100		100	1	99		100	0	74		100	2	50	0	100	4	99
26-Sep		100	1	100		100	0	99		100	2	79		100	2	60	0	100	6	99
27-Sep		100	0	100		100	2	100		100	5	92		100	2	70	0	100	9	100
28-Sep		100	0	100		100	0	100		100	0	92		100	1	75	0	100	1	100
29-Sep		100	0	100		100	0	100		100	0	92		100	1	80	0	100	1	100
30-Sep		100	0	100		100	1	100		100	0	92		100	1	85	0	100	3	100
01-Oct		100	0	100		100	0	100		100	2	97		100	1	90	0	100	3	100
02-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
03-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
04-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
05-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
06-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
07-Oct		100	0	100		100	0	100		100	0	97		100	0	90	0	100	0	100
08-Oct		100	0	100		100	0	100		100	0	97		100	1	95	0	100	1	100
09-Oct		100	0	100		100	0	100		100	0	97		100	1	100	0	100	1	100
10-Oct		100	0	100		100	0	100		100	1	100		100	0	100	0	100	1	100
11-Oct		100	0	100		100	0	100		100	0	100		100	0	100	0	100	0	100
12-Oct		100	0	100		100	0	100		100	0	100		100	0	100	0	100	0	100
13-Oct		100	0	100		100	0	100		100	0	100		100	0	100	0	100	0	100
Total	637		374		707		326		134		39		166		20		6833		2964	

Table C-7. Travel time information for recoveries of tagged coho salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1								Fish tagged at fishwheel 2								Grand Total
	Location recovered																
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	
<1	10	8						18	7	3						10	28
1	14	16						30	14	5						19	49
2	18	9			4			31	12	4	1		1	2		20	51
3	7	6	2	4	3	3		25	9	4	2	1		1		17	42
4	11	3	2	14	9	5		44	8	5	3	3	4	2		25	69
5	3	5	2	3	5	4		22	9	1	1	4	4	6		25	47
6	5	5	1	4	12	9		36	2	3	5	1	4	4		19	55
7	9	4	4	5	5	8		35	2	1	5	4	3	2		17	52
8	1	2	5	5	5	4		22	3	1	1	2	3	7		17	39
9	2	2	4	5	7	3		23	5	3	2	3	3	3		19	42
10	3		3	3	7	1		17	1	1	1	4	3			10	27
11		1		1	5	5		12	2		3	2	4			11	23
12			3	2	5	4		14	2	1	2	1	6	3		15	29
13		1	2	2	5	3		13		1	1	3	10	1		16	29
14	1				2	3		6					2	4		6	12
15	1		2		6	1		10			2		5	2		9	19
16			1	2	4	3		10				2	1	3		6	16
17			2		4	1		7			4	1	2	1		8	15
18	1		1		3	4		9			1		1	2		4	13
19			3	2	5	2		12			2			2		4	16
20			1	1		2		4			2	1		1		4	8
21	1		2	3	3	2		11			1	1		2		4	15
22	1		3	1	4	2		11		1	3	2	1			7	18
23				2	2	4		8					1	4		5	13
24				1		1		2				1	4			5	7
25			1	1	1			3			1	3	2	1		7	10
26			1	1	1	2	2	7					1	1		2	9
27								0			1		3		2	6	6
28				2				2	1				1	1	4	7	9
29	1	1						2						1		1	3
30			1		1	1	1	4							2	2	6
31			1				3	4					1		1	2	6
32						1		1						1	1	2	3
33			1					1			1			1	3	5	6
34		1						1							1	1	2
35					1			1			1			1		2	3
36						1		1							2	2	3
37						2		2								0	2
38							1	1							2	2	3
39							2	2								0	2
40								0								0	0
41			1				1	2							1	1	3
42								0								0	0
43								0								0	0
44								0								0	0
45								0								0	0

Table C-7. Travel time information for recoveries of tagged coho salmon by location tagged and location recovered, 2000.

Travel time (d)	Fish tagged at fishwheel 1								Fish tagged at fishwheel 2								Grand Total
	Location recovered																
	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	Fw1	Fw2	Fw3	Fw4	Fw5	Fw6	Mez	Total	
46								0							1	1	1
47								0							1	1	1
48							1	1								0	1
49								0								0	0
50								0								0	0
51								0								0	0
52								0								0	0
53								0								0	0
54								0								0	0
55								0								0	0
56								0								0	0
57								0								0	0
58								0								0	0
59								0							1	1	1
60								0								0	0
61								0								0	0
62							1	1								0	1
66								0								0	0
67								0								0	0
69								0								0	0
Totals	89	64	49	64	109	81	12	468	77	34	46	39	70	59	22	347	815

APPENDIX D

Daily counts of salmon at the Meziadin fishway and in-season sockeye run-size estimates
to Gitwinksihlkw, 2000

Table D-1. Daily counts of sockeye salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Adults		Jacks		All sockeye		No. of tags counted		Recovered tags	Portion recovered	Portion of adults tagged	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Total	Cum.			Daily	Cum.
04-Jul	0	-	0	-	0	-	0	-				
05-Jul	0	-	0	-	0	-	0	-				
06-Jul	2	2	0	-	2	2	0	-			0.000	0.000
07-Jul	0	2	0	-	0	2	0	-				0.000
08-Jul	0	2	0	-	0	2	0	-				0.000
09-Jul	3	5	0	-	3	5	0	-			0.000	0.000
10-Jul	5	10	0	-	5	10	0	-			0.000	0.000
11-Jul	1	11	0	-	1	11	0	-			0.000	0.000
12-Jul	0	11	0	-	0	11	0	-				0.000
13-Jul	7	18	0	-	7	18	0	-			0.000	0.000
14-Jul	12	30	0	-	12	30	0	-			0.000	0.000
15-Jul	97	127	0	-	97	127	0	-			0.000	0.000
16-Jul	161	288	0	-	161	288	0	-			0.000	0.000
17-Jul	798	1,086	0	-	798	1,086	5	5			0.006	0.005
18-Jul	6,492	7,578	0	-	6,492	7,578	63	68			0.010	0.009
19-Jul	13,280	20,858	0	-	13,280	20,858	118	186			0.009	0.009
20-Jul	12,006	32,864	1	1	12,007	32,865	151	337			0.013	0.010
21-Jul	2,152	35,016	0	1	2,152	35,017	35	372			0.016	0.011
22-Jul	4,479	39,495	0	1	4,479	39,496	79	451			0.018	0.011
23-Jul	12,456	51,951	1	2	12,457	51,953	272	723			0.022	0.014
24-Jul	8,915	60,866	2	4	8,917	60,870	195	918			0.022	0.015
25-Jul	5,186	66,052	3	7	5,189	66,059	163	1,081			0.031	0.016
26-Jul	662	66,714	1	8	663	66,722	25	1,106			0.038	0.017
27-Jul	610	67,324	0	8	610	67,332	19	1,125			0.031	0.017
28-Jul	925	68,249	1	9	926	68,258	16	1,141			0.017	0.017
29-Jul	328	68,577	2	11	330	68,588	8	1,149			0.024	0.017
30-Jul	899	69,476	4	15	903	69,491	31	1,180			0.034	0.017
31-Jul	1,622	71,098	4	19	1,626	71,117	49	1,229			0.030	0.017
01-Aug	2,339	73,437	2	21	2,341	73,458	73	1,302			0.031	0.018
02-Aug	1,852	75,289	5	26	1,857	75,315	75	1,377			0.040	0.018
03-Aug	1,848	77,137	9	35	1,857	77,172	83	1,460			0.045	0.019
04-Aug	1,314	78,451	8	43	1,322	78,494	63	1,523			0.048	0.019
05-Aug	1,158	79,609	8	51	1,166	79,660	67	1,590			0.058	0.020

Table D-1. Daily counts of sockeye salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Adults		Jacks		All sockeye		No. of tags counted		Recovered tags	Portion recovered	Portion of adults tagged	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Total	Cum.			Daily	Cum.
06-Aug	1,094	80,703	11	62	1105	80,765	50	1,640			0.046	0.020
07-Aug	976	81,679	17	79	993	81,758	46	1,686			0.047	0.021
08-Aug	1,117	82,796	40	119	1157	82,915	44	1,730			0.039	0.021
09-Aug	1,074	83,870	37	156	1111	84,026	33	1,763			0.031	0.021
10-Aug	771	84,641	23	179	794	84,820	16	1,779			0.021	0.021
11-Aug	1,125	85,766	30	209	1155	85,975	24	1,803			0.021	0.021
12-Aug	1,518	87,284	56	265	1574	87,549	23	1,826			0.015	0.021
13-Aug	2,659	89,943	52	317	2711	90,260	39	1,865			0.015	0.021
14-Aug	4,201	94,144	85	402	4286	94,546	61	1,926			0.015	0.020
15-Aug	4,195	98,339	82	484	4277	98,823	69	1,995			0.016	0.020
16-Aug	4,283	102,622	44	528	4327	103,150	66	2,061			0.015	0.020
17-Aug	4,517	107,139	56	584	4573	107,723	88	2,149			0.019	0.020
18-Aug	3,744	110,883	24	608	3768	111,491	67	2,216			0.018	0.020
19-Aug	2,853	113,736	20	628	2873	114,364	62	2,278			0.022	0.020
20-Aug	4,132	117,868	61	689	4193	118,557	114	2,392			0.028	0.020
21-Aug	2,865	120,733	56	745	2921	121,478	83	2,475			0.029	0.020
22-Aug	1,665	122,398	23	768	1688	123,166	50	2,525			0.030	0.021
23-Aug	50	122,448	0	768	50	123,216	1	2,526			0.020	0.021
24-Aug	393	122,841	1	769	394	123,610	10	2,536			0.025	0.021
25-Aug	391	123,232	5	774	396	124,006	13	2,549			0.033	0.021
26-Aug	58	123,290	1	775	59	124,065	0	2,549			0.000	0.021
27-Aug	75	123,365	0	775	75	124,140	1	2,550			0.013	0.021
28-Aug	197	123,562	4	779	201	124,341	4	2,554			0.020	0.021
29-Aug	559	124,121	7	786	566	124,907	14	2,568			0.025	0.021
30-Aug	1,597	125,718	21	807	1618	126,525	37	2,605			0.023	0.021
31-Aug	1,500	127,218	21	828	1521	128,046	42	2,647			0.028	0.021
01-Sep	1,305	128,523	57	885	1362	129,408	50	2,697			0.038	0.021
02-Sep	1,015	129,538	19	904	1034	130,442	38	2,735			0.037	0.021
03-Sep	764	130,302	18	922	782	131,224	25	2,760			0.033	0.021
04-Sep	926	131,228	14	936	940	132,164	30	2,790			0.032	0.021
05-Sep	915	132,143	30	966	945	133,109	25	2,815			0.027	0.021
06-Sep	423	132,566	9	975	432	133,541	15	2,830			0.035	0.021
07-Sep	319	132,885	8	983	327	133,868	10	2,840			0.031	0.021

Table D-1. Daily counts of sockeye salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Adults		Jacks		All sockeye		No. of tags counted		Recovered tags	Portion recovered	Portion of adults tagged	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Total	Cum.			Daily	Cum.
08-Sep	147	133,032	5	988	152	134,020	5	2,845			0.034	0.021
09-Sep	131	133,163	2	990	133	134,153	5	2,850			0.038	0.021
10-Sep	200	133,363	4	994	204	134,357	8	2,858			0.040	0.021
11-Sep	342	133,705	5	999	347	134,704	13	2,871			0.038	0.021
12-Sep	481	134,186	12	1,011	493	135,197	15	2,886	1	0.07	0.031	0.022
13-Sep	264	134,450	6	1,017	270	135,467	9	2,895	1	0.11	0.034	0.022
14-Sep	366	134,816	8	1,025	374	135,841	13	2,908	1	0.08	0.036	0.022
15-Sep	389	135,205	10	1,035	399	136,240	12	2,920	1	0.08	0.031	0.022
16-Sep	103	135,308	5	1,040	108	136,348	5	2,925	1	0.20	0.049	0.022
17-Sep	192	135,500	10	1,050	202	136,550	4	2,929			0.021	0.022
18-Sep	24	135,524	0	1,050	24	136,574	0	2,929			0.000	0.022
19-Sep	3	135,527	0	1,050	3	136,577	0	2,929			0.000	0.022
20-Sep	5	135,532	0	1,050	5	136,582	0	2,929			0.000	0.022
21-Sep	37	135,569	3	1,053	40	136,622	1	2,930			0.027	0.022
22-Sep	14	135,583	1	1,054	15	136,637	0	2,930			0.000	0.022
23-Sep	65	135,648	1	1,055	66	136,703	2	2,932	1	0.50	0.031	0.022
24-Sep	57	135,705	2	1,057	59	136,762	2	2,934	1	0.50	0.035	0.022
25-Sep	136	135,841	0	1,057	136	136,898	4	2,938	2	0.50	0.029	0.022
26-Sep	219	136,060	6	1,063	225	137,123	6	2,944	3	0.50	0.027	0.022
27-Sep	156	136,216	12	1,075	168	137,291	9	2,953	9	1.00	0.058	0.022
28-Sep	68	136,284	1	1,076	69	137,360	1	2,954	1	1.00	0.015	0.022
29-Sep	225	136,509	4	1,080	229	137,589	1	2,955	1	1.00	0.004	0.022
30-Sep	94	136,603	1	1,081	95	137,684	3	2,958	3	1.00	0.032	0.022
01-Oct	69	136,672	1	1,082	70	137,754	3	2,961	3	1.00	0.043	0.022
02-Oct	53	136,725	1	1,083	54	137,808	0	2,961			0.000	0.022
03-Oct	35	136,760	1	1,084	36	137,844	1	2,962	1	1.00	0.029	0.022
04-Oct	28	136,788	0	1,084	28	137,872	0	2,962			0.000	0.022
05-Oct	19	136,807	0	1,084	19	137,891	0	2,962			0.000	0.022
06-Oct	7	136,814	1	1,085	8	137,899	0	2,962			0.000	0.022
07-Oct	25	136,839	1	1,086	26	137,925	0	2,962			0.000	0.022
08-Oct	38	136,877	0	1,086	38	137,963	1	2,963	1	1.00	0.026	0.022
09-Oct	48	136,925	0	1,086	48	138,011	0	2,963			0.000	0.022
10-Oct	50	136,975	0	1,086	50	138,061	1	2,964	1	1.00	0.020	0.022

Table D-1. Daily counts of sockeye salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Adults		Jacks		All sockeye		No. of tags counted		Recovered tags	Portion recovered	Portion of adults tagged	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Total	Cum.			Daily	Cum.
11-Oct	32	137,007	0	1,086	32	138,093	0	2,964			0.000	0.022
12-Oct	21	137,028	0	1,086	21	138,114	0	2,964			0.000	0.022
13-Oct	14	137,042	0	1,086	14	138,128	0	2,964			0.000	0.022
Total	137,042		1,086		138,128		2,964		32	0.01	0.022	

Table D-2. Daily counts of chinook, coho, steelhead and pink salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Chinook						Coho						Steelhead							
	Adults		Tags		Portion	Jacks		Adults		Tags		Portion tagged		Jacks		Adults		Tags		Portion
	Daily	Cum.	Daily	Cum.	tagged	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	tagged
04-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
05-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
06-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
07-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
08-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
09-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
10-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
11-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
12-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
13-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
14-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
15-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
16-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
17-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
18-Jul	0	-	0	-		0	-	0	-	0	-			0	-	0	-	0	-	
19-Jul	3	3	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
20-Jul	5	8	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
21-Jul	1	9	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
22-Jul	1	10	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
23-Jul	2	12	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
24-Jul	6	18	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
25-Jul	12	30	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
26-Jul	3	33	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
27-Jul	2	35	0	-	0.000	0	-	0	-	0	-			0	-	0	-	0	-	
28-Jul	8	43	1	1	0.023	0	-	0	-	0	-			0	-	0	-	0	-	
29-Jul	2	45	0	1	0.022	0	-	0	-	0	-			0	-	0	-	0	-	
30-Jul	7	52	0	1	0.019	0	-	0	-	0	-			0	-	0	-	0	-	
31-Jul	8	60	0	1	0.017	0	-	0	-	0	-			0	-	0	-	0	-	
01-Aug	4	64	0	1	0.016	0	-	0	-	0	-			0	-	0	-	0	-	
02-Aug	7	71	0	1	0.014	0	-	0	-	0	-			0	-	0	-	0	-	
03-Aug	5	76	0	1	0.013	0	-	0	-	0	-			0	-	0	-	0	-	
04-Aug	7	83	0	1	0.012	0	-	0	-	0	-			0	-	0	-	0	-	
05-Aug	11	94	0	1	0.011	0	-	0	-	0	-			0	-	0	-	0	-	
06-Aug	13	107	1	2	0.019	0	-	0	-	0	-			0	-	0	-	0	-	
07-Aug	16	123	0	2	0.016	1	1	0	-	0	-			0	-	0	-	0	-	
08-Aug	16	139	0	2	0.014	0	1	0	-	0	-			0	-	0	-	0	-	
09-Aug	18	157	1	3	0.019	0	1	0	-	0	-			0	-	0	-	0	-	

Table D-2. Daily counts of chinook, coho, steelhead and pink salmon through the Meziadin fishway, 4 July to 13 October 2000.

Table D-2. Daily counts of chinook, coho, steelhead and pink salmon through the Meziadin fishway, 4 July to 13 October 2000.																	
Date	Chinook					Coho					Jacks		Adults		Steelhead		
	Adults		Tags		Portion tagged	Jacks		Adults		Tags		Portion	Daily	Cum.	Daily	Cum.	Portion tagged
	Daily	Cum.	Daily	Cum.	tagged	Daily	Cum.	Daily	Cum.	Daily	Cum.	tagged					
10-Aug	11	168	0	3	0.018	0	1	0	-	0	-			0	-	0	-
11-Aug	9	177	2	5	0.028	0	1	0	-	0	-			0	-	0	-
12-Aug	14	191	0	5	0.026	1	2	0	-	0	-	0.000	0.000	0	-	0	-
13-Aug	12	203	0	5	0.025	0	2	2	2	0	-	0.000	0.000	0	-	0	-
14-Aug	11	214	1	6	0.028	1	3	1	3	0	-	0.000	0.000	0	-	0	-
15-Aug	13	227	1	7	0.031	2	5	1	4	0	-	0.000	0.000	0	-	0	-
16-Aug	19	246	1	8	0.033	3	8	2	6	0	-	0.000	0.000	0	-	0	-
17-Aug	14	260	0	8	0.031	1	9	15	21	0	-	0.000	0.000	0	-	1	1.000
18-Aug	5	265	2	10	0.038	0	9	6	34	0	-	0.000	0.000	0	-	1	1
19-Aug	17	282	0	10	0.035	0	9	23	40	0	-	0.000	0.000	0	-	1	0.000
20-Aug	12	294	4	14	0.048	1	10	34	63	0	-	0.000	0.000	0	-	2	1
21-Aug	3	297	1	15	0.051	0	10	15	97	0	-	0.000	0.000	0	-	2	1
22-Aug	11	308	1	16	0.052	0	10	1	112	0	-	0.000	0.000	0	-	2	1
23-Aug	0	308	0	16	0.052	0	10	3	113	0	-	0.000	0.000	0	-	2	1
24-Aug	5	313	0	16	0.051	0	10	2	116	0	-	0.000	0.000	0	-	2	1
25-Aug	10	323	0	16	0.050	0	10	0	118	0	-	0.000	0.000	0	-	2	1
26-Aug	0	323	0	16	0.050	1	11	0	118	0	-	0.000	0.000	0	-	2	1
27-Aug	2	325	0	16	0.049	0	11	2	120	0	-	0.000	0.000	0	-	2	1
28-Aug	2	327	0	16	0.049	0	11	7	127	0	-	0.000	0.000	0	-	2	1
29-Aug	7	334	0	16	0.048	0	11	6	133	0	-	0.000	0.000	0	-	2	1
30-Aug	7	341	4	20	0.059	0	11	15	148	0	-	0.000	0.000	0	-	2	1
31-Aug	7	348	3	23	0.066	0	11	39	187	0	-	0.000	0.000	0	-	3	0.000
01-Sep	7	355	0	23	0.065	1	12	54	241	0	-	0.029	0.006	0	-	3	1
02-Sep	8	363	0	23	0.063	0	12	69	310	2	2	0.000	0.005	0	-	4	0.000
03-Sep	5	368	1	24	0.065	0	12	75	385	0	2	0.028	0.011	0	-	4	1
04-Sep	8	376	1	25	0.066	0	12	144	529	4	6	0.044	0.017	0	-	5	0.000
05-Sep	2	378	0	25	0.066	1	13	113	642	5	11	0.000	0.016	2	2	6	0.000
06-Sep	8	386	2	27	0.070	0	13	34	676	0	11	0.056	0.017	1	3	6	1
07-Sep	3	389	0	27	0.069	0	13	18	694	1	12	0.071	0.018	0	3	6	1
08-Sep	3	392	0	27	0.069	0	13	14	708	1	13	0.100	0.019	0	3	7	0.000
09-Sep	4	396	1	28	0.071	0	13	10	718	1	14	0.040	0.020	0	3	7	1
10-Sep	1	397	0	28	0.071	0	13	25	743	1	15	0.037	0.021	0	3	7	1
11-Sep	5	402	1	29	0.072	0	13	27	770	1	16	0.016	0.020	0	3	8	0.000
12-Sep	3	405	0	29	0.072	0	13	63	833	2	17	0.054	0.022	0	3	9	0.000
13-Sep	0	405	0	29	0.072	0	13	37	870	0	19	0.000	0.021	1	4	11	0.000
14-Sep	1	406	0	29	0.071	0	13	56	926	1	20	0.016	0.020	1	5	11	1
15-Sep	0	406	0	29	0.071	0	13	64	990								

Page 2 of 3

Table D-2. Daily counts of chinook, coho, steelhead and pink salmon through the Meziadin fishway, 4 July to 13 October 2000.

Date	Chinook								Coho						Steelhead					
	Adults		Tags		Portion	Jacks		Adults		Tags		Portion tagged		Jacks		Adults		Tags		Portion
	Daily	Cum.	Daily	Cum.	tagged	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	tagged
16-Sep	1	407	0	29	0.071	0	13	18	1,008	0	20	0.000	0.020	0	5	0	11	0	1	
17-Sep	5	412	0	29	0.070	0	13	24	1,032	3	23	0.125	0.022	0	5	2	13	0	1	0.000
18-Sep	0	412	0	29	0.070	0	13	4	1,036	1	24	0.250	0.023	0	5	2	15	0	1	0.000
19-Sep	1	413	1	30	0.073	0	13	0	1,036	0	24		0.023	0	5	0	15	0	1	
20-Sep	0	413	0	30	0.073	0	13	0	1,036	0	24		0.023	0	5	0	15	0	1	
21-Sep	0	413	0	30	0.073	0	13	7	1,043	0	24	0.000	0.023	0	5	0	15	0	1	
22-Sep	0	413	0	30	0.073	0	13	4	1,047	0	24	0.000	0.023	0	5	0	15	0	1	
23-Sep	0	413	0	30	0.073	0	13	6	1,053	1	25	0.167	0.024	0	5	0	15	0	1	
24-Sep	0	413	0	30	0.073	0	13	12	1,065	0	25	0.000	0.023	0	5	0	15	0	1	
25-Sep	1	414	0	30	0.072	0	13	47	1,112	1	26	0.021	0.023	0	5	1	16	0	1	0.000
26-Sep	0	414	0	30	0.072	0	13	61	1,173	0	26	0.000	0.022	0	5	1	17	0	1	0.000
27-Sep	0	414	0	30	0.072	0	13	38	1,211	1	27	0.026	0.022	0	5	0	17	0	1	
28-Sep	0	414	0	30	0.072	0	13	18	1,229	1	28	0.056	0.023	0	5	2	19	1	2	0.500
29-Sep	0	414	0	30	0.072	0	13	57	1,286	1	29	0.018	0.023	0	5	4	23	0	2	0.000
30-Sep	2	416	0	30	0.072	0	13	14	1,300	0	29	0.000	0.022	0	5	0	23	0	2	
01-Oct	0	416	0	30	0.072	0	13	18	1,318	1	30	0.056	0.023	1	6	0	23	0	2	
02-Oct	0	416	0	30	0.072	0	13	16	1,334	0	30	0.000	0.022	0	6	0	23	0	2	
03-Oct	0	416	0	30	0.072	0	13	12	1,346	0	30	0.000	0.022	0	6	1	24	0	2	0.000
04-Oct	0	416	0	30	0.072	0	13	6	1,352	2	32	0.333	0.024	0	6	1	25	0	2	0.000
05-Oct	0	416	0	30	0.072	0	13	3	1,355	0	32	0.000	0.024	1	7	0	25	0	2	
06-Oct	0	416	0	30	0.072	0	13	3	1,358	0	32	0.000	0.024	0	7	0	25	0	2	
07-Oct	0	416	0	30	0.072	0	13	9	1,367	0	32	0.000	0.023	0	7	2	27	1	3	0.500
08-Oct	0	416	0	30	0.072	0	13	8	1,375	0	32	0.000	0.023	1	8	2	29	0	3	0.000
09-Oct	0	416	0	30	0.072	0	13	10	1,385	0	32	0.000	0.023	0	8	5	34	1	4	0.200
10-Oct	0	416	0	30	0.072	0	13	8	1,393	0	32	0.000	0.023	0	8	1	35	0	4	0.000
11-Oct	0	416	0	30	0.072	0	13	8	1,401	0	32	0.000	0.023	0	8	1	36	0	4	0.000
12-Oct	0	416	0	30	0.072	0	13	8	1,409	1	33	0.125	0.023	0	8	1	37	0	4	0.000
13-Oct	0	416	0	30	0.072	0	13	14	1,423	2	35	0.143	0.025	1	9	0	37	0	4	
Total	416		30			13		1423		35		0.025		9		37		4		0.108

Table D-3. The data used to derive the in-season sockeye salmon run-size estimates for the Nass River, 2000. These are preliminary data as presented during the season; refer to Appendix B for complete catch and tag totals.

Date	Fishwheel Catch				Fishwheel Tags				Prop. tagged	Grease Harbour (FW3, 4, 5, 6, IS Fishery)					In-season run size at GW		Post-season run size at GW	
	Daily FW1	Daily FW2	Daily Actual Total	Cum. catch	Daily FW1	Daily FW2	Cum. Total	Cum. tagged		Catch (incl. reps)	Cum. catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark recap	Expansion factor (fw1&2; 94-97&99)	Daily RunRec.	RunRec. Cum
11-Jun	0	0	0	0	0	0	0	0	0%	[REDACTED]	0	0	[REDACTED]	22.7 11-30 June 11.8 1 July-14 July 13.7 15 July 15.6 16-31 July; 1-3 Aug 18.2 4-7 Aug (1-day tra interpolat between 1 20.7 8-14 Aug 19.5 15 August 18.3 16-31 Aug; Sep	0	0	0	
12-Jun	0	4	4	4	0	4	4	4	100%						91	111	111	
13-Jun				4				4	0%						91	0	111	
14-Jun				4				4	0%						91	0	111	
15-Jun				4				4	0%						91	0	111	
16-Jun	5	11	16	20	2	7	9	13	56%						455	442	553	
17-Jun	18	53	71	91	14	25	39	52	55%						2,068	1964	2517	
18-Jun	13	53	66	157	6	39	45	97	68%						3,569	1825	4342	
19-Jun	30	95	125	282	28	72	100	197	80%						6,410	3457	7799	
20-Jun	42	102	144	426	35	77	112	309	78%						9,683	3982	11781	
21-Jun	63	144	207	633	44	114	158	467	76%	14,388	5725	17506						
22-Jun	36	216	252	885	34	132	166	633	66%	20,116	6969	24476						
23-Jun	73	223	296	1181	31	122	153	786	52%	26,844	8186	32662						
24-Jun	130	216	346	1527	69	104	173	959	50%	34,708	9569	42231						
25-Jun	238	232	470	1997	128	111	239	1198	51%	45,391	12998	55229						
26-Jun	197	416	613	2610	131	174	305	1503	50%	59,324	16953	72182						
27-Jun	86	193	279	2889	57	92	149	1652	53%	65,666	7716	79898						
28-Jun				2889				1652	0%	65,666	0	79898						
29-Jun				2889				1652	0%	65,666	0	79898						
30-Jun				2889				1652	0%	65,666	0	79898						
01-Jul	151	270	421	4152	141	242	383	2035	30%	80,629	6068	85966						
02-Jul	630	617	1247	6652	19	98	117	2152	5%	110,248	17972	103938						
03-Jul	253	373	626	8652	42	285	327	2479	16%	133,944	9022	112961						
04-Jul		163	163	9254		145	145	2624	24%	141,076	2349	115310						
05-Jul	65	105	170	9696	61	88	149	2773	34%	146,313	2450	117760						
06-Jul				9696	0	0	0	2773	0%	146,313	0	117760						
07-Jul	5	14	19	9715	5	13	18	2791	95%	146,538	198	117958						
08-Jul	92	155	247	9962	63	101	164	2955	66%	149,464	2577	120535						
09-Jul	290	251	541	10503	149	125	274	3229	51%	155,874	5644	126179						
10-Jul	293	281	574	11077	153	145	298	3527	52%	162,674	5989	132168						
11-Jul	107	225	332	11409	23	102	125	3652	38%	165,339	3464	135632						
12-Jul	162	210	372	11781	61	135	196	3848	53%	166,608	4435	140067						
13-Jul	91	92	183	11964	49	49	98	3946	54%	171,015	4435	140067						
14-Jul	145	159	304	12268	67	55	122	4068	40%	173,183	2182	142248						
15-Jul	39	71	110	12378	3	59	62	4130	56%	176,785	3624	145873						
16-Jul	52	103	155	12533	4	73	77	4207	50%	177,308	1311	147184						
17-Jul	51	76	127	12660	29	38	67	4274	53%	180,715	1848	149032						
18-Jul	46	69	115	12775	11	47	58	4332	50%	182,698	1514	150546						
19-Jul	59	69	128	12903	30	56	86	4418	67%	184,493	1371	151917						
20-Jul	33	59	92	12995	16	32	48	4466	52%	186,491	1526	153443						
21-Jul	37	49	86	13081	17	24	41	4507	48%	187,928	1097	154540						
22-Jul	69	64	133	13214	31	33	64	4571	48%	189,270	1025	155565						
23-Jul	64	112	176	13390	29	60	89	4660	51%	191,347	2147	157711						
24-Jul	73	164	237	13627	35	86	121	4781	51%	194,094	2841	160552						
										197,794	3825	164377						

Table D-3. The data used to derive the in-season sockeye salmon run-size estimates for the Nass River, 2000. These are preliminary data as presented during the season; refer to Appendix B for complete catch and tag totals.

Date	Fishwheel Catch				Fishwheel Tags					Grease Harbour (FW3, 4, 5, 6, IS Fishery)					In-season run size at GW		Post-season run size at GW	
	Daily FW1	Daily FW2	Actual Total	Cum. catch	Daily FW1	Daily FW2	Total	Cum. tagged	Prop. tagged	Catch (incl. rcps)	Cum. catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark recap	Expansion factor (fw1&2; 94-97&99)	Daily RunRec.	RunRec. Cum
25-Jul	35	67	102	13729	13	39	52	4833	51%	2112	25813	48	98	16.4	194,580	199,387	1646	166023
26-Jul	18	58	76	13805	5	40	45	4878	59%	1062	26875	33	80	14.3	197,400	200,573	1227	167250
27-Jul	41	82	123	13928	18	42	60	4938	49%	21	26896	0	0	14.4	199,905	202,493	1985	169235
28-Jul	50	74	124	14052	10	51	61	4999	49%	31	26927	0	0	14.4	201,174	204,429	2001	171236
29-Jul	31	39	70	14122	8	27	35	5034	50%	16	26943	0	0	14.4	201,866	205,522	1130	172366
30-Jul	95	91	186	14308	39	51	90	5124	48%	60	27003	1	2	11.6	203,585	208,426	3002	175368
31-Jul	84	94	178	14510	35	30	65	5189	32%	205	27208	4	5	37.1	205,237	211,573	2873	178241
01-Aug	65		65	14666	58	0	58	5247	37%	349	27557	11	19	20.4	206,450	214,009	1403	179643
02-Aug	136	0	136	14938	118	0	118	5365	43%	272	27829	16	45	10.2	208,910	218,255	2935	182579
03-Aug	148	261	409	15347	67	126	193	5558	47%	456	28285	15	38	9.9	212,341	224,640	8827	191406
04-Aug	293	152	445	15792	157	111	268	5826	60%	642	28927	21	60	9.2	216,213	232,719	9604	201010
05-Aug	131	297	428	16220	66	113	179	6005	42%	622	29549	17	67	8.2	220,684	240,489	8044	209054
06-Aug	80	184	264	16484	38	49	87	6092	33%	323	29872	7	28	7.8	223,621	245,281	4962	214015
07-Aug	64	131	195	16679	24	33	57	6149	29%	404	30276	7	23	9.0	225,747	248,821	3665	217680
08-Aug	51	99	150	16829	31	40	71	6220	47%	477	30753	22	57	8.4	228,093	251,926	2819	220499
09-Aug	59	83	142	16971	16	57	73	6293	51%	292	31045	9	19	8.7	230,384	254,865	2669	223168
10-Aug	63	71	134	17105	14	62	76	6369	57%	305	31350	6	11	10.4	232,320	257,638	2518	225686
11-Aug	34	91	125	17230	6	62	68	6437	54%	192	31542	7	11	11.1	234,347	260,225	2349	228035
12-Aug	27	27	54	17284	9	21	30	6467	56%	186	31728	7	9	10.9	235,339	261,343	1015	229050
13-Aug	12	39	51	17335	6	23	29	6496	57%	151	31879	5	8	15.6	236,519	262,398	958	230009
14-Aug	31	36	67	17402	17	20	37	6533	55%	108	31987	5	8	16.1	238,515	263,785	1259	231268
15-Aug	3	26	29	17431	3	18	21	6554	72%	149	32136	5	7	14.4	239,298	264,385	827	232095
16-Aug	2	14	16	17447	1	12	13	6567	81%	102	32238	1	1	16.2	239,736	264,716	457	232552
17-Aug	1	7	8	17455	1	5	6	6573	75%	91	32329	1	1	18.4	239,936	264,882	228	232780
18-Aug	5	26	31	17486	4	21	25	6598	81%	102	32431	1	1	23.1	240,746	265,523	885	233665
19-Aug	2	17	19	17505	2	11	13	6611	68%	95	32526	4	4	29.8	241,070	265,916	542	234207
20-Aug	7	12	19	17524	7	11	18	6629	95%	67	32593	3	3	27.0	241,459	266,310	542	234749
21-Aug	5	19	24	17548	3	16	19	6648	79%	95	32688	4	4	27.4	241,910	266,806	685	235434
22-Aug	0	5	5	17553	0	4	4	6652	80%	14	32702	0	0	24.9	242,038	266,910	143	235576
23-Aug				17553				6652	0%		32702		0	26.1	242,038	266,910	0	235576
24-Aug	0	2	2	17555	0	2	2	6654	100%	9	32711	1	1	17.1	242,167	266,951	57	235633
25-Aug	6	3	9	17564	3	1	4	6658	44%	15	32726	0	0	20.5	242,395	267,138	257	235890
26-Aug	1	4	5	17569	1	2	3	6661	60%	14	32740	0	0	18.8	242,451	267,241	143	236033
27-Aug	2	4	6	17575	2	4	6	6667	100%	43	32783	1	1	25.6	242,511	267,365	171	236204
28-Aug	12	8	20	17595	8	6	14	6681	70%	169	32952	3	1	56.9	242,689	267,779	541	236745
29-Aug	16	18	34	17629	11	14	25	6706	74%	266	33218	4	3	64.8	242,924	268,483	919	237664
30-Aug	9	12	21	17650	8	6	14	6720	67%	183	33401	5	16	25.2	243,056	268,917	568	238232
31-Aug	15	12	27	17677	8	9	17	6737	63%	199	33600	8	39	11.3	243,359	269,476	730	238961
01-Sep	6	13	19	17696	3	7	10	6747	53%	119	33719	5	15	10.0	243,703	269,870	514	239475
02-Sep	5	14	19	17715	4	10	14	6761	74%	97	33816	2	4	8.9	243,981	270,263	514	239989
03-Sep	5	10	15	17730	0	5	5	6766	33%	62	33878	1	2	6.9	244,182	270,573	405	240394
04-Sep	5	4	9	17739	4	0	4	6770	44%	48	33926	4	6	6.3	244,331	270,759	243	240637
05-Sep	15	10	25	17764	7	4	11	6781	44%	92	34018	2	3	11.2	244,695	271,277	676	241313
06-Sep	3	13	16	17780	1	11	12	6793	75%	190	34208	6	7	18.1	244,878	271,608	433	241746

Table D-3. The data used to derive the in-season sockeye salmon run-size estimates for the Nass River, 2000. These are preliminary data as presented during the season; refer to Appendix B for complete catch and tag totals.

Date	Fishwheel Catch				Fishwheel Tags				Prop. tagged	Grease Harbour (FW3, 4, 5, 6, IS Fishery)					In-season run size at GW		Post-season run size at GW	
	Daily FW1	Daily FW2	Daily Actual FW2	Cum. catch	Daily FW1	Daily FW2	Daily Actual FW2	Cum. tagged		Catch (incl. recps)	Cum. catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark recap	Expansion factor (fw1&2; 94-97&99)	Daily RunRec.	RunRec. Cum
07-Sep	3	10	13	17793	3	7	10	6803	77%	87	34295	6	9	14.6	245,057	271,877	351	242097
08-Sep	6	5	11	17804	3	3	6	6809	55%	102	34397	4	7	13.4	245,231	272,105	297	242395
09-Sep	4	2	6	17810	4	2	6	6815	100%	112	34509	2	4	16.6	245,331	272,229	162	242557
10-Sep	4	3	7	17817	4	2	6	6821	86%	122	34631	5	8	14.6	245,489	272,374	189	242746
11-Sep	0	1	1	17818	0	1	1	6822	100%	82	34713	5	8	11.4	245,522	272,394	27	242773
12-Sep	5	1	6	17824	3	0	3	6825	50%	87	34800	2	2	13.8	245,724	272,519	162	242935
13-Sep	7	1	8	17832	3	0	3	6828	38%	92	34892	3	3	15.8	245,989	272,684	216	243151
14-Sep	2	1	3	17835	1	1	2	6830	67%	127	35019	4	3	16.6	246,089	272,746	81	243233
15-Sep	2	1	3	17838	0	0	0	6830	0%	189	35208	4	4	22.6	246,189	272,808	81	243314
16-Sep	6	4	10	17848	2	1	3	6833	30%	129	35337	3	3	32.5	246,383	273,015	270	243584
17-Sep				17848						7	35344	0	0	33.7				243584
18-Sep				17848						0	35344	0	0	33.1				243584
19-Sep				17848						0	35344	0	0	33.4				243584
20-Sep				17848						0	35344	0	0	33.3				243584
21-Sep				17848						72	35416	2	3	19.4				243584
22-Sep				17848						80	35496	1	2	23.2				243584
23-Sep				17848						76	35572	4	0	34.7				243584
24-Sep				17848						121	35693	1	0	29.0				243584
25-Sep				17848						66	35759	0	0	31.8				243584
26-Sep				17848						53	35812	1	0	30.4				243584
27-Sep				17848						39	35851	1	0	31.1				243584
28-Sep				17848						31	35882	1	0	30.8				243584
29-Sep				17848						18	35900	0	0	30.9				243584
Total	5450	7967	13417		2476	4357	6833		51%	35900		1048			246,383	273,015	243584	

Note 1: Fishwheel 1 and 2 were started on 11 June but were stopped on 12 June due to high water until 16 June. Fishwheel 3 was started on 19 June. Fishwheel 4 was started on 24 June (14:30 hrs). Fishwheel 5 was started on 5 July and moved upstream on 14 July. Fishwheel 6 was started on 9 July (pm).

Note 2: Shading represents non-operation of fishwheels due to high water or damage.

Note 3: Fishwheel 1-2 were operated less than 0.5 d on 1-5, 7, 31 July and 22, 24-26 August due to high catch rates or water levels. Fishwheels 3-6 were operated less than 0.5 d on 1-4 July and 21-22, 24-27 August.

Note 4: Harvesting of sockeye occurred on fishwheels 1-2 on 2, 28-31 July; on fishwheels 3-5 (and 6) on 5-31 July and 3-16 August.

APPENDIX E

Age and length data from fish captured in the Nass River fishwheels, 2000

Table E-1. Numbers of fish by age and length for chinook salmon sampled at the Nass River fishwheels, 2000.

Nose-fork length (cm)	Numbers of fish by age class					Total aged	Fish sampled but not aged ^a					Total not aged	Percent not aged
	32	42	52	53	62		1M	2M	3M	4M	RG		
35	2	0	0	0	0	2	0	0	0	0	0	0	0
36	1	0	0	0	0	1	0	0	0	0	0	0	0
37	1	0	0	0	0	1	0	0	0	0	0	0	0
39	2	0	0	0	0	2	1	0	0	0	0	1	33
41	3	0	0	0	0	3	2	0	0	0	0	2	40
42	2	0	0	0	0	2	0	0	0	0	0	0	0
43	2	0	0	0	0	2	0	0	0	0	0	0	0
44	1	1	0	0	0	2	1	0	0	0	0	1	33
46	1	0	0	0	0	1	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	1	0	0	0	1	100
56	0	0	0	0	0	0	0	1	0	0	0	1	100
57	0	0	0	0	0	0	0	2	0	0	0	2	100
58	0	1	0	0	0	1	0	0	0	0	0	0	0
59	0	1	0	0	0	1	0	0	0	0	0	0	0
61	0	3	0	0	0	3	0	1	0	0	0	1	25
62	0	1	1	0	0	2	0	3	0	0	0	3	60
63	0	5	0	0	0	5	0	1	0	0	1	2	29
64	0	1	0	0	0	1	0	1	0	0	0	1	50
65	0	5	0	0	0	5	0	1	0	0	0	1	17
66	0	13	1	0	0	14	0	1	0	0	0	1	7
67	0	5	0	0	0	5	0	2	0	0	0	2	29
68	0	11	1	0	0	12	0	3	0	0	0	3	20
69	0	8	0	0	0	8	0	1	0	0	0	1	11
70	0	17	0	1	0	18	0	1	0	0	0	1	5
71	0	14	0	0	0	14	0	1	0	0	0	1	7
72	0	19	1	1	0	21	0	3	0	0	0	3	13
73	0	12	1	1	0	14	0	4	0	0	0	4	22
74	0	12	2	1	0	15	0	0	0	0	0	0	0
75	0	8	1	0	0	9	0	2	0	0	2	4	31
76	0	8	0	0	0	8	0	1	1	0	0	2	20
77	0	13	1	0	0	14	0	2	1	0	0	3	18
78	0	9	2	0	0	11	0	0	1	0	0	1	8
79	0	2	6	1	0	9	0	2	0	0	0	2	18
80	0	2	2	1	0	5	0	0	1	0	1	2	29
81	0	5	1	0	0	6	0	2	0	0	0	2	25
82	0	3	5	1	0	9	0	0	0	0	0	0	0
83	0	1	1	0	0	2	0	0	1	0	0	1	33
84	0	2	3	0	0	5	0	0	1	0	0	1	17
85	0	4	6	1	0	11	0	0	0	0	0	0	0
86	0	2	8	0	0	10	0	0	3	0	0	3	23
87	0	2	9	0	1	12	0	0	0	0	0	0	0
88	0	0	13	0	0	13	0	0	4	0	0	4	24
89	0	1	14	0	2	17	0	0	1	0	0	1	6
90	0	0	20	0	1	21	0	0	2	0	1	3	13
91	0	0	9	0	0	9	0	0	2	0	1	3	25

Table E-1. Numbers of fish by age and length for chinook salmon sampled at the Nass River fishwheels, 2000.

Nose-fork length (cm)	Numbers of fish by age class					Total aged	Fish sampled but not aged ^a					Total not aged	Percent not aged
	32	42	52	53	62		1M	2M	3M	4M	RG		
92	0	0	9	0	2	11	0	0	4	0	1	5	31
93	0	0	6	0	2	8	0	0	3	0	0	3	27
94	0	1	13	0	3	17	0	0	2	0	0	2	11
95	0	0	10	0	3	13	0	0	1	0	0	1	7
96	0	1	7	0	3	11	0	0	0	1	0	1	8
97	0	0	2	0	3	5	0	0	0	2	0	2	29
98	0	0	5	0	1	6	0	0	0	0	0	0	0
99	0	0	3	0	1	4	0	0	0	0	0	0	0
100	0	0	6	0	1	7	0	0	0	1	0	1	13
101	0	0	1	0	2	3	0	0	1	1	0	2	40
102	0	0	2	0	2	4	0	0	0	0	0	0	0
103	0	0	1	0	0	1	0	0	0	0	0	0	0
104	0	0	1	0	1	2	0	0	0	0	0	0	0
105	0	0	0	0	1	1	0	0	0	0	0	0	0
106	0	0	1	0	0	1	0	0	0	0	0	0	0
109	0	0	0	0	1	1	0	0	0	0	0	0	0
112	0	0	0	0	1	1	0	0	0	0	0	0	0
Totals	15	193	175	8	31	422	4	36	29	5	7	81	16
Percent	3.6	45.7	41.5	1.9	7.3	100.0							

^a Age error codes: M refers to marine annuli, the numbers refer to the number of marine annuli and RG is regenerated regenerated scale.

Table E-2. Numbers of fish by age and length for sockeye salmon sampled at the Nass River fishwheels, 2000.

Nose-fork length (cm)	Numbers of fish by age class							Number of fish sampled but could not be age						Percent not aged
	31	41	42	52	53	63	Total	2M	3M	RG	S2	S3	Total	
42			1				1						0	0
44			1				1						0	0
45	1		1				2	1					1	33
46	1						1			2			2	67
47	1		4				5						0	0
48	1		4		1		6			1			1	14
49			10				10			2			2	17
50	3		13				16						0	0
51	2		15	1	3		21	1					1	5
52	1		11		1		13	1					1	7
53	2	1	17		5	1	26	5		1			6	19
54	2		22	1	7		32	3		2			5	14
55		2	31	1	15	4	53	3	3				6	10
56	3	1	35	1	13	1	54	10					10	16
57	3	1	49	6	21	2	82	6	1	3			10	11
58		1	51	4	23	2	81	12	5	1	1		19	19
59		3	48	2	28	3	84	10		2			12	13
60		2	60	7	29	3	101	23		1			24	19
61			64	10	50	7	131	19	2	2			23	15
62		2	43	12	44	7	108	12	2	1			15	12
63		2	31	18	43	17	111	7	4	2		2	15	12
64			33	22	19	23	97	5	6	1			12	11
65	1	3	13	21	27	30	95	6	10				16	14
66			12	23	12	33	80	4	4	1			9	10
67			12	28	11	37	88	6		3			9	9
68			13	18	4	20	55	2	1		1		4	7
69			5	12	7	31	55	3	3	4			10	15
70			4	13	3	29	49		2	1		1	4	8
71			1	13	1	27	42		3	1			4	9
72			2	3	1	16	22			1			1	4
73				4		15	19		1				1	5
74				2		10	12		1				1	8
75				2	1	7	10						0	0
76				1		4	5		1	1			2	29
77				1		3	4						0	0
78						2	2						0	0
79						1	1						0	0
Totals	21	18	606	226	369	335	1575	139	49	33	2	3	226	13

^a Age error codes: 1M, 2M, 3M, refers to 1, 2 or 3 marine annuli; RG, regenerated; S2, sub-two (1 fresh water annulus); S3, sub-three (2 fresh water annuli).

Table E-3. Summary of weekly age composition of sockeye salmon sampled at the Nass River fishwheels, 2000.

Week ending	Stat. week	Portion of total run	Numbers of fish by age class							Proportions by week					
			31	41	42	52	53	63	Totals	31	41	42	52	53	63
17-Jun	25	0.0103	3	1	3	15	3	9	34	0.088	0.029	0.088	0.441	0.088	0.265
24-Jun	26	0.1630	4	9	28	31	8	18	98	0.041	0.092	0.286	0.316	0.082	0.184
01-Jul	27	0.1795	5	5	33	38	32	45	158	0.032	0.032	0.209	0.241	0.203	0.285
08-Jul	28	0.1419	8	3	121	58	105	83	378	0.021	0.008	0.320	0.153	0.278	0.220
15-Jul	29	0.1094	1	0	87	35	41	49	213	0.005	0.000	0.408	0.164	0.192	0.230
22-Jul	30	0.0432	0	0	42	16	21	29	108	0.000	0.000	0.389	0.148	0.194	0.269
29-Jul	31	0.0602	0	0	30	3	25	20	78	0.000	0.000	0.385	0.038	0.321	0.256
05-Aug	32	0.1506	0	0	71	14	52	23	160	0.000	0.000	0.444	0.088	0.325	0.144
12-Aug	33	0.0821	0	0	80	4	36	21	141	0.000	0.000	0.567	0.028	0.255	0.149
19-Aug	34	0.0212	0	0	17	2	16	4	39	0.000	0.000	0.436	0.051	0.410	0.103
26-Aug	35	0.0075	0	0	14	0	11	10	35	0.000	0.000	0.400	0.000	0.314	0.286
02-Sep	36	0.0162	0	0	38	5	16	18	77	0.000	0.000	0.494	0.065	0.208	0.234
09-Sep	37	0.0105	0	0	30	5	3	2	40	0.000	0.000	0.750	0.125	0.075	0.050
16-Sep	38	0.0042	0	0	12	0	0	4	16	0.000	0.000	0.750	0.000	0.000	0.250
Totals		1.0000	21	18	606	226	369	335	1575	0.013	0.011	0.385	0.143	0.234	0.213
Proportions weighted by portion of run:										0.017	0.022	0.360	0.167	0.224	0.211

Table E-4. Summary of the numbers and mean lengths (nose-fork, cm) of successfully aged sockeye salmon from the Nass River fishwheel catch, 2000.

Age class	June			July			August			September			Total		
	N	Mean	SD ^a	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
41	14	59.6	3.8	4	60.3	3.7							18	59.8	3.7
42	60	60.3	4.6	296	59.7	4.3	199	58.5	5.0	51	54.7	4.6	606	59.0	4.8
52	80	66.7	4.1	120	65.4	4.0	19	64.1	4.7	7	61.4	2.9	226	65.6	4.2
53	36	61.3	4.2	209	60.7	3.8	119	61.5	4.0	5	65.2	3.3	369	61.1	3.9
63	67	67.6	4.4	188	67.6	4.3	68	68.3	4.3	12	65.1	3.2	335	67.6	4.3
Totals	257	64.3	5.4	817	62.6	5.3	405	61.3	5.8	75	57.7	6.1	1554	62.3	5.6

^a Standard deviation

Table E-5. Numbers of fish by age and length for coho salmon sampled at the Nass River fishwheels, 2000.

Nose-fork length (cm)	Numbers of fish by age class				Total aged	Fish sampled but not aged ^a		Total not aged	Percent not aged
	32	42	43	54		IC	RG		
41	1	0	1	0	2	0	0	0	0
42	1	0	1	0	2	0	0	0	0
43	2	0	1	0	3	0	1	1	25
44	0	0	3	0	3	0	0	0	0
45	7	0	2	0	9	0	0	0	0
46	1	0	0	0	1	0	0	0	0
47	7	0	0	0	7	0	1	1	13
48	5	0	4	0	9	0	0	0	0
49	7	0	2	0	9	0	0	0	0
50	10	0	4	0	14	1	0	1	7
51	4	0	5	0	9	0	0	0	0
52	5	0	5	0	10	0	0	0	0
53	5	0	4	0	9	0	0	0	0
54	4	0	5	0	9	0	0	0	0
55	4	0	6	0	10	0	0	0	0
56	1	0	3	1	5	0	2	2	29
57	10	0	5	0	15	0	1	1	6
58	4	0	7	0	11	0	0	0	0
59	9	0	10	0	19	0	2	2	10
60	9	0	9	0	18	0	1	1	5
61	7	0	10	0	17	1	0	1	6
62	18	0	18	0	36	0	0	0	0
63	23	0	19	0	42	0	1	1	2
64	21	0	18	0	39	2	2	4	9
65	27	1	19	2	49	4	0	4	8
66	22	0	22	0	44	1	0	1	2
67	26	0	23	0	49	0	1	1	2
68	25	0	26	1	52	1	0	1	2
69	13	0	14	0	27	0	0	0	0
70	10	0	18	0	28	0	1	1	3
71	9	0	13	0	22	0	0	0	0
72	8	0	12	0	20	0	0	0	0
73	6	0	4	0	10	0	0	0	0
74	1	0	3	0	4	0	0	0	0
75	1	0	1	0	2	0	1	1	33
76	1	0	2	0	3	0	0	0	0
78	1	0	0	0	1	0	0	0	0
79	1	0	0	0	1	0	0	0	0
88	0	0	1	0	1	0	0	0	0
Total	316	1	300	4	621	10	14	24	4
Percent	50.9	0.2	48.3	0.6					

^a Age error codes: IC refers to incorrect scale sample and RG is regenerated scale.

SH 223 F55 no.2616 c.1
Alexander, R.F.
The 2000 fishwheel project
on the Nass River, BC
275643 12061067 c.1

