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Review committee

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APPROVED

A REVIEW OF STOCK ASSESSMENT INFORMATION FOR SKEENA RIVER CHINOOK

by

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INTRODUCTION

Skeena River (Figure 1) chinook salmon (Onchorhynchus tshawytscha) are the second largest wild chinook stock aggregate in British Columbia, second only to the Fraser River. Skeena chinook are renowned for their large size with a number of records of fish over 100 pounds (Figure 2). The Skeena chinook stock aggregate includes over 75 discrete spawning populations. The three spawning populations exceeding 5,000 spawners (Kitsumkalum, Morice, and Bear Rivers) represent 73.3% of the total Skeena chinook spawning population in the 1980's. Skeena chinook escapements declined from the 1950's average of 49,000 to an average of 24,000 over the next 2 decades, then escapement levels increased to average 57,000 since 1985. Until the 1880's the First Nation fisheries in the Skeena area were the major chinook harvesters. Currently, Skeena chinook run a gauntlet of directed and incidental harvests from as far away as the Alaskan trawl fisheries in the western Gulf of Alaska. The total exploitation rate (excluding unknown native harvests) averages 48% (45% ocean) for Kitsumkalum and 16% (11% ocean) for upper Bulkley chinook.

Skeena management has changed significantly over the last decade, particularly since 1993 with the formation of the Skeena Watershed Committee. Interest, concern and the need for chinook assessments on the Skeena are high. PSARC reviewed Skeena chinook in 1989 (Riddell and Snyder 1989) but there has been considerable new information collected in the interim and a new assessment is warranted. This report contains lengthy Appendices of background information as the intent is to provide detail as an information source for the Skeena Watershed Committee deliberations in addition to providing a summary of the available stock assessment information for the Pacific Stock Assessment Review Committee (PSARC).

CHINOOK STOCK CHARACTERISTICS

Escapement

Escapement Data Sources

DFO inspectors first produced escapement records for Babine sockeye in 1904 (Smith and Lucop 1966). Escapements for species other than sockeye were first recorded in the 1920's. The early inspection reports provide only subjective assessments of relative abundance, generally using phrases like "light", "heavy" or "better than 1923". The first large scale investigations of Skeena River salmon by the Fisheries Research Board, 1944 to1948 produced the first series of escapement data and established the Babine Counting Fence (Pritchard, 1948). With the major DFO reorganisation in 1947, Fishery Officers began to use letter designations for escapements estimated to fall in a *given*

range. Jantz et al (1989) contains a summary of the evolution of DFO escapement record keeping by Hugh McNairnay (Appendix A).

Escapement data for Skeena watershed streams presented in this report originate from electronic files (Excel spreadsheet format) available (to DFO) on the North Coast network N drive. Data files contain streams geographically organised by subareas (Figure 3). Chinook escapement data, by stream since 1950 is provided in Appendix B. Information for each stream is recorded by year and grouped by decade. These files generally agree with the DFO salmon escapement database (SEDS) maintained by the Pacific Biological Station in Nanaimo (Serbic 1991), however there are some differences yet to be resolved (Table 1). A program to review all original Skeena escapement records and update the SEDS files is underway and will be completed by July, 1996. The North Coast Statistical Area escapement information is maintained and co-ordinated by Brian Spilsted, North Coast Stock Assessment Unit Prince Rupert (Tel: 604-627-3462).

The Skeena watershed chinook escapement data are mainly derived from Fishery Officer visual estimates conducted by foot, boat or aerial surveys. These escapement records have been reported since the early 1950's. The level of accuracy is unknown but presumed to be low because of the variability in visibility, frequency of surveys, changing methods of observation, variable fish abundance, and differences among pilots and among observers.

Riddell and Snyder (1989) compared escapements for streams with observations in 9 of 10 years against the reported escapements for all streams. The consistently surveyed streams represented 90.4 % of the total escapement on average with no clear temporal trends. North Coast salmon escapements were reviewed in 1993 to evaluate trends in stream enumeration patterns and coverage (Spilsted pers. comm.). The designations 0, not inspected, non-observed and unknown were used arbitrarily with no consistent patterns among areas or years. Interpretation of these reporting categories varied widely among Fishery Officers in 1994, with the majority not used as defined. The Department of Fisheries and Oceans (DFO) reorganisation in 1993 resulted in Fishery Officer duty reassignments, particularly in the interior areas of the Skeena watershed. This resulted in reduced surveys in 1993 and 1994, the most significant impacts being the loss of surveys of the Bear and Morice systems two of the largest Skeena chinook populations. The 1995 Skeena escapement surveys were covered by a contractual arrangement with John Hipp a former Terrace fishery Officer very experienced in escapement enumeration. Escapement priorities for the Skeena were set by a joint Stock Assessment, Operations and Habitat Enhancement Branch committee. The important (based on size, value as an index of escapement or harvest) chinook stocks were made a priorty for escapement enumerations (Table 2), however resources allowed only two and for some systems one annual observation. We reviewed in detail the original escapement documentation for Stephens Creek, a very small inconsistently surveyed stream (1980's average 180 spawners),

Kloiya Creek a small accessible regularly surveyed stream (1980's average 228 spawners), Kitwanga River (1980's average 677 spawners), and a large Skeena tributary the Bear River (1980's average 10,480 spawners). The intent was to demonstrate the nature of the information on inspection methods, number of visits and reliability of the estimates. Stephens Creek has been surveyed irregularly with the method of survey changing from unspecified to helicopter beginning in 1986 (start of PST funding). The number and dates of the surveys have been recorded for most years (Table 3). The Kloiya has been walked in almost all years, the number of visits and the date of the inspections have been recorded since1984 (Table 4). The Kitwanga has been surveyed by helicopter since 1986, and the dates of inspection and the number of visits are recorded from 1948 to 1991 (Table 5). The Bear has been inspected by helicopter in the most recent period (1984 to 1995), while a plane was used 1970 to 1980 with methodologies unknown prior to 1970 (Table 6). The dates of the surveys have been recorded for most years since 1950. There was a shift in methodologies for all areas beginning in the 1984 to 86 period but since the change coincided with the PST management alterations (and the subsequent increase in chinook spawners) we cannot determine to what extent, if any, the escapement estimates changed because of the increased use of helicopters. The enumeration of the Kloiya was less frequent in recent years compared to 1957 to 1983 when there was a guardian on site, and observers have changed from Fishery Officers to Hatchery crew.

Fishery Officer Observations

Since 1953, chinook have been observed spawning in 75 streams throughout the Skeena watershed. The distribution of spawner abundance is highly skewed to the lower spawning population sizes:

Range of Spawning Escapement (average 1980-89)	Number in Category
No record	23
1 to 50	21
50 to 499	20
500 to 999	5
1,000 to 4,999	3
> 5,000	3

The three spawning populations exceeding 5,000 spawners (Kitsumkalum, Morice, and Bear Rivers) represented 73.3% of the total Skeena chinook spawners in the 1980's. Adding the next category (Ecstall, Kispiox and Babine Rivers) adds 13.4%, so the top 6

streams contributed 86.7% of the observed chinook spawning escapement in the1980's.

Appendix B contains the annual Skeena escapement data by tributary since 1950, with a summary of trends by subarea. Figure 4 includes the Fishery Officer Skeena chinook escapements since 1950. Skeena chinook escapements declined from the 1950's average of 49,000 to an average of 24,000 over the next 2 decades, then increased abruptly during the period 1985 to 1993 with escapements varying between 52,000 to 68,000 (average 57,000). There was a strong decline in escapements in 1994 and 1995 that is also reflected in the escapement trends by subarea (Figure 5). Although there is some variability among systems there is no apparent trend related to geographical area. The annual escapements for each Skeena Watershed stream regularly surveyed (12 of 15 years) during the period 1981 to 1995 are plotted in Figure 6. Although there are variable patterns in escapement there is no evident trend related to the size of stock. The enumeration effort in some streams changed with the Fishery Officer reorganisation, beginning in 1994, and this complicates the interpretation of the escapement decline in 1994 and 1995. We did not attempt to reconstruct the stream specific escapement methodologies to clarify whether some of the stream specific changes were due to reduced enumeration effort.

Babine River Weir Count

The Babine weir is located on the Babine River below the outlet of Babine Lake (Figure 7). The weir was constructed in 1946, rebuilt in 1967 and replaced again in 1994. Daily chinook weir counts were obtained from Aro (1961) for the years 1946 to 1961, from Jordan (1967) for the years 1961 to 1966, and from the electronic files maintained by Les Jantz (DFO Prince Rupert) for the remaining years. One interesting feature of the fence data for the period 1962 to 1966 is the round number totals for both the jack and adult counts:

1962 630 adults, 2,400 jacks
1963 1,500 adults, 1,900 jacks
1965 1,200 adults, 2,000 jacks
1966 1,600 adults, 2,500 jacks.

Jordan (1967) makes no mention of anything unusual with respect to data collected for these years, and the daily weir counts are variable and do not look reconstructed. The Babine weir was not operated in 1948 or 1964. The Babine Fence counts for chinook are truncated in some years when the fence was closed early, mainly during the years 1960 through 1974. To provide annual estimates that were comparable for the years when the late counts were missing, the jack and adult data for 1960 through 1974 were

adjusted by adding the average run proportion (by date) for other years which generally represent the complete run. The annual chinook counts did not separate jacks until 1962 as indicated in the data presented in Figure 4. The Babine chinook adult escapement declined during the 1950's and 1960's and was variable with no clear trend until escapement increased from 1989 to 1993. Escapement subsequently declined to very low levels in 1994 and 1995.

Chinook biological sampling data from recent years (1988 to 1995) is reported by Jakubowski 1990a, 1990b, and 1996 (in preparation). This biological sampling information for all years will be entered in the North Coast biological sampling database by the end of 1996.

Kitsumkalum Chinook Key Stream Escapement Enumeration

A mark-recovery program (tagging live returning adults and recovering tags from carcasses following spawning) to estimate chinook escapement to the Kitsumkalum River has been conducted since 1984. The 1984-86 results are presented in Andrew and Webb (1988), 1987-88 in Carolsfeld et al. (1990), 1989-90 in Nass and Bocking (1992), 1991 in Nelson (1993a), 1992 in Nelson (1993b), 1993 in Nelson (1994) and the 1994 results in Nelson (1995). The reported escapements were:

Year	Kitsumkalum Escapement	Year	Kitsumkalum Escapement
1984	11,825	1990	21,039
1985	8,308	1991	9,288
1986	10,151	1992	12,437
1987	24,508	1993	14,059
1988	22,755	1994	12,629
1989	18,287	1995	7,221

This data is also represented graphically in Figure 4. Unfortunately, the Fishery Officer counts were not continued in parallel to this program so there is no direct insight into how the Fishery Officer estimates compared to the mark recovery calculations. However, the escapements derived from the mark-recovery program were similar to the previous Fishery Officer estimates for 1984 to 1986, which supports the notion that the two estimates were in the same range, The estimates increased significantly beginning in 1987, but this was consistent with increases in most of the Skeena chinook stocks in this period, and does not necessarily suggest the estimates increased because the enumeration technique changed (Figure 5),

Other Escapement Enumeration

Neilson and Geen (1981) evaluated chinook spawning escapements to a portion of the Morice River in 1979. The estimated the Chinook spawning population to be 2,826 and noted the maximum single count from the 7 helicopter surveys was 52% of their estimated total escapement in the study area. Since this survey represented only a portion of the escapement to the Morice, and the DFO counts in the equivalent portion are not identified, direct comparison is not appropriate. This study indicates that single surveys significantly underestimate the total spawning population. The underestimate would be even greater if the survey missed the peak abundance.

A fence was operated on the Bear River (by Environmental Quality Unit, DFO to provide background data for an evaluation of the potential impacts of dam development) from August 9 to October 19, 1972 and 3,452 chinook salmon were counted (Kussat 1973). The DFO escapement record indicates 3,100 chinook spawners and the original escapement record forms make no mention of the counting fence. If these are independent assessments the results are encouragingly similar.

A fish counting weir on the lower Sustut River in 1994 counted 956 chinook but missed the early portion of the run (Saimoto 1994). The chinook weir count in 1995 was 1,021 (pers. comm. Barb Snyder). The DFO estimates correspond quite closely (1994 was 1,055 and 1995 was 972) but they are not believed to be independent estimates.

A radio tagging program was implemented in 1985 to study early run chinook salmon stocks returning to the upper Kitsumkalum River watershed (Alexander and English 1996). These Cedar River and Clear Creek chinook stocks are of concern because escapements are low (Appendix B). The purpose of the study was to confirm the locations of major spawning areas, collect information on in-river migration timing of chinook and to estimate the escapement of early run chinook salmon to the Kitsumkalum River. The program confirmed the timing separation between the early and late run Kitsumkalum chinook, established the early run spawning areas (Cedar River 82%, and Clear Creek, 18%) and provided a spawning population estimate of 658 chinook (Figure 8). The DFO independent escapement estimate of 580 (from helicopter overflights) differs little from the mark-recovery estimate.

Timing of Skeena Chinook Spawning

Skeena chinook spawning timing is summarised in Appendix C (Description of methods and two figures from Jantz et al. 1989). The data is organised geographically from the Skeena River mouth to upstream areas. Chinook spawning generally occurs in August and September. Spawning in the lower Skeena coastal area occurs predominantly in

September. The spawning peak for chinook stocks in the Skeena downstream from Terrace is earlier, mainly in August. The two Terrace sub-areas, Kitsumkalum and Lakelse, both have an early (August) and a late (September) component to the escapement. The Skeena tributaries above Terrace are variable in their peak spawning times throughout August and September, with the Upper Bulkley being a notably early spawning population.

The observations of Shepherd (1979) that chinook migrations into the Morice system begin the end of July, with peak spawning in mid-September and die off by mid-October agree with the summary data in Appendix C.

Healey (1991) analysed the relationship between medial spawning date and latitude. Using the regression from Healey (p. 320), the Skeena median spawning date was predicted to be July 22. The Skeena escapement data indicated an approximate median date of September 1, which is still within the normal range of variability of the relationship.

Skeena Test Fishery

The Skeena Management Committee created the Skeena test fishery in 1955 to provide an index of salmon escapement past the commercial fishing areas. The Skeena gillnet test fishery is located at Tyee in the tidal waters at the mouth of the Skeena (Figure 3). The test net consists of 10 panels ranging in size from 3.5'" to 8" mesh in 1/2" increments, making the net effective over a broad range of salmon sizes. The net is fished during daylight slack tides for 1 hour per tide, and a daily index is calculated based on the daily average catch per hour. A detailed description of the site and methods is available in Kadowaki (1977). An important change in the methodology (size-catchability relationship) was introduced by Kadowaki (1985) and recent performance is reviewed in Cox-Rogers and Jantz (1993). The sockeye index is calibrated each year by comparing the total sockeye escapement (a high proportion of which is from the Babine Fence counts) with the in-season test fishery index. There has been a significant progressive decrease in the catchability of the test fishery for sockeye (Cox-Rogers and Jantz 1993). Whether there has been a parallel shift in chinook catchability is unknown since there is no accurate measure of chinook escapement to calibrate the test fishery results.

The Skeena test fishery adult chinook and jack indices, standardised to the annual period June 15 to August 15, are presented in Figure 4. A striking feature of the jack indices is the precipitous decline in 1991 and the continued low jack catch from 1992 to 1995. We reaffirmed that the test fishery staff normally sampled all (or an unsorted subsample during high catch periods) of the chinooks caught at the test fishery.

Chinook Ageing

Vancouver Ageing Laboratory

Fish aged at this facility are recorded using the Gilbert-Rich scale age designation system (Gilbert and Rich 1927). Precise scale age determination can be affected by the degree of scale resorption. If a resorbed scale is encountered, an attempt is made to interpret the true age of the fish (J. Till pers. comm.). When available, Coded Wire Tag (CWT) and fin ray data can be used to confirm interpreted ages.

An electronic age database was established in 1989 and contains age and sampling information. Age information prior to 1989 has not been entered into the database.

Pacific Biological Station Ageing Laboratory

Salmon ages are documented using the European scale age designation system (Koo 1962). When resorbed scales are encountered, a resolved may not be determined unless CWT or Fin Ray data is available. No annuli are added to a resorbed scale to compensate for loss due to resorption. The scale age given is the best estimate of only the number of annuli visible on the scale and as a result some under-ageing may occur (D. Gillespie, pers. comm.). Information generated by the lab is retained on ageing sheets, but not entered into an electronic database. Ageing formation prior to 1980 is saved as archive material and stored at the Pacific Biological Station (PBS).

Review of Skeena Historical Age Data Records

All the original Vancouver scale lab chinook scale books for samples taken within the Skeena watershed were reviewed and the data compiled for this report.

A database was set up summarising chinook scale age information from the Vancouver and the PBS Ageing Units. A description of the database fields is included as part of Appendix D. PBS data contain 32 smolts aged in 1994 (Sustut), while the remaining data represent adult ages. Vancouver data represent adult ages only. The data does not include information on the sex of the chinook. Summaries of the number of chinook aged by the Vancouver and the PBS scale labs from samples taken from the Skeena watershed for the years 1973 to 1995 are provided in Table 7. Data for the Skeena Test Fishery, Kitsumkalum River, Kispiox River and Babine River show the longest time series with 23, 20, 16 and 20 years respectively. Samples are represented from 26 Skeena tributaries, although only 10 have more than 100 scales in total for all years. The Kitsumkalum River has relatively high sample sizes with annual coverage. The Babine

Fence recoveries usually provide annual sample sizes exceeding 100 chinook. The Bear, Bulkley, Cedar, Copper, Ecstall, Kispiox, Morice, and Sustut have intermittent sampling with highly variable sample sizes.

Skeena Chinook Escapement Age Structure

The detailed annual age structure for each project listing is available in Appendix D. As is indicated in the previous section, many of the sample sizes are very low. Data on the annual age proportions by year (with averages for the 1980 to 1995 period) from the Skeena Test Fishery, Kitsumkalum River and Babine River are outlined in Table 8. In the Skeena test fishery samples, age 5 sub 2 and 6 sub 2 are the most abundant (42% and 33% respectively), with age 4 sub 2 representing 16%. The remaining 9% is spread among a variety of other ages. The Kalum age structure is skewed more towards the older ages with 6 sub 2 being the most common (64%) followed by age 5 sub 2 (25%) with ages 5 sub 1, 5 sub 2 and 4 sub 2 all represented at about 3%. The pattern in the Babine is reversed with age 5 sub 2 (56%) the predominant age and age 4 sub 2 (19%), 6 sub 2 (16%) and 3 sub 2 (9%) also represented. This pattern seems to be generally present in the other tributaries with the Terrace area stocks (Cedar, Copper and Kispiox) showing a similar pattern to the Kalum and the other upper river samples (Bulkley, Morice and Bear) tending to be similar to the Babine age structure (Appendix D).

Skeena Chinook Sex Specific Age Structure

There are distinctly different maturity schedules for male and female Skeena chinook based on analysis of the 1990 to1995 Skeena test fishery samples (Table 9). The females were predominantly age 5 and 6 (40.9% and 54.6% respectively), with very few age 4 (2.9%) and age 7 (1.6%). The male age structure was mainly age 4 (32.4%), age 5 (36.4%, and age 6 (25.9%), with a small percentage of age 2 (.1%) and age 3 (5%).

Ocean versus Stream Type Chinook Scales

Gilbert (1913) designated two chinook life history forms based on stream residency. A "stream type" spends at least one winter in freshwater and an "ocean type" migrates to sea in it's first summer, does not have a freshwater annulus and would have a subscript $_1$ (or written sub 1). Reports from the 1960's and 1970's indicated a very high proportion of sub 1 chinook in Skeena samples (Godfrey 1968, 57.8 % sub 1; Healey 1983, 52%). The ageing methods were revised in 1978 for Fraser chinook (Tutty and Yole 1978) and for all chinook scale readings beginning in 1980. Table 10 shows total sub 1, 2, 3 and 4 chinook for each Skeena escapement sub area for the years 1980 to 1995 for the Vancouver scale lab and for 1984 to 1995 for the PBS scale lab. Scales from years prior to 1980 were excluded as some scale readings for this period have not been reread (1977 and 1978 Skeena test fishery for example). Data from our review indicate stream type chinook are

dominant as sub 1 chinook represent only 4.1 % of the Vancouver scale lab data and 1.1 % of the Pacific Biological Station (PBS) data. There is a trend of decreasing proportions of sub 1 ages from the mouth (Coastal sub area) through to the upper Skeena (Sustut sub area). The coastal sub area ages were 16.7 % sub 1 from the Vancouver lab data. In the few areas of overlap between the Vancouver and PBS databases they are in close agreement:

Kitsumkalum	Vancouver 4.9% sub 1	PBS 3.6% sub 1
Bulkley/Morice	Vancouver 1.7% sub 1	PBS .6% sub 1
Sustut	Vancouver 0% sub 1	PBS 1.0% sub 1.

Chinook Length at Age

Postorbital-hypural length and age data for chinook sampled from the Skeena test fishery for the years 1990 to 1995 were summarised from the North Coast stock assessment biological database. Biological sampling information recorded in the database follow a standardised format as recommended by Shaw (1994). The data entry is incomplete but will continue through the final year of Skeena Green Plan funding, to encompass the majority of Skeena programs where biological samples are collected.

A summary of the available length at age information for the Babine Fence, Skeena test fishery and Kitsumkalum River and single entries for the Skeena terminal gillnet fishery, Cedar River and Upper Bulkley River are presented in Table 11. General trends in the data showed Babine, Upper Bulkley and Cedar stocks smaller at age than the test fishery and Kitsumkalum chinook larger at age than the test fishery. As would be expected age 4 sub 2 chinook were smaller than age 5 sub 2 which were smaller than age 6 sub 2. There appeared to be no consistent differences in length at age between sexes, although a rigid statistical comparison was not attempted. The reports on the Kitsumkalum stocks (Table, 11) make annual statistical comparisons of differences between sexes and sections of the river but there are no consistent patterns. The Skeena test fishery length frequencies are plotted for the years 1990 to1995 by sex by age (Appendix E). The data shows a number of very small size chinook that are well outside the common lengths which may indicate fish that were incorrectly aged.

Data from Kispiox and Upper Bulkley SEP programs exist as raw data but were not obtained for this report. Other data not included in summary Table 11 because the ages are believed to be incorrect are available in other reports. Godfrey (1968), reported age and physical characteristics of chinook salmon from the Skeena River in 1964, 1965, and 1966. Harding and Buxton (1971) reported length frequency of dipnetted chinook from Moricetown for 1961, 1962, and 1965 and for chinook captured by gaff or gillnet in 1964. They also calculated nose-fork to post-orbital hypural length conversion factors for salmon

captured in the Moricetown gaff and gillnet fishery 1964. Shepherd (1979) reports chinook length frequency distributions by sex and age for Morice River chinook spawners in 1974.

Fecundity

Godfrey (1968) summarised fecundities for Skeena test fishery samples by year by flesh colour for the years 1964 to 1966. The Cedar River chinook fecundity from the 1989 egg take averaged 6,079, (n=9 std=1,693), calculated from Terrace Salmonid Enhancement Society (1989) data. The 1988 fecundity data from the egg take averaged 7,253 (n=18 std=1,329), again calculated from the Terrace Salmonid Enhancement Society (1988) data. A mean fecundity of 7,300 was reported for the pilot Kitsumkalum River Hatchery production 1980-82 (Morgan 1985). This fecundity information is of little biological interest without associated length and age information to derive fecundity-length relationships.

Egg Retention

Morgan (1985) reported average egg retention of 2% for 175 female chinook carcasses examined during 1978. The egg retention for chinook sampled from the Babine Fence (1991-1994) is summarised in Table 12. There is evidence of some pre-spawning mortality in these Babine samples with annual variation ranging from high mortalities in 1993 when 33% of the sockeye sampled (n=9) retained half or more of their eggs to a low incidence in 1994 when none of the sockeye sampled (n=117) retained more than half their eggs. In recent years pre-spawning chinook mortalities have been noted by fence staff and are generally associated with unusually high water temperatures (Mike Jakubowski pers. comm.).

Flesh Colour

A total of 87% of the chinook sampled in the Skeena test fishery from 1964 to 1966 had red flesh (Godfrey 1968). Tallman (1995) reported that 71% of chinook caught in the lower Skeena River sport fishery in 1995 had red flesh.

Chinook Fry Migration

Emigration of emergent chinook fry in the Kitsumkalum River system from 1977 to 1980 indicated peak movements occurred during late April and mid-May (Morgan 1985). Williams et al. (1985) reported Bear River chinook fry emigration peaked between May 30 and June 25. Shepherd (1986) reported that in 1984, newly emerged chinook fry in the Morice River emigrated mainly during the period from mid-April through early June with the peak in late April. A juvenile monitoring program (rotary screw trap) in place on the Sustut system in 1994 indicated that chinook fry moved downstream in large

numbers from May 31 to June 8 with the peak from June 5 to June 7 (D. Bustard and Associates 1994a). Healey (1991) reports that large downstream movement of fry immediately after emergence is typical for most chinook and Skeena chinook seem to behave in this manner.

The 1994 Sustut chinook fry migration was estimated to be 1,291,759 extrapolated from the catch of 73,817 (D. Bustard and Associates 1994a). This represents a minimum estimate as the chinook fry migration had started before the weir was in place and continued past the end of this study. This fry output was from an escapement estimated to be 1200 to 1600 (the previous years chinook weir count was 199, but covered an unknown proportion of the run. Provincial staff did a swim survey of the system and reported 1200-1600 spawning chinook (the DFO escapement record shows 199). If the lower escapement levels were accurate and assuming a fecundity of 7,000 the egg to fry survival would be 92%. If 1400 spawners were present, then the egg to fry survival would be 13.2% which is more plausible. Healey (1991) reported chinook egg to fry survival varies widely, but "under natural conditions, 30% or less of the potential eggs deposited resulted in emergent fry".

Juvenile Chinook Sizes

Information on Skeena River juvenile chinook length and weight information is summarised in Table 13. Spring fry lengths and weights showed little variation among tributaries. Bustard (1994a) reports 1994 Sustut chinook fry averaged 38.8 mm fork length and .4 g in weight in late May - early June. The weir location was within 5 km of the main chinook spawning areas and so these are assumed to be recently emerged fry. Sustut chinook fry in May of 1995 averaged 38.9 mm fork length (Chris Wood Pers. Comm.). Kitsumkalum River chinook fry in April 1978 averaged 40.4 mm fork length and .62 g in weight (Morgan 1985). Morice River fry averaged 39.3 mm fork length and .52 g weight in April of 1979, and averaged 36.8 mm fork length and .57 g weight in April of 1980. Williams et al. (1985) reported a fry size range of 39.3 to 41.8 for the Bear River in 1984.

There are consistent observations throughout the Skeena watershed that chinook juveniles did not rear in the vicinity of the chinook spawning areas, but migrated out of the smaller tributaries into the main tributaries or perhaps the Skeena River mainstem. Bustard (1994a) reports a 1994 spring migration of 2,672 chinook smolts (averaging 75.5 mm fork length and 4.5 grams weight). This low number of chinook smolts is consistent with the observations of Bustard (1994b) who reported that in Sustut juvenile surveys he conducted in 1992 and 1993 that there was little evidence of chinook juveniles rearing more than 1 km upstream in Johanson Creek or in the Sustut River upstream of the confluence with Johanson Creek. Therefore there is a relatively small section of stream to produce the chinook smolts counted in the 1994 smolt program

program. Bustard (1994b) reported that significant numbers of chinook fry rear along the mainstem of the Sustut River from the Johanson Creek confluence down to the Bear River confluence. Shepherd (1979) failed to locate an abundance of chinook smolts in the Morice River and suggested that juvenile chinook leave the Morice but continue to rear in the Bulkley or Skeena Rivers over winter.

Chinook Stock Timing in the Terminal Areas

Aggregate Stock Timing

Timing of the Skeena Test Fishery Chinook Escapement

The timing of escapement past the Skeena River test fishery was summarised by Riddell and Snyder (1989) using Skeena test fishery data standardised to a June 15 start date (Figure 9). The timing for the years 1984-1988 was shifted much earlier than the previous periods. Overall, the data indicates a flat migration timing curve with a relatively consistent abundance of chinook from the standardised start date of June 15 for a 35 or 40 day period (until July 25 to 30). A graph of recent (1990 to 1993) daily average chinook escapement indicates a similar distribution (Figure 10).

In developing the Skeena management model (Cox-Rogers 1994), Skeena test fishery chinook migration timing was summarised by calculating the average cumulative escapement timing by decade (Table 14, Steve Cox-Rogers pers. comm.). The 50% point in the run was July 11 (+/- 2 days) for the 1950's, 1960's and 1970's. The 1980's and 1990 to 1993 data shifted to an earlier date, July 2 (+/- 1 day). The earlier run timing is believed to result from a reduced harvest rate on Skeena chinook in the period prior to July 1 due to Pacific Salmon Treaty (PST) management actions which have disproportionately increased the early component of the Skeena chinook escapement.

Timing of Skeena Chinook Catch in the Area 4 Gillnet Area

The timing of the cumulative chinook catch in the Skeena River, Statistical Area 4, gillnet fishery was summarised by Riddell and Snyder (1989) (Figure 9). The pre 1973 data indicated an abundant chinook harvest from the second week of June through the last week of July, similar to the pattern in the Skeena test fishery. The fishery during this time period was open throughout the total period of the chinook migration. After 1973 the chinook harvest begins the first week of July when the fishery first opens.

Chinook catches in the most terminal portion of the Statistical Area 4 gillnet fishing area (Figure 11), the river-gap-slough (RGS), represent only Skeena origin chinook (see Skeena Terminal Exclusion page 24). Chinook hail catch estimates prorated to Area 4 sales slip totals, and calculated are presented in Appendix F. Hailed catches are

derived from Fishery Officer interviews of fishers on the grounds. The subsamples are expanded to provide an estimate of the fleet by area. The peak of the chinook catch in the RGS varies from week 7-1 to week 7-4 a peak in week 7-2 or 7-3 most common (Table 15). Catch can be a biased indication of timing. Catch is influenced by abundance and effort. Since effort is not equal in all weeks, the chinook catches are artificially increased in the weeks with higher effort (weeks 7-4 and 7-5).

The CPUE data for most years indicates the peak is likely earlier than the first week of gillnet fishing. This data is also biased, but in the opposite direction, since the effort-CPUE relationship for a given abundance is not linear and the early weeks CPUE with a low effort are inflated relative to the later weeks of high effort (Cox-Rogers 1994).

Reconstruction of Area 4 Chinook Catch and Escapement

As an alternate way of looking at the Skeena chinook terminal timing total Area 4 catch and escapement was reconstructed for the period 1990-1993 (pers. comm. Steve Cox-Rogers, Table 16). The chinook catch peaked week 7-1 (week ending July 2-8).

Stock Specific Timing

Cedar River/ Clear Creek Chinook Timing

The 1995 radio tagging study on the early chinook stocks to the Kitsumkalum system indicated the early chinook run which spawned in the Cedar River and Clear Creek entered the lower Kitsumkalum River from late April to late June (Alexander and English 1996).

Back Calculation from Morice Fishway and Babine Weir Counts

Terminal area timing of Babine and Morice chinook stocks can be estimated from the timing of weir and fishway counts by subtracting the migration timing from the terminal tidal area to the fence or fishway.

The Moricetown fishway chinook daily counts are summarised in Table 17 (data from Harding and Buxton 1971). Data from 1959 and 1964 were excluded as partial counts that appeared to miss the main chinook migration period. The peak daily counts occurred on: 1961 July 27, 1962 August 2, 1965 July 29, 1966 July 30 and 1967 July 29. The mean peak date was July 30. The average chinook run timing through the Babine Weir was calculated using the data from 1946 to 1959 and from 1975 to 1995. The years 1960 to 1974 were excluded because the counting operation was stopped

early in those years. The average date that 50% of the chinook run passed through the Babine Weir was September 8.

Skeena sockeye migration rate (summarised from a series of sockeye tagging programs) averaged 13 km per day from the Skeena River terminal fishing area to the Babine Fence (Takagi and Smith 1973). Nass radio tagged chinook salmon averaged 8 to 14 km per day once they were above the Nass canyon (Koski et.al. 1993). Using an assumed 12 km per day migration rate for Skeena chinook, the Babine fence migration timing would translate to peak migration dates past the Skeena test fishery of August 7 based on a distance of 380 km. The Moricetown migration timing would translate to peak migration past the Skeena test fishery on July 6 based on a distance of 283 km. (mileage converted from Table 18, Smith and Lucop 1966). There is uncertainty regarding the effects of the Babine counting fence on the chinook migrations. Chinook hold for extended periods below the fence and it is not clear whether these fish are delayed because of the fence or if they are pausing because the fence is a convenient normal holding area for adjacent spawning areas. Bear River chinook enumerated through a counting weir peaked August 12 (Kussat 1973). Chinook migrating at 12 km per day would take 38 days from the Tyee test fishery. This would suggest this run peaked at the test fishery on July 5.

Skeena Chinook Timing based on CWT Recovery Patterns

CWT recovery patterns are biased indicators of run timing since the sampling rate (fishery harvest rate) varies within and among years. This should be taken into consideration when interpreting the qualitative assessments that follow.

Skeena chinook coded wire tag (CWT) information was obtained from the PBS MRP-Reporter Program (Kuhn 1988). Further details of the methods are provided in Appendix G. Data from Skeena CWT recoveries were analysed to evaluate stock specific timing patterns in the recoveries. The details of CWT recoveries for each stock, by brood year, by week, by recovery area/gear type are included in Appendix H. Data have been provided for the following rivers: Cedar, Copper, Kitsumkalum, Kispiox, Morice, Bulkley, and Babine. Additional detail is provided for the Kitsumkalum stock giving details by statistical area rather than rolling up into regions.

Although there have been relatively few Cedar River chinook recoveries (45 expanded recoveries for the 8 brood years tagged, Appendix H, Table H 1), the indications from the recovery data (mainly Canadian freshwater sport (BCFW SPORT), suggest a presence of the stock in the lower Skeena River from the April until June. This

corresponds closely with the summary of timing indicated from the 1995 radio tagging program (Alexander and English 1996). The absence of Canadian net (BC NET) recoveries provides indirect evidence that the migration through Areas 3 and 4 were complete prior to the last week of June, which was the normal start date for the net fisheries during the years of adult returns from these brood years.

The Copper River recoveries are sparse for the brood years 1980, 1981 and 1983 (13 expanded recoveries in total), but relatively abundant from the 1984 brood (Appendix H, Table H 2). The timing of the recoveries indicates a presence in the Skeena terminal area beginning in early June but concentrated in the first three weeks of July.

The Kispiox River recoveries (Appendix H, Table H 4) are reported for the years 1980, 1984 and 1987. The recoveries are spread from early June to mid-August. There were 446 expanded tag recoveries reported for BC NET in week 73, however, this result was double checked and confirmed as the information contained in the database.

There are few recoveries (66 expanded recoveries, Appendix H, Table H 6) from the Morice River tagging in 1978 and 1979. The recoveries indicate a presence in the terminal fisheries from May through July.

The Fulton River recoveries from the brood years 1975 and 1978 indicate a presence in BC NET and BC SPORT fisheries from the first week of July until the second week of August (Appendix H, Table H 8).

The Babine recoveries (from 13 brood years between 1975 and 1992) in the BC NET, BC SPORT AND BCFW SPORT catch regions are concentrated from July to mid-August, even in the brood years from the 1970's when troll and net fisheries operated throughout June (Appendix H, Table H 7).

The Bulkley chinook recoveries are mainly from the BCFW SPORT in July, (most of the recoveries are from the Bulkley area sport fisheries (Appendix H, Table H5). The general lack of troll and net catch recoveries from Alaska or Canada indicates a very early run timing before the late June, start of these fisheries.

The Kitsumkalum recoveries for 16 brood years from 1975 to 1992 indicate a terminal migration timing BC NET concentrated in July, with little overlap into June or August (Appendix H, Table H 3). The BC SPORT recoveries suggest the run is also present earlier from the second week of June through the end of July. The BCFW SPORT recoveries are later, from the third week of July to the first week of August, however the sport fisheries are restricted on the start by unfishable water conditions and at the end by a sport closure around the end of July in the sport fishing areas adjacent to the Kitsumkalum.

Additional information is provided for the more extensive data sets for Fulton River, Babine River, Bulkley River and Kitsumkalum River. In addition to the annual information available in Appendix H, the information for all brood years is summarised by catch region, age class and week in Appendix I, and summaries of the weekly recovery distributions by catch region is presented in Figures 12-16.

The Fulton and Babine recoveries in the Alaska (AK) catch region are concentrated from the first week of July until early August and Kitsumkalum recoveries tend to be earlier, from the last week of June to the third week of July (Figure 12). The Canadian troll (BC TROLL) catch region recoveries indicate a similar Babine and Fulton pattern of recoveries throughout July into early August, with Kitsumkalum recoveries earlier, peaking in the second week of July (Figure 13). The timing differences are clearer for the BC NET recoveries which are concentrated from the third week of July to the second week of August, in contrast to the earlier Kitsumkalum recoveries concentrated in the early to mid July period (Figure 14). Bulkley chinook recoveries are sparse, but concentrated in the last week of June and the first week of July. The BC SPORT recoveries indicate an earlier component of the Kitsumkalum (and to a lesser extent Babine) River chinook run not indicated in the BC NET because the fisheries don't operate during this period, and confirm the early run timing of Bulkley chinook (Figure 15). Small numbers of Bulkley Chinook were recovered from the June tidal sport fishery. The BCFW SPORT recoveries show no Fulton and very few Babine recoveries, but indicate a relatively large July harvest of Bulkley chinook (presumably from the upriver fishery in the Bulkley) and a late July early August harvest of Kitsumkalum chinook (mainly in the Skeena mainstem in the Terrace area (Figure 16).

Run Timing from GWG REPORT 1980?

Planning documents created by the DFO Geographical Working Group (GWG) around 1980 included an unreferenced graph that presumably represents the combined wisdom of the time on the Skenna chinook stock specific run timing (Figure 17). This Figure is included out of interest as there are detailed stock specific timings with peak and ranges.

Skeena Chinook Enhancement

Level of Enhancement

Enhancement of Skeena chinook salmon has been modest by regional standards. Total releases in recent years have fluctuated around 500,000 combined fry and smolt

releases (Table 19). Enhancement is predominantly associated with the Terrace, Kispiox, Toboggan Creek (near Smithers) and Fort Babine (outlet of Babine Lake) Community Development Programs. The Terrace area program has tagged 200,000 spring fry annually since 1984 for the Kitsumkalum key stream program, enhances the Cedar River (upper tributary of the Kalum system), and previously enhanced the Copper River (Skeena tributary just upstream of Terrace) and the Coldwater Creek (tributary of the Lakelse River). The Kispiox project has enhanced the Kispiox River since 1979 and a Kispiox tributary, Shegunia River since 1986. Recent releases are in the order of 80,000 to 150,000 fry and smolts annually. The Toboggan Creek hatchery has concentrated on Upper Bulkley chinook enhancement since 1985. Smolt releases have varied widely around an average of 55,000. The Upper Bulkley stock is a CWT indicator stock. The Fort Babine hatchery has enhanced Babine River chinook since 1984. Annual total fry and smolt releases are variable around an average of 45,000. The Fulton River enhancement facility produced chinook fry during the period 1975 to 1979.

Survival Rates

Survival rates for Skeena chinook hatchery releases were estimated from CWT returns as part of a SEP benefit /cost review (data analysis from SEP, Carol Cross, description in Appendix J). Tables of estimated mean brood year survival are included in Appendix J. The Kitsumkalum and the upper Bulkley are true calculations of survival from catch and escapement sampling. Calculations of survival for other releases assume the same escapement proportions as Kitsumkalum or Upper Bulkley. The Skeena chinook survival rates (to brood 1987 release) are summarised in Table 20. The survivals show the expected progression with release type, as spring fry have generally the poorest survivals (average 0.33% n=15), fall fry slightly higher (0.41% n=10), smolts average 0.5 % (n=3) and yearlings 2.0 % (n=7).

Differences in brood year survivals are difficult to separate because of the mix of facilities and release types. Time series of consistent data are present for Terrace spring fry, Terrace yearlings and Cedar 1984 to 1986, however there are no patterns indicating any linkage by brood year in the stock survivals among release types.

SKEENA CHINOOK HARVESTS

Skeena chinook are harvested in the high seas fisheries, the Alaskan trawl fisheries in the Gulf of Alaska, Canadian and Alaskan troll, seine, gillnet, recreational and native fisheries in tidal waters and Canadian native and recreational fisheries within the Skeena watershed.

High Seas Fisheries

Healey (1991) reviewed the ocean harvest distribution of chinook and summarised the distribution of the Southeastern Alaskan/British Columbian chinook stock complex as:

> "Southeastern Alaskan/British Columbian chinook appear to be relatively rare in both the Bering Sea and the western North Pacific Ocean, at least on the basis of scale analysis. Since virtually all chinook captured in the Bering Sea and western North Pacific are stream type, any fish of the Southeastern Alaskan/British Columbian stock grouping captured there must have been of the stream type race. The Southeastern Alaskan/British Columbian chinook, as well as those from Washington, Oregon, and California, are probably distributed mainly in the eastern North Pacific with the greatest concentrations over the continental shelf waters along the North American coast (Healey 1983). "

Chinook distribution is generally oriented to coastal areas and they are almost never caught in the Japanese squid driftnet fishery (pers. comm. Skip McKinnell).

Alaskan Trawl Fisheries

The main incidental harvest of chinook in non-salmon fisheries is by the Alaskan trawl fisheries in the northeastern portion of the Gulf of Alaska. Healey (1991) summarises CWT recoveries from 60,000 chinook sampled by observers on foreign vessels and determined that 30.7% were of British Columbian origin out of 244 total CWT recoveries. Skip McKinnell (pers. comm.) provided observed Canadian CWT recovery data from Alaskan trawl fisheries from 1982 to 1994 (Table 21). These data are summarised for all years by release site (Table 22) and for Skeena stocks (Table 23). Tag releases and sampling have been highly variable among years. Skeena origin tags comprise over 5% of the recoveries of Canadian chinook. We were not able to obtain estimates of the total chinook harvest in these fisheries for this review.

Southeast Alaskan Salmon Fisheries

Southeast Alaskan (SEA) troll, net, sport and probably native fisheries impact Skeena chinook. The Pacific Salmon Treaty (PST) driven management changes in the Alaska fisheries beginning in 1984, delayed the opening of the summer fisheries until July 1 which resulted in the summer chinook troll harvests being concentrated in the first 3 weeks of July. Alaskan chinook harvests have averaged 263,000 (excluding Alaska hatchery production) since the PST was signed in 1985 (which is equal to the Alaskan chinook catch ceiling). The most recent chinook technical report for the 1994 fishing year (Chinook Technical Committee 1996) lists the 1994 SEA chinook catch as

264,300 comprised of 186,300 troll, 42,400 recreational and 35,600 net. The troll catch was divided among a winter fishery (56,400), localised spring terminal fisheries directed on hatchery stocks (11,400) and the main summer fishery (118,500) which lasted for 7 days beginning July 1. Further details of the Alaskan chinook fisheries and harvests are available in the annual chinook reports published by the Pacific Salmon Commission, Chinook Technical Committee for the years 1985 to 1994.

The Skeena chinook CWT fishery harvest proportions by stock, by year are summarised in Table 24. CWT recovery programs are not in place for native fisheries and sport recoveries are opportunistic, with an assumed awareness factor of 4 (observed recoveries are multiplied by 4 to estimate the actual tag recoveries). The data for the Cedar, Copper, Kispiox (and to a lesser extent othert stocks) are sparse in some years and should be interpreted with caution (Table 24). More detailed CWT recovery information is available in previously referenced Appendices H and I. The Fulton (17.3% harvest in Alaska) and Morice (47.5 % harvest in Alaska) recovery years were prior to or on the cusp of the PST management changes and represent the best estimate of the pre-PST Alaska harvest proportions. For the more recent CWT recoveries, Alaska harvested only 12.0% of the early migrating Cedar and .7% of the early migrating Bulkley stocks, 29.9% of the Copper, 34.9% of the Kitsumkalum, 8.7% of the Kispiox and 28.3% of the Babine. The average Alaskan harvest percentage, using Kitsumkalum and Babine only is 31.6%.

The detailed CWT recovery breakdown by area for Kitsumkalum reveals the majority of the recoveries from Alaskan commercial fisheries are from the north west area troll fishery (Figure 18) with 74% of the 496 expanded commercial recoveries and the south west area troll fishery with 13.1% of the expanded commercial recoveries. There were 83 expanded recoveries from the Alaska tidal sport fisheries (stocks (Appendