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**Assessment of chinook salmon
returns to the Fraser River watershed
using run reconstruction techniques,
1982-04**

**Évaluation des retours de saumon
quinnet dans le bassin du Fraser à
l'aide de techniques de reconstitution
des remontes, 1982 – 2004**

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ABSTRACT

The Fraser River watershed is the largest Canadian producer of Chinook salmon. In 2005, technical advisors to several Fraser River First Nations recommended that a run reconstruction analyses similar to that conducted in 1994 be conducted to provide estimates of the total return of Chinook to the Fraser River that could be used to define abundance based Treaty allocations. This document provides a description of data and model parameters used to reconstruct 1982-2004 Chinook salmon returns to the Fraser River. The fundamental building blocks for our run reconstruction analysis are DFO estimates for in-river harvests, tributary specific escapement numbers and timing, and upstream migration rates. Annual escapement estimates are derived from a combination of visual survey, mark-recapture studies and counting fences. Annual escapement summaries for each timing-age aggregate show increasing trend for most aggregates and the substantial difference in the abundance of fall Chinook relative to other aggregates. The only aggregate that has not shown a substantial increase in escapement since the late 1980s is the Spring 5.2 aggregate. On average, 44,046 Chinook were harvested in annual fisheries within the Fraser watershed from 1982-04. Catch estimates by aggregate indicate that harvest of spring and summer timing groups increased substantially since 1999. The largest annual harvest occurred in 2004 when over 73,000 Chinook were harvested in river fisheries. The average total return of Chinook salmon to the Fraser River was 315,233 over the period from 1982-04. The average contribution of timing-age aggregates were: 6% Spring 4₂, 15% Spring 5₂, 15% Summer 5₂, 16% Summer 4₁ and 48% Fall. The trends in total return are very similar to those observed in the escapement data. Trends for all Fraser stocks combined are largely determined by the escapement estimates for the fall timing aggregate. The similarity between escapement and total returns for fall stocks is not surprising given the relatively low harvest rates for this run timing group. The closure of the Area 29 Chinook gillnet fishery in the mid 1980s resulted in a substantial decline in the annual harvest rates for the spring and summer timing groups. Since 1988, in-river harvest rates for the spring and summer aggregates have varied between 10% and 30% in most years. The six stocks with consistently high in-river harvest rates since 1997 (Chilako, Cottonwood, Upper Chilcotin, Louis, Coldwater and Spius) are believed to represent the majority of the Fraser Chinook that entry the river before the end of May each year. The average annual harvest rates for these stocks (38-60%) from 1997-2004, were notably higher than those for all other Fraser Chinook stocks (19%). Estimates for total mortality in Canadian marine fisheries for early and late Fraser Chinook stocks were used to convert the river entry abundances into estimates of the Total Return to Canada for each timing-age aggregate.

RÉSUMÉ

Le bassin du Raser est le plus grand producteur de saumon quinnat. En 2005, les conseillers techniques de plusieurs Premières nations du Fraser ont recommandé de procéder à des analyses par reconstitution des remontes, comme celles qui ont été réalisées en 1994, afin d'obtenir une estimation du total de la remonte de quinnats dans le Fraser qui pourrait servir à définir les allocations fondées sur l'abondance, prévues par traité. Le présent document donne une description des données et paramètres du modèle utilisé pour reconstituer les remontes de saumon quinnat dans le Fraser, de 1982 à 2004. Les éléments constitutifs fondamentaux de notre analyse sont les estimations par le MPO des captures en cours d'eau, l'effectif de l'échappée et la période dans différents tributaires particuliers et le taux de migration vers l'amont. Les estimations annuelles de l'échappée sont établies à partir d'une combinaison de relevés visuels, d'études par marquage-recapture et de barrières de dénombrement. Les données sommaires de l'échappée pour chaque groupe, fondé sur l'âge et la période, montrent une tendance à la hausse dans la plupart des groupes et une différence substantielle de l'abondance du quinnat d'automne par rapport aux autres groupes. Le seul groupe dont l'échappée ne semble pas avoir connu d'augmentation importante depuis la fin des années 1980 est celui du printemps 5₂. En moyenne, 44 046 quinnats ont été capturés dans le cadre des pêches annuelles dans le bassin du Fraser, de 1982 à 2004. L'estimation des prises par groupe révèle que les captures chez les groupes de printemps et d'été ont augmenté substantiellement depuis 1999. Le plus grand total annuel de captures est celui de 2004, alors que plus de 73 000 quinnats ont été pêchés en cours d'eau. La remonte totale moyenne de quinnats dans le Fraser s'établissait à 315 233 pendant la période de 1982 à 2004. La contribution moyenne des groupes, fondés sur l'âge et la période, a été la suivante : 6 % printemps 4₂, 15 % printemps 5₂, 15 % été 5₂, 16 % été 4₁ et 48 % automne. Les tendances du total de remonte sont très proches de celles qui sont observées dans le cas de l'échappée. Les tendances pour tous les stocks du Fraser combinés sont en grande partie déterminées par l'estimation de l'échappée du groupe d'automne. La similitude entre l'échappée et la remonte totale des stocks d'automne n'est pas surprenante, puisque le taux de capture de ce groupe. La fermeture de la pêche aux filets maillants du quinnat dans la zone 29 au milieu des années 1980 a entraîné une baisse substantielle du taux de prise annuel des groupes de printemps et d'été. Depuis 1988, les captures en cours d'eau de ces groupes ont varié entre 10 % et 30 % au cours de la plupart des années. Les six stocks pour lesquels les taux de captures en cours d'eau sont systématiquement élevés depuis 1997 (Chilako, Cottonwood, Chilcotin supérieure, Louis, Coldwater et Spius) sont considérés comme représentant la plupart des saumons quinnats du Fraser qui entrent dans le fleuve avant la fin de mai chaque année. Le taux de capture annuel moyen de ces stocks (entre 38 % et 60 %) de 1997 à 2004 était passablement plus élevé que celui de tous les autres stocks de quinnats du Fraser (19 %). L'estimation du taux de mortalité totale des stocks de quinnat du Fraser de remonte hâtive et tardive dans le cadre des pêches canadiennes en mer a servi à convertir le taux d'abondance, à l'entrée dans le cours d'eau, en un total de remonte vers le Canada de chaque groupe fondé sur l'âge et la période.

1.0 INTRODUCTION

The Fraser River watershed is the largest Canadian producer of Chinook salmon. Fraser Chinook are comprised of a large number of local populations as described in PSC (2002). Detailed information on the catch, escapement, migration timing and behaviour of Fraser River Chinook stocks were initially compiled for run reconstruction analyses conducted in 1994 (English and Bocking 1994). The primary goal of these initial analyses was to provide estimates of the abundance, run timing and harvest rates for Nechako Chinook using the available data for 1978-1993. In 2005, technical advisors to several Fraser River First Nations recommended that a run reconstruction analyses similar to that conducted in 1994 be conducted to provide estimates of the total return of Chinook to the Fraser River that could be used to define abundance based Treaty allocations. This document provides a description of data and model parameters used to reconstruct 1982-2004 Chinook salmon returns to the Fraser River. The fundamental building blocks for our run reconstruction analysis are DFO estimates for in-river harvests, tributary specific escapement numbers and timing, and upstream migration rates. The catch and escapement estimates for 1982-1993 are similar to those used in English and Bocking (1994). Information on river entry timing, residence times in each fishing area and spawning periods have been significantly adjusted to be consistent with recent stock specific timing data from DNA analysis of Albion test fishery samples and annual escapement monitoring efforts. In addition to these refinements, weekly catch estimates for 1994-2004 has been compiled for the Area 29 commercial fisheries, mainstem First Nation fisheries and lower Fraser recreational fisheries and these combined with tributary specific estimates of First Nations and recreational catch to provide a more complete accounting of the harvests for each Chinook stock.

1.1 Analysis Objectives

Annual estimates of the number of Chinook salmon returning to the Fraser watershed are desired to track trends and define First Nation allocations for Fraser Chinook stocks. The purpose of the Chinook run reconstruction model was to derive a defensible estimate of the number of Chinook salmon entering the Fraser River by combining the best available estimates of catch and escapement for all fisheries and stocks within the Fraser watershed. The model provides a systematic process for combining information on catch, escapement, river entry run timing, escapement run timing, stock specific migration rates through fisheries and fishery timing. The reliability of the resulting run size estimates depends on the accuracy of the input data and validity of model assumptions. It is hoped that annual run reconstruction analyses will provide further justification for annual catch and escapement monitoring programs and periodic assessment of our understanding of Chinook migration timing. The degree fisheries managers and Treaty negotiators desire more accurate estimates of returning abundance will determine the resources allocated to these annual monitoring programs and periodic assessments. For example: estimates of terminal run size for Fraser Early and Late stocks prepared by the PSC Chinook Technical Committee (PSC 2004) were not adequate to define Treaty allocations for upper Fraser First Nations because these estimates lacked the necessary geographic resolution for fisheries and stocks.

2.0 DATA SOURCES AND PREPARATION

2.1 Chinook Stocks and Stock Aggregates

The model includes 61 distinct Chinook stocks defined by specific spawning streams or major tributaries within the Fraser watershed (Table 1). These stocks have been categorized into five run-timing and age groups based primarily on a review of stock groupings by Candy et al. (2002). The five groups are: (1) Spring-run Age 4₂, (2) Spring-run Age 5₂, (3) Summer-run Age 5₂, (4) Summer-run Age 4₁ and (5) Fraser Late-Harrison River that are described in PSC (2002, 2004) and below:

Spring-run Age 4₂: This aggregate includes seven smaller body-size populations that spawn in the Lower Thompson River tributaries, Louis Creek of the North Thompson and the spring-run fish of Bessette Creek in the South Thompson (PSC 2002, 2004). These Chinook are stream-type, spending one year in freshwater before migrating to sea, and predominately return as 4 year olds to the Lower Fraser between March and early-July, with the peak of migration in June. There are currently no accepted escapement goals for this aggregate (PSC 2004).

Spring-run Age 5₂: This aggregate includes 32 populations that spawn in the Fraser River and its tributaries. These Chinook are stream-type, spending one year in freshwater before migrating to seas, and predominately return as 5 year olds to the Lower Fraser between late March and mid-July, with the peak of migration in June. This aggregate includes the Upper Pitt and Birkenhead river stocks in the lower Fraser, and the spring-run Chinook of the mid- and upper Fraser, North Thompson and South Thompson but excluding those of the lower Thompson (PSC 2002). Stocks upstream of Prince George include the McGregor and Torpy river systems. There are currently no accepted escapement goals for this aggregate (PSC 2004).

Summer-run Age 5₂: This aggregate includes 14 populations, spawning in large rivers, mostly below the outlets of large lakes (PSC 2004). These include the Stuart and Nechako rivers upstream of Prince George, Chilko and Quesnel rivers in the mid-Fraser and the Clearwater and North Thompson rivers in the North Thompson watershed (PSC 2002, 2004). These Chinook return to the Lower Fraser predominantly as 5 year olds between early June and early August. There are currently no accepted escapement goals for this aggregate (PSC 2004).

Summer-run Age 4₁: This aggregate includes six populations spawning in the South Thompson watershed upstream of Kamloops and one in the lower Fraser (PSC 2004). These include the Middle Shuswap, Lower Shuswap, Lower Adams, Little River, South Thompson and Lower Thompson mainstem, in the BC interior, and Maria Slough in the lower Fraser (PSC 2002, 2004). These Chinook return to the Lower Fraser predominantly as 4 year olds between early July and early September. There is currently no accepted escapement goals for this aggregate (PSC 2004).

Late-run Harrison River: This aggregate is dominated by fall returning Harrison-origin Chinook that include natural spawners in the Harrison River and Harrison-origin fish that were introduced to the Chilliwack River (PSC 2004). These Chinook are white-fleshed that return to the Fraser River in fall months. In 1984, the Harrison Chinook population was selected as an escapement

indicator stock for assessment of Chinook rebuilding due to their natural abundance and importance in numerous BC and Washington State fisheries (PSC 2004). In 1986, an interim escapement goal for Harrison River Chinook was established at 241,700 fish based on doubling the escapement estimate obtained from a mark-recapture program in 1984 (PSC 2002, 2004). In 2001, an escapement goal range was developed for Harrison Chinook using a Ricker stock-recruit approach as described in PSC (2002). The escapement goal range that was proposed was 75,100-98,500 with the upper bound equal to the upper 75% confidence limit derived from a bootstrap procedure. This escapement range was accepted by PSC in 2002 (PSC 2002, 2004). Estimated spawning escapements in the Harrison have exceeded this escapement goal range in eight years from 1984 to 2003 (PSC 2004).

2.2 Fishery Definitions

The model includes 21 fishing areas: 13 fisheries along the mainstem Fraser River, five fishing areas within the Thompson Watershed and three other major tributaries (Nechako, Stuart and Chilcotin) (Table 2). Figure 1 shows the relationship between the major fisheries and the traditional fishing areas for First Nations. In general, these fisheries harvest multiple stocks and stock composition estimates are not available for these fisheries. Consequently, run reconstruction analysis is required to distribute the reported weekly catches between the stocks vulnerable to each fishery. Our analyses also include First Nation and recreational catches from locations where only a single stock is affected. Estimates of the annual harvests from these fisheries are compiled by stock and added to the annual escapement estimates for each stock.

2.3 Escapement

Much of our understanding of the status of Fraser Chinook is based on time series of spawner escapement data. Most escapement data were obtained from visual surveys and subsequent expansion of the counts. Visual estimates are generally biased low, although many estimates are considered to be reasonably precise.

Visual survey data are obtained from aerial over-flight surveys, floats and stream walks and the escapement estimates are usually generated by dividing the observed peak counts (live plus dead) by 0.65 (Bailey et al. 2000; Farwell et al. 1999), although in certain cases, greater expansions have been employed in response to glacial siltation or other factors that impaired the surveyors ability obtain complete counts.

Redd counts were employed on the North Thompson River and in the Lower Thompson River. In the North Thompson, turbidity precludes counting while Chinook are present, while in the Lower Thompson, redds are clearly visible yet they frequently at greater depths than spawners can be reliably observed. Escapement estimates were derived by multiplying the redd count by 2.2.

Fishways, counting fences and mark-recapture projects exist for some systems, although most of the time series of escapement data from these projects are relatively short or discontinuous. In recent years, fence counts have been attempted at the Chilako River and Salmon River in the Upper Fraser and employed at Dome Creek (Upper Fraser) and on the Salmon River in Salmon

Arm (South Thompson). Fence counts were discontinued at the Salmon River (Prince George) in 1998, and the Chilako River in 2000. In some cases such as Louis Creek, fences are used to generate minimum counts and apply tags for upstream carcass recovery and generation of mark-recapture estimates.

Intensive Petersen mark-recapture surveys are conducted on the Nicola River and Lower Shuswap River annually. No mark-recapture surveys are conducted on spawners in the Fraser Spring-Run or Summer-Run Age 5₂ aggregates. Escapements to the Harrison River are also estimated using a Petersen Mark-recapture. Estimates of fall Chinook escapement to the Chilliwack River are based on a procedure long established by the Chilliwack Hatchery staff for expanding the number of carcasses counted in standardized reaches of the river. The escapement estimates for Harrison and Chilliwack stocks were the sum of the DFO estimates for “natural spawners”, broodstock removals and swim-ins to the Chehalis or Chilliwack hatcheries (Chuck Parken, DFO Nanaimo, pers. comm.).

For the purposes of the run-reconstruction, the most consistent time series of data available were used for each spawning population. For example, where both mark-recapture and visual estimates were available, visual estimates were used because the time-series for visual estimates are much longer (e.g. Lower Shuswap, Nicola).

The most significant gaps in escapement coverage are associated with the Summer 5₂ aggregate. Three large rivers with summer run stocks, with large but unknown sized returns, are no longer monitored on an annual basis. These are the Taseko River, the North Thompson River and the Stuart River. Chinook salmon have been observed to be spawning on dunes in the Taseko River from the outlet of Taseko Lake downstream for several kilometres. Glacial turbidity is extreme and all attempts to count spawners have been frustrated by the lack of visibility. Mark-recapture methods have not been attempted in that location due to the cost. Chinook returns to the North Thompson were estimated by late fall redd count for several years because direct observation is not possible due to turbidity. Observations of Chinook and sockeye salmon spawning in 2001 and 2003 indicated that the redd counts were likely unreliable, and estimates remained relatively stable while most other populations in the aggregate grew. Due to the large geographic expanse of spawning and the poor visibility, no estimates are currently generated. Lastly, attempts have been made to estimate Stuart Chinook using both mark recapture and visual surveys. To date, neither of these approaches has provided reliable estimates. There are very few places where Stuart Chinook can be captured and marks applied in a proportional manner, and the only consistent successful capture method has been tangle netting in the vicinity of redds. Marking fish at this time provides no opportunity for suitable re-distribution and mixing representatively with unmarked fish, thus invalidating the estimates. Visual estimation is equally challenging at Stuart. Prevailing northwest winds on Stuart Lake lead to wave-induced turbulence and entrainment of silt into the Stuart River. As a result, counting conditions are at best unreliable. These winds frequently persist throughout the duration of the run, thus visual surveys rarely yield reliable estimates.

For two of these large stocks in the Summer 5₂ aggregate (Taseko and North Thompson), we used more reliable escapement estimates for nearby stocks. Since the Taseko stocks is believed to be roughly half the size of the Chilko stocks, the annual escapement estimates for the Taseko stock were set to 50% of the Chilko estimate. For the North Thompson stock, we assumed that Chinook escapement would be equivalent to that recorded for the Clearwater River. In the absence of any better alternative, we used the available escapement estimates for the Stuart River stock and the following procedure to fill in any gaps in the escapement estimates for these and other stocks.

Estimates of the annual escapement for each of the 62 Chinook stocks were extracted from data tables maintained by DFO regional biologists located in Kamloops and New Westminster. Years with missing values for specific stocks were identified by negative numbers (-1= not recorded, -2=none observed, -3=not inspected, -4=present, -5= unknown). A sample of the original escapement estimates for 2000-04 is provided in Table 3. The missing values were filled in using the following equations where,

s	= index denoting the stock
a	= index denoting the timing-age aggregate
y	= index denoting a year with escapement survey data
S_a	= number of stocks in aggregate a
Y_{sa}	= total years of escapement survey data for stock s (which is part of aggregate a)
w_{say}	= weighting factor
E_{say}	= recorded escapement by stock s (which is part of aggregate a) in a specific year, y
\hat{E}_{say}	= estimated escapement by stock s (which is part of aggregate a) for a specific year with no survey data
\bar{E}_{sa}	= mean escapement by stock s (which is part of aggregate a), averaged over years with survey data
E'_{ay}	= adjusted total escapement for an aggregate
P_{sa}	= portion of total mean escapements for aggregate a , accounted for by stock s
F'_{ay}	= correction factor for missing escapement estimates within aggregate a in year y

The mean escapement for each stock, averaged over years with survey data, was calculated as:

$$\bar{E}_{sa} = \frac{\sum_{y=1}^{Y_{sa}} E_{say}}{Y_{sa}}. \quad (\text{Eqn. 1})$$

The portion that each stock represents of its aggregate was calculated as:

$$P_{sa} = \frac{\bar{E}_{sa}}{\sum_{s=1}^{S_a} \bar{E}_{sa}}. \quad (\text{Eqn. 2})$$

The following two equations were used to determine the factor required to expand the recorded escapement by aggregate to account for stocks with missing survey data:

$$F'_{ay} = \frac{1}{\sum_{s=1}^{S_a} (P_{sa} \cdot w_{say})} \quad \begin{cases} w_{say} = 0 & \text{if } E_{say} = 0 \\ w_{say} = 1 & \text{if } E_{say} > 0 \end{cases}; \quad (\text{Eqn. 3})$$

and:

$$E'_{ay} = F'_{ay} \sum_{s=1}^{S_a} E_{say}. \quad (\text{Eqn. 4})$$

For those year-stock combinations with missing values, stock-specific escapement estimates (\hat{E}_{say}) were derived by multiplying the adjusted total escapement for the aggregate (E'_{ay}) by the portion that that stock represents of its aggregate (P_{sa}):

$$\hat{E}_{say} = P_{sa} E'_{ay}. \quad (\text{Eqn. 5})$$

Table 4 provides a sample of the annual escapement estimates for 2000-04 with the missing values filled in using the above approach. The complete set of adjusted escapement estimates used for this run reconstruction analysis are provided in Appendix A.

2.4 Run Timing

Reliable information on river entry and spawning area arrival timing are essential components for the run reconstruction analysis. The run timing parameter used in the English and Bocking (1994) analyses were provided by Neil Schubert. These parameters were substantially revised using more recent river entry timing data from DNA analysis results and CWT recoveries from the Albion test fishery and spawning area arrival timing from extensive escapement enumeration efforts. The procedure used to adjust the run timing parameters was:

1. adjust the peak escapement timing, where necessary, to be consistent with peak dates from recent escapement survey data;
2. determine the duration of the run for each stock using river entry run timing data from the Albion test fishery;
3. calculate the start and end dates for spawning area timing using the peak dates and run duration parameters, assuming a normal distribution around the peak date;
4. use the estimates of total travel time from river entry to arrival in spawning areas to derive start, peak and end dates for river entry;
5. compare the above river entry periods for each stock with the available DNA and CWT data from the Albion test fishery and adjust the river entry and escapement timing, where necessary.

The resulting run timing parameters are provided in Table 5. The major changes from the parameters used in the 1994 analysis were increases in the duration of the run (days between the start and end date) and earlier river entry dates for most stocks. The run timing aggregates with the largest changes were the spring 4₂ and 5₂ groups where run durations increase by 20-50 days for most stocks. The stock with the largest change (93 d) was Blackwater where the DNA results indicated that Baszeako and Nazko stocks were present in Albion test fishery samples from early April through mid-August (Table 6). Changes were smaller (0-30 days) for most summer-run stocks, however, the run duration for the North Thompson stock required a large increase (68 days) to be consistent with the DNA data showing these stocks migrating through the lower Fraser from early June through the end of August. There were several instances where we classified the DNA analysis results as outliers that were likely errors in stock assignments (see dark shaded cells in Table 6). For example: the river entry run timing for Chilako spring Chinook was not extended to mid-July because we believed that these late detections were likely miss-assignments of fish from the Nechako summer-run stock. Similarly, Upper Chilcotin Chinook detected in July were likely mis-assignments from the lower Chilcotin stock.

Comparison of the model run timing parameter with the Albion CWT data shows very few CWT recoveries outside the river entry periods defined for each stock (Table 7).

2.5 Fishery Residence Time

Residency time is defined as the number of days (to the nearest day) a stock resides within the boundaries of a single fishery (Table 8). The residence times in fisheries below Mission were the same for all stocks (e.g. Area 29 commercial = 3 days, Steveston to Deas Island = 1 day, Deas Island to Mission = 2 days). Above Mission, the residence times varied by run timing aggregate and region. The residence times for spring run returns to the Thompson watershed were twice as long as the residence times for Thompson summer-run stocks in all Fraser mainstem and Thompson River fisheries. All spring and summer stocks that migrate upstream of the Chilcotin junction were assigned the same residence times for the fisheries that they encounter. The last component of the travel time from river entry to spawning areas was the time spent in tributaries upstream of the last fishery and prior to arrival on the spawning grounds (see column labelled “Trib Time” in Table 8). These tributary residence times ranged from a single day (e.g. Blackwater, Cottonwood and Seton) to 60 days for the Coldwater and Spius stocks.

2.6 Catch

Commercial, recreational and First Nations harvest data were compiled from DFO records for all monitored Chinook fisheries in the Fraser watershed (Appendix A). The various data sets and sources for harvest information were:

1. 1982-2004 weekly commercial catch for the Area 29 fishery from the PBS catch database (B. Riddell, DFO Nanaimo, pers. comm.);
2. 1982-1993 weekly First Nations catch data for all mainstem fisheries from DFO’s catch monitoring records (N. Schubert, DFO New Westminister, pers. comm.);

3. 1994-2004 weekly First Nation catch data for all Fraser mainstem fisheries (C. Samaha and J. Scroggie, DFO Kamloops, pers. comm.);
4. 1994-2004 annual catch estimates for First Nations fisheries conducted in tributaries to the Fraser River (C. Samaha and J. Scroggie, pers. comm.);
5. 1986-2004 annual estimates for recreational fisheries conducted in tributaries to the Fraser River (C. Samaha and J. Scroggie, pers. comm.); and
6. 1984-2004 monthly estimates for recreational fisheries along the lower Fraser (J. Mahoney and L. Stevens, DFO New Westminster, pers. comm.).

Table 9 provides a summary of the annual Chinook catch estimates for the Area 29 commercial fishery and all the mainstem First Nations fisheries. These fisheries represent the majority of the Chinook harvested within the Fraser watershed.

Catch records for First Nation fisheries in tributaries were limited to the period from 1994-2004. Harvest estimates are not available for the years prior to 1994. Catches in tributary fisheries are small relative to the lower river mainstem fisheries but these catches can be significant for some stocks. Missing annual catch estimates for Clearwater, Finn and Middle Shuswap were calculated using a linear regression equation for the relationship between First Nations catch and escapement. Missing annual catch estimates for Raft, Barriere and Louis were calculated using the average of available estimates. DFO Kamloops (BCI) staff is currently trying to estimate missing annual catch for Eagle, Salmon, Adams, Little River, Deadman, Fraser and Holmes.

Catch records are available for most of the recreational fisheries conducted in tributaries from 1986 through 2001. Reductions in monitoring efforts after 2001 have created data gaps for several fisheries. The missing data gaps have been estimated either by using a linear regression relationship or by averaging available catch estimates. The footnotes attached to Appendix Table A26 explain in detail what process was used to fill in the data gaps by stock.

Information on recreational catches of Chinook in the lower Fraser fisheries is fairly complete for a few years (e.g. 2001-2004). The available monthly estimates were converted into weekly estimates for the run reconstruction analysis by dividing the total monthly catch by the number of assessed days in the month and then multiplied by the number of that month's assessed days included in each statistical week. The appropriate annual statistical week was used and aligned with the statistical week number. From 1991-1994 there was no retention of adult Chinook and it was strictly a Chinook jack fishery (30-50 cm Chinook retention); therefore, no catch was reported. There is currently a data request submitted to DFO Lower Fraser Division to determine the opening and closing times for the 1984-2004 recreational fisheries. However, this data will not be available until May 2007. The opening and closing time data will allow us to determine if we need to estimate catch outside the monitoring periods. For example, Chuck Parken (DFO, Nanaimo) calculated the 2001-2002 May and June catch estimates based on the knowledge that the fishery was open (see Appendix Table A24 footnotes for more detail).

2.7 Fishing Patterns

Information on annual fishing patterns from Fraser River commercial and First Nation fisheries were obtained from DFO fishery management records. Table 10 provides the most common start day (1= Sunday, 2=Monday...) and typical number of fishing days per week for each year for those fisheries with weekly catch estimates.

3.0 RUN RECONSTRUCTION MODEL

The theoretical basis of run reconstruction analysis for salmon stocks and fisheries are described in Starr and Hilborn (1988), Gazey et al. (1989), Gazey (1992), Cave and Gazey (1994) and Gazey and English (2000). Our analytical model uses essentially the same algorithms as those described in Gazey and English (2000). The sequential steps in the run reconstruction are described below:

1. read all catch and escapement data;
2. estimate the daily escapement to spawning tributaries for each stock by summing the annual escapement estimates and tributary harvests for each stock, and then distribute the total for each stock over the escapement timing period assuming a normal distribution between the start and end dates defined for each stock;
3. back-date the daily terminal escapement estimates for each tributary stock to the furthest upstream fishery for that stock using fixed tributary residence times;
4. starting with the furthest upstream mainstem fishery, assign portions of the weekly catch to each stock present in the fishery using the estimated constant daily harvest rate for the number of days that the fishery is conducted each week based on the assumption of equal vulnerability for all stocks present during the fishing period;
5. add the catch for each stock to the reconstructed escapement from that fishery;
6. repeat steps 4 and 5 for each fishery within the tributaries and each mainstem fishery from Tete Juene to the mouth of the Fraser River (Statistical Area 29); and
7. calculate annual estimates for: the return to the river mouth, in-river catch and in-river harvest rates for each aggregate Chinook stock.

The model prompts the user for inputs regarding the start and end years for the analysis and whether to fix the number of fishing days to 1 for each fishery or to use the number of fishing days per week defined in Table 9. This later option was included to evaluate the sensitivity of the model to the defined number of fishing days per week and to improve model efficiency when conducting the analysis for a large number of years.

A more mathematically rigorous description of these steps is provided below.

Indices and variables

f	- fishery ($f = O_j$)
s	- stock group ($s = 1, 2, \dots S$)
j	- fishery referenced in sequence ($j = 1, 2, \dots J$)
k	- migration block of fish available to a fishery ($k = 0, 1, 2, \dots r_{sf}$)
d	- day
t	- week ($t = 1, 2, \dots T$)
$m(t)$	- day within a week ($m \subset t$)

in association with the following input variables

C_{ft}	- catch in fishery f during the t 'th week
E_{sd}	- escapement to stock s during the d 'th day
$I_{fm(t)}$	- indicator variable of fishing pattern (1 when fishery f is open during day $m(t)$; otherwise, 0)
O_j	- fishery identifier or migration order for the j 'th area
r_{sf}	- residence (days) of a stock s in fishery f
w_{sf}	- travel time (days) from leaving a fishery f to escapement of stock s

and output variables

$h_{fm(t)}$	- harvest rate of fishery f during the $m(t)$ 'th day
N_{sd}	- available population (entering run size after reconstruction) of stock s representing the run which would have escaped during the d 'th day

Algorithm

The computational algorithm is given below in “pseudo-code”, assuming that catch has a weekly resolution with an associated daily fishing pattern:

1. Let $N_{sd} = E_{sd}$ for all s and d
2. Let $t = T$
3. Let $j = J$
4. Let $f = O_j$
5. solve $C_{ft} = \sum_{m \subset t} \frac{I_{fm(t)} h_{fm(t)}}{\prod_{m \subset t} (1 - h_{fm(t)})} \sum_{s=1}^S \sum_{k=0}^{r_{sf}-1} N_{s, m(t)+w_{sf}+k}$ for $h_{fm(t)}$

6. Let $N_{s,m(t)+w_{sf}+k} = \frac{N_{s,m(t)+w_{sf}+k}}{1-h_{fm(t)}}$ for $s = 1, 2, \dots, S$ when $r_{sf} \neq 0$ and for $k = 0, 1, 2, \dots, r_{sf} - 1$ and $m \subset t$.

7. Let $j = j - 1$

8. If $j \neq 0$ then go to step (4)

9. Let $t = t - 1$

10. If $t = 0$ then finished; otherwise, go to step (3).

Step (1) of the algorithm copies the daily escapement for a specific stock into a vector which will be expanded in subsequent steps to represent the entering run size. Step (2) initiates the week counter to the last week in the season. The iterative part of the algorithm starts in step (3) which sets the fishery reference to the last fishery through which a Chinook passes prior to escapement. Step (4) identifies the current fishery in the migration order. Step (5) solves the catch equation for the constant daily harvest rate over all days open to fishing within the week and for all stocks found in the fishery (assuming equal vulnerability). Since the only unknown variable is h and it must be real and bounded by 0 and 1, a numerical solution can be found easily with the bisection method. Step (6) expands the run size by the survival rate over the associated stocks and days impacted by the fishery. In step (7) the fishery index is decreased (working backward through the fisheries) and tested in step (8) to see if all the fisheries have been processed. Finally, step (9) decreases the time counter by one week (working backward through the season) and step (10) tests if there are any more weeks to process.

The above structure is said to be “rigid” because variable movement speeds are not accommodated (e.g. migration rates changing through the season). Currently, the degree to which migration rates change over the season for each stock is unknown so this option has not been included in the model. Variable migration rates could be accommodated by making r_{sf} and w_{sf} a function of time.

3.1 Model Assumptions

The assumptions associated with this run reconstruction analyses were:

- a. The Chinook stocks included in the model adequately represent the run timing and total escapement for Fraser River Chinook;
- b. The methods used to derive the annual escapement estimates account for annual variability in survey conditions and survey coverage;
- c. The distribution of the annual escapement estimates over the escapement period defined for each stock is consistent with a normal distribution;
- d. The fisheries and catch data included in the model adequately represent the timing and location of fisheries that harvest Chinook within the Fraser watershed;

- e. All stocks are equally vulnerable to harvesting when present in a fishery, such that harvests of a stock are proportional to the relative abundance of that stock in that fishery during the fishing period; and
- f. The number of days that a stock resides in each fishery is constant throughout the run.

4.0 RESULTS

4.1 Escapement Estimates

Most of the annual escapement estimates for Fraser Chinook were derived using visual survey techniques. Since visual survey estimates are generally believed to be underestimates of spawning escapement, the run reconstruction analysis will likely overestimate the harvest rates and underestimated the total run size for most stocks. The degree to which the escapement data and run reconstruction results can be used to assess temporal trends and make comparison between stocks depends on the consistency of the application of escapement monitoring procedures and suitability of the techniques for each stock. Annual escapement summaries for each timing-age aggregate show increasing trend for most aggregates and the substantial difference in the abundance of fall Chinook relative to other aggregates (Figure 2). The only aggregate that has not shown a substantial increase in escapement since the late 1980s is the Spring 5.2 aggregate.

4.2 Catch Estimates

On average, 44,046 Chinook were harvested annually in fisheries within the Fraser watershed from 1982-2004 (Table 11). Catches were generally high from 1982-86, averaging 47,000 Chinook per year. The total catch dropped substantially in 1987 to less than 30,000 largely due to restriction of the Area 29 fishery (Table 9). From 1987 to 1996, harvest levels were fairly consistent with an average catch of 33,350. In 1997, increase to over 63,000 and have averaged 55,570 from 1997-2004. The largest annual harvest occurred in 2004 (the last year reconstructed) when over 73,000 Chinook were harvested in river fisheries. Run reconstruction estimates by aggregate indicate that harvest of spring and summer timing groups increased substantially since 1999 (Table 11). In contrast to spring and summer Chinook, catches of fall Chinook are relative small in mainstem fisheries. Since 1997, more than 80% of the estimated Fraser River harvest of Fall Chinook occurred in the Chilliwack recreational (see Appendix Table A26).

4.3 Stock size and harvest rates

The average total return of Chinook salmon to the Fraser River was 315,233 over the period from 1982-2004 (Table 12). The average contribution of timing-age aggregates were: 6% Spring 4₂, 15% Spring 5₂, 15% Summer 5₂, 16% Summer 4₁ and 48% Fall. In general, the trends in total return are very similar to those observed in the escapement data (Figures 2 and 3). Trends for all Fraser stocks combined are largely determined by the escapement estimates for the fall timing aggregate. The similarity between escapement and total returns for fall stocks is not surprising given the relatively low harvest rates for this run timing group (Figure 4). Harvest trends are similar for the two summer aggregates. The closure of the Area 29 Chinook gillnet

fishery in the mid 1980s resulted in a substantial decline in the annual harvest rate from over 50% in 1984 to less than 20% in 1988. Since 1988, in-river harvest rates for the spring and summer aggregates have varied between 10% and 30% in most years. Stock specific estimates of the total return to the mouth of the Fraser and in-river harvest rates are provided in Appendix B. The six stocks with consistently high in-river harvest rates since 1997 (Chilako, Cottonwood, Upper Chilcotin, Louis, Coldwater and Spius) are believed to represent the majority of the Fraser Chinook that enter the river before the end of May each year (Figure 5). The average annual harvest rates for these stocks (38-60%) from 1997-2004, were notably higher than those for all other Fraser Chinook stocks (19%).

The estimated total return of Chinook salmon to the mouth of the Fraser River was expanded to an estimate of the Total Return to Canada (TRTC)¹ using estimates of the Canadian marine total mortality derived from the Coast-wide Chinook Model (C. Parken, DFO Nanaimo, pers. comm.). The average TRTC for all Fraser Chinook stocks combined during the 1982-2004 period was estimated to be 505,216 (Table 13). The annual TRTC estimates have ranged from 293,700 in 1995 to over 914,000 in 1984.

5.0 DISCUSSION

The accuracy of the run reconstruction estimates depends on the degree to which the assumptions associated with the data and analysis procedure are violated. The following sections examine each of the key assumptions.

- a. *The Chinook stocks included in the model adequately represent the run timing and total escapement for Fraser River Chinook;*

The Albion test fishery has been used to monitor the migration timing and relative abundance of Fraser Chinook since 1980 (Dempson et al. 1998). The test fishery generally operates from early April through late October each year. Information from the analysis of 6484 DNA samples and 463 CWT recoveries from the Albion test fishery was the basis for the stock specific run timing parameters used in the run reconstructions. While there is some potential for misclassification of Chinook samples between stocks, we believe that these data provide a good indication of the migration timing for all of the major stocks.

Escapement monitoring efforts are extensive for Fraser Chinook. Annual surveys are believed to cover the vast majority (80-90%) of the total escapement to the Fraser watershed. Even so, there are spawning returns for which we are either unable to survey or generate estimates due to counting conditions or budgetary constraints. The accuracy of the escapement estimates varies substantially between stocks depending on the enumeration method, survey conditions and coverage. Escapement estimates for Fraser Chinook can be classified in one of the following categories: 1) high quality fence counts or mark-recapture estimates with little or no bias; 2)

¹ TRTC is a term used in the Nisga'a Final Agreement, and other Treaty related assessments, to include the salmon of a specific stock or stock group vulnerable to fisheries in Canadian waters. Most of the salmon included in the TRTC estimates are adult salmon enumerated as catch or escapement as they pass through Canadian waters on their return migration to their spawning areas. However, the TRTC may include fish that never left Canadian waters or were harvest prior to initiating their "return" migration.

reliable visual estimates with a small negative bias; and 3) poor quality fence, mark-recapture or visual estimates with unknown bias. Of the 61 stocks in our run reconstruction analysis, 55 stocks were assigned to the 2nd category; five stocks were assigned to the 3rd category and only four stocks (Harrison, Nicola, Lower Shuswap and Salmon River at Salmon Arm) were assigned to the 1st category. However, to maintain time series, Nicola and Lower Shuswap estimates used in the reconstruction are aerially derived visual estimates of escapement.

The most significant uncertainty in escapement coverage are associated with the Summer 5₂ aggregate. Direct measures of escapement for Taseko River, the North Thompson River and the Stuart River Chinook stocks are either not available or unreliable. We used the more reliable information from the Chilko and Clearwater rivers to produce a time series of escapement estimates for the Taseko and North Thompson stocks, respectively. No alternative to the available escapement estimates for the Stuart River stock was identified.

For the remainder of the systems, there are a variety of estimate types generated annually, and for the different rivers, it is thought that those estimates have differing degrees of accuracy and precision. To better understand the accuracy and precision of those estimates, calibration studies have been undertaken annually when budgetary constraints permit. Multiple types of escapement estimates have been generated on some stocks to investigate the magnitude and direction of biases associated with the widely used peak live surveys. Preliminary results for the Nicola River were reported by Bailey et al. (2000). Peak live estimates are typically less than those estimated through intensive mark-recapture studies; however the negative bias is not consistent and has varied from 5% to 40% on the Nicola River. Similar results have been observed on the Lower Shuswap River; however more work is required to investigate the influence of large sockeye runs on counting Chinook escapements.

b. The methods used to derive the annual escapement estimates account for annual variability in survey conditions and survey coverage;

Survey methods have remained consistent for many populations throughout the years included in the run reconstruction analysis, and coverage has not changed substantially. During the period of 1999 to 2002, additional survey visits were undertaken on some Interior Fraser systems and AUC-type estimates, and peak-live estimates generated. These AUC estimates were used to compare to peak-live estimates to examine the statistical properties of the peak-live estimates. The time series of estimates are consistent by stock, and for most populations are based on peak-live estimates. Survey conditions have been remarkably consistent for most years, and because several surveys are undertaken around the time of peak spawn for each population, it is uncommon not to have at least one count where conditions were acceptable. Estimates are always generated from the best survey information available.

There is one exception regarding survey conditions and estimate reliability and that is the variable influence of sockeye escapements on counting spawning Chinook salmon. Unpublished data from the Lower Shuswap River indicate that Chinook behaviour may be influenced by large numbers of sockeye spawning concurrently (Trouton and Bailey). Peak live estimates on years when few sockeye are present on lower Shuswap exhibit similar negative bias when compared to Petersen estimates as those from the Nicola. However, in 2002 when ~800,000 sockeye were

present and competing for redd sites; the peak live estimate grossly underestimated the Petersen escapement (~18,000 vs. ~55,000). Concurrent observations of Chinook spawner behaviour indicated female redd residence time, declined by >50%. As a result of those findings, additional work will be undertaken on the Lower and Mid Shuswap rivers in 2006 to determine the influence of large sockeye escapements on peak live visual Chinook estimates. Results of this work may provide insight into estimate reliability for Chilko, Shuswap, Adams, and Little River Chinook escapements.

- c. The distribution of the annual escapement estimates over the escapement period defined for each stock is consistent with a normal distribution;*

There are a few stocks where the migration timing data from the Albion test fishery is bimodal (e.g. Bessette) or multi-modal (e.g. Blackwater). However, most of the migration timing data from Albion and escapement surveys are consistent with a normal distribution.

- d. The fisheries and catch data included in the model adequately represent the timing and location of fisheries that harvest Chinook within the Fraser watershed;*

The run reconstruction analyses include all the available catch estimates for fisheries within the Fraser watershed. Weekly estimates of the number of Chinook caught in Area 29 commercial fisheries were available for all years but there is some concerns that the reported catches from 1998-2002 may be underestimated due to dock-side sales and other gaps in the catch reporting system in these year (Brian Riddell, DFP Nanaimo, pers. comm.). A substantial amount of effort was expended in the compilation of catch estimates for First Nations and recreational fisheries. Detail records of fishery opening were compared with the available harvest data to identify any gaps in the direct estimates of harvest for each fishery. All identified data gaps were addressed through consultation from region fisheries biologists and those responsible for compiling catch data (see Appendix A).

- e. All stocks are equally vulnerable to harvesting when present in a fishery, such that harvests of a stock are proportional to the relative abundance of that stock in that fishery during the fishing period;*

Some concerns have been raised that the vulnerability of difference size Chinook (Age 4 verses Area 5 fish) may not be the same in the lower river gillnet fisheries. However, no direct estimates of differential vulnerability were available and it is possible that the differences may change within each year due to variation in mesh size and species composition. For example: smaller Chinook (Age 4) may be less vulnerable during the spring fishing periods when larger mesh sizes are used in the First Nation fisheries and the opposite may occur during the summer months when in-river First Nation fisheries use smaller mesh sizes to catch sockeye.

- f. The number of days that a stock resides in each fishery is constant throughout the run.*

While there are reasons to suspect that migration speeds, and thus residence times, could vary over the migration period, no direct evidence of season changes in migration speed was found. Mark-recapture data from a study conducted in 1997 provided some information on migration

time from the lower Fraser tagging site to tributary spawning areas (Melanie Sullivan, DFO New Westminster, pers. comm.) but the sample sizes were much too low to detect in-season variations in migration rates. Given the small number of days that Chinook reside in most fisheries and the long duration of the run for most stocks, we suspect that including in-season variability in fishery residence times would not have a substantive affect on the run reconstruction estimates.

The run reconstruction model includes two options: 1) fix the number of fishing days to 1 day per week or 2) use the average number of fishing days defined in Table 9. Comparison of results from these options showed only nominal changes in the final estimates for run size and harvest rates. A reduction in the number of fishing days from 7 to 1 is a substantial decrease in the number of days that Chinook are vulnerable to each fishery. This provides further support for our contention that the run reconstruction results are not sensitive to the violation of the assumption of constant residence times for each fishery.

6.0 RECOMMENDATIONS

1. A systematic approach for addressing the underestimation bias in Chinook escapement estimates needs to be developed and implemented, especially for several of the larger Chinook stocks where visual counts are affected by sockeye abundance or turbidity.
2. A catch monitoring plan should be developed and implemented for all Chinook fisheries with the Fraser River. Detailed records of fishery openings, gear and species restrictions and catch estimates need to be maintained for these fisheries.
3. Migration speeds and fishery residence times need to be measured directly for Chinook stocks that migrate through fisheries conducted during the April-August periods. A carefully designed radio-telemetry study could provide this type of information.
4. If seasonal variability in migration behaviour is confirmed for any of the major Chinook stocks, the run reconstruction model should be modified to accommodate variable migration rates.
5. Estimates for incidental fishing mortality, including net drop out rates and sport fishery release mortality should be obtained, given increasing trends in the harvesting effort for Fraser River Chinook and sockeye fisheries.
6. The above recommendations need to be addressed before additional time and resources are allocated to more extensive sensitivity analysis and a rigorous assessment of the precision of model outputs.
7. A user manual, similar to that completed for the Northern Boundary Sockeye Run Reconstruction Model, should be prepared and provided to DFO along with the internally documented source code and input data files.
8. Chinook run reconstruction analyses should be conducted annually so the information required to assess trends in abundance and harvest rates are available to evaluate alternative management decisions and relative abundance measures are available for the Treaty negotiation and implementation.

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Table 1. Definition of Fraser Chinook stocks included in run reconstructions.

Stock No.	Stock Name	Location Code	Location Name	Aggregate No.	Aggregate Name
1	Swift	1	Upper Fraser	1	Spring 5.2
2	Fraser	1	Upper Fraser	1	Spring 5.2
3	Horsey	1	Upper Fraser	1	Spring 5.2
4	Nevin	1	Upper Fraser	1	Spring 5.2
5	Holmes	1	Upper Fraser	1	Spring 5.2
6	McKale	1	Upper Fraser	1	Spring 5.2
7	Twin	1	Upper Fraser	1	Spring 5.2
8	Goat	1	Upper Fraser	1	Spring 5.2
9	Morkill	1	Upper Fraser	1	Spring 5.2
10	Walker	1	Upper Fraser	1	Spring 5.2
11	Torpy	1	Upper Fraser	1	Spring 5.2
12	Dome	1	Upper Fraser	1	Spring 5.2
13	Slim	1	Upper Fraser	1	Spring 5.2
14	Bowron	1	Upper Fraser	1	Spring 5.2
15	McGregor	1	Upper Fraser	1	Spring 5.2
16	Willow	1	Upper Fraser	1	Spring 5.2
17	Salmon (PG)	1	Upper Fraser	1	Spring 5.2
18	Stuart	2	Nechako	2	Summer 5.2
19	Nechako	2	Nechako	2	Summer 5.2
20	Stellako	2	Nechako	2	Summer 5.2
21	Endako	3	Quesnel-Nechako	1	Spring 5.2
22	Chilako	3	Quesnel-Nechako	1	Spring 5.2
23	Blackwater	3	Quesnel-Nechako	1	Spring 5.2
24	Cotton-wood	3	Quesnel-Nechako	1	Spring 5.2
25	Quesnel	4	Quesnel	2	Summer 5.2
26	Cariboo	4	Quesnel	2	Summer 5.2
27	Horsefly	4	Quesnel	1	Spring 5.2
28	Chilko	5	Chilcotin	2	Summer 5.2
29	Chilcotin Upper	5	Chilcotin	1	Spring 5.2
30	Chilcotin Lower	5	Chilcotin	1	Spring 5.2
31	Elkin	5	Chilcotin	1	Spring 5.2
32	Taseko	5	Chilcotin	2	Summer 5.2
33	Bridge	6	Middle Fraser	1	Spring 5.2
34	Portage	6	Middle Fraser	2	Summer 5.2
35	Seton	6	Middle Fraser	2	Summer 5.2
36	Mahood	7	North Thompson	2	Summer 5.2
37	Clearwater	7	North Thompson	2	Summer 5.2
38	Finn	7	North Thompson	1	Spring 5.2
39	Raft	7	North Thompson	2	Summer 5.2
40	Barriere	7	North Thompson	1	Spring 5.2
41	Louis	7	North Thompson	3	Spring 4.2
42	North Thompson	7	North Thompson	2	Summer 5.2
43	Bessette	8	South Thompson	3	Spring 4.2
44	Middle Shuswap	8	South Thompson	4	Summer 4.1
45	Lower Shuswap	8	South Thompson	4	Summer 4.1
46	Eagle	8	South Thompson	1	Spring 5.2
47	Salmon (ST)	8	South Thompson	1	Spring 5.2
48	Adams	8	South Thompson	4	Summer 4.1
49	Little	8	South Thompson	4	Summer 4.1
50	South Thompson	8	South Thompson	4	Summer 4.1
51	Lower Thompson	9	Lower Thompson	4	Summer 4.1
52	Deadman	9	Lower Thompson	3	Spring 4.2
53	Bonaparte	9	Lower Thompson	3	Spring 4.2
54	Coldwater	9	Lower Thompson	3	Spring 4.2
55	Spilus	9	Lower Thompson	3	Spring 4.2
56	Nicola	9	Lower Thompson	3	Spring 4.2
57	Nahatlach	10	Lower Fraser Early Timing	1	Spring 5.2
58	Maria Slough	10	Lower Fraser Early Timing	1	Summer 4.1
59	Birkenhead	10	Lower Fraser Early Timing	1	Spring 5.2
60	Harrison	11	Lower Fraser Late Timing	5	Fall
61	Chilliwack	11	Lower Fraser Late Timing	5	Fall
62	Pitt	10	Lower Fraser Early Timing	1	Spring 5.2

Table 2. Definition of Fraser River Chinook fisheries.

Fishery		
Number	Short Name	Description
1	Area 29	Statistical Area 29 - estuary to Mission
2	Stev-Deas	Steveston - Deas Island
3	Deas-Miss	Deas Island to Mission
4	Miss-Hope	Mission to Hope
5	Hope-Sawm	Hope to Sawmill Creek
6	Sawm-Texa	Sawmill to Texas Creek
7	Texa-Kelly	Texas Creek to Kelly Creek
8	Kelly-Deadm	Kelly Creek to Deadman Creek
9	Deadm-Chil	Deadman Creek to Chilcotin River
10	Chil-Quen	Chilcotin River to Quesnel
11	Quen-Naver	Quesnel River to Naver Creek
12	Naver-Salm	Naver Creek to Salmon River
13	Tete Juene	Tete Juene
14	Nechako	Nechako
15	Stuart	Stuart
16	Chilcotin	Chilcotin
17	Tomp-Bona	Thompson Junction to Bonaparte River
18	Bona-Kam	Bonaparte River to Kamloops Lake
19	N.Thomp	North Thompson River
20	Kam-Shu	Kamloops to Shuswap Lake
21	L.Shu	Lower Shuswap River

Table 3. Sample of the unadjusted annual estimates of the escapement to spawning areas for each Fraser Chinook stock, 2000-04.

Stock Name	No.	Loc	Agg	Agg Name	2000	2001	2002	2003	2004	Average	Average
										2000-04	1982-04
Swift	1	1	1	Spring 5.2	486	982	1535	835	520	872	992
Fraser	2	1	1	Spring 5.2	2262	4976	3913	3048	2062	3252	3988
Horsely	3	1	1	Spring 5.2	128	78	308	288	62	173	130
Nevin	4	1	1	Spring 5.2	62	57	132	385	238	175	104
Holmes	5	1	1	Spring 5.2	1795	1018	3740	4110	1376	2408	2156
McKale	6	1	1	Spring 5.2	32	9	81	49	68	48	31
Twin	7	1	1	Spring 5.2	52	49	73	160	102	87	61
Goat	8	1	1	Spring 5.2	212	411	820	569	172	437	225
Morkill	9	1	1	Spring 5.2	926	-1	-1	-1	1122	1024	1053
Walker	10	1	1	Spring 5.2	252	177	382	543	277	326	332
Torpy	11	1	1	Spring 5.2	1468	1755	2565	4457	2730	2595	1926
Dome	12	1	1	Spring 5.2	271	385	450	444	208	352	370
Slim	13	1	1	Spring 5.2	2112	2876	3021	3676	2278	2793	2928
Bowron	14	1	1	Spring 5.2	3233	5491	8719	10059	8682	7237	6435
McGregor	15	1	1	Spring 5.2	2449	2168	4003	3740	2722	3016	2587
Willow	16	1	1	Spring 5.2	1314	893	1033	1980	1887	1421	1222
Salmon (PG)	17	1	1	Spring 5.2	634	478	463	2395	1170	1028	739
Stuart	18	2	2	Summer 5.2	1920	1954	4789	-4	-1	2888	4003
Nechako	19	2	2	Summer 5.2	3794	9331	3296	5100	5189	5342	2621
Stellako	20	2	2	Summer 5.2	-1	-1	-1	-2	-3	na	35
Endako	21	3	1	Spring 5.2	160	275	292	-3	-3	242	188
Chilako	22	3	1	Spring 5.2	20	7	229	-3	106	91	162
Blackwater	23	3	1	Spring 5.2	1600	1924	1620	2966	1366	1895	3476
Cottonwood	24	3	1	Spring 5.2	1208	781	1352	1555	1241	1227	1742
Quesnel	25	4	2	Summer 5.2	1718	2418	5509	5265	3477	3677	3641
Cariboo	26	4	2	Summer 5.2	744	503	1097	2565	250	1032	1261
Horsefly	27	4	1	Spring 5.2	174	281	404	246	375	296	475
Chilko	28	5	2	Summer 5.2	9171	10891	10731	21625	16287	13741	9579
Chilcotin Upper	29	5	1	Spring 5.2	229	243	523	678	220	379	400
Chilcotin Lower	30	5	1	Spring 5.2	2971	1574	2092	3396	967	2200	2617
Elkin	31	5	1	Spring 5.2	394	458	423	1038	-1	578	531
Taseko	32	5	2	Summer 5.2	-4	-4	-4	-4	-3	na	334
Bridge	33	6	1	Spring 5.2	769	198	969	-1	1101	759	765
Portage	34	6	2	Summer 5.2	46	248	445	158	103	200	165
Seton	35	6	2	Summer 5.2	-3	-2	6	5	-3	6	74
Mahood	36	7	2	Summer 5.2	245	172	155	929	317	364	304
Clearwater	37	7	2	Summer 5.2	4563	5051	6215	6234	4616	5336	4734
Finn	38	7	1	Spring 5.2	1511	1115	650	45	426	749	991
Raft	39	7	2	Summer 5.2	936	237	443	311	741	534	604
Barriere	40	7	2	Summer 5.2	77	362	357	131	306	247	124
Louis	41	7	3	Spring 4.2	611	349	481	198	105	349	248
North Thompson	42	7	2	Summer 5.2	2732	3175	2200	1989	-1	2524	2290
Bessette	43	8	3	Spring 4.2	360	323	350	187	153	275	196
Middle Shuswap	44	8	4	Summer 4.1	2617	2868	5775	4799	1415	3495	2821
Lower Shuswap	45	8	4	Summer 4.1	20409	18349	19475	21380	13228	18568	13427
Eagle	46	8	1	Spring 5.2	1085	1397	1469	1583	867	1280	971
Salmon (ST)	47	8	1	Spring 5.2	355	1362	1003	89	439	650	788
Adams	48	8	4	Summer 4.1	2266	5890	3674	2496	2216	3308	2111
Little	49	8	4	Summer 4.1	2043	9885	3680	2488	5728	4765	1595
South Thompson	50	8	4	Summer 4.1	17560	36740	51298	38178	29677	34691	16565
Lower Thompson	51	8	4	Summer 4.1	3200	6900	18900	10000	10000	9800	2957
Deadman	52	9	3	Spring 4.2	787	780	1940	1639	1159	1261	881
Bonaparte	53	9	3	Spring 4.2	5258	6150	8368	8470	7990	7247	3169
Coldwater	54	9	3	Spring 4.2	497	781	1012	1195	1023	902	858
Spilus	55	9	3	Spring 4.2	668	603	1012	1170	1866	1064	474
Nicola	56	9	3	Spring 4.2	8808	7771	11628	14574	7850	10126	6160
Nahatlatch	57	10	1	Spring 5.2	40	97	100	89	-3	82	73
Maria Slough	58	10	4	Summer 4.1	266	400	1200	823	-1	672	225
Birkenhead	59	10	1	Spring 5.2	404	624	463	427	180	420	355
Harrison	60	11	5	Fall	79143	74467	96935	250751	139497	128158	112786
Chilliwack	61	11	5	Fall	43163	68247	63476	56072	58025	35464	30769
Pitt	62	10	1	Spring 5.2	-1	-1	276	171	-1	224	333
Total					242210	306984	367550	507753	344182	334348	264157

Table 4. Sample of the adjusted annual estimates of the escapement to spawning areas for each Fraser Chinook stock, 2000-04.

Stock Name	No.	Loc	Agg	Agg Name	2000	2001	2002	2003	2004	Average	Average
										2000-04	1982-04
Swift	1	1	1	Spring 5.2	486	982	1535	835	520	872	992
Fraser	2	1	1	Spring 5.2	2262	4976	3913	3048	2062	3252	3988
Horsey	3	1	1	Spring 5.2	128	78	308	288	62	173	132
Nevin	4	1	1	Spring 5.2	62	57	132	385	238	175	106
Holmes	5	1	1	Spring 5.2	1795	1018	3740	4110	1376	2408	2156
McKale	6	1	1	Spring 5.2	32	9	81	49	68	48	31
Twin	7	1	1	Spring 5.2	52	49	73	160	102	87	61
Goat	8	1	1	Spring 5.2	212	411	820	569	172	437	225
Morkill	9	1	1	Spring 5.2	926	898	1213	1405	1122	1113	1023
Walker	10	1	1	Spring 5.2	252	177	382	543	277	326	332
Torpy	11	1	1	Spring 5.2	1468	1755	2565	4457	2730	2595	1926
Dome	12	1	1	Spring 5.2	271	385	450	444	208	352	370
Slim	13	1	1	Spring 5.2	2112	2876	3021	3676	2278	2793	2928
Bowron	14	1	1	Spring 5.2	3233	5491	8719	10059	8682	7237	6435
McGregor	15	1	1	Spring 5.2	2449	2168	4003	3740	2722	3016	2581
Willow	16	1	1	Spring 5.2	1314	893	1033	1980	1887	1421	1222
Salmon (PG)	17	1	1	Spring 5.2	634	478	463	2395	1170	1028	733
Stuart	18	2	2	Summer 5.2	1920	1954	4789	7019	5467	4230	4198
Nechako	19	2	2	Summer 5.2	3794	9331	3296	5100	5189	5342	2621
Stellako	20	2	2	Summer 5.2	31	42	43	62	48	45	36
Endako	21	3	1	Spring 5.2	160	275	292	251	162	228	189
Chilako	22	3	1	Spring 5.2	20	7	229	216	106	116	165
Blackwater	23	3	1	Spring 5.2	1600	1924	1620	2966	1366	1895	3476
Cottonwood	24	3	1	Spring 5.2	1208	781	1352	1555	1241	1227	1756
Quesnel	25	4	2	Summer 5.2	1718	2418	5509	5265	3477	3677	3641
Cariboo	26	4	2	Summer 5.2	744	503	1097	2565	250	1032	1261
Horsefly	27	4	1	Spring 5.2	174	281	404	246	375	296	475
Chilko	28	5	2	Summer 5.2	9171	10891	10731	21625	16287	13741	9579
Chilcotin Upper	29	5	1	Spring 5.2	229	243	523	678	220	379	390
Chilcotin Lower	30	5	1	Spring 5.2	2971	1574	2092	3396	967	2200	2617
Elkin	31	5	1	Spring 5.2	394	458	423	1038	458	554	506
Taseko	32	5	2	Summer 5.2	4586	5446	5366	10813	8144	6871	4790
Bridge	33	6	1	Spring 5.2	769	198	969	1020	1101	811	776
Portage	34	6	2	Summer 5.2	46	248	445	158	103	200	167
Seton	35	6	2	Summer 5.2	65	87	6	5	100	53	79
Mahood	36	7	2	Summer 5.2	245	172	155	929	317	364	304
Clearwater	37	7	2	Summer 5.2	4563	5051	6215	6234	4616	5336	4734
Finn	38	7	1	Spring 5.2	1511	1115	650	45	426	749	991
Raft	39	7	2	Summer 5.2	936	237	443	311	741	534	604
Barriere	40	7	1	Summer 5.2	77	362	357	131	306	247	128
Louis	41	7	3	Spring 4.2	611	349	481	198	105	349	248
North Thompson	42	7	2	Summer 5.2	4563	5051	6215	6234	4616	5336	4734
Besette	43	8	3	Spring 4.2	360	323	350	187	153	275	206
Middle Shuswap	44	8	4	Summer 4.1	2617	2868	5775	4799	1415	3495	2821
Lower Shuswap	45	8	4	Summer 4.1	20409	18349	19475	21380	13228	18568	13427
Eagle	46	8	1	Spring 5.2	1085	1397	1469	1583	867	1280	976
Salmon (ST)	47	8	1	Spring 5.2	355	1362	1003	89	439	650	788
Adams	48	8	4	Summer 4.1	2266	5890	3674	2496	2216	3308	2111
Little	49	8	4	Summer 4.1	2043	9885	3680	2488	5728	4765	1554
South Thompson	50	8	4	Summer 4.1	17560	36740	51298	38178	29677	34691	16565
Lower Thompson	51	8	4	Summer 4.1	3200	6900	18900	10000	10000	9800	2957
Deadman	52	9	3	Spring 4.2	787	780	1940	1639	1159	1261	881
Bonaparte	53	9	3	Spring 4.2	5258	6150	8368	8470	7990	7247	3169
Coldwater	54	9	3	Spring 4.2	497	781	1012	1195	1023	902	858
Spilus	55	9	3	Spring 4.2	668	603	1012	1170	1866	1064	474
Nicola	56	9	3	Spring 4.2	8808	7771	11628	14574	7850	10126	6160
Nahatlatch	57	10	1	Spring 5.2	40	97	100	89	63	78	73
Maria Slough	58	10	4	Summer 4.1	266	400	1200	823	383	614	216
Birkenhead	59	10	1	Spring 5.2	404	624	463	427	180	420	355
Harrison	60	11	5	Fall	79143	74467	96935	250751	139497	128158	112786
Chilliwack	61	11	5	Fall	43163	68247	63476	56072	58025	57797	30769
Pitt	62	10	1	Spring 5.2	245	284	276	171	288	253	333
Total					242210	306984	367550	507753	344182	367893	271187

Table 5. Average spawning area timing and river entry timing for Fraser Chinook stocks.

Stock Name	No.	Agg	Stock Agg	Duration Days	Spawning Area Timing						Travel Days	River Entry Timing		
					Day of Year			Dates				Start	Peak	End
					Start	Peak	End	Start	Peak	End				
Swift	1	1	Spring 5.2	70	196	231	266	15-Jul	19-Aug	23-Sep	71	5-May	9-Jun	14-Jul
Fraser	2	1	Spring 5.2	70	214	249	284	2-Aug	6-Sep	11-Oct	70	24-May	28-Jun	2-Aug
Horsey	3	1	Spring 5.2	70	194	229	264	13-Jul	17-Aug	21-Sep	69	5-May	9-Jun	14-Jul
Nevin	4	1	Spring 5.2	70	197	232	267	16-Jul	20-Aug	24-Sep	68	9-May	13-Jun	18-Jul
Holmes	5	1	Spring 5.2	70	198	233	268	17-Jul	21-Aug	25-Sep	68	10-May	14-Jun	19-Jul
McKale	6	1	Spring 5.2	70	196	231	266	15-Jul	19-Aug	23-Sep	67	9-May	13-Jun	18-Jul
Twin	7	1	Spring 5.2	70	196	231	266	15-Jul	19-Aug	23-Sep	67	9-May	13-Jun	18-Jul
Goat	8	1	Spring 5.2	70	195	230	265	14-Jul	18-Aug	22-Sep	66	9-May	13-Jun	18-Jul
Morkill	9	1	Spring 5.2	70	193	228	263	12-Jul	16-Aug	20-Sep	65	8-May	12-Jun	17-Jul
Walker	10	1	Spring 5.2	70	195	230	265	14-Jul	18-Aug	22-Sep	64	11-May	15-Jun	20-Jul
Torpy	11	1	Spring 5.2	70	193	228	263	12-Jul	16-Aug	20-Sep	64	9-May	13-Jun	18-Jul
Dome	12	1	Spring 5.2	70	198	233	268	17-Jul	21-Aug	25-Sep	64	14-May	18-Jun	23-Jul
Slim	13	1	Spring 5.2	70	206	241	276	25-Jul	29-Aug	3-Oct	64	22-May	26-Jun	31-Jul
Bowron	14	1	Spring 5.2	70	206	241	276	25-Jul	29-Aug	3-Oct	63	23-May	27-Jun	1-Aug
McGregor	15	1	Spring 5.2	70	196	231	266	15-Jul	19-Aug	23-Sep	63	13-May	17-Jun	22-Jul
Willow	16	1	Spring 5.2	70	202	237	272	21-Jul	25-Aug	29-Sep	58	24-May	28-Jun	2-Aug
Salmon	17	1	Spring 5.2	70	203	238	273	22-Jul	26-Aug	30-Sep	54	29-May	3-Jul	7-Aug
Stuart	18	2	Summer 5.2	48	232	256	280	20-Aug	13-Sep	7-Oct	50	1-Jul	25-Jul	18-Aug
Nechako	19	2	Summer 5.2	62	216	247	278	4-Aug	4-Sep	5-Oct	48	17-Jun	18-Jul	18-Aug
Stellako	20	2	Summer 5.2	62	216	247	278	4-Aug	4-Sep	5-Oct	50	15-Jun	16-Jul	16-Aug
Endako	21	1	Spring 5.2	66	194	227	260	13-Jul	15-Aug	17-Sep	52	22-May	24-Jun	27-Jul
Chilako	22	1	Spring 5.2	76	134	172	210	14-May	21-Jun	29-Jul	50	25-Mar	2-May	9-Jun
Blackwater	23	1	Spring 5.2	132	134	200	266	14-May	19-Jul	23-Sep	41	3-Apr	8-Jun	13-Aug
Cottonwood	24	1	Spring 5.2	76	134	172	210	14-May	21-Jun	29-Jul	41	3-Apr	11-May	18-Jun
Quesnel	25	2	Summer 5.2	50	244	269	294	1-Sep	26-Sep	21-Oct	42	21-Jul	15-Aug	9-Sep
Cariboo	26	2	Summer 5.2	80	210	250	290	29-Jul	7-Sep	17-Oct	42	17-Jun	27-Jul	5-Sep
Horsefly	27	1	Spring 5.2	70	205	240	275	24-Jul	28-Aug	2-Oct	48	6-Jun	11-Jul	15-Aug
Chilko	28	2	Summer 5.2	76	204	242	280	23-Jul	30-Aug	7-Oct	54	30-May	7-Jul	14-Aug
Chilcotin Upper	29	1	Spring 5.2	76	186	224	262	5-Jul	12-Aug	19-Sep	102	25-Mar	2-May	9-Jun
Chilcotin Lower	30	1	Spring 5.2	70	205	240	275	24-Jul	28-Aug	2-Oct	55	30-May	4-Jul	8-Aug
Elkin	31	1	Spring 5.2	70	217	252	287	5-Aug	9-Sep	14-Oct	60	6-Jun	11-Jul	15-Aug
Taseko	32	2	Summer 5.2	50	227	252	277	15-Aug	9-Sep	4-Oct	60	16-Jun	11-Jul	5-Aug
Bridge	33	1	Spring 5.2	50	224	249	274	12-Aug	6-Sep	1-Oct	63	10-Jun	5-Jul	30-Jul
Portage	34	2	Summer 5.2	50	281	306	331	8-Oct	2-Nov	27-Nov	24	14-Sep	9-Oct	3-Nov
Seton	35	2	Summer 5.2	50	285	310	335	12-Oct	6-Nov	1-Dec	23	19-Sep	14-Oct	8-Nov
Mahood	36	2	Summer 5.2	46	242	265	288	30-Aug	22-Sep	15-Oct	56	5-Jul	28-Jul	20-Aug
Clearwater	37	2	Summer 5.2	54	238	265	292	26-Aug	22-Sep	19-Oct	56	1-Jul	28-Jul	24-Aug
Finn	38	1	Spring 5.2	62	207	238	269	26-Jul	26-Aug	26-Sep	46	10-Jun	11-Jul	11-Aug
Raft	39	2	Summer 5.2	46	235	258	281	23-Aug	15-Sep	8-Oct	56	28-Jun	21-Jul	13-Aug
Barriere	40	2	Summer 5.2	46	235	258	281	23-Aug	15-Sep	8-Oct	56	28-Jun	21-Jul	13-Aug
Louis	41	3	Spring 4.2	78	156	195	234	5-Jun	14-Jul	22-Aug	64	2-Apr	11-May	19-Jun
North Thompson	42	2	Summer 5.2	88	208	252	296	27-Jul	9-Sep	23-Oct	46	11-Jun	25-Jul	7-Sep
Bessette	43	3	Spring 4.2	110	172	227	282	21-Jun	15-Aug	9-Oct	39	13-May	7-Jul	31-Aug
Middle Shuswap	44	4	Summer 4.1	68	223	257	291	11-Aug	14-Sep	18-Oct	61	11-Jun	15-Jul	18-Aug
Lower Shuswap	45	4	Summer 4.1	74	232	269	306	20-Aug	26-Sep	2-Nov	56	25-Jun	1-Aug	7-Sep
Eagle	46	1	Spring 5.2	68	215	249	283	3-Aug	6-Sep	10-Oct	61	3-Jun	7-Jul	10-Aug
Salmon	47	1	Spring 5.2	62	201	232	263	20-Jul	20-Aug	20-Sep	61	20-May	20-Jun	21-Jul
Adams	48	4	Summer 4.1	60	249	279	309	6-Sep	6-Oct	5-Nov	53	15-Jul	14-Aug	13-Sep
Little River	49	4	Summer 4.1	76	249	287	325	6-Sep	14-Oct	21-Nov	53	15-Jul	22-Aug	29-Sep
South Thompson	50	4	Summer 4.1	76	249	287	325	6-Sep	14-Oct	21-Nov	53	15-Jul	22-Aug	29-Sep
Lower Thompson	51	4	Summer 4.1	76	263	301	339	20-Sep	28-Oct	5-Dec	51	31-Jul	7-Sep	15-Oct
Deadman	52	3	Spring 4.2	120	186	246	306	5-Jul	3-Sep	2-Nov	86	10-Apr	9-Jun	8-Aug
Bonaparte	53	3	Spring 4.2	120	186	246	306	5-Jul	3-Sep	2-Nov	86	10-Apr	9-Jun	8-Aug
Coldwater	54	3	Spring 4.2	100	190	240	290	9-Jul	28-Aug	17-Oct	116	15-Mar	4-May	23-Jun
Spius	55	3	Spring 4.2	100	190	240	290	9-Jul	28-Aug	17-Oct	116	15-Mar	4-May	23-Jun
Nicola	56	3	Spring 4.2	82	202	243	284	21-Jul	31-Aug	11-Oct	76	6-May	16-Jun	27-Jul
Nahatlatch	57	1	Spring 5.2	60	214	244	274	2-Aug	1-Sep	1-Oct	53	10-Jun	10-Jul	9-Aug
Maria Slough	58	4	Summer 4.1	50	258	283	308	15-Sep	10-Oct	4-Nov	57	20-Jul	14-Aug	8-Sep
Birkenhead	59	1	Spring 5.2	100	116	166	216	26-Apr	15-Jun	4-Aug	77	8-Feb	30-Mar	19-May
Harrison	60	5	Fall	92	264	310	356	21-Sep	6-Nov	22-Dec	32	20-Aug	5-Oct	20-Nov
Chilliwack	61	5	Fall	92	264	310	356	21-Sep	6-Nov	22-Dec	32	20-Aug	5-Oct	20-Nov
Pitt	62	1	Spring 5.2	46	214	237	260	2-Aug	25-Aug	17-Sep	24	9-Jul	1-Aug	24-Aug
Min/Max					134		356	26-Apr		5-Dec		8-Feb		20-Nov

Table 7. Comparison of stock specific river entry timing derived from Albion test fishery CWT data with the average river entry timing used in the run reconstruction analyses.

CWT Group	Run	Week start day -->	Stock Name	No.	Albion Test Fishing Week (7/1 = first week in July = model days 182-188)																															River Entry Timing		
					91	98	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	Start
SWIFT R/UPFR	Spring		Swift	1			1		1																											125	195	
DOME CR	Spring		Dome	12						2	2	5	5	13	5	5	1																			134	204	
SLIM CR	Spring		Slim	13											1																					142	212	
BOWRON R	Spring		Bowron	14											2	4	3	1	2	1	1															143	213	
FONTONIKO CR	Spring		McGregor	15								1	1				1																			133	203	
JAMES CR	Spring		McGregor	15										1	1	1																				133	203	
WILLOW R	Spring		Willow	16							1	1	1	1	1	4																				144	214	
STUART R	summer		Stuart	18													4	3	3	3	1															182	230	
BAEZAEO R	Spring		Blackwater	23									1		1			1																		93	225	
NAZKO R	Spring		Blackwater	23							1								1																	93	225	
WEST ROAD RIVER	Spring		Blackwater	23									1	1	1	1	5	5																		93	225	
QUESNEL R	summer		Quesnel	25														1	1	4	3	1	3	2	2				1						202	252		
CARIBOO R UP	Spring		Cariboo	26										1	2	1	1																			168	248	
HORSEFLY R	Spring		Horsefly	27															1																	157	227	
CHILKO R	summer		Chilko	28															2		1	1														150	226	
CHILCOTIN R	Spring		Chilcotin Lower	30										1	1	1																				150	220	
BRIDGE R	summer		Bridge	33														3	5	1			1													161	211	
CLEARWATER R LW/BC	summer		Clearwater	37														1		1	2	4	1	5	3										182	236		
CLEARWATER R UP/TOMF	summer		Clearwater	37															2	1	1	1														182	236	
FINN CR	Spring		Finn	38															1	1			1													161	223	
RAFT R	summer		Raft	39																2	4	3	2	3		1									179	225		
SHUSWAP R MID	summer		Middle Shuswap	44																2	1	4	4	11	2	3	5		1						162	230		
SHUSWAP R LOW	summer		Lower Shuswap	45																		1	4	6	5	8	4	10	8	4	2	1	1			176	250	
EAGLE R	summer		Eagle	46																		2	1	1	5	4	2		1							154	222	
SALMON R/TOMF	Spring		Salmon	47																		1	1													140	202	
DEADMAN R	Spring		Deadman	51																																	100	220
BONAPARTE R	Spring		Bonaparte	52																																	100	220
COLDWATER R	Spring		Coldwater	53																																	74	174
SPIUS CR	Spring		Spius	54																																	74	174
NICOLA R	Spring		Nicola	55																																	126	208
MARIA SL	summer		Maria Slough	57																																	201	251
BIRKENHEAD R	Spring		Birkenhead	58																																	39	139
HARRISON + CHEHALIS	fall		Harrison	59																																	232	324
HARRISON R	fall		Harrison	59																																	232	324
CHILLIWACK R	fall		Chilliwack	60																																	232	324
STAVE R	fall		Chilliwack	60																																	232	324

Table 9. Summary of annual Chinook catch estimates for major commercial and First Nation fisheries conducted within the Fraser River watershed.

Year	Fraser River Fisheries (Area 29 = Commercial, Other Fisheries are First Nation Fisheries)																					Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N. Thomp	Kam-Shu	L. Shu	
1982	23,792	2,208	2,508	11,480	14,973	925	1,057	0	130	1,200	0	264	0	17	0	0	0	0	0	0	0	58,554
1983	25,580	341	858	6,729	4,422	551	309	0	370	1,035	0	72	0	34	0	0	0	0	0	0	0	40,301
1984	27,929	1,425	1,309	10,188	6,336	517	423	0	680	863	0	198	0	173	0	0	0	0	0	0	0	50,041
1985	28,894	827	446	3,274	2,754	232	317	0	131	670	0	354	0	112	0	0	0	0	0	0	0	38,011
1986	31,401	708	1,038	5,723	5,144	668	970	0	160	390	0	148	0	14	0	0	0	0	0	0	0	46,364
1987	12,021	728	749	4,084	7,237	603	802	0	16	60	0	9	0	43	0	0	0	0	0	0	0	26,352
1988	8,446	1,103	991	5,895	4,672	1,182	1,010	0	30	40	0	20	0	35	0	0	0	0	0	0	0	23,424
1989	23,443	568	195	1,502	1,717	1,213	546	0	65	100	0	8	0	6	0	0	0	0	0	0	0	29,363
1990	15,689	751	572	6,331	8,591	566	254	0	300	400	0	31	0	14	0	0	0	0	0	0	0	33,499
1991	14,757	1,179	782	5,073	8,299	484	264	0	103	127	0	168	0	18	0	0	0	0	0	0	0	31,254
1992	7,363	1,673	338	4,786	5,681	124	0	0	0	0	0	91	0	38	0	0	0	0	0	0	0	20,094
1993	13,885	1,595	763	4,932	6,501	4,416	927	0	33	26	0	33	0	7	0	0	0	0	0	0	0	33,118
1994	13,693	2,552	1,812	6,943	7,880	2,289	196	0	12	42	0	97	0	0	27	38	0	1	5	6	0	35,593
1995	6,451	2,441	3,366	5,279	9,410	769	41	0	76	1	0	16	0	7	1	142	3	3	15	6	0	28,027
1996	9,707	2,443	2,358	5,553	6,152	1,656	33	7	10	8	0	57	0	1	45	613	22	6	15	8	0	28,694
1997	28,742	3,506	3,545	6,484	10,946	2,477	516	48	139	149	0	211	0	5	0	227	0	0	42	38	0	57,075
1998	6,815	2,177	2,043	4,012	6,380	2,610	991	0	23	14	0	35	0	15	27	45	32	21	12	2	0	25,254
1999	3,911	2,242	1,415	9,149	5,792	7,699	1,646	3	151	82	0	14	0	7	0	353	230	15	4	0	0	32,713
2000	5,650	2,365	2,335	7,042	8,654	2,795	981	5	73	27	0	4	0	4	3	57	419	3	3	30	0	30,450
2001	4,121	2,562	2,699	7,443	9,079	3,503	1,470	0	44	59	0	31	0	13	0	36	376	77	0	67	0	31,580
2002	7,132	2,537	2,730	6,965	8,901	2,371	633	3	56	261	0	128	0	17	2	62	516	95	14	308	0	32,731
2003	11,040	4,194	3,858	5,673	13,105	1,554	201	0	31	17	0	168	0	0	30	95	298	93	9	910	0	41,276
2004	13,323	5,379	4,733	4,830	18,769	3,662	640	14	40	28	0	240	0	6	34	155	62	191	2	1,172	0	53,280
Mean	14,947	1,978	1,802	6,060	7,887	1,864	619	3	116	243	0	104	0	25	7	79	85	22	5	111	0	35,959

Table 11. Annual Chinook catch estimates for each timing-age aggregate, 1982-2004.

Year	Spring 5.2	Summer 5.2	Spring 4.2	Summer 4.1	Fall	Total
1982	8,997	18,070	3,470	9,274	18,573	58,384
1983	8,141	5,686	1,735	5,863	18,808	40,233
1984	7,197	9,905	1,534	16,786	14,640	50,062
1985	6,921	11,194	2,129	13,551	4,741	38,536
1986	5,988	10,915	2,445	9,639	18,784	47,771
1987	8,770	7,012	2,050	8,063	4,004	29,899
1988	6,788	5,849	1,445	7,129	5,890	27,101
1989	10,206	7,025	2,360	10,616	1,654	31,861
1990	7,613	12,614	1,539	10,901	3,771	36,438
1991	10,590	8,951	3,142	7,302	4,384	34,369
1992	7,343	4,574	3,453	4,123	5,278	24,771
1993	12,142	7,738	6,021	6,758	3,856	36,515
1994	11,339	7,069	6,725	10,939	3,083	39,155
1995	8,748	8,240	6,203	11,905	1,686	36,782
1996	7,569	7,378	8,539	11,369	1,778	36,633
1997	9,131	11,812	8,856	29,097	4,420	63,316
1998	13,334	6,765	4,265	10,659	9,023	44,046
1999	7,007	9,734	6,186	10,886	8,043	41,856
2000	9,444	6,786	12,192	10,609	4,741	43,772
2001	10,785	8,051	13,385	15,439	10,198	57,858
2002	7,280	9,093	8,742	16,231	17,147	58,493
2003	11,085	10,739	14,895	19,178	6,198	62,095
2004	13,617	18,567	15,349	18,296	7,283	73,112
Mean	9,132	9,294	5,942	11,940	7,738	44,046

Table 12. Annual estimates of the total return of Chinook salmon to the Fraser for each timing-age aggregate, 1982-2004.

Year	Spring 5.2	Summer 5.2	Spring 4.2	Summer 4.1	Fall	Total
1982	24,929	36,392	9,130	17,124	138,773	226,348
1983	33,705	26,875	4,396	16,364	139,008	220,348
1984	39,441	27,291	8,713	33,307	137,246	245,998
1985	52,429	34,895	12,406	34,927	181,834	316,491
1986	56,943	50,175	13,715	33,100	186,582	340,515
1987	60,395	39,707	7,462	31,466	101,231	240,261
1988	53,389	46,334	5,972	37,697	56,256	199,648
1989	43,078	26,207	9,211	35,817	81,073	195,386
1990	51,305	55,475	5,145	37,326	184,420	333,671
1991	40,361	41,028	8,735	34,720	106,981	231,825
1992	43,701	48,820	11,049	37,527	175,887	316,984
1993	49,645	32,672	15,392	21,803	144,526	264,038
1994	65,943	34,887	21,705	37,451	110,979	270,965
1995	56,438	45,231	20,030	33,588	62,346	217,633
1996	49,666	64,770	33,656	63,268	65,232	276,592
1997	56,574	67,088	29,151	79,347	159,187	391,347
1998	56,806	55,887	9,130	79,692	279,966	481,481
1999	30,208	39,965	16,892	66,090	192,889	346,044
2000	38,296	39,243	29,183	58,971	127,047	292,740
2001	44,107	49,841	30,140	96,471	152,913	373,472
2002	51,591	53,759	33,535	120,231	177,558	436,674
2003	62,997	77,191	42,328	99,343	313,021	594,880
2004	47,552	68,229	35,493	80,943	204,804	437,021
Mean	48,239	46,172	17,938	51,590	151,294	315,233

Table 13. Annual total mortality estimates for Fraser chinook in Canadian marine fisheries from Coastwide Chinook Model and Total Return to Canada estimates based on Fraser River run reconstruction estimates.

Year	Reconstructed Run to Fraser Mouth						Canadian Marine Total Mortality		Total Return to Canada (TRTC)					
	Spring 5.2	Summer 5.2	Spring 4.2	Summer 4.1	Fall	Total	Early	Late	Spring 5.2	Summer 5.2	Spring 4.2	Summer 4.1	Fall	Total
	1982	24,929	36,392	9,130	17,124	138,773	226,348	44.3%	68.3%	44,762	65,345	16,394	30,748	437,618
1983	33,705	26,875	4,396	16,364	139,008	220,348	44.5%	66.5%	60,744	48,435	7,923	29,492	414,491	561,084
1984	39,441	27,291	8,713	33,307	137,246	245,998	44.7%	80.9%	71,330	49,356	15,758	60,236	717,776	914,456
1985	52,429	34,895	12,406	34,927	181,834	316,491	46.5%	48.4%	98,005	65,229	23,191	65,289	352,344	604,058
1986	56,943	50,175	13,715	33,100	186,582	340,515	39.3%	49.0%	93,787	82,640	22,589	54,517	365,811	619,345
1987	60,395	39,707	7,462	31,466	101,231	240,261	32.9%	52.6%	90,048	59,202	11,126	46,915	213,347	420,638
1988	53,389	46,334	5,972	37,697	56,256	199,648	29.3%	51.8%	75,554	65,570	8,451	53,348	116,828	319,751
1989	43,078	26,207	9,211	35,817	81,073	195,386	45.4%	47.2%	78,883	47,989	16,867	65,587	153,515	362,841
1990	51,305	55,475	5,145	37,326	184,420	333,671	32.9%	44.1%	76,486	82,702	7,670	55,646	330,035	552,538
1991	40,361	41,028	8,735	34,720	106,981	231,825	37.5%	50.9%	64,559	65,626	13,972	55,536	217,950	417,643
1992	43,701	48,820	11,049	37,527	175,887	316,984	35.7%	51.1%	67,939	75,897	17,177	58,341	359,790	579,144
1993	49,645	32,672	15,392	21,803	144,526	264,038	37.2%	61.3%	79,035	52,014	24,504	34,710	373,095	563,359
1994	65,943	34,887	21,705	37,451	110,979	270,965	41.4%	45.2%	112,596	59,569	37,061	63,947	202,387	475,559
1995	56,438	45,231	20,030	33,588	62,346	217,633	20.4%	36.8%	70,894	56,816	25,160	42,191	98,639	293,701
1996	49,666	64,770	33,656	63,268	65,232	276,592	11.3%	30.9%	56,008	73,040	37,953	71,347	94,402	332,750
1997	56,574	67,088	29,151	79,347	159,187	391,347	16.2%	22.8%	67,508	80,054	34,785	94,683	206,070	483,101
1998	56,806	55,887	9,130	79,692	279,966	481,481	16.4%	7.1%	67,980	66,880	10,926	95,368	301,207	542,361
1999	30,208	39,965	16,892	66,090	192,889	346,044	12.6%	19.0%	34,572	45,738	19,332	75,637	237,988	413,266
2000	38,296	39,243	29,183	58,971	127,047	292,740	6.6%	16.9%	40,993	42,007	31,238	63,125	152,921	330,285
2001	44,107	49,841	30,140	96,471	152,913	373,472	7.1%	17.4%	47,456	53,625	32,428	103,796	185,187	422,493
2002	51,591	53,759	33,535	120,231	177,558	436,674	13.5%	21.0%	59,641	62,148	38,768	138,992	224,771	524,320
2003	62,997	77,191	42,328	99,343	313,021	594,880	13.7%	20.0%	72,970	89,411	49,029	115,070	391,438	717,917
2004	47,552	68,229	35,493	80,943	204,804	437,021	19.3%	28.6%	58,930	84,555	43,986	100,311	286,700	574,482
Mean	48,239	46,172	17,938	51,590	151,294	315,233	28.2%	40.8%	69,160	64,080	23,752	68,471	279,753	505,216

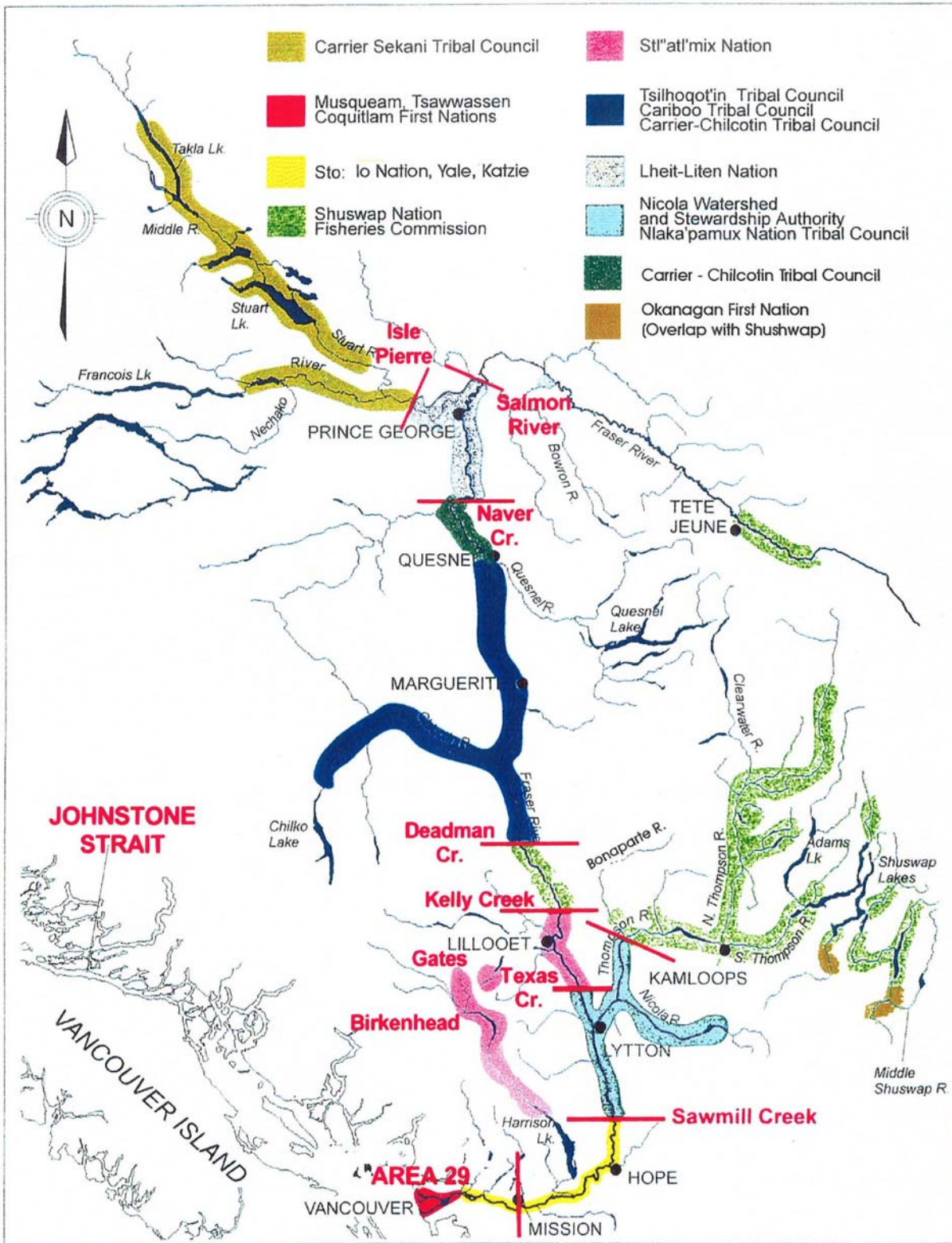


Figure 1. Geographic location and boundaries of the major First Nation fisheries within the Fraser River watershed.

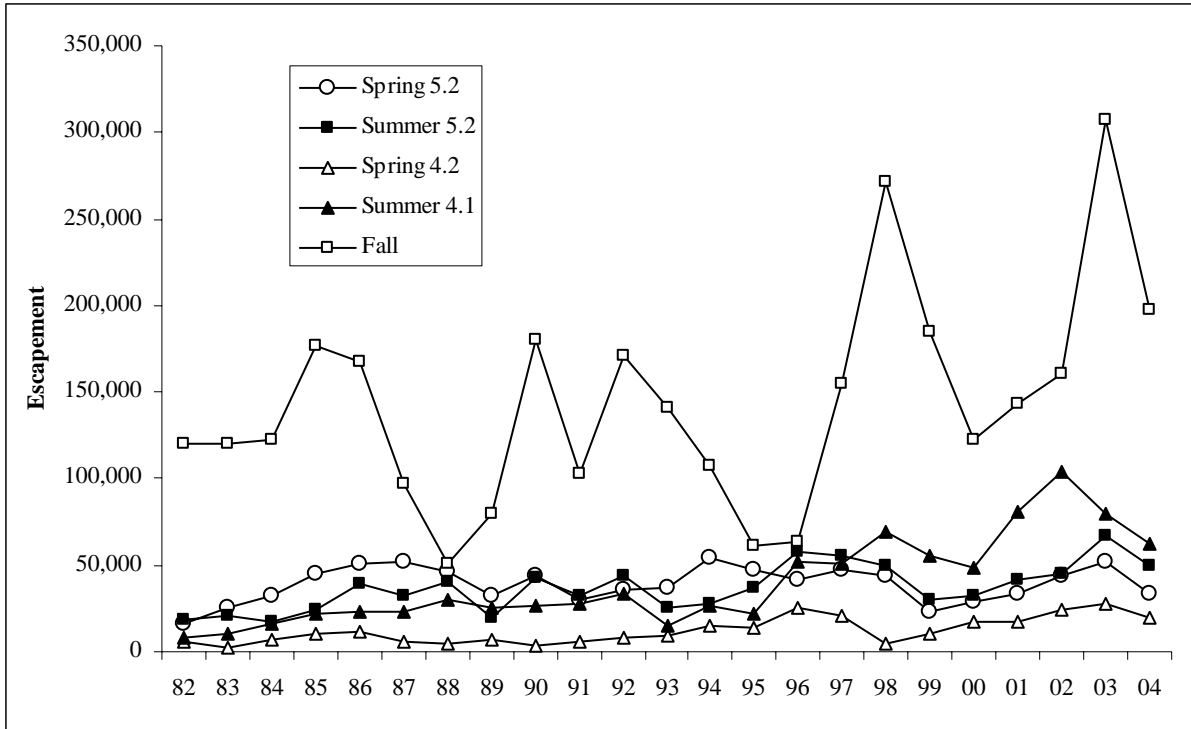


Figure 2. Annual escapement estimates for each timing-age aggregate, 1982-2004.

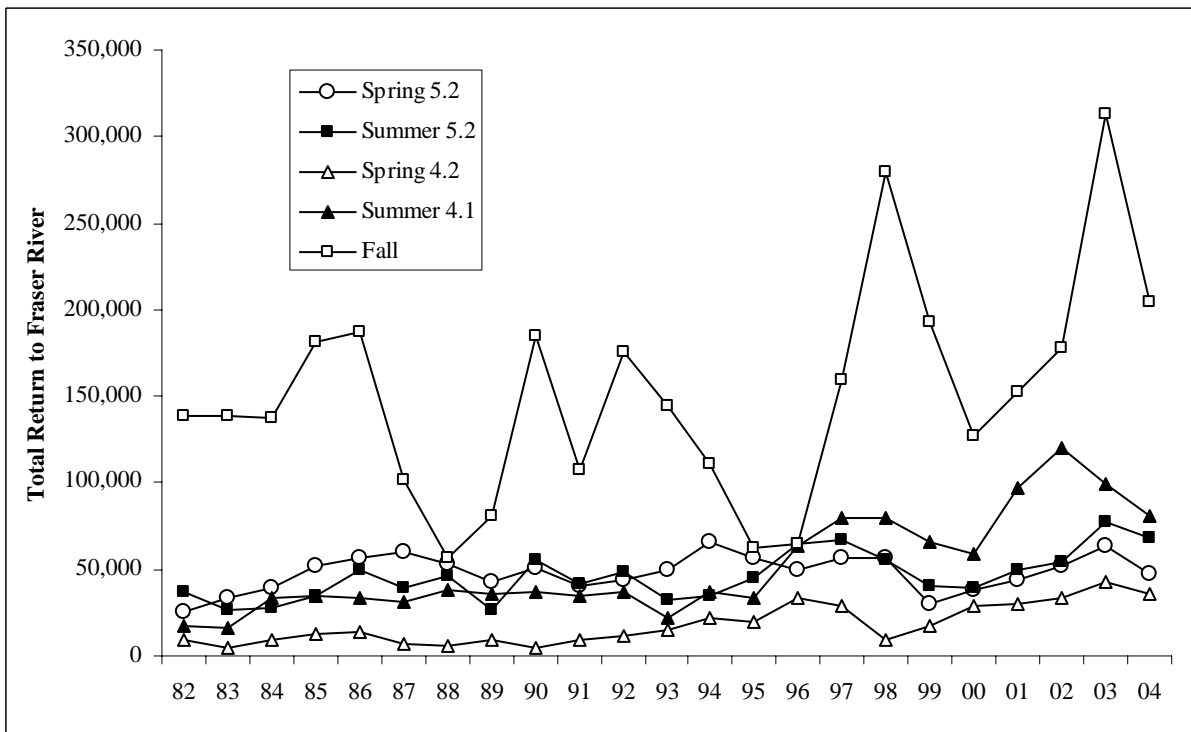


Figure 3. Estimated return to the Fraser River for each timing-age aggregate, 1982-2004.

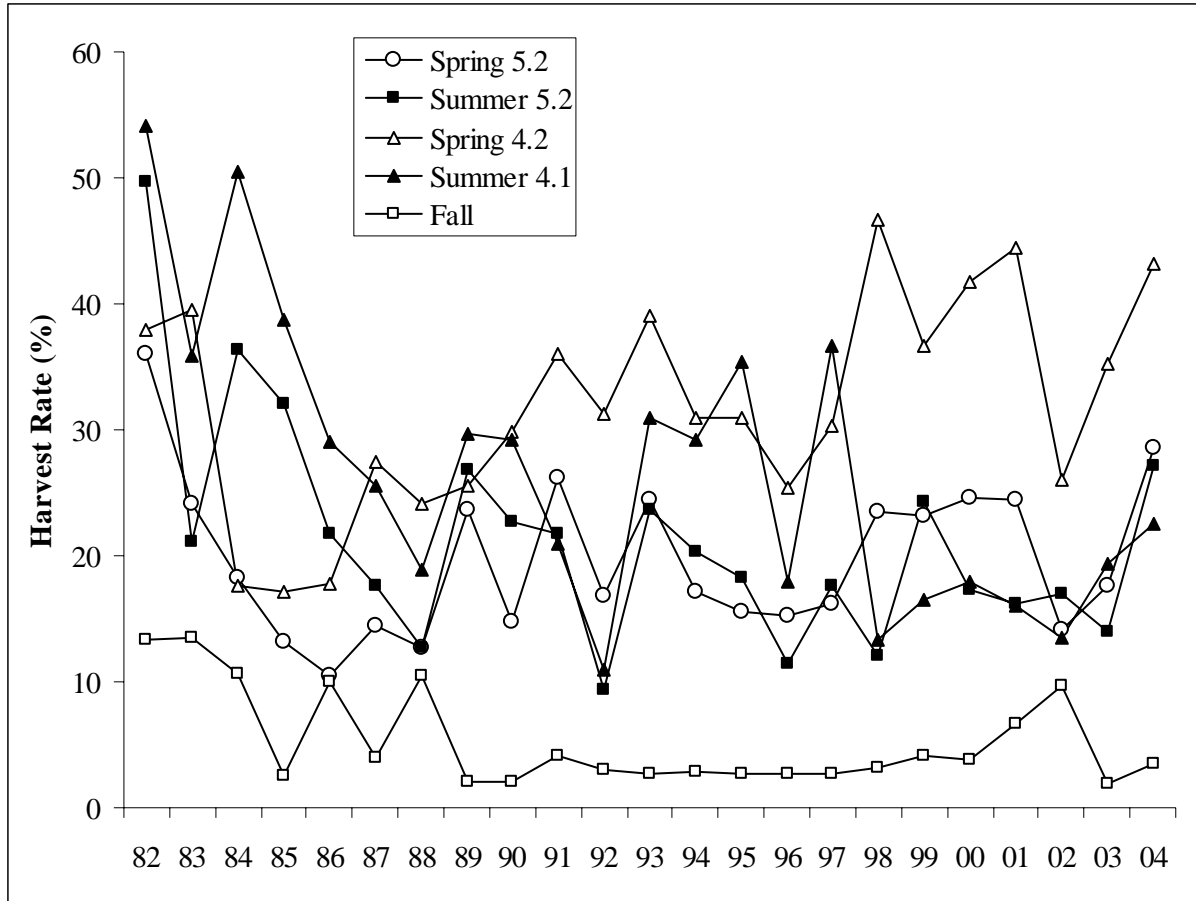


Figure 4. Annual harvest rates for Fraser River fisheries by timing-age aggregate, 1982-2004.

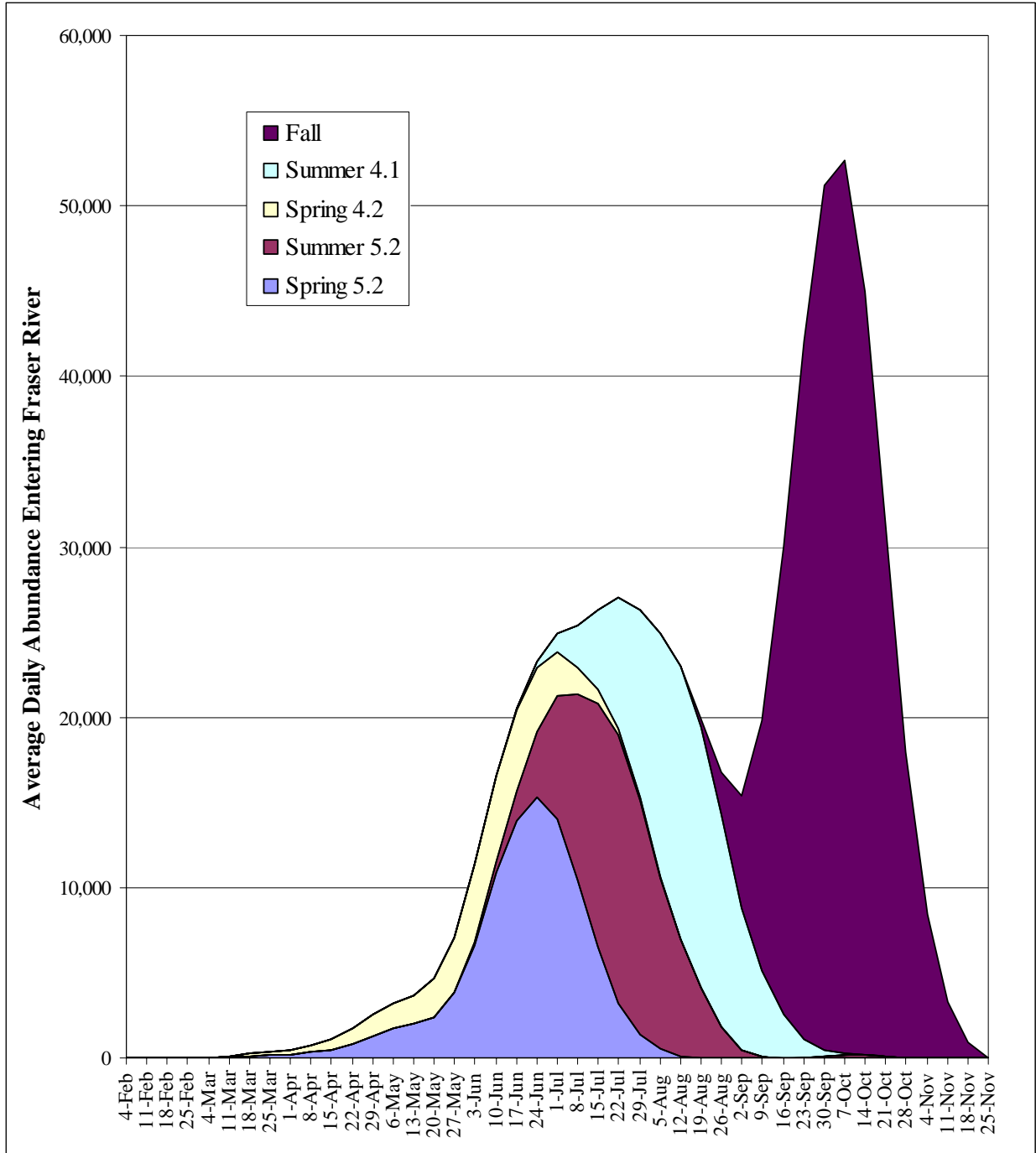


Figure 5. Average daily abundance of Chinook salmon entering the Fraser River derived from the 1982-2004 run reconstruction results for each timing-age aggregate.

APPENDIX A

Fraser Chinook Catch and Escapement Estimates

Appendix Table A1. Weekly chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1982.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu
3-Jan	3																				
10-Jan	10																				
17-Jan	17																				
24-Jan	24																				
31-Jan	31																				
7-Feb	38																				
14-Feb	45																				
21-Feb	52				8	4															
28-Feb	59				8	3															
7-Mar	66	0																			
14-Mar	73	0																			
21-Mar	80	0		6	230	60															
28-Mar	87	0		1	22	8	45														
4-Apr	94	2		6	10	6	45														
11-Apr	101	5		2	33	10	45														
18-Apr	108	2	3		15	28	25														
25-Apr	115	0			60	30	25														
2-May	122	17	12	4	33	6	8														
9-May	129	30	12	3	60	20	6														
16-May	136	31	57	6	114	25	4														
23-May	143	34	12	5	7	12	4														
30-May	150	38	90	5	97	40	4														
6-Jun	157	40	81		140	15	4														
13-Jun	164	41	93	5	490	300	4	2													
20-Jun	171	30	30	8	357	126	6	9													
27-Jun	178	68	138	10	650	200	7	14													
4-Jul	185	84	111	46	760	350	7	8													
11-Jul	192	103	111	33	440	360	4	4													
18-Jul	199	295	30	40	510	650	12	10		30											
25-Jul	206	149	162	212	1100	3000	50	10		15		6									
1-Aug	213	1,650	54	190	900	3380	75	30		35	355	33									
8-Aug	220	262	60	33	525	1680	170	60		50	300	140									
15-Aug	227	1,750	30	74	873	3420	120	250		25	150	54									
22-Aug	234	2,768	21	31	350	450	34	270		20	350	16									
29-Aug	241	1,534	15	12	165	215	30	200				15									
5-Sep	248	1,407	165	9	273	275	30	100													
12-Sep	255	2,883	318	50	175	100	30	75													
19-Sep	262	138	429	258	295	200	18	15													
26-Sep	269	3,164	42	1012	780		25														
3-Oct	276	3,259	87	271	440		20														
10-Oct	283	3,896	33	40	510		20														
17-Oct	290	62	12	76	550		20														
24-Oct	297	21		28	275		18														
31-Oct	304	12		32	150		10														
7-Nov	311	8			75																
14-Nov	318	3																			
21-Nov	325	2																			
28-Nov	332	0																			
5-Dec	339	4																			
12-Dec	346																				
19-Dec	353																				
26-Dec	360																				
Total		23792	2208	2508	11480	14973	925	1057	0	130	1200	0	264	0	17	0	0	0	0	0	0

Appendix Table A2. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1983.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
2-Jan	2																					
9-Jan	9																					
16-Jan	16																					
23-Jan	23																					
30-Jan	30																					
6-Feb	37																					
13-Feb	44																					
20-Feb	51																					
27-Feb	58																					
6-Mar	65			5	5	2																
13-Mar	72				10	25																
20-Mar	79		1		35	25																
27-Mar	86		4		17	15																
3-Apr	93	4			32	30																
10-Apr	100	9	10	4	40	40	3															
17-Apr	107	6	2	5	55	45	5															
24-Apr	114	13		8	85	45	6	2														
1-May	121	22	4	20	165	70	6	2														
8-May	128	14	4	17	80	60	10	5														
15-May	135	21	7	5	35	25	20	20														
22-May	142	21	5	43	189	120	40	6														
29-May	149	28	10	12	43	25	25	6														
5-Jun	156	24	13	23	53	50	10	3														
12-Jun	163	64	15	23	120	120	12	5														
19-Jun	170	86	26	4	393	150	12	5														
26-Jun	177	98	59	88	1125	700	25	25														
3-Jul	184	93	21		630	750	25	29														
10-Jul	191	142	12	50	1295	840	47	45			50											
17-Jul	198	47		20	0		150	50		10	20											
24-Jul	205	103			0			5			0											
31-Jul	212	1308	3	62	357	420	15	15		80	280											
7-Aug	219	1149	3	10	150	80		20		60	185		10		6							
14-Aug	226	53	11	52	185	100	10	15		120	240		20		8							
21-Aug	233	84	6		220	75	17	18		100	260		16		3							
28-Aug	240	1827	6	15	130	360		10					14		6							
4-Sep	247	672	2	159	340	65		10					4		7							
11-Sep	254	3574	8	30	195	120	2	8					5		4							
18-Sep	261	6798		53	70	50	4	3					3									
25-Sep	268	9156	17	51	40	10	100	2														
2-Oct	275	74	6	6	40			5														
9-Oct	282	28	67	3	70	5	2															
16-Oct	289	41	8	15	20																	
23-Oct	296	7	2	40	375																	
30-Oct	303	9	7	10	45																	
6-Nov	310	4		20	40																	
13-Nov	317	0			10																	
20-Nov	324	1	2	5	25																	
27-Nov	331	0			10																	
4-Dec	338	0																				
11-Dec	345																					
18-Dec	352																					
25-Dec	359																					
Total		25580	341	858	6729	4422	551	309	0	370	1035	0	72	0	34	0	0	0	0	0	0	0

Appendix Table A3. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1984.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
8-Jan	8																					
15-Jan	15																					
22-Jan	22																					
29-Jan	29																					
5-Feb	36																					
12-Feb	43																					
19-Feb	50																					
26-Feb	57																					
4-Mar	64				5	3																
11-Mar	71				36	20																
18-Mar	78			3	45	20																
25-Mar	85			6	45	10																
1-Apr	92	8	2	4	37	25																
8-Apr	99	5		13	14	8																
15-Apr	106	9	1	4	25	12																
22-Apr	113	5	8	4	20	8																
29-Apr	120	4	3	5	105	30																
6-May	127	8	6	5	54	40																
13-May	134	18	8	1	29	15																
20-May	141	33	36	4	30	10																
27-May	148	41	31	5	40	20																
3-Jun	155	55	32	1	30	30	30	20														
10-Jun	162	78	37	10	58	52	42	28														
17-Jun	169	79	48	6	69	45	20	5														
24-Jun	176	121	91	23	810	321	25	20														
1-Jul	183	176					15	10														
8-Jul	190	184																				
15-Jul	197	91																				
22-Jul	204	2188	19	62	700	1040																
29-Jul	211	1338	11	75	700	653	50	150	300						13							
5-Aug	218	1818	7	39	180	130	40	50	210	728		50		34								
12-Aug	225	4516	2	18	175	450	45	30	150	135		65		65								
19-Aug	232	2964	10	12	65	60	30	15	20			56		41								
26-Aug	239	1250	27	2	681	436	25	15						15								
2-Sep	246	3139	45	52	100	472	15	15				25		5								
9-Sep	253	3036	50	10	125	346	10	10				2										
16-Sep	260	4829	107	109	1057	600	20	10														
23-Sep	267	1810	293	73	1292	315	50	20														
30-Sep	274	72	366	294	869	770	50	15														
7-Oct	281	50	113	60	1515	295	10	10														
14-Oct	288	3	39	114	919	65	10															
21-Oct	295	1	8	107	137	35	10															
28-Oct	302		15	55	206		20															
4-Nov	309		2																			
11-Nov	316		1	1	15																	
18-Nov	323		5	120																		
25-Nov	330		2	7																		
2-Dec	337			5																		
9-Dec	344																					
16-Dec	351																					
23-Dec	358																					
30-Dec	365																					
Total		27929	1425	1309	10188	6336	517	423	0	680	863	0	198	0	173	0	0	0	0	0	0	0

Appendix Table A4. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1985.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
6-Jan	6																					
13-Jan	13																					
20-Jan	20																					
27-Jan	27																					
3-Feb	34																					
10-Feb	41																					
17-Feb	48																					
24-Feb	55																					
3-Mar	62																					
10-Mar	69				8																	
17-Mar	76				40	35																
24-Mar	83				7	12																
31-Mar	90	3			40	21																
7-Apr	97	7	3	6	82	30																
14-Apr	104	3	2	13	102	40																
21-Apr	111	9	6		170	35																
28-Apr	118	2	5		145	40																
5-May	125	7			133	45																
12-May	132		2	7	110	50																
19-May	139		24	2	75	30																
26-May	146		26	2	25	5																
2-Jun	153		58	3	82	38																
9-Jun	160		59	6	57	25																
16-Jun	167		102	17	330	169		16														
23-Jun	174	150	72	26	603	430		24														
30-Jun	181	136	55	23	315	357	85	38			20											
7-Jul	188	102	30		75	210	30	40			20											
14-Jul	195	124			0				31	125												
21-Jul	202	1,626	33	12	45	60																
28-Jul	209	2,984	20	60	70	145	2	24	10	240					3							
4-Aug	216	4,391	10	5	75	147	26	35	65	120		10			13							
11-Aug	223	1,956	13	3	135	100	37	41	25	30		224			23							
18-Aug	230	6,807	4	13	65	65	19	37		60		65			32							
25-Aug	237	5,122	12	10	80	150	10	30		35		20			22							
1-Sep	244	1,199	18	4	50	110	8	12		20		20			12							
8-Sep	251	1,594	20		25	145	5	10				10			7							
15-Sep	258	655	6	12	140	155		10				5										
22-Sep	265	9	87	10	35	55																
29-Sep	272	64	53	75	50	5	10															
6-Oct	279	1,696	77	65	45	25																
13-Oct	286	91	15	28	5	5																
20-Oct	293	50	9	25	50																	
27-Oct	300	49	4	12	5																	
3-Nov	307	26	2	6		15																
10-Nov	314	3																				
17-Nov	321	19		1																		
24-Nov	328	0																				
1-Dec	335	10																				
8-Dec	342																					
15-Dec	349																					
22-Dec	356																					
29-Dec	363																					
Total		28894	827	446	3274	2754	232	317	0	131	670	0	354	0	112	0	0	0	0	0	0	0

Appendix Table A5. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1986.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
5-Jan	5																					
12-Jan	12																					
19-Jan	19																					
26-Jan	26																					
2-Feb	33																					
9-Feb	40																					
16-Feb	47					1																
23-Feb	54																					
2-Mar	61					2																
9-Mar	68				1	3																
16-Mar	75			2	1																	
23-Mar	82																					
30-Mar	89																					
6-Apr	96				85	8																
13-Apr	103	12																				
20-Apr	110	11			67	52																
27-Apr	117	10	1		30	3																
4-May	124	32		1	98	150																
11-May	131	77		4	150	36																
18-May	138	12	41	3	142	46																
25-May	145	9	26	7	64																	
1-Jun	152	2	41	3	60	8																
8-Jun	159	6	21	14	90																	
15-Jun	166	50	82	44	295	205																
22-Jun	173	95	45	44	658	745																
29-Jun	180	168	69	27	1112	1305	40	30														
6-Jul	187	233					30	50														
13-Jul	194	239							15	20												
20-Jul	201	171	39																			
27-Jul	208	152	39	19	445	767																
3-Aug	215	194	32	52	580	210	90	135														
10-Aug	222	2497	19	50	409	284	180	250	30	80					3							
17-Aug	229	3053	11	42	106	100	120	180	50	160		18			7							
24-Aug	236	3749	18	22	30	35	105	170	50	110		2			2							
31-Aug	243	2513	7	0	114	50	48	72	15	10		110			2							
7-Sep	250	2358	23	11	194	258	25	42		10		16										
14-Sep	257	1263	36	24	239	570	14	26														
21-Sep	264	42	43	84	95	110	6	6														
28-Sep	271	3699	32	94	117	102	7	1				2										
5-Oct	278	10263	48	10	65	30	2	4														
12-Oct	285	138	26	410	239	20	1	3														
19-Oct	292	72	2	35	55	43		1														
26-Oct	299	240	3	30	135																	
2-Nov	306	11	4	5	24																	
9-Nov	313	13		1	11	1																
16-Nov	320	2			5																	
23-Nov	327	10			7																	
30-Nov	334	3																				
7-Dec	341	2																				
14-Dec	348																					
21-Dec	355																					
28-Dec	362																					
Total		31401	708	1038	5723	5144	668	970	0	160	390	0	148	0	14	0	0	0	0	0	0	0

Appendix Table A6. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1987.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
4-Jan	4																					
11-Jan	11																					
18-Jan	18																					
25-Jan	25																					
1-Feb	32																					
8-Feb	39																					
15-Feb	46			15																		
22-Feb	53			12	11	4																
1-Mar	60				5																	
8-Mar	67																					
15-Mar	74				3																	
22-Mar	81		1	8	12	3																
29-Mar	88		1	12	2																	
5-Apr	95	7	2	2	45	24	2															
12-Apr	102	2	3	1	17	24	6	5														
19-Apr	109	25	4	4	27	47	4	7														
26-Apr	116	30	5	4	38	40	5	8														
3-May	123	40	17	4	41	33	10	12														
10-May	130	84	6	1	71	19	3	4														
17-May	137	50	14	0	305	228	4	5														
24-May	144	105	23	14	347	404	4	5														
31-May	151	68	40	6	163	214	5	8														
7-Jun	158	131	49	30	197	284	24	20														
14-Jun	165	128	78	15	192	60	40	27														
21-Jun	172	272	141	40	382	1170	33	24														
28-Jun	179	361	138	40	405	300	45	44		10												
5-Jul	186	281		20	273	863	34	38		10												
12-Jul	193	124					38	43		20												
19-Jul	200	179	1						15	20		6			8							
26-Jul	207	185	10												10							
2-Aug	214	119	15	76	142	450									9							
9-Aug	221	1,417	18	0	64	799	76	54							10							
16-Aug	228	2,112	10	6	116	544	143	308	1			3			6							
23-Aug	235	2,306	7	197	141	522	82	148														
30-Aug	242	394	10	24	263	511	35	32														
6-Sep	249	1,581	4	9	20	109	6	6														
13-Sep	256	648	12	0	84	284		4														
20-Sep	263	1,163	35	0	48	121																
27-Sep	270	67	31	12	27	64																
4-Oct	277	37	38	76	24	31																
11-Oct	284	52	6	10		26																
18-Oct	291	22	3	6	191	41	4															
25-Oct	298	9	3	27	138	14																
1-Nov	305	4		45	162																	
8-Nov	312	8	2	33	89	4																
15-Nov	319	5			32																	
22-Nov	326	0			7																	
29-Nov	333	3	1																			
6-Dec	340	2																				
13-Dec	347																					
20-Dec	354																					
27-Dec	361																					
Total		12021	728	749	4084	7237	603	802	0	16	60	0	9	0	43	0	0	0	0	0	0	0

Appendix Table A7. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1988.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
3-Jan	3																					
10-Jan	10																					
17-Jan	17																					
24-Jan	24																					
31-Jan	31																					
7-Feb	38																					
14-Feb	45																					
21-Feb	52																					
28-Feb	59																					
6-Mar	66			1	3																	
13-Mar	73		1		3	5																
20-Mar	80		2		16	7																
27-Mar	87				6																	
3-Apr	94	6	1		70	23																
10-Apr	101	19	6	3	88	41																
17-Apr	108	24	9	2	92	38	11	2														
24-Apr	115	23	8		72	14																
1-May	122	27	7	15	155	20	7	1														
8-May	129	52	32	12	141	101	3															
15-May	136	30	32	2	68																	
22-May	143	22	60	3	272	17	5	2														
29-May	150	52	39	6	92	41	12	3														
5-Jun	157	65	70	2	147	172	26	7														
12-Jun	164	187	76		257	111	66	31														
19-Jun	171	111	154	10	250	344	69	15														
26-Jun	178	246	166	12	270	501	157	103														
3-Jul	185	227		13	111	160	150	110														
10-Jul	192	203					245	167	15	20												
17-Jul	199	137	59						15	20												
24-Jul	206	129	27	12	80	18						13										
31-Jul	213	1121	35		32	173	90	132				2										
7-Aug	220	1644	24	30	105	111	135	163														
14-Aug	227	1608	19	15	142	249	70	144														
21-Aug	234	116	3	24	55	143	67	93														
28-Aug	241	106		8	89	193	21	26														
4-Sep	248	44		10	62	558	35	9					1									
11-Sep	255	51		16	562	539		2														
18-Sep	262	116	104	407	742	301																
25-Sep	269	617	67	144	417	586	13															
2-Oct	276	86	92	40	466	11																
9-Oct	283	1111	6	30	640	166																
16-Oct	290	40	2	98	203	17																
23-Oct	297	206	2	46	74	12																
30-Oct	304	13		20	82																	
6-Nov	311	5			12																	
13-Nov	318	1			11																	
20-Nov	325	0																				
27-Nov	332	1		6																		
4-Dec	339	0		4	8																	
11-Dec	346																					
18-Dec	353																					
25-Dec	360																					
Total		8446	1103	991	5895	4672	1182	1010	0	30	40	0	20	0	35	0	0	0	0	0	0	0

Appendix Table A8. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1989.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu
1-Jan	1																				
8-Jan	8																				
15-Jan	15																				
22-Jan	22																				
29-Jan	29																				
5-Feb	36																				
12-Feb	43																				
19-Feb	50																				
26-Feb	57																				
5-Mar	64																				
12-Mar	71																				
19-Mar	78				3																
26-Mar	85			1																	
2-Apr	92	8	1																		
9-Apr	99	4	1		8	13															
16-Apr	106	7		6	12		3	3													
23-Apr	113	2	2		54	3		0													
30-Apr	120	15	7		41	22	4	0													
7-May	127	12	3	2	40	31	10	0													
14-May	134	12	30	12	21	26	18	6													
21-May	141	43	30	12	49	94	50	19													
28-May	148	30	10		19	28	26	15													
4-Jun	155	14	59		2	41	56	54													
11-Jun	162	116	152		27	24	36	20													
18-Jun	169	204	87	10	61	74	36	10													
25-Jun	176	184	53	7	139	444	59	38													
2-Jul	183	2845	5	23	255	163	146	34													
9-Jul	190	3188	53		88	36	172	55	30	50											
16-Jul	197	1102	22		46		258	79	35	20											
23-Jul	204	120	12	13			80	53													
30-Jul	211	971	6	33	40	6	60	45					5								
6-Aug	218	1870	19	43	74	90	36	18					1		4						
13-Aug	225	2200		11	75	116	45	33			20										
20-Aug	232	5037			29	63	72	52			10		2								
27-Aug	239	3044		2	76	142	31	12													
3-Sep	246	1217	3		72	101	5														
10-Sep	253	48	1	14	38	25									1						
17-Sep	260	81	8		41	11									1						
24-Sep	267	955	1	6	68																
1-Oct	274	43	2		48																
8-Oct	281	34			0	16	2														
15-Oct	288	13	1		53																
22-Oct	295	5																			
29-Oct	302	17																			
5-Nov	309	2			9	148	8														
12-Nov	316				14																
19-Nov	323																				
26-Nov	330																				
3-Dec	337																				
10-Dec	344																				
17-Dec	351																				
24-Dec	358																				
Total		23443	568	195	1502	1717	1213	546	0	65	100	0	8	0	6	0	0	0	0	0	0

Appendix Table A9. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1990.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
7-Jan	7																					
14-Jan	14																					
21-Jan	21																					
28-Jan	28																					
4-Feb	35																					
11-Feb	42																					
18-Feb	49																					
25-Feb	56																					
4-Mar	63																					
11-Mar	70			2																		
18-Mar	77					8																
25-Mar	84					17	3															
1-Apr	91	13	2	10	14	112	12															
8-Apr	98	9	1		27	7	8	2														
15-Apr	105	8	4		73	27	14	2														
22-Apr	112	23	3		126	24																
29-Apr	119	5	7		58	36	2															
6-May	126	39	5	10	418	80	27	4														
13-May	133	20	18		192	47	27	4														
20-May	140	21	14	2	183	158	42	11														
27-May	147	12	29	7	67	37	50	10														
3-Jun	154	20	27		29	2																
10-Jun	161	73	60	6	34	29																
17-Jun	168	148	179	30	118	3																
24-Jun	175	259	207	96	456	689																
1-Jul	182	274	8																			
8-Jul	189	157																				
15-Jul	196	102	11	4	235	1181																
22-Jul	203	91	32	30	563	2014	100	30														
29-Jul	210	95	34	11	538	810	70	25		100	120		2									
5-Aug	217	2428	5	18	207	341	105	30		200	30		13									
12-Aug	224	2578	10	0	62	954	50	60			150		9		11							
19-Aug	231	3172	10	0	150	948	18	45			0		5		1							
26-Aug	238	2974	15	0	142	701	30	22		100			2		1							
2-Sep	245	2579	0	9	117	35	2	9														
9-Sep	252	48	12	70	72	237	5								1							
16-Sep	259	55	24	152	502	56																
23-Sep	266	34	25		349	24																
30-Sep	273	150	3	97	289																	
7-Oct	280	82	5	6	694																	
14-Oct	287	44			513	9	1															
21-Oct	294	139	1	12	100	5																
28-Oct	301	5																				
4-Nov	308	32																				
11-Nov	315																					
18-Nov	322																					
25-Nov	329																					
2-Dec	336																					
9-Dec	343																					
16-Dec	350																					
23-Dec	357																					
30-Dec	364																					
Total		15689	751	572	6331	8591	566	254	0	300	400	0	31	0	14	0	0	0	0	0	0	0

Appendix Table A10. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1991.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu
6-Jan	6																				
13-Jan	13																				
20-Jan	20																				
27-Jan	27																				
3-Feb	34																				
10-Feb	41																				
17-Feb	48																				
24-Feb	55																				
3-Mar	62																				
10-Mar	69		1																		
17-Mar	76																				
24-Mar	83																				
31-Mar	90	2																			
7-Apr	97	5	1																		
14-Apr	104	7																			
21-Apr	111	8	2	17																	
28-Apr	118	9	6																		
5-May	125	10	7				6	4													
12-May	132	17	26	55	70	12	2														
19-May	139	17	13			30															
26-May	146	46	16																		
2-Jun	153	72	54	30	68	94															
9-Jun	160	100	32	16	147			10													
16-Jun	167	146	143	68	235																
23-Jun	174	212	149	84	370	583		15													
30-Jun	181	348	182	102	550	673		20													
7-Jul	188	4144	61	72	484	982	80	22	15	15											
14-Jul	195	125	58	89	623	2752	88	90	22	11											
21-Jul	202	132	42	30	528	825	50	29	10	61	45										
28-Jul	209	2295	35	4	88	291	46	20		0	55										
4-Aug	216	2160	33	53	183	523	36	15	50	40	13	5									
11-Aug	223	1649	11	298	339	25	2		2		11	6									
18-Aug	230	75	7	10	125	155	20	20	1			3									
25-Aug	237	1138	10	1	120	476	62	8	3		21	2									
1-Sep	244	111	53	10	118	55	29	4			9										
8-Sep	251	631	30	29	53	142					6	1									
15-Sep	258	268	12	167	83						1										
22-Sep	265	399	89	103	63			3			7	1									
29-Sep	272	283	41	40																	
6-Oct	279	157	49	55																	
13-Oct	286	41	9	54	549																
20-Oct	293	114	6	221	21																
27-Oct	300	13		39																	
3-Nov	307	4	1	139																	
10-Nov	314	17																			
17-Nov	321	1																			
24-Nov	328	0																			
1-Dec	335	1																			
8-Dec	342																				
15-Dec	349																				
22-Dec	356																				
29-Dec	363																				
Total		14757	1179	782	5073	8299	484	264	0	103	127	0	168	0	18	0	0	0	0	0	0

Appendix Table A11. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1992.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
5-Jan	5																					
12-Jan	12																					
19-Jan	19																					
26-Jan	26																					
2-Feb	33																					
9-Feb	40																					
16-Feb	47																					
23-Feb	54																					
1-Mar	61																					
8-Mar	68																					
15-Mar	75				26																	
22-Mar	82		1																			
29-Mar	89			30																		
5-Apr	96		9			112																
12-Apr	103	2	2	37																		
19-Apr	110	14	6																			
26-Apr	117	9	20	2	94	99																
3-May	124	12	27	8	41	51																
10-May	131	14	27		36	22																
17-May	138	30	30		116	250																
24-May	145	37	56	1	141	126																
31-May	152	53	37	1	142	380																
7-Jun	159	40	137	2	283	111																
14-Jun	166	178	168	13	354	563																
21-Jun	173	185	274	39	738	661																
28-Jun	180	302	207	17	377	789																
5-Jul	187	170	247	4	1030	1205																
12-Jul	194	352	269	18	389	469						3										
19-Jul	201	247		106	186	92						22		3								
26-Jul	208	168		3								10										
2-Aug	215	182	125	47	120	138	43					37		7								
9-Aug	222	1026	11	15	149	208	7					5		14								
16-Aug	229	716		53	149	380	74					14		12								
23-Aug	236	1568															2					
30-Aug	243	68																				
6-Sep	250	55																				
13-Sep	257	48																				
20-Sep	264	266																				
27-Sep	271	242			7																	
4-Oct	278	444																				
11-Oct	285	322																				
18-Oct	292	162																				
25-Oct	299	55	20	3	187	14																
1-Nov	306	360		6	117	10																
8-Nov	313	12			37	1																
15-Nov	320	15																				
22-Nov	327	7																				
29-Nov	334	1																				
6-Dec	341	1																				
13-Dec	348																					
20-Dec	355																					
27-Dec	362																					
Data		7363	1673	338	4786	5681	124	0	0	0	0	0	91	0	38	0	0	0	0	0	0	0

Appendix Table A12. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1993.

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
3-Jan	3																					
10-Jan	10																					
17-Jan	17																					
24-Jan	24																					
31-Jan	31																					
7-Feb	38																					
14-Feb	45																					
21-Feb	52																					
28-Feb	59																					
7-Mar	66					2																
14-Mar	73				6	1																
21-Mar	80				4	7																
28-Mar	87				19	18																
4-Apr	94	2		7	30	13																
11-Apr	101	11	3		37	50																
18-Apr	108	3	4	2	115	174																
25-Apr	115	6	12	12	115	215																
2-May	122	8	12	1	78	159																
9-May	129	8	13	1	97	213	37															
16-May	136	8	45	6	315	65	15															
23-May	143	11	18	13	118	48	13															
30-May	150	15	75	14	377	679	468															
6-Jun	157	56	168	19	503	794	377	25														
13-Jun	164	106	194	27	454	1288	438															
20-Jun	171	212	140	3	1158	386	685	199														
27-Jun	178	191	214	44	310	593	925	80														
4-Jul	185	251			30		614	144														
11-Jul	192	243	162	7	225	381	221	230														
18-Jul	199	204	77	83	109	170	298	165	1	5												
25-Jul	206	2987					29	52							2							
1-Aug	213	1259	11			40	8	2	21			23										
8-Aug	220	1162	176	262	199	423	121				10											
15-Aug	227	964	94	144	157	628	84	10	4	2					3							
22-Aug	234	2484	80	34	85	105	77	20	6	5					2							
29-Aug	241	117									2											
5-Sep	248	2186		9	13	27					2											
12-Sep	255	567	15	20	23	17	1		1													
19-Sep	262	78					3						10									
26-Sep	269	155					2															
3-Oct	276	134																				
10-Oct	283	150																				
17-Oct	290	111	66	37	121	1																
24-Oct	297	46			4																	
31-Oct	304	6	16	18	230	4																
7-Nov	311	107																				
14-Nov	318	15																				
21-Nov	325	15																				
28-Nov	332	2																				
5-Dec	339	5																				
12-Dec	346																					
19-Dec	353																					
26-Dec	360																					
Total		13885	1595	763	4932	6501	4416	927	0	33	26	0	33	0	7	0	0	0	0	0	0	0

Appendix Table A13. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1994. (Shading indicates the fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
2-Jan	2																					
9-Jan	9																					
16-Jan	16																					
23-Jan	23																					
30-Jan	30		0	0	0	1																
6-Feb	37																					
13-Feb	44																					
20-Feb	51																					
27-Feb	58		0	0	0	1																
6-Mar	65		0	0	0	1																
13-Mar	72		0	0	2	5																
20-Mar	79		1	0	2	7																
27-Mar	86		0	0	12	17																
3-Apr	93	1	1	1	13	35																
10-Apr	100	2	0	1	6	33																
17-Apr	107	9	0	0	65	28																
24-Apr	114	9	0	0	77	15																
1-May	121	16	3	4	177	88																
8-May	128	13	0	0	98	152																
15-May	135	9	11	8	99	38																
22-May	142	17	22	16	283	220																
29-May	149	26	106	27	329	362																
5-Jun	156	82	176	26	876	568																
12-Jun	163	140	188	35	670	362	63															
19-Jun	170	162	251	64	685	605	40															
26-Jun	177	239	316	175	902	1756	94	114														
3-Jul	184	462	20	190	513	626	142	3		0	0										2	
10-Jul	191	327	35	82	498	544	44	7		0	1											
17-Jul	198	265	109	101	396	496	40	16		4	10											3
24-Jul	205	219	76	189	110	232	776			2	13											
31-Jul	212	139	99	210	177	339	231	56		6	12		7									
7-Aug	219	224	104	107	80	307	54	0		0	6		31									
14-Aug	226	4070	174	164	184	325	395	0		0	0		44									
21-Aug	233	2806		2	264	318	368	0		0	0		8				32					
28-Aug	240	2432	136	82	47	341	22	0		0	0		7				3	4		1		
4-Sep	247	1181					12	0		0	0						18	2				
11-Sep	254	63	315	0	1	0	0	0									6					
18-Sep	261	98	211	177	178	7	0	0														
25-Sep	268	111	141	101	66	31	8															
2-Oct	275	64		31	88	8	0	0														5
9-Oct	282	264					0	0														
16-Oct	289	146																				1
23-Oct	296	27	51																			
30-Oct	303	29	4	14	29	9																
6-Nov	310	32		3	3	0																
13-Nov	317	3	1	1	11	3																
20-Nov	324	6	1	1	2	0																
27-Nov	331																					
4-Dec	338																					
11-Dec	345																					
18-Dec	352																					
25-Dec	359																					
Total		13693	2552	1812	6943	7880	2289	196	0	12	42	0	97	0	0	27	38	0	1	5	6	

Appendix Table A14. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1995. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N. Thomp	Kam-Shu
1-Jan	1																				
8-Jan	8																				
15-Jan	15																				
22-Jan	22																				
29-Jan	29																				
5-Feb	36																				
12-Feb	43																				
19-Feb	50																				
26-Feb	57																				
5-Mar	64																				
12-Mar	71																				
19-Mar	78																				
26-Mar	85																				
2-Apr	92	4	2	5	29	46															
9-Apr	99	8	6	1	49	43															
16-Apr	106	15	2	19	90	111															
23-Apr	113	8	8	49	89	313															
30-Apr	120	10	4	53	178	119															
7-May	127	0	28	53	216	137															
14-May	134	9	11	39	163	208															
21-May	141	26	44	8	50	75															
28-May	148	27	45	35	181	363															
4-Jun	155	57	109	43	79	221															
11-Jun	162	61	205	61	214	684															
18-Jun	169	211	301	421	602	966															
25-Jun	176	325	471	367	608	638															
2-Jul	183	259		0																	
9-Jul	190	139		0																	
16-Jul	197	127		0																	
23-Jul	204	263		174	124	136	105								0	0	11	0			
30-Jul	211	115		0			21	11		0	0		6		0	0	30	0			
6-Aug	218	284	304	262	270	677	22	13		25	0		0		3	0	23	0			
13-Aug	225	1757		145	133	259	143	15		19	1		10		0	0	16	0			
20-Aug	232	1287	442	424	300	588	138	1		29	0		0		0	1	3	0			
27-Aug	239	1002	36	641	566	1246	74	0		2	0		0		4	0	58	0			
3-Sep	246	62	321	390	685	1372	180	0		1	0		0		0	0	1	0			9
10-Sep	253	104	77	135	465	996	19	0		0	0		0		0	0	0	0			6
17-Sep	260	104		7	136	203	34	1		0	0				0	0	0	1		3	
24-Sep	267	59		0			33	0		0	0					0	0	2			
1-Oct	274	39		0			0	0		0	0					0	0	0			
8-Oct	281	35		0			0	0		0	0					0	0	0			
15-Oct	288	13		0																	6
22-Oct	295	12		0																	
29-Oct	302	27	19	27	31	5															
5-Nov	309	1	4	4	8	1															
12-Nov	316	0	1	1	10	2															
19-Nov	323	1	1	2	3	1															
26-Nov	330	0	0	0																	
3-Dec	337	0	0	0																	
10-Dec	344		0	0																	
17-Dec	351		0	0																	
24-Dec	358		0	0																	
Total		6451	2441	3366	5279	9410	769	41	0	76	1	0	16	0	7	1	142	3	3	15	6

¹ Note from Below Port Mann to Sawmill Fishery closed 10-Aug due to conservation concern on summer-run sockeye; above Sawmill fishery closed 11-Aug due to conservation concern (no closure indicated above Maguerite and above the Bonaparte confluence on the Thompson).

Appendix Table A15. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1996. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chileotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu
7-Jan	7																				
14-Jan	14																				
21-Jan	21																				
28-Jan	28																				
4-Feb	35																				
11-Feb	42																				
18-Feb	49																				
25-Feb	56																				
3-Mar	63																				
10-Mar	70																				
17-Mar	77																				
24-Mar	84																				
31-Mar	91																				
7-Apr	98	2	9	11	19	162															
14-Apr	105	6	21	10	21	7															
21-Apr	112	12	26	31	122	29															
28-Apr	119	7	25	23	239	27															
5-May	126	20	49	45	340	242															
12-May	133	16	70	61	165	295															
19-May	140	28	55	51	105	322															
26-May	147	10	169	62	159	94															
2-Jun	154	27	145	74	225	111															
9-Jun	161	28	235	123	259	84															
16-Jun	168	107	277	432	975	557															
23-Jun	175	354	388	481	2049	2469															
30-Jun	182	362	72	0	0	0															
7-Jul	189	529	0	0	1	0	160														
14-Jul	196	381	0	0	1	0	160														
21-Jul	203	356	0	0	0	0	160														
28-Jul	210	273	72	0	0	0	160		0	0											
4-Aug	217	228	26	62	40	92	160	6	4	3		0						14	2		
11-Aug	224	1413	75	136	53	145	104	6	0	4	5	21	0	0	94	0				11	
18-Aug	231	3944	323	541	456	1122	30	0	4	0	0	26	1	36	519	0					
25-Aug	238	334	385	209	309	382	37	0	1	0	0	10	0	3	0	2				2	
1-Sep	245	253	0	0	0	3	166	0	0	1	0	0	0	0	0	0	5			2	
8-Sep	252	225	0	0	0	0	132	21	2	1	0		0	0	0	1					3
15-Sep	259	171	10	0	0	0	155	0					0	6					1		
22-Sep	266	250	0	0	0	0	234	0										0			
29-Sep	273	206	0	0	0	0															
6-Oct	280	97	0	0	0	0														1	
13-Oct	287	42	0	0	0	0														2	
20-Oct	294	17	0	0	0	0															5
27-Oct	301	2	11	0	0	0															
3-Nov	308	4	0	4	7	5															
10-Nov	315	2	0	2	5	3															
17-Nov	322	0		3	1																
24-Nov	329	0																			
1-Dec	336	1																			
8-Dec	343	0																			
15-Dec	350																				
22-Dec	357																				
29-Dec	364																				
Total		9707	2443	2358	5553	6152	1656	33	7	10	8	0	57	0	1	45	613	22	6	15	8

Appendix Table A16. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1997. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu
5-Jan	5		0	0	0	0															
12-Jan	12		0	0	0	0															
19-Jan	19		0	0	0	0															
26-Jan	26		0	0	0	0															
2-Feb	33		0	0	0	0															
9-Feb	40		0	0	0	0															
16-Feb	47		0	0	0	0															
23-Feb	54		0	0	0	0															
2-Mar	61		0	12	5	1															
9-Mar	68		0	0	0	0															
16-Mar	75		0	0	0	6															
23-Mar	82		0	6	54	29															
30-Mar	89		0	39	66	46															
6-Apr	96	6	30	31	220	71															
13-Apr	103	26	48	50	255	225															
20-Apr	110	12	29	24	254	176															
27-Apr	117	8	23	15	275	57															
4-May	124	1	53	86	252	75															
11-May	131	10	29	112	301	197															
18-May	138	0	37	37	165	51															
25-May	145	5	78	60	420	128															
1-Jun	152	0	143	38	335	256															
8-Jun	159	3	364	64	348	165															
15-Jun	166	11	257	158	787	643	5	0													
22-Jun	173	38	663	161	879	681	138	0													
29-Jun	180	321	1	238	675	1124	591	45													
6-Jul	187	194	0	0	4	4	296	171	0	4	0						1				
13-Jul	194	407	247	161	128	731	294	180	4	25	35						14				
20-Jul	201	80	0	0	0	7	215	15	6	71	23		8		0		19				
27-Jul	208	993	175	305	116	581	59	25	26	20	58		17		0		15				
3-Aug	215	141	156	0	0	0	41	6	1	2	14		88		2		30			12	
10-Aug	222	1522	438	357	111	674	45	23	10	12	11		25		1		55				
17-Aug	229	1753	519	664	221	1636	356	29	1	5	3		30		2		77			30	
24-Aug	236	4088	203	615	323	1761	224	6	0	0	5		23		0		5				
31-Aug	243	9539	4	290	146	949	176	16	0	0	0		7		0		7				
7-Sep	250	7467	2	13	91	665	36	0	0	0	0		12		0		3				
14-Sep	257	562	0	0	4	7	1	0	0	0	0		1		0		1				
21-Sep	264	588	0	0	0	0	0	0	0				0		0		0				
28-Sep	271	462	3	0	4	0	0	0					0		0		0				7
5-Oct	278	261	0	0	0	0							0				0				4
12-Oct	285	124	0	0	3	0							0								27
19-Oct	292	92	0	0	0	0															
26-Oct	299	14	0	0	0	0															
2-Nov	306	9	1	0	0	0															
9-Nov	313	3	3	9	11	0															
16-Nov	320	1	0	0	30	0															
23-Nov	327	0	0	0	1	0															
30-Nov	334	1	0	0	0	0															
7-Dec	341	0	0	0	0	0															
14-Dec	348		0	0	0	0															
21-Dec	355		0	0	0	0															
28-Dec	362		0	0	0	0															
Total		28742	3506	3545	6484	10946	2477	516	48	139	149	0	211	0	5	0	227	0	0	42	38

Appendix Table A17. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1998. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chileotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
4-Jan	4																					
11-Jan	11																					
18-Jan	18																					
25-Jan	25																					
1-Feb	32																					
8-Feb	39																					
15-Feb	46																					
22-Feb	53																					
1-Mar	60				6																	
8-Mar	67				4																	
15-Mar	74			3	0	6																
22-Mar	81			3	4	17																
29-Mar	88			5	9	6																
5-Apr	95		12	5	14	84																
12-Apr	102		8	8	20	132																
19-Apr	109		9	12	28	215																
26-Apr	116		15	21	5	53																
3-May	123	20	28	13	52	43																
10-May	130	12	32	16	129	61																
17-May	137	14	32	61	319	283																
24-May	144	18	72	103	356	449	260	32														
31-May	151	19	196	142	196	366	259	101														
7-Jun	158	61	202	250	388	656	395	188														
14-Jun	165	134	469	414	210	956	327	85														
21-Jun	172	81	386	298	445	828	234	83														
28-Jun	179	76	221	152	76	511	145	121														
5-Jul	186	105	0	0	0	0	79	123	0	0	15	3										
12-Jul	193	220	0	0	0	32	0	7	14	2	1	0										
19-Jul	200	68	2	0	0	0	0	10	1	1	5	0	0									
26-Jul	207	294	52	7	0	1	0	7	3	0	1	4	0									
2-Aug	214	103	0	110	281	649	80	34	3	1	0	1	0	0	0							
9-Aug	221	1693	132	80	245	299	157	57	1	9	7	2	1	35	3							
16-Aug	228	263	54	137	251	286	236	33	0	1	5	2	16	6	0	2						
23-Aug	235	2692	238	151	354	360	371	25	0	0	1	3	9	3	11	1	2					
30-Aug	242	444	8	48	257	87	67	0	1	0	0	0	0	1	9	4	9					
6-Sep	249	61	0	0	0	0	0	4	0	0	0	0	1	0	0	1						
13-Sep	256	60	0	0	0	0	0	81	0	0	0	0	0	0	9	12						
20-Sep	263	86	0	0	2	0	0	0	0	0	0	0	0	0	1	1	2					
27-Sep	270	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
4-Oct	277	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11-Oct	284	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
18-Oct	291	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
25-Oct	298	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
1-Nov	305	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
8-Nov	312	9	6	1	232	0	0	0	0	0	0	0	0	0	0	0						
15-Nov	319	2	3	3	57	0	0	0	0	0	0	0	0	0	0	0						
22-Nov	326	1	0	0	59	0	0	0	0	0	0	0	0	0	0	0						
29-Nov	333	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0						
6-Dec	340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
13-Dec	347	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
20-Dec	354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
27-Dec	361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Total		6815	2177	2043	4012	6380	2610	991	0	23	14	0	35	0	15	27	45	32	21	12	2	

Appendix Table A18. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 1999. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
3-Jan	3																					
10-Jan	10																					
17-Jan	17																					
24-Jan	24																					
31-Jan	31																					
7-Feb	38																					
14-Feb	45																					
21-Feb	52																					
28-Feb	59																					
7-Mar	66																					
14-Mar	73																					
21-Mar	80			3	3	26																
28-Mar	87			6	6	20																
4-Apr	94	2	2	13	9	19																
11-Apr	101	0	3	31	34	62																
18-Apr	108	11	20	28	35	59																
25-Apr	115	8	28	16	67	22																
2-May	122	3	40	1	153	37																
9-May	129	4	8	34	259	314																
16-May	136	4	45	60	492	490																
23-May	143	7	179	41	389	247																
30-May	150	5	54	26	191	13																
6-Jun	157	20	152	45	338	203																
13-Jun	164	26	165	120	554	189																
20-Jun	171	12	121	107	527	54																
27-Jun	178	5	391	111	802	125																
4-Jul	185	150	715	219	1461	882			0	1												
11-Jul	192	185	0	0	0	0	35	18	0	0							0					
18-Jul	199	64	0	3	0	5	0	0	0	0							0					
25-Jul	206	234	67	0	0	0	0	51	3	0				0	0		0					
1-Aug	213	296	87	193	1041	1553	1,517	313	55	20				0	0		0					
8-Aug	220	282	133	331	1320	1443	4,270	897	39	26			0	0			71	12				
15-Aug	227	328	0	0	0	0	1,853	366	44	30			7	4			212	2				
22-Aug	234	419	0	0	0	8	3	1	9	5			1	3			63	27				
29-Aug	241	429	0	0	0	6	16		1	0			6	0			7	70			1	
5-Sep	248	195	4	0	0	9	3		0	0			0	0			0	0	1	1		
12-Sep	255	201	1	0	0	3			0	0			0	0			0	119	7	2		
19-Sep	262	470	1	0	39	1			0	0			0	0			0	5				
26-Sep	269	272	0	0	33	0	0		3	0			0	0			0	2				
3-Oct	276	126	0	0	2	0	2		0	0			0	0			0	0				
10-Oct	283	78	0	0	59	0			0	0			0	0			0	0				
17-Oct	290	34	10	10	176	0			0	0			0	0			0	0				
24-Oct	297	7	5	7	727	0			0	0			0	0			0	0				
31-Oct	304	12	10	4	334	1			0	0			0	0			0	0				
7-Nov	311	21	1	2	72	0			0	0			0	0			0	0				
14-Nov	318	1	0	4	4	0			0	0			0	0			0	0				
21-Nov	325	0	0	0	22	0			0	0			0	0			0	0				
28-Nov	332	0	0	0	0	0			0	0			0	0			0	0				
5-Dec	339	0	0	0	0	0			0	0			0	0			0	0				
12-Dec	346	0	0	0	0	0			0	0			0	0			0	0				
19-Dec	353	0	0	0	0	0			0	0			0	0			0	0				
26-Dec	360	0	0	0	0	0			0	0			0	0			0	0				
Total		3911	2242	1415	9149	5792	7699	1646	3	151	82	0	14	0	7	0	353	230	15	4	0	0

Appendix Table A19. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 2000. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete-Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
2-Jan	2																					
9-Jan	9																					
16-Jan	16																					
23-Jan	23																					
30-Jan	30																					
6-Feb	37																					
13-Feb	44																					
20-Feb	51																					
27-Feb	58																					
5-Mar	65																					
12-Mar	72																					
19-Mar	79			2	4	10																
26-Mar	86			5	12	93																
2-Apr	93		2	17	81	98																
9-Apr	100		1	29	45	26																
16-Apr	107		7	31	56	79																
23-Apr	114		18	53	105	596																
30-Apr	121		16	25	126	151																
7-May	128		20	44	379	148																
14-May	135		54	40	410	624																
21-May	142		35	78	135	673	178	0														
28-May	149		44	50	87	49	169	0														
4-Jun	156	5	199	137	253	603	366	211					0									
11-Jun	163	11	137	57	109	357	97	0					0									
18-Jun	170	7	299	182	503	449	328	19					0									
25-Jun	177	73	542	407	875	957	420	37					0									
2-Jul	184	245	11	105	1009	1686	367	73					0									
9-Jul	191	209	166	133	637	469	231	69					0									
16-Jul	198	252	58	16	285	333	204	192		4	0		0	0	0							
23-Jul	205	254	83	135	441	315	65	286	1	1	7		4	0	0	7						
30-Jul	212	1121	144	75	149	149	57	30	4	63	12		0	2	0	14	153					
6-Aug	219	319	64	118	95	89	57	46	0	3	6		0	2	0	6	18					
13-Aug	226	709	51	118	106	111	121	0	0	2	2		0	0	0	23	87		1			
20-Aug	233	354	186	206	137	39	60	9	0	0	0		0	0	1	5	58	1	1			
27-Aug	240	1246	40	155	308	235	39	0	0	0	0		0	0	0	1	67	2				
3-Sep	247	139	156	107	560	309	36	9	0	0	0		0	0	2	1	15					
10-Sep	254	128			1			0	0	0			0	0	0	0	21		1		30	
17-Sep	261	227			6			0					0			0						
24-Sep	268	106			3																	
1-Oct	275	109			2																	
8-Oct	282	67			3																	
15-Oct	289	30			8																	
22-Oct	296	9	23	7	57																	
29-Oct	303	14	8	2	38																	
5-Nov	310	12	1	1	6																	
12-Nov	317	3			9																	
19-Nov	324	1			2																	
26-Nov	331																					
3-Dec	338																					
10-Dec	345																					
17-Dec	352																					
24-Dec	359																					
Total		5650	2365	2335	7042	8654	2795	981	5	73	27	0	4	0	4	3	57	419	3	3	30	

Appendix Table A20. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 2001. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete-Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
7-Jan	7																					
14-Jan	14																					
21-Jan	21																					
28-Jan	28																					
4-Feb	35																					
11-Feb	42																					
18-Feb	49																					
25-Feb	56																					
4-Mar	63																					
11-Mar	70					1																
18-Mar	77			1	9	1																
25-Mar	84			5	5	19																
1-Apr	91	18		26	24	44																
8-Apr	98	10	2	33	73	151	22	0														
15-Apr	105	14	6	49	168	184	19	1														
22-Apr	112	12	13	35	225	129	62	6														
29-Apr	119	9	41	50	106	113	36	3														
6-May	126	21	53	32	236	169	43	2														
13-May	133	9	98	105	404	603	164	18														
20-May	140	48	58	76	256	539	317	9														
27-May	147	41	82	105	182	354	380	47														
3-Jun	154	91	124	43	102	116	27	2														
10-Jun	161	138	227	123	636	447	55	27														
17-Jun	168	219	518	456	761	1520	330	75														
24-Jun	175	134	420	280	668	1795	1,087	109														
1-Jul	182	288	348	0	33	73	218	536														18
8-Jul	189	214	0	0	9	2	11	291	7	4	3	0	0	0	0	0	0	0	0	0	0	1
15-Jul	196	218	0	0	35	73	0	10	9	11	17	0	0	0	0	0	0	0	0	0	0	20
22-Jul	203	188	0	1	62	12	0	12	0	8	5	11	0	0	0	0	0	0	0	0	0	2
29-Jul	210	257	70	501	292	243	0	49	0	0	6	0	1	0	0	0	0	0	0	0	0	28
5-Aug	217	401	309	335	679	1929	295	135	0	8	12	0	4	0	0	0	0	0	0	0	0	19
12-Aug	224	456	25	306	408	364	148	101	0	8	10	0	4	0	0	0	0	0	0	0	0	84
19-Aug	231	453	105	0	5	0	111	20	0	3	7	0	4	0	0	0	0	0	0	0	0	133
26-Aug	238	335	47	123	172	195	99	17	0	1	4	0	0	0	0	0	0	0	0	0	0	5
2-Sep	245	188	0	0	0	1	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
9-Sep	252	159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16-Sep	259	94	0	0	44	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Sep	266	26	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Sep	273	47	0	1	702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67
7-Oct	280	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Oct	287	10	0	0	319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Oct	294	4	4	7	608	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Oct	301	2	5	5	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Nov	308	3	5	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Nov	315	3	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Nov	322	0			5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Nov	329	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Dec	336					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9-Dec	343					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Dec	350					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Dec	357					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Dec	364					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		4121	2562	2699	7443	9079	3503	1470	0	44	59	0	31	0	13	0	36	376	77	0	67	

Appendix Table A21. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 2002. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
6-Jan	6																					
13-Jan	13																					
20-Jan	20																					
27-Jan	27																					
3-Feb	34																					
10-Feb	41																					
17-Feb	48																					
24-Feb	55																					
3-Mar	62																					
10-Mar	69																					
17-Mar	76																					
24-Mar	83					4																
31-Mar	90			5	6	70																
7-Apr	97	2	2	2	15	140	0	0														
14-Apr	104	6	2	17	41	223	13	0														
21-Apr	111		42	55	93	55	5	1														
28-Apr	118	16	19	92	189	43	0	0														
5-May	125	13	64	111	133	97	27	5	0													
12-May	132	15	61	176	553	425	72	36	0													
19-May	139	35	105	50	212	118	135	22	0													
26-May	146	27	39	48	259	42	38	8	0													
2-Jun	153	30	307	45	289	64	36	8	0													
9-Jun	160	52	323	126	687	296	7	1	0													
16-Jun	167	64	694	137	1008	700	83	0	0													
23-Jun	174	9	168	42	12	0	0	0	0													
30-Jun	181	41	0	0	0	0	25	8	0													
7-Jul	188	229	0	0	0	9	0	12	0	0	0								3			
14-Jul	195	284	0	0	47	72	55	0	0	8	11								1			
21-Jul	202	131	26	255	842	1791	14	4	0	24	159						2		2			
28-Jul	209	234	0	536	784	2338	377	99	2	12	55	3					11	5	12	1		
4-Aug	216	825	406	302	445	1010	736	265	1	6	20	65	1				21	156	30			
11-Aug	223	585	138	183	401	416	636	106	0	4	6	32	11	1			5	113	21	3		
18-Aug	230	3409	80	179	246	355	13	46	0	1	3	27	4	0			13	52	1	8	46	
25-Aug	237	220	0	212	130	94	32	0	0	1	7	1	1	0			7			2	62	
1-Sep	244	136	0	115	72	301	67	5	0	0	0	0	0	0			1	123	2		52	
8-Sep	251	71	0	0	134	238	0	7	0	0	0	0	0	0			1	2	5	3	98	
15-Sep	258	101	0	0	0		0	0	0	0	0	0	0	0			0	0	119	3	42	
22-Sep	265	123	0	0	0					0							0	0	17	8		
29-Sep	272	205	0	0	0																	
6-Oct	279	82	0	0	0																	
13-Oct	286	75	22	33	151																	
20-Oct	293	8	32	3	80																	
27-Oct	300	88	6	6	19																	
3-Nov	307	3	1		54																	
10-Nov	314	8			52																	
17-Nov	321	5			8																	
24-Nov	328				3																	
1-Dec	335																					
8-Dec	342																					
15-Dec	349																					
22-Dec	356																					
29-Dec	363																					
Total		7132	2537	2730	6965	8901	2371	633	3	56	261	0	128	0	17	2	62	516	95	14	308	

Appendix Table A22. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 2003. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
5-Jan	5																					
12-Jan	12																					
19-Jan	19																					
26-Jan	26																					
2-Feb	33																					
9-Feb	40																					
16-Feb	47																					
23-Feb	54					1																
2-Mar	61					0																
9-Mar	68					0																
16-Mar	75					0																
23-Mar	82				16	10																
30-Mar	89		1	10	28	41																
6-Apr	96	10	3	44	34	27	2	0														
13-Apr	103	10	4	27	105	175	5	0														
20-Apr	110	27	13	44	120	80	4	1														
27-Apr	117	17	22	78	245	425	66	2														
4-May	124	27	54	132	307	293	28	3														
11-May	131	17	67	107	327	399	60	12														
18-May	138	35	100	62	129	452	171	11														
25-May	145	51	148	31	104	728	138	13														
1-Jun	152	84	177	148	63	70	16	6														
8-Jun	159	258	531	302	850	935	38	0				0										
15-Jun	166	117	379	296	865	1534	27	0				0								9		
22-Jun	173	506	512	418	910	3631	342	0				0								1		
29-Jun	180	565	45	0	0	623	306	16				0								3		
6-Jul	187	325	50	0	0	0	0	4		2	6	0					0	165	19			
13-Jul	194	176	0	0	0	0	0	0		21	1	0					6	61	25			
20-Jul	201	70	50	0	0	0	0	0		1	4	0					11	18	3			
27-Jul	208	194	21	193	212	775	0	21		1	1	27				0	16	14	2			
3-Aug	215	261	128	272	179	602	47	21		4	1	0				0	4	24	4			
10-Aug	222	2199	224	347	162	616	104	17	0	1	0	83				1	26	14	3			
17-Aug	229	4128	438	541	191	895	68	4	0	0	1	41				0	17	0	2	2	29	
24-Aug	236	561	1182	418	287	484	82	48	0	0	2	12		0	2	6	2	3				
31-Aug	243	501	8	328	236	309	10	21	0	1	1	0		0	0	5		11			57	
7-Sep	250	32	2	0	0	0	36	0	0	0	0	1		0	0	3		6	6	106		
14-Sep	257	65	0	0	0	0	4	1	0			0		0	0	17	1		2	1	154	
21-Sep	264	192	0	0	0	0		0				3		0	10	0					290	
28-Sep	271	182	0	0	0	0						1		0	0							
5-Oct	278	170	0	0	0	0						0		0	0						135	
12-Oct	285	31	0	4	27	0						0									32	
19-Oct	292	33	12	35	117	0						0									107	
26-Oct	299	84	17	10	39	0						0										
2-Nov	306	71	4	10	16	0						0										
9-Nov	313	30	2	1	103	0																
16-Nov	320	10			1	0																
23-Nov	327	1																				
30-Nov	334																					
7-Dec	341																					
14-Dec	348																					
21-Dec	355																					
28-Dec	362																					
Total		11040	4194	3858	5673	13105	1554	201	0	31	17	0	168	0	0	30	95	298	93	9	910	

Appendix Table A23. Weekly Chinook catch estimates for Area 29 commercial and Fraser River First Nation Fisheries, 2004. (Shading indicates fishery was open).

Week End Date	Day of Year	Area 29	Stev-Deas	Deas-Miss	Miss-Hope	Hope-Sawm	Sawm-Texa	Texa-Kelly	Kelly-Deadm	Deadm-Chil	Chil-Quen	Quen-Naver	Naver-Salm	Tete Juene	Nechako	Stuart	Chilcotin	Tomp-Bona	Bona-Kam	N.Thomp	Kam-Shu	
4-Jan	4																					
11-Jan	11																					
18-Jan	18																					
25-Jan	25																					
1-Feb	32																					
8-Feb	39																					
15-Feb	46																					
22-Feb	53																					
29-Feb	60																					
7-Mar	67																					
14-Mar	74			4	3	3																
21-Mar	81			2	3	8																
28-Mar	88			9	11	23																
4-Apr	95	3		12	18	12																
11-Apr	102	6	8	18	21	44																
18-Apr	109	4	13	26	34	39																
25-Apr	116	5	17	61	93	267																
2-May	123	4	25	37	172	233																
9-May	130	6	63	25	78	82																
16-May	137	19	102	77	216	899																
23-May	144	32	99	53	66	494																
30-May	151	22	126	142	150	629		91														
6-Jun	158	32	331	199	182	1142		76														
13-Jun	165	29	292	389	154	330																
20-Jun	172	148	552	701	441	1829																
27-Jun	179	219	547	577	538	2428																
4-Jul	186	213	727	514	357	2721	218	69													24	
11-Jul	193	142	790	282	352	2026	120	44	20	1							6				36	
18-Jul	200	429	393	115	206	992	87	38	5	7							13				20	
25-Jul	207	104	206	211	309	1344	653	138	8	10		37					41	10		30	1	
1-Aug	214	2818	358	392	362	720	168	27	5	3		52					10	49		1		
8-Aug	221	3664	621	413	381	1499	186	7	1	1		50				12	14			6		
15-Aug	228	2198	64	366	305	403	74	29		2		17		6	1	12				9		4
22-Aug	235	455	4	42	152	601	153	16		3		13				4	12			40	1	23
29-Aug	242	592			93		1168	24		1	0		5			11	34	3		1		29
5-Sep	249	522					323	66			1		20			5	13			19		69
12-Sep	256	183					49	11	1				28			1				5		225
19-Sep	263	166					443		13				16									281
26-Sep	270	441					20	4					2									523
3-Oct	277	547																				18
10-Oct	284	50	6	17																		
17-Oct	291	40	17	15	22																	
24-Oct	298	181	18	30	26																	
31-Oct	305	8			35																	
7-Nov	312	38		1	33																	
14-Nov	319	2		1	8																	
21-Nov	326	1		2	9																	
28-Nov	333																					
5-Dec	340																					
12-Dec	347																					
19-Dec	354																					
26-Dec	361																					
Total		13323	5379	4733	4830	18769	3662	640	14	40	28	0	240	0	6	34	155	62	191	2	1172	

Appendix Table A25. Annual Chinook catch estimates for First Nation fisheries conducted in tributaries to the Fraser River, 1994-2004.

Stock Name ¹	Order	Agg	Stock Agg	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Swift	1	1	Spring 5.2											
Fraser	2	1	Spring 5.2		1									
Horsey	3	1	Spring 5.2											
Nevin	4	1	Spring 5.2											
Holmes	5	1	Spring 5.2									7		4
McKale	6	1	Spring 5.2											
Twin	7	1	Spring 5.2											
Goat	8	1	Spring 5.2											
Morkill	9	1	Spring 5.2											
Walker	10	1	Spring 5.2											
Torpy	11	1	Spring 5.2											
Dome	12	1	Spring 5.2											
Slim	13	1	Spring 5.2											
Bowron	14	1	Spring 5.2											
McGregor	15	1	Spring 5.2											
Willow	16	1	Spring 5.2											
Salmon	17	1	Spring 5.2											
Stuart	18	2	Summer 5.2											
Nechako	19	2	Summer 5.2											
Stellako	20	2	Summer 5.2											
Endako	21	1	Spring 5.2											
Chilako	22	1	Spring 5.2											
Blackwater	23	1	Spring 5.2											
Cotton-wood	24	1	Spring 5.2											
Quesnel	25	2	Summer 5.2											
Cariboo	26	2	Summer 5.2											
Horsefly	27	1	Spring 5.2											
Chilko	28	2	Summer 5.2											
Chilcotin Upper	29	1	Spring 5.2											
Chilcotin Lower	30	1	Spring 5.2											
Elkin	31	1	Spring 5.2											
Taseko	32	2	Summer 5.2											
Bridge	33	1	Spring 5.2											
Portage	34	2	Summer 5.2											
Seton	35	2	Summer 5.2											
Mahood	36	2	Summer 5.2											
Clearwater ²	37	2	Summer 5.2	57	61	30	80	39	128	46	84	16	3	13
Finn ³	38	1	Spring 5.2	70	13	92	10	49	2	14	21	6	22	10
Raft ³	39	2	Summer 5.2	2	6	14	3	13	6	1	3	6	3	6
Barriere ⁵	40	1	Spring 5.2	11	11	11	11	11	11	4	17	11	11	11
Louis ⁶	41	3	Spring 4.2	6	6	6	6	6	6	6	11	3	6	3
North Thompson	42	2	Summer 5.2											
Bessette	43	3	Spring 4.2											
Middle Shuswap ⁷	44	4	Summer 4.1	58	49	64	6	35	19	13	1	21	37	12
Lower Shuswap	45	4	Summer 4.1	4	205	69	214	390	265	63	168	401	422	156
Eagle	46	1	Spring 5.2					8						
Salmon	47	1	Spring 5.2			4	3	2			44			
Adams	48	4	Summer 4.1			1		22						
Little River	49	4	Summer 4.1		4					38	52			
South Thompson	50	4	Summer 4.1											
Lower Thompson	51	4	Summer 4.1											
Deadman	52	3	Spring 4.2									13	4	
Bonaparte	53	3	Spring 4.2	191	141	13	940	203	244	411	876	942	845	929
Coldwater	54	3	Spring 4.2											
Spilus	55	3	Spring 4.2											
Nicola	56	3	Spring 4.2											
Nahatlatch	57	1	Spring 5.2											
Maria Slough	58	4	Summer 4.1											
Birkenhead	59	1	Spring 5.2											
Harrison	60	5	Fall											
Chilliwack	61	5	Fall											
Pitt	62	1	Spring 5.2											
Total				399	497	304	1273	778	681	596	1277	1426	1353	1144

¹ DFO (BCI) is currently trying to estimate missing annual catch data for Eagle, Salmon, Adams, Little River, Deadman, Fraser and Holmes.

² 1994 and 1995 catch estimates for Clearwater are estimated using linear regression equation for the relationship between First Nations catch and escapement.

³ 2003 catch estimate for Finn is estimated using linear regression equation for the relationship between First Nations catch and escapement.

⁴ The 1995, 1999, 2002, 2004 catch estimates for Raft were calculated based on the average of available estimates

⁵ The 1994-1999, and 2002-2004 catch estimates for Barriere were calculated based on the average of available estimates

⁶ The 1994-2000, 2003 catch estimates for Louis were calculated based on the average of available estimates

⁷ The 1998, 2003 and 2004 catch estimates for Middle Shuswap are estimated using linear regression equation for the relationship between First Nations catch and escapement.

Appendix Table A26. Annual Chinook catch estimates for recreational fisheries conducted in tributaries to the Fraser River, 1986-2004.

Stock Name	Order	Agg	Stock Agg	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Swift	1	1	Spring 5.2										
Fraser	2	1	Spring 5.2										
Horsey	3	1	Spring 5.2										
Nevin	4	1	Spring 5.2										
Holmes	5	1	Spring 5.2										
McKale	6	1	Spring 5.2										
Twin	7	1	Spring 5.2										
Goat	8	1	Spring 5.2										
Morkill	9	1	Spring 5.2										
Walker	10	1	Spring 5.2										
Torpy	11	1	Spring 5.2										
Dome	12	1	Spring 5.2										
Slim	13	1	Spring 5.2										
Bowron ¹	14	1	Spring 5.2	13	121	105	150	100	75	200	200	450	250
McGregor	15	1	Spring 5.2										
Willow	16	1	Spring 5.2										
Salmon	17	1	Spring 5.2										
Stuart	18	2	Summer 5.2										
Nechako	19	2	Summer 5.2										
Stellako	20	2	Summer 5.2										
Endako	21	1	Spring 5.2										
Chilako	22	1	Spring 5.2										
Blackwater	23	1	Spring 5.2										
Cotton-wood	24	1	Spring 5.2										
Quesnel ²	25	2	Summer 5.2	14	182	14	60	75	50	80	45	20	0
Cariboo ³	26	2	Summer 5.2	closed	closed	closed	closed	closed	closed	50	20	0	0
Horsefly	27	1	Spring 5.2										
Chilko ⁴	28	2	Summer 5.2	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
Chilcotin Upper	29	1	Spring 5.2										
Chilcotin Lower	30	1	Spring 5.2										
Elkin	31	1	Spring 5.2										
Taseko	32	2	Summer 5.2										
Bridge	33	1	Spring 5.2	closed	115	11	closed	closed	closed	closed	closed	closed	102
Portage	34	2	Summer 5.2										
Seton ⁵	35	2	Summer 5.2	closed	closed	closed	closed	closed	closed	closed	closed	0	0
Mahood	36	2	Summer 5.2										
Clearwater ⁶	37	2	Summer 5.2	3	80	240	225	308	91	141	87	232	117
Finn	38	1	Spring 5.2										
Raft	39	2	Summer 5.2										
Barriere	40	1	Spring 5.2										
Louis	41	3	Spring 4.2										
North Thompson ⁷	42	2	Summer 5.2	closed	closed	closed	closed	closed	closed	7	10	74	48
Bessette	43	3	Spring 4.2										
Middle Shuswap ⁸	44	4	Summer 4.1	92	closed	closed	closed	closed	482	307	459	163	316
Lower Shuswap ⁹	45	4	Summer 4.1	237	215	174	120	1515	528	595	847	1107	846
Eagle	46	1	Spring 5.2										
Salmon	47	1	Spring 5.2										
Adams	48	4	Summer 4.1										
Little River	49	4	Summer 4.1										
South Thompson ¹⁰	50	4	Summer 4.1	closed	36	180	259	39	100	100	100	75	150
Deadman	51	3	Spring 4.2										
Bonaparte ¹¹	52	3	Spring 4.2	closed	closed	closed	closed	closed	closed	closed	closed	closed	closed
Coldwater	53	3	Spring 4.2										
Spius	54	3	Spring 4.2										
Nicola ¹	55	3	Spring 4.2	closed	closed	109	104	187	290	197	162	354	208
Nahatlatch	56	1	Spring 5.2										
Maria Slough	57	4	Summer 4.1										
Birkenhead	58	1	Spring 5.2										
Harrison ¹²	59	5	Fall						0	0	0	0	0
Chilliwack ¹³	60	5	Fall	246	700	670	300	300	1500	3000	1500	720	720
Pitt	61	1	Spring 5.2										
Total				605	1449	1503	1218	2524	3116	4677	3430	3195	2757

Appendix Table A26 continued.

Stock Name	Order	Agg	Stock Agg	1996	1997	1998	1999	2000	2001	2002	2003	2004
Swift	1	1	Spring 5.2									
Fraser	2	1	Spring 5.2									
Horsey	3	1	Spring 5.2									
Nevin	4	1	Spring 5.2									
Holmes	5	1	Spring 5.2									
McKale	6	1	Spring 5.2									
Twin	7	1	Spring 5.2									
Goat	8	1	Spring 5.2									
Morkill	9	1	Spring 5.2									
Walker	10	1	Spring 5.2									
Torpy	11	1	Spring 5.2									
Dome	12	1	Spring 5.2									
Slim	13	1	Spring 5.2									
Bowron ¹	14	1	Spring 5.2	325	188	92	50	12	9	217	246	206
McGregor	15	1	Spring 5.2									
Willow	16	1	Spring 5.2									
Salmon	17	1	Spring 5.2									
Stuart	18	2	Summer 5.2									
Nechako	19	2	Summer 5.2									
Stellako	20	2	Summer 5.2									
Endako	21	1	Spring 5.2									
Chilako	22	1	Spring 5.2									
Blackwater	23	1	Spring 5.2									
Cotton-wood	24	1	Spring 5.2									
Quesnel ²	25	2	Summer 5.2	0	55	65	15	47	51	69	67	56
Cariboo ³	26	2	Summer 5.2	0	0	0	5	5	5	5	5	5
Horsefly	27	1	Spring 5.2									
Chilko ⁴	28	2	Summer 5.2	closed	1	2	5	5	4	5	5	5
Chilcotin Upper	29	1	Spring 5.2									
Chilcotin Lower	30	1	Spring 5.2									
Elkin	31	1	Spring 5.2									
Taseko	32	2	Summer 5.2									
Bridge	33	1	Spring 5.2	248	33	139	1	97	141	73	380	315
Portage	34	2	Summer 5.2									
Seton ⁵	35	2	Summer 5.2	0	0	5	10	5	5	5	5	5
Mahood	36	2	Summer 5.2									
Clearwater ⁶	37	2	Summer 5.2	389	249	265	83	235	214	261	255	179
Finn	38	1	Spring 5.2									
Raft	39	2	Summer 5.2									
Barriere	40	1	Spring 5.2									
Louis	41	3	Spring 4.2									
North Thompson ⁷	42	2	Summer 5.2	80	51	55	17	48	44	54	53	37
Bessette	43	3	Spring 4.2									
Middle Shuswap ⁸	44	4	Summer 4.1	223	150	70	70	55	314	304	270	154
Lower Shuswap ⁹	45	4	Summer 4.1	1592	755	1042	2121	1080	1506	2293	777	887
Eagle	46	1	Spring 5.2									
Salmon	47	1	Spring 5.2									
Adams	48	4	Summer 4.1									
Little River	49	4	Summer 4.1									
South Thompson ¹⁰	50	4	Summer 4.1	350	610	750	422	177	2058	1408	1233	1115
Deadman	51	3	Spring 4.2									
Bonaparte ¹¹	52	3	Spring 4.2	closed	closed	closed	closed	4	4	4	4	4
Coldwater	53	3	Spring 4.2									
Spilus	54	3	Spring 4.2									
Nicola ¹	55	3	Spring 4.2	280	401	196	92	394	238	57	210	14
Nahatlatch	56	1	Spring 5.2									
Maria Slough	57	4	Summer 4.1									
Birkenhead	58	1	Spring 5.2									
Harrison ¹²	59	5	Fall			36			60	40	10	14
Chilliwack ¹³	60	5	Fall	1087	1020	8196	5543	3923	8345	16057	3947	5463
Pitt	61	1	Spring 5.2									
Total				4574	3513	10913	8434	6087	12998	20852	7467	8459

Appendix Table A26. Footnotes - continued.

- ¹ Bowron fishery was not monitored in 1997, 2002-2004; catch estimates for these years were calculated based on a linear regression.
- ² Quesnel fishery was not monitored in 1997, 1998, 2000-2004; catch estimates for these years were calculated based on a linear regression. Zero values for 1995/1996 are currently being verified by DFO BCI staff.
- ³ Catch values from 1992-1998 are currently being verified by DFO BCI staff. Cariboo fishery was not monitored in 1999-2004; catch estimates for these years were based on the 2006 catch estimate.
- ⁴ Chilko fishery was not monitored in 2000, 2002-2004; catch estimates for these years were based on the 2006 catch estimate.
- ⁵ Catch values from 1994-1997 are currently being verified by DFO BCI staff. Seton fishery was not monitored in 1998, 2000-2004; catch estimates for these years were based on the 2006 catch estimate.
- ⁶ Clearwater fishery was not monitored from 2002-2004; catch estimates for these years were calculated based on a linear regression. Clearwater catch estimates from 1996-2004 had to be apportioned out based on the average stock portion for 1992-1995 (83%) multiplied by the North Thompson/Clearwater catch estimate.
- ⁷ North Thompson fishery was closed from 1984-1994. DFO calculated separate catch estimates for Clearwater and North Thompson from 1992-1995; thereafter, DFO combined the catch. In order to separate the 1996-2004 catch, the stock portions from 1992-1995 (17%) was multiplied by the North Thompson/Clearwater combination catch.
- ⁸ Middle Shuswap fishery was not monitored from 2002-2004; catch estimates for these years were calculated based on a linear regression.
- ⁹ Lower Shuswap catch estimates includes catches from Mabel Lake. DFO BCI staff updated the 2001-2004 catch estimates.
- ¹⁰ South Thompson fishery was not monitored in 2004; catch estimate for this year was calculated based on a linear regression.
- ¹¹ Bonaparte fishery @ confluence of the river. Fishery was not monitored from 2001-04; catch est. for these years were based on 2000 est.
- ¹² Zero catch values for the Harrison have been verified. DFO currently confirming if blanks=fishery closure.
- ¹³ Chilliwack - catch values updated by DFO.

Appendix Table A27. Adjusted annual estimates of the escapement to spawning areas for each Fraser Chinook stock, 1982-04.

Stock Name	No.	Loc	Agg	Agg Name	1982	1983	1984	1985	1986	1987	1988	1989
Swift	1	1	1	Spring 5.2	570	700	1200	1200	900	1000	1500	850
Fraser	2	1	1	Spring 5.2	1800	4300	5814	6050	6500	3500	4000	5000
Horsey	3	1	1	Spring 5.2	15	100	250	325	175	200	180	100
Nevin	4	1	1	Spring 5.2	40	45	60	100	125	110	140	60
Holmes	5	1	1	Spring 5.2	900	1100	1750	2400	3000	3000	2700	1500
McKale	6	1	1	Spring 5.2	40	15	12	5	40	15	75	26
Twin	7	1	1	Spring 5.2	20	10	45	50	50	105	70	20
Goat	8	1	1	Spring 5.2	50	10	130	85	150	160	110	50
Morkill	9	1	1	Spring 5.2	428	682	150	400	1000	2000	1800	400
Walker	10	1	1	Spring 5.2	175	125	400	500	1000	500	800	75
Torpy	11	1	1	Spring 5.2	300	1000	1500	1500	3000	2800	2000	1900
Dome	12	1	1	Spring 5.2	80	75	200	450	450	250	170	110
Slim	13	1	1	Spring 5.2	1800	2000	1800	5000	5500	3750	4600	2000
Bowron	14	1	1	Spring 5.2	1400	4300	4922	7002	9465	10900	5908	6000
McGregor	15	1	1	Spring 5.2	1485	1000	1500	3100	3800	3750	2860	1500
Willow	16	1	1	Spring 5.2	450	780	350	1400	1450	1600	1800	1200
Salmon (PG)	17	1	1	Spring 5.2	300	250	603	350	450	700	1200	450
Stuart	18	2	2	Summer 5.2	615	485	500	3005	3127	5010	3227	1600
Nechako	19	2	2	Summer 5.2	1448	850	1300	2000	2000	1590	2692	2915
Stellako	20	2	2	Summer 5.2	18	21	17	30	75	50	50	20
Endako	21	3	1	Spring 5.2	65	50	300	300	300	500	300	200
Chilako	22	3	1	Spring 5.2	150	75	150	175	150	175	250	50
Blackwater	23	3	1	Spring 5.2	1500	3800	4050	5000	3000	5000	4000	2100
Cottonwood	24	3	1	Spring 5.2	325	900	900	1500	1300	2700	2057	800
Quesnel	25	4	2	Summer 5.2	1000	1500	1800	2000	9000	4331	6300	3000
Cariboo	26	4	2	Summer 5.2	400	700	600	1150	1400	1100	1760	1160
Horsefly	27	4	1	Spring 5.2	365	300	250	250	250	250	250	400
Chilko	28	5	2	Summer 5.2	5300	6000	4200	4500	7500	9000	8037	3000
Chilcotin Upper	29	5	1	Spring 5.2	162	259	327	463	517	523	472	333
Chilcotin Lower	30	5	1	Spring 5.2	550	1000	950	1500	3300	3800	3410	2600
Elkin	31	5	1	Spring 5.2	216	344	300	400	400	450	300	200
Taseko	32	5	2	Summer 5.2	2650	3000	2100	2250	3750	4500	4019	1500
Bridge	33	6	1	Spring 5.2	80	210	582	956	836	600	638	750
Portage	34	6	2	Summer 5.2	150	70	138	225	98	50	125	330
Seton	35	6	2	Summer 5.2	50	24	157	114	105	65	75	115
Mahood	36	7	2	Summer 5.2	250	300	400	250	500	300	700	180
Clearwater	37	7	2	Summer 5.2	3000	4000	2800	3800	5500	3000	6300	2200
Finn	38	7	1	Spring 5.2	850	700	1500	1300	1300	1300	1600	900
Raft	39	7	2	Summer 5.2	375	175	500	525	700	650	800	700
Barriere	40	7	2	Summer 5.2	63	65	75	50	5	50	100	260
Louis	41	7	3	Spring 4.2	150	20	100	250	150	25	80	325
North Thompson	42	7	2	Summer 5.2	3000	4000	2800	3800	5500	3000	6300	2200
Besette	43	8	3	Spring 4.2	10	10	100	200	230	88	50	190
Middle Shuswap	44	8	4	Summer 4.1	500	300	700	900	1000	1700	1600	1500
Lower Shuswap	45	8	4	Summer 4.1	2200	5800	7892	11125	12000	10000	14000	11000
Eagle	46	8	1	Spring 5.2	400	250	775	1250	1000	840	1000	821
Salmon (ST)	47	8	1	Spring 5.2	700	300	850	1670	1000	641	1100	1638
Adams	48	8	4	Summer 4.1	500	250	650	750	2500	2000	1500	1250
Little	49	8	4	Summer 4.1	100	100	250	400	350	200	400	400
South Thompson	50	8	4	Summer 4.1	3500	3000	6000	7000	6500	8500	12000	10000
Lower Thompson	51	8	4	Summer 4.1	1000	1000	1000	1000	1000	1000	1000	1000
Deadman	52	9	3	Spring 4.2	600	162	1626	1066	945	499	1013	571
Bonaparte	53	9	3	Spring 4.2	150	20	800	800	993	275	525	724
Coldwater	54	9	3	Spring 4.2	800	547	598	2061	2100	550	220	1040
Spius	55	9	3	Spring 4.2	200	102	256	100	350	475	150	500
Nicola	56	9	3	Spring 4.2	3750	1800	3700	5800	6500	3500	2490	3500
Nahatlatch	57	10	1	Spring 5.2	16	30	50	240	94	75	50	51
Maria Slough	58	10	4	Summer 4.1	50	50	30	200	110	4	67	50
Birkenhead	59	10	1	Spring 5.2	400	550	300	200	150	80	412	415
Harrison	60	11	5	Fall	120000	120000	122403	175419	163329	79956	35583	76085
Chilliwack	61	11	5	Fall	200	200	204	1674	4469	17271	14782	3333
Pitt	62	10	1	Spring 5.2	300	300	272	385	300	350	850	375
Total					167961	180111	195938	277950	292738	210363	172547	163522

Appendix Table A27 continued.

Stock Name	No.	Loc	Agg	Agg Name	1990	1991	1992	1993	1994	1995	1996	1997
Swift	1	1	1	Spring 5.2	1200	600	980	1000	886	1700	1500	1200
Fraser	2	1	1	Spring 5.2	6000	4027	3224	3300	4240	6000	4100	2935
Horsey	3	1	1	Spring 5.2	100	50	90	130	181	120	20	75
Nevin	4	1	1	Spring 5.2	20	55	74	80	90	126	111	126
Holmes	5	1	1	Spring 5.2	2100	1500	2150	2100	1877	2600	2775	3203
McKale	6	1	1	Spring 5.2	40	14	15	10	16	37	33	37
Twin	7	1	1	Spring 5.2	70	42	50	60	43	74	65	74
Goat	8	1	1	Spring 5.2	100	107	100	55	293	400	440	354
Morkill	9	1	1	Spring 5.2	1000	1000	1800	1005	1231	407	567	550
Walker	10	1	1	Spring 5.2	200	100	500	150	240	101	426	122
Torpy	11	1	1	Spring 5.2	2000	2000	2600	1000	1921	1590	1055	1042
Dome	12	1	1	Spring 5.2	420	523	458	575	530	550	571	625
Slim	13	1	1	Spring 5.2	5000	2500	1725	1300	2473	4634	2268	3130
Bowron	14	1	1	Spring 5.2	6500	4200	4670	6140	9104	8316	4577	7334
McGregor	15	1	1	Spring 5.2	1000	1300	4150	2468	1660	2412	3461	2505
Willow	16	1	1	Spring 5.2	1800	550	700	600	1170	817	1612	1961
Salmon (PG)	17	1	1	Spring 5.2	700	300	300	50	729	901	1054	1200
Stuart	18	2	2	Summer 5.2	6000	7500	15000	1000	2455	3730	7415	6221
Nechako	19	2	2	Summer 5.2	2642	2360	2498	664	1144	1689	2040	1954
Stellako	20	2	2	Summer 5.2	41	34	46	26	10	35	52	50
Endako	21	3	1	Spring 5.2	75	200	10	20	200	125	167	43
Chilako	22	3	1	Spring 5.2	425	150	150	25	119	200	624	186
Blackwater	23	3	1	Spring 5.2	5000	2500	2500	3200	6150	6050	4615	7206
Cottonwood	24	3	1	Spring 5.2	1000	1000	2200	4470	4690	2100	1750	3329
Quesnel	25	4	2	Summer 5.2	6195	4400	3375	5028	1549	3073	3100	3185
Cariboo	26	4	2	Summer 5.2	2500	1625	1000	2480	2000	817	1850	1800
Horsefly	27	4	1	Spring 5.2	1000	500	400	200	4154	185	400	115
Chilko	28	5	2	Summer 5.2	6305	7400	11168	6343	5665	10461	17000	16272
Chilcotin Upper	29	5	1	Spring 5.2	443	303	372	200	450	262	735	360
Chilcotin Lower	30	5	1	Spring 5.2	2700	3140	2486	3100	6354	3480	2285	4000
Elkin	31	5	1	Spring 5.2	250	600	540	450	508	786	1250	806
Taseko	32	5	2	Summer 5.2	3153	3700	5584	3172	2833	5231	8500	8136
Bridge	33	6	1	Spring 5.2	375	150	800	950	615	851	1900	1968
Portage	34	6	2	Summer 5.2	175	159	50	330	36	163	300	232
Seton	35	6	2	Summer 5.2	60	35	95	150	69	73	109	104
Mahood	36	7	2	Summer 5.2	500	20	250	100	180	130	415	260
Clearwater	37	7	2	Summer 5.2	7320	2219	2370	2700	5450	5100	7780	7830
Finn	38	7	1	Spring 5.2	1100	460	630	1300	1837	810	1569	725
Raft	39	7	2	Summer 5.2	550	355	280	190	935	1371	870	1230
Barriere	40	7	2	Summer 5.2	100	50	160	50	44	21	183	174
Louis	41	7	3	Spring 4.2	50	10	6	20	510	800	420	480
North Thompson	42	7	2	Summer 5.2	7320	2219	2370	2700	5450	5100	7780	7830
Bessette	43	8	3	Spring 4.2	200	180	80	250	200	280	400	331
Middle Shuswap	44	8	4	Summer 4.1	4000	5000	5000	2500	4000	3000	5000	3800
Lower Shuswap	45	8	4	Summer 4.1	13000	10000	13300	6000	16150	10000	19000	13100
Eagle	46	8	1	Spring 5.2	1200	835	1271	1100	1200	700	780	915
Salmon (ST)	47	8	1	Spring 5.2	1100	616	300	1850	800	700	727	252
Adams	48	8	4	Summer 4.1	2000	3000	1300	800	1800	1900	2200	3400
Little	49	8	4	Summer 4.1	400	250	600	653	400	150	3000	1850
South Thompson	50	8	4	Summer 4.1	6000	8000	12000	4000	3000	5500	21600	27000
Lower Thompson	51	8	4	Summer 4.1	1000	1000	1000	1000	1000	1000	1000	1000
Deadman	52	9	3	Spring 4.2	225	232	241	1200	1591	540	1506	934
Bonaparte	53	9	3	Spring 4.2	380	2100	1659	1500	4283	4157	4391	10084
Coldwater	54	9	3	Spring 4.2	350	325	1332	1500	275	1050	1500	400
Spus	55	9	3	Spring 4.2	100	248	250	900	150	500	500	450
Nicola	56	9	3	Spring 4.2	2300	2500	4028	4000	7970	6500	16400	7614
Nahatlatch	57	10	1	Spring 5.2	50	55	100	200	35	89	10	88
Maria Slough	58	10	4	Summer 4.1	25	168	204	92	162	133	100	100
Birkenhead	59	10	1	Spring 5.2	275	242	713	241	343	162	293	573
Harrison	60	11	5	Fall	178854	92079	132385	120487	99659	28835	38659	71955
Chilliwack	61	11	5	Fall	1795	10518	38224	20182	8237	31825	24795	82812
Pitt	62	10	1	Spring 5.2	450	150	300	175	463	404	357	402
Total					297232	197455	292213	227521	231809	180852	239964	328029

Appendix Table A27 continued.

Stock Name	No.	Loc	Agg	Agg Name	1998	1999	2000	2001	2002	2003	2004	Average
Swift	1	1	1	Spring 5.2	1098	375	486	982	1535	835	520	992
Fraser	2	1	1	Spring 5.2	2586	2081	2262	4976	3913	3048	2062	3988
Horsey	3	1	1	Spring 5.2	57	14	128	78	308	288	62	132
Nevin	4	1	1	Spring 5.2	161	46	62	57	132	385	238	106
Holmes	5	1	1	Spring 5.2	2362	523	1795	1018	3740	4110	1376	2156
McKale	6	1	1	Spring 5.2	20	18	32	9	81	49	68	31
Twin	7	1	1	Spring 5.2	88	36	52	49	73	160	102	61
Goat	8	1	1	Spring 5.2	302	89	212	411	820	569	172	225
Morkill	9	1	1	Spring 5.2	2398	1152	926	898	1213	1405	1122	1023
Walker	10	1	1	Spring 5.2	392	206	252	177	382	543	277	332
Torpy	11	1	1	Spring 5.2	2293	1819	1468	1755	2565	4457	2730	1926
Dome	12	1	1	Spring 5.2	400	309	271	385	450	444	208	370
Slim	13	1	1	Spring 5.2	2664	1235	2112	2876	3021	3676	2278	2928
Bowron	14	1	1	Spring 5.2	7618	3455	3233	5491	8719	10059	8682	6435
McGregor	15	1	1	Spring 5.2	4471	1870	2449	2168	4003	3740	2722	2581
Willow	16	1	1	Spring 5.2	2041	717	1314	893	1033	1980	1887	1222
Salmon (PG)	17	1	1	Spring 5.2	1362	823	634	478	463	2395	1170	733
Stuart	18	2	2	Summer 5.2	4645	3875	1920	1954	4789	7019	5467	4198
Nechako	19	2	2	Summer 5.2	1868	1917	3794	9331	3296	5100	5189	2621
Stellako	20	2	2	Summer 5.2	15	18	31	42	43	62	48	36
Endako	21	3	1	Spring 5.2	191	171	160	275	292	251	162	189
Chilako	22	3	1	Spring 5.2	39	115	20	7	229	216	106	165
Blackwater	23	3	1	Spring 5.2	3827	984	1600	1924	1620	2966	1366	3476
Cottonwood	24	3	1	Spring 5.2	2592	641	1208	781	1352	1555	1241	1756
Quesnel	25	4	2	Summer 5.2	4906	1620	1718	2418	5509	5265	3477	3641
Cariboo	26	4	2	Summer 5.2	936	573	744	503	1097	2565	250	1261
Horsefly	27	4	1	Spring 5.2	43	137	174	281	404	246	375	475
Chilko	28	5	2	Summer 5.2	14549	8920	9171	10891	10731	21625	16287	9579
Chilcotin Upper	29	5	1	Spring 5.2	617	285	229	243	523	678	220	390
Chilcotin Lower	30	5	1	Spring 5.2	1636	2896	2971	1574	2092	3396	967	2617
Elkin	31	5	1	Spring 5.2	651	417	394	458	423	1038	458	506
Taseko	32	5	2	Summer 5.2	7275	4460	4586	5446	5366	10813	8144	4790
Bridge	33	6	1	Spring 5.2	626	898	769	198	969	1020	1101	776
Portage	34	6	2	Summer 5.2	18	200	46	248	445	158	103	167
Seton	35	6	2	Summer 5.2	92	63	65	87	6	5	100	79
Mahood	36	7	2	Summer 5.2	341	91	245	172	155	929	317	304
Clearwater	37	7	2	Summer 5.2	7007	3837	4563	5051	6215	6234	4616	4734
Finn	38	7	1	Spring 5.2	632	524	1511	1115	650	45	426	991
Raft	39	7	2	Summer 5.2	309	712	936	237	443	311	741	604
Barriere	40	7	2	Summer 5.2	155	106	77	362	357	131	306	128
Louis	41	7	3	Spring 4.2	377	183	611	349	481	198	105	248
North Thompson	42	7	2	Summer 5.2	7007	3837	4563	5051	6215	6234	4616	4734
Bessette	43	8	3	Spring 4.2	150	404	360	323	350	187	153	206
Middle Shuswap	44	8	4	Summer 4.1	4474	2441	2617	2868	5775	4799	1415	2821
Lower Shuswap	45	8	4	Summer 4.1	16704	24698	20409	18349	19475	21380	13228	13427
Eagle	46	8	1	Spring 5.2	1076	624	1085	1397	1469	1583	867	976
Salmon (ST)	47	8	1	Spring 5.2	284	350	355	1362	1003	89	439	788
Adams	48	8	4	Summer 4.1	4182	2029	2266	5890	3674	2496	2216	2111
Little	49	8	4	Summer 4.1	1246	1163	2043	9885	3680	2488	5728	1554
South Thompson	50	8	4	Summer 4.1	41277	22675	17560	36740	51298	38178	29677	16565
Lower Thompson	51	8	4	Summer 4.1	1000	2000	3200	6900	18900	10000	10000	2957
Deadman	52	9	3	Spring 4.2	665	350	787	780	1940	1639	1159	881
Bonaparte	53	9	3	Spring 4.2	1864	1954	5258	6150	8368	8470	7990	3169
Coldwater	54	9	3	Spring 4.2	300	267	497	781	1012	1195	1023	858
Spius	55	9	3	Spring 4.2	300	52	668	603	1012	1170	1866	474
Nicola	56	9	3	Spring 4.2	1211	7495	8808	7771	11628	14574	7850	6160
Nahatlatch	57	10	1	Spring 5.2	10	43	40	97	100	89	63	73
Maria Slough	58	10	4	Summer 4.1	150	198	266	400	1200	823	383	216
Birkenhead	59	10	1	Spring 5.2	565	147	404	624	463	427	180	355
Harrison	60	11	5	Fall	189432	108169	79143	74467	96935	250751	139497	112786
Chilliwack	61	11	5	Fall	81512	76677	43163	68247	63476	56072	58025	30769
Pitt	62	10	1	Spring 5.2	369	198	245	284	276	171	288	333
Total					437437	304184	248968	315616	378185	532784	363913	271187

APPENDIX B

River Entry Run Size and In-river Harvest Rate Estimates by Stock

Appendix Table B1. Annual estimates of the total return to the mouth of the Fraser River by stock, 1982-2004.

Year	Swift	Fraser	Horsley	Nevin	Holmes	McKale	Twin	Goat	Morkill	Walker	Torpy	Dome	Slim	Bowron	McGregor	Willow
1982	751	2,792	20	53	1,209	53	27	67	569	237	401	110	2,708	2,136	2,033	698
1983	902	5,723	129	59	1,445	20	13	13	890	165	1,309	100	2,667	5,729	1,325	1,038
1984	1,343	7,162	280	68	1,976	14	51	146	169	453	1,689	229	2,175	6,001	1,710	431
1985	1,343	6,960	364	112	2,699	6	56	96	449	563	1,686	507	5,708	8,022	3,491	1,611
1986	1,012	7,183	197	141	3,383	45	56	169	1,128	1,127	3,384	505	6,086	10,480	4,273	1,602
1987	1,210	3,875	242	131	3,543	18	125	190	2,385	588	3,323	290	4,184	12,248	4,364	1,772
1988	1,773	4,399	213	163	3,134	87	82	128	2,106	925	2,331	194	5,089	6,631	3,279	1,980
1989	1,074	6,620	126	77	1,941	33	26	64	513	98	2,447	145	2,659	8,161	1,967	1,589
1990	1,344	6,866	112	22	2,360	45	79	112	1,122	225	2,246	473	5,695	7,534	1,126	2,060
1991	763	5,612	64	72	1,978	18	55	140	1,299	133	2,618	708	3,484	5,960	1,749	766
1992	1,217	3,778	112	91	2,651	19	62	124	2,227	615	3,212	559	2,041	5,735	5,083	820
1993	1,496	4,054	194	114	2,968	14	86	79	1,454	209	1,430	774	1,617	7,833	3,362	737
1994	1,121	4,956	229	112	2,334	20	54	366	1,542	297	2,398	648	2,916	11,216	2,038	1,368
1995	2,127	6,767	150	155	3,181	46	91	492	503	123	1,956	657	5,277	9,704	2,901	921
1996	1,829	4,592	24	135	3,356	40	79	534	689	514	1,279	679	2,571	5,523	4,138	1,805
1997	1,466	3,376	92	153	3,899	45	90	432	671	148	1,271	753	3,635	8,693	3,027	2,256
1998	1,652	2,988	86	228	3,291	28	125	427	3,447	538	3,245	524	3,139	8,993	5,942	2,358
1999	468	2,542	17	57	642	23	45	110	1,422	252	2,239	377	1,504	4,274	2,282	876
2000	661	2,869	174	83	2,400	43	70	284	1,246	336	1,969	358	2,706	4,137	3,247	1,667
2001	1,478	6,014	117	83	1,463	13	71	597	1,318	252	2,549	527	3,550	6,716	3,006	1,079
2002	1,765	4,357	354	149	4,217	92	82	927	1,376	428	2,899	500	3,346	9,921	4,458	1,150
2003	1,089	3,414	376	488	5,172	62	203	722	1,796	678	5,654	539	4,170	11,612	4,584	2,217
2004	719	2,775	86	328	1,901	94	141	237	1,548	381	3,764	285	3,080	11,989	3,739	2,540
Mean	1,244	4,768	163	134	2,658	38	77	281	1,299	404	2,404	454	3,479	7,793	3,179	1,450

Appendix Table B1 continued.

Year	Salmon (PG)	Stuart	Nechako	Stellako	Endako	Chilako	Blackwater	Cotton-wood	Quesnel	Cariboo	Horsefly	Chilko	Chicotin Upper	Chicotin Lower	Elkin	Taseko
1982	508	1,616	3,360	41	95	207	2,095	418	2,997	1,055	714	8,542	224	818	376	4,438
1983	331	668	1,166	29	78	119	4,992	1,254	2,453	949	394	7,338	413	1,226	417	3,528
1984	786	839	2,109	27	472	180	4,741	1,038	3,771	1,023	355	5,467	392	1,182	411	2,879
1985	415	4,704	2,895	42	387	208	5,655	1,663	3,832	1,840	319	5,439	550	1,743	503	2,776
1986	500	4,146	2,465	91	338	178	3,362	1,474	13,810	1,861	287	8,321	614	3,601	449	4,104
1987	766	6,287	1,846	57	608	254	6,158	3,750	6,476	1,406	278	9,951	755	4,154	500	4,837
1988	1,310	3,844	3,073	57	357	366	4,765	2,675	7,280	2,053	276	8,835	692	3,719	331	4,363
1989	584	2,106	3,649	25	273	64	2,672	1,009	4,902	1,607	503	3,832	424	3,350	251	1,807
1990	812	7,639	3,259	50	88	691	5,925	1,399	9,364	3,284	1,194	7,328	720	3,100	295	3,704
1991	413	9,536	3,029	44	293	174	3,147	1,154	5,290	2,034	659	9,904	351	4,267	789	4,769
1992	342	16,209	2,719	50	17	192	3,044	2,744	3,888	1,155	439	12,495	468	2,814	593	6,025
1993	61	1,358	863	33	29	35	4,580	6,401	7,107	3,373	248	7,778	282	3,749	556	3,876
1994	839	3,020	1,329	11	238	154	7,627	5,861	2,492	2,607	4,737	6,497	581	7,274	581	3,173
1995	999	4,431	1,918	39	146	289	7,445	2,718	5,376	1,050	205	11,690	378	3,882	878	5,734
1996	1,151	8,245	2,199	56	192	858	5,513	2,232	3,937	2,127	428	18,671	1,010	2,532	1,369	9,197
1997	1,353	7,365	2,220	56	53	298	8,727	4,282	5,730	2,319	128	18,280	578	4,497	901	8,889
1998	1,520	5,357	2,082	17	239	73	5,651	4,399	5,902	1,077	47	16,172	1,054	1,819	716	7,854
1999	1,023	5,947	2,732	25	210	256	1,378	1,235	1,761	791	181	11,548	635	3,674	558	5,837
2000	784	2,265	4,463	37	212	41	2,304	2,182	2,207	892	208	11,194	470	3,668	472	5,412
2001	557	2,436	11,090	49	352	17	2,926	1,550	2,857	613	325	12,694	601	1,828	530	6,153
2002	527	6,002	4,086	53	329	376	1,951	1,936	6,294	1,344	480	12,465	859	2,385	503	6,469
2003	2,628	8,488	5,799	70	287	385	3,863	2,395	6,833	3,131	270	23,828	1,206	3,715	1,143	11,642
2004	1,560	8,025	7,144	66	222	166	1,921	1,913	4,698	360	500	21,811	345	1,291	615	10,636
Mean	860	5,241	3,282	45	240	243	4,367	2,421	5,185	1,650	573	11,308	591	3,056	597	5,570

Appendix Table B1 continued.

Year	Bridge	Portage	Seton	Mahood	Clearwater	Finn	Raft	Barriere	Louis	North Thompson	Bessette	Middle Shuswap	Lower Shuswap	Eagle	Salmon (ST)	Adams
1982	162	220	67	546	6,546	2,289	736	125	221	6,103	18	874	4,914	966	1,100	1,187
1983	259	74	25	371	4,942	874	213	79	32	5,040	13	355	7,585	321	462	396
1984	743	286	238	666	4,658	2,242	750	113	121	4,465	133	972	13,701	1,089	981	1,288
1985	1,100	244	126	391	6,018	1,647	747	71	296	5,770	252	1,182	18,542	1,515	1,881	1,376
1986	945	140	130	626	6,903	1,493	803	6	183	6,769	262	1,215	16,051	1,133	1,170	3,691
1987	793	76	94	375	3,850	1,517	740	57	44	3,655	102	1,888	13,212	967	771	2,809
1988	720	191	100	819	7,588	1,788	900	113	121	7,118	55	1,750	16,321	1,108	1,259	1,740
1989	979	423	185	243	3,301	1,128	851	316	419	2,960	244	1,846	15,900	1,054	2,238	1,943
1990	470	192	64	642	9,844	1,412	661	120	83	9,324	241	4,728	19,465	1,528	1,329	2,919
1991	226	186	40	25	2,882	662	447	63	12	2,779	244	7,029	12,941	1,269	1,031	3,569
1992	920	57	116	274	2,756	706	297	169	9	2,610	93	5,749	15,410	1,469	406	1,455
1993	1,138	341	157	135	3,770	1,663	247	65	38	3,569	316	3,689	9,349	1,367	2,391	1,116
1994	733	39	79	227	7,308	2,257	1,060	62	793	6,983	241	4,792	23,452	1,434	1,048	2,764
1995	1,045	168	78	159	6,541	974	1,546	36	1,243	6,465	331	3,750	14,977	824	879	3,182
1996	2,302	305	114	471	9,388	1,813	943	207	626	8,910	450	5,646	24,386	857	907	2,727
1997	2,226	233	104	316	10,079	849	1,382	207	741	9,908	388	4,388	19,132	1,046	312	5,730
1998	837	18	98	393	8,404	792	358	184	821	7,971	175	5,011	20,879	1,260	378	4,865
1999	1,374	213	79	119	5,177	770	923	151	545	4,662	492	3,034	32,705	880	469	2,216
2000	1,085	46	71	289	5,727	1,937	1,094	95	1,371	5,451	443	3,130	25,708	1,403	515	2,791
2001	388	265	97	214	6,592	1,462	289	457	877	6,035	391	3,673	24,062	1,758	1,865	6,826
2002	1,327	453	11	189	7,921	885	553	455	770	7,464	412	7,229	26,563	1,954	1,152	4,188
2003	1,506	161	10	1,153	8,043	79	359	163	399	7,511	221	5,697	28,325	1,862	111	3,198
2004	2,035	104	107	466	6,950	670	1,035	441	203	6,386	218	2,116	19,949	1,349	723	2,883
Mean	1,014	193	95	396	6,313	1,300	736	163	433	5,996	249	3,467	18,414	1,235	1,016	2,820

Appendix Table B1 continued.

Year	Little	South Thompson	Lower Thompson	Deadman	Bonaparte	Coldwater	Spius	Nicola	Nahatlatch	Maria Slough	Birkenhead	Harrison	Chilliwack	Pitt	Total
1982	225	7,868	1,967	988	247	1,310	328	6,018	28	89	674	138,542	231	391	226,348
1983	189	5,672	2,099	241	30	1,142	213	2,725	35	68	661	138,777	231	342	220,348
1984	572	13,735	2,988	1,945	957	854	365	4,338	66	51	443	137,018	228	423	245,998
1985	657	11,494	1,310	1,236	928	2,906	141	6,647	293	366	271	180,115	1,719	606	316,491
1986	534	9,920	1,534	1,128	1,185	2,757	460	7,740	102	155	165	181,347	5,235	361	340,515
1987	279	11,914	1,359	678	374	1,010	872	4,382	81	5	146	82,654	18,577	409	240,261
1988	514	15,638	1,663	1,270	658	468	319	3,081	53	71	505	39,223	17,033	951	199,648
1989	559	14,328	1,163	748	949	1,374	661	4,816	61	78	439	77,378	3,695	509	195,386
1990	556	8,394	1,230	284	480	821	234	3,002	59	34	318	182,285	2,135	544	333,671
1991	295	9,559	1,140	338	3,059	398	304	4,380	75	187	257	94,630	12,351	175	231,825
1992	645	13,014	1,026	336	2,313	2,096	393	5,809	110	228	769	134,122	41,765	322	316,984
1993	874	5,485	1,166	1,935	2,419	2,931	1,759	5,994	240	124	267	122,485	22,041	217	264,038
1994	573	4,403	1,226	2,250	6,326	488	266	11,341	39	241	367	101,827	9,152	558	270,965
1995	266	9,746	1,499	745	5,926	1,996	950	8,839	96	168	175	29,289	33,057	454	217,633
1996	3,524	25,781	1,087	1,980	5,790	2,505	835	21,470	10	117	314	39,073	26,159	391	276,592
1997	3,053	45,565	1,327	1,219	14,390	1,087	1,223	10,103	96	152	771	73,525	85,662	450	391,347
1998	1,375	46,370	1,027	1,111	3,455	746	746	2,076	11	165	606	190,004	89,962	393	481,481
1999	1,240	24,619	2,069	570	3,586	980	191	10,528	48	207	183	109,589	83,300	204	346,044
2000	2,478	21,117	3,452	1,239	8,996	1,456	1,957	13,721	46	295	460	79,656	47,391	259	292,740
2001	11,057	43,173	7,258	1,306	11,523	2,478	1,914	11,651	108	422	714	75,412	77,501	293	373,472
2002	4,016	57,514	19,422	2,515	11,972	1,923	1,923	14,020	116	1,299	494	97,552	80,006	296	436,674
2003	2,998	47,486	10,685	2,496	13,786	2,744	2,686	19,996	96	954	486	252,569	60,452	189	594,880
2004	7,029	37,785	10,749	2,029	14,719	1,958	3,572	12,794	83	432	207	140,752	64,052	345	437,021
Mean	1,892	21,330		1,243	4,959	1,584	970	8,499	85	257	421	117,297	33,997	395	315,233

Appendix Table B2. Annual harvest rates for Fraser River fisheries by stock, 1982-2004.

Year	Swift	Fraser	Horsey	Nevin	Holmes	McKale	Twin	Goat	Morkill	Walker	Torpy	Dome	Slim	Bowron	McGregor	Willow
1982	24.1	35.5	23.8	25.4	25.6	25.4	24.9	25.1	24.9	26.0	25.2	27.6	33.5	34.5	27.0	35.5
1983	22.4	24.9	22.4	23.6	23.9	23.2	23.8	23.8	23.3	24.1	23.6	24.6	25.0	24.9	24.5	24.9
1984	10.7	18.8	10.7	11.1	11.4	10.8	11.1	11.2	11.0	11.7	11.2	12.7	17.2	18.0	12.3	18.8
1985	10.7	13.1	10.6	11.1	11.1	10.3	11.1	11.0	10.9	11.1	11.0	11.2	12.4	12.7	11.2	13.1
1986	11.1	9.5	11.1	11.3	11.3	11.4	11.4	11.4	11.3	11.3	11.3	10.9	9.6	9.7	11.1	9.5
1987	17.3	9.7	17.3	15.7	15.3	15.6	15.7	15.7	16.1	14.9	15.7	13.6	10.4	11.0	14.1	9.7
1988	15.4	9.1	15.4	14.2	13.9	14.3	14.1	14.2	14.5	13.5	14.2	12.4	9.6	10.9	12.8	9.1
1989	20.9	24.5	20.9	22.4	22.7	22.4	22.1	22.5	22.0	23.0	22.3	24.0	24.8	26.5	23.7	24.5
1990	10.7	12.6	10.7	11.2	11.0	10.9	10.9	11.0	10.9	11.1	10.9	11.3	12.2	13.7	11.2	12.6
1991	21.3	28.2	21.2	23.6	24.2	24.0	23.6	23.6	23.0	24.6	23.6	26.2	28.2	29.5	25.7	28.3
1992	19.5	14.7	19.5	19.1	18.9	18.6	19.0	19.0	19.2	18.7	19.0	18.1	15.5	18.6	18.3	14.7
1993	33.1	18.6	33.2	30.2	29.2	30.7	30.0	30.0	30.9	28.4	30.1	25.7	19.6	21.6	26.6	18.6
1994	21.0	14.5	21.0	19.9	19.6	19.9	19.8	19.9	20.2	19.2	19.9	18.2	15.2	18.8	18.5	14.4
1995	20.1	11.3	20.1	18.7	18.3	18.7	18.7	18.7	19.1	17.8	18.7	16.4	12.2	14.3	16.9	11.3
1996	18.0	10.7	18.3	17.6	17.3	17.6	17.6	17.5	17.7	17.0	17.5	16.0	11.8	17.1	16.4	10.7
1997	18.2	13.1	18.1	18.0	17.9	18.2	18.0	18.0	18.1	17.7	18.0	16.9	13.9	15.6	17.2	13.1
1998	33.5	13.5	33.4	29.3	28.2	29.7	29.2	29.4	30.4	27.1	29.3	23.6	15.1	15.3	24.8	13.5
1999	20.0	18.1	20.5	18.6	18.5	18.4	18.6	18.7	19.0	18.4	18.7	17.9	17.9	19.2	18.0	18.1
2000	26.4	21.2	26.4	25.5	25.2	25.4	25.4	25.5	25.7	25.0	25.4	24.4	21.9	21.9	24.6	21.2
2001	33.6	17.3	33.7	31.1	30.4	31.3	31.2	31.2	31.8	29.6	31.2	26.9	19.0	18.2	27.9	17.3
2002	13.1	10.2	13.1	11.5	11.3	11.5	11.6	11.5	11.9	10.8	11.5	10.0	9.7	12.1	10.2	10.2
2003	23.3	10.7	23.3	21.2	20.5	21.2	21.2	21.2	21.8	19.9	21.2	17.7	11.9	13.4	18.4	10.7
2004	27.6	25.7	27.6	27.5	27.6	27.4	27.4	27.5	27.5	27.4	27.5	27.2	26.0	27.6	27.2	25.7
Mean	20.5	16.8	20.5	19.9	19.7	19.9	19.8	19.9	20.1	19.5	19.9	18.8	17.1	18.5	19.1	16.8

Appendix Table B2 continued.

Year	Salmon (PG)	Stuart	Nechako	Stellako	Endako	Chilako	Blackwater	Cotton-wood	Quesnel	Cariboo	Horsefly	Chilko	Chilcotin Upper	Chilcotin Lower	Elkin	Taseko
1982	40.9	61.9	56.9	54.5	32.0	27.5	28.4	22.3	66.6	62.0	48.9	37.9	27.5	32.8	42.7	40.3
1983	24.5	27.4	27.1	26.6	35.5	37.3	23.9	28.2	38.8	26.3	23.8	18.2	37.2	18.4	17.5	15.0
1984	23.3	40.4	38.3	38.2	36.5	16.7	14.6	13.3	52.3	41.4	29.5	23.2	16.7	19.6	26.9	27.1
1985	15.7	36.1	30.9	29.5	22.5	16.0	11.6	9.8	47.8	37.5	21.7	17.3	15.9	13.9	20.6	18.9
1986	10.0	24.6	18.9	17.2	11.1	15.8	10.8	11.8	34.8	24.8	12.8	9.9	15.8	8.4	11.0	8.6
1987	8.6	20.3	13.9	12.2	17.8	31.0	18.8	28.0	33.1	21.8	10.0	9.6	30.8	8.5	10.0	7.0
1988	8.4	16.1	12.4	11.5	16.1	31.7	16.1	23.1	13.5	14.3	9.4	9.0	31.7	8.3	9.4	7.9
1989	23.0	24.0	20.1	19.1	26.6	21.3	21.4	20.7	38.8	27.8	20.5	21.7	21.4	22.4	20.3	17.0
1990	13.8	21.5	18.9	18.1	14.8	38.5	15.6	28.5	33.8	23.9	16.3	14.0	38.5	12.9	15.1	14.9
1991	27.3	21.4	22.1	22.7	31.6	13.6	20.6	13.3	16.8	20.1	24.1	25.3	13.6	26.4	23.9	22.4
1992	12.4	7.5	8.1	8.8	39.3	22.0	17.9	19.8	13.2	13.4	8.9	10.6	20.7	11.7	8.9	7.3
1993	17.4	26.4	23.0	22.2	29.8	29.5	30.1	30.2	29.2	26.5	19.2	18.4	29.0	17.3	19.1	18.2
1994	13.1	18.7	13.9	13.4	15.8	22.6	19.4	20.0	37.8	23.3	12.3	12.8	22.6	12.6	12.5	10.7
1995	9.8	15.8	11.9	10.9	14.7	30.8	18.7	22.7	42.8	22.2	9.8	10.5	30.8	10.3	10.4	8.8
1996	8.4	10.1	7.2	6.7	12.9	27.3	16.3	21.6	21.3	13.0	6.6	9.0	27.3	9.8	8.7	7.6
1997	11.3	15.5	12.0	11.1	18.2	37.6	17.4	22.3	44.4	22.4	10.0	11.0	37.7	11.1	10.5	8.5
1998	10.4	13.3	10.3	9.4	20.0	46.1	32.3	41.1	16.9	13.1	9.0	10.0	41.5	10.1	9.1	7.4
1999	19.5	34.8	29.8	28.7	18.3	55.1	28.6	48.1	8.0	27.6	24.1	22.8	55.1	21.2	25.2	23.6
2000	19.2	15.2	15.0	15.1	24.5	51.4	30.6	44.6	22.1	16.6	16.4	18.1	51.4	19.0	16.6	15.3
2001	14.2	19.8	15.9	14.9	21.9	60.7	34.2	49.6	15.4	18.0	13.5	14.2	59.6	13.9	13.6	11.5
2002	12.2	20.2	19.3	18.7	11.3	39.2	16.9	30.2	12.5	18.4	15.9	13.9	39.2	12.3	16.0	17.1
2003	8.8	17.3	12.0	10.7	12.8	43.7	23.2	35.1	22.9	18.1	9.0	9.2	43.8	8.6	9.2	7.1
2004	25.0	31.9	27.4	26.4	26.8	36.3	28.9	35.1	26.0	30.5	25.0	25.3	36.3	25.1	25.4	23.4
Mean	16.4	23.5	20.2	19.4	22.2	32.7	21.6	26.9	30.0	24.5	17.3	16.2	32.3	15.4	16.6	15.0

Appendix Table B2 continued.

Year	Bridge	Portage	Seton	Mahood	Clearwater	Finn	Raft	Barriere	Louis	North Thompson	Besette	Middle Shuswap	Lower Shuswap	Eagle	Salmon (ST)	Adams
1982	50.4	32.0	24.7	54.2	54.2	62.9	49.0	48.9	31.9	50.8	43.4	42.8	55.2	58.6	36.3	57.8
1983	18.8	5.4	5.0	19.1	19.1	19.9	17.9	17.9	38.0	20.6	19.8	15.5	23.5	22.0	35.0	36.7
1984	21.7	51.8	33.9	39.9	39.9	33.1	33.3	33.2	17.4	37.3	24.7	28.0	42.4	28.8	13.4	49.6
1985	13.1	7.7	9.2	36.2	36.9	21.1	29.7	29.8	15.6	34.1	20.8	23.8	40.0	17.5	11.2	45.5
1986	11.5	30.3	19.0	20.2	20.3	13.0	12.9	12.3	17.8	18.7	12.4	17.7	25.2	11.8	14.5	32.3
1987	24.4	34.7	31.2	20.0	22.1	14.3	12.2	12.2	42.2	17.9	13.7	10.0	24.3	13.1	16.8	28.8
1988	11.4	34.8	24.9	14.5	17.0	10.5	11.1	11.1	33.8	11.5	9.8	8.6	14.2	9.8	12.6	13.8
1989	23.4	22.0	38.0	26.1	33.3	20.2	17.7	17.7	22.5	25.7	22.3	18.7	30.8	22.1	26.8	35.7
1990	20.2	8.8	5.5	22.1	25.6	22.1	16.7	16.8	40.0	21.5	17.1	15.4	33.2	21.5	17.3	31.5
1991	33.8	14.5	12.1	20.4	23.0	30.4	20.7	20.6	18.4	20.1	26.4	28.9	22.7	34.2	40.2	15.9
1992	13.0	13.1	17.7	8.8	14.0	10.7	5.6	5.6	32.6	9.2	13.5	13.0	13.7	13.5	26.2	10.7
1993	16.5	3.1	4.2	26.2	28.4	21.8	23.0	23.0	47.2	24.3	20.9	32.2	35.8	19.5	22.6	28.3
1994	16.1	7.9	12.8	20.5	25.4	18.6	11.8	29.4	35.7	22.0	16.9	16.5	31.1	16.3	23.7	34.9
1995	18.5	3.3	7.1	18.3	22.0	16.8	11.3	41.4	35.6	21.1	15.5	20.0	33.2	15.0	20.4	40.3
1996	17.4	1.8	4.6	12.0	17.1	13.5	7.7	11.4	32.9	12.7	11.1	11.5	22.1	9.0	19.9	19.3
1997	11.6	0.4	0.3	17.7	22.3	14.6	11.0	15.7	35.3	21.0	14.6	13.4	31.5	12.6	19.2	40.7
1998	25.2	0.2	5.8	13.2	16.6	20.3	13.8	16.0	54.1	12.1	14.1	10.7	20.0	14.6	24.8	14.0
1999	34.6	5.9	20.5	23.5	25.9	32.0	22.9	29.4	66.4	17.7	17.9	19.6	24.5	29.1	25.5	8.4
2000	29.1	0.9	8.2	15.4	20.3	22.0	14.5	18.5	55.4	16.3	18.7	16.4	20.6	22.7	31.2	18.8
2001	48.9	6.3	11.2	19.8	23.4	23.7	18.1	20.8	60.2	16.3	17.4	21.9	23.7	20.5	27.0	13.7
2002	27.0	1.7	47.3	18.2	21.5	26.6	19.8	21.6	37.5	16.7	15.0	20.1	26.7	24.8	12.9	12.3
2003	32.3	1.6	51.5	19.4	22.5	43.1	13.5	19.7	50.4	17.0	15.2	15.8	24.5	15.0	19.6	22.0
2004	45.9	0.8	5.6	32.0	33.6	36.5	28.4	30.6	48.2	27.7	30.0	33.1	33.7	35.8	39.2	23.1
Mean	24.6	12.6	17.4	22.5	25.4	23.8	18.4	21.9	37.8	21.4	18.7	19.7	28.4	21.2	23.3	27.6

Appendix Table B2 continued.

Year	Little	South Thompson	Lower Thompson	Deadman	Bonaparte	Coldwater	Spius	Nicola	Nahatlach	Maria Slough	Birkenhead	Harrison	Chilliwack	Pitt	Total
1982	55.5	55.5	49.2	39.3	39.3	38.9	38.9	37.7	42.6	44.2	40.7	13.4	13.4	23.2	25.8
1983	47.1	47.1	52.4	32.7	32.5	52.1	52.1	33.9	15.0	27.0	16.8	13.5	13.5	12.3	18.3
1984	56.3	56.3	66.5	16.4	16.4	29.9	30.0	14.7	23.7	41.0	32.3	10.7	10.7	35.6	20.4
1985	39.1	39.1	23.7	13.8	13.7	29.1	29.1	12.7	18.0	45.5	26.0	2.6	2.6	36.4	12.2
1986	34.5	34.5	34.8	16.2	16.2	23.8	23.8	16.0	7.2	29.3	9.0	9.9	14.6	16.8	14.0
1987	28.4	28.7	26.4	26.5	26.4	45.5	45.5	20.1	7.2	23.0	45.1	3.3	7.0	14.4	12.4
1988	22.1	23.3	39.8	20.2	20.3	53.1	53.1	19.2	6.0	5.6	18.4	9.3	13.2	10.6	13.6
1989	28.4	30.2	14.0	23.7	23.7	24.3	24.3	27.3	17.0	36.0	5.4	1.7	9.8	26.4	16.3
1990	28.1	28.5	18.7	20.9	20.8	57.3	57.5	23.4	15.8	27.5	13.5	1.9	15.9	17.3	10.9
1991	15.3	16.3	12.3	31.4	31.4	18.5	18.4	42.9	26.6	10.4	5.9	2.7	14.8	14.4	14.8
1992	7.0	7.8	2.6	28.3	28.3	36.4	36.5	30.7	9.3	10.4	7.2	1.3	8.5	6.7	7.8
1993	25.2	27.1	14.2	38.0	38.0	48.8	48.8	33.3	16.6	25.9	9.6	1.6	8.4	19.2	13.8
1994	30.1	31.9	18.4	29.3	32.3	43.6	43.6	29.7	9.5	32.8	6.6	2.1	10.0	17.1	14.5
1995	43.5	43.6	33.3	27.5	29.9	47.4	47.4	26.5	7.5	21.2	7.7	1.5	3.7	10.9	16.9
1996	14.9	16.2	8.0	23.9	24.2	40.1	40.1	23.6	4.7	14.5	6.8	1.1	5.2	8.6	13.2
1997	39.4	40.7	24.6	23.4	29.9	63.2	63.2	24.6	8.0	34.4	25.7	2.1	3.3	10.7	16.2
1998	9.4	11.0	2.6	40.2	46.1	59.8	59.8	41.7	6.5	9.3	6.8	0.3	9.4	6.2	9.1
1999	6.2	7.9	3.3	38.5	45.5	72.7	72.7	28.8	10.3	4.2	19.8	1.3	8.0	2.8	12.1
2000	17.5	16.8	7.3	36.4	41.6	65.8	65.8	35.8	13.7	9.9	12.3	0.6	8.9	5.4	15.0
2001	10.6	14.9	4.9	40.3	46.6	68.5	68.5	33.3	10.2	5.3	12.6	1.3	11.9	3.2	15.5
2002	8.4	10.8	2.7	22.9	30.1	47.4	47.4	17.1	14.2	7.6	6.3	0.6	20.7	6.9	13.4
2003	17.0	19.6	6.4	34.3	38.6	56.4	56.5	27.1	7.2	13.8	12.1	0.7	7.2	9.7	10.4
2004	18.5	21.5	7.0	42.9	45.7	47.8	47.8	38.6	24.4	11.3	12.9	0.9	9.4	16.8	16.7
Mean	26.2	27.4	20.6	29.0	31.2	46.5	46.6	27.8	14.0	21.3	15.6	3.7	10.0	14.4	14.5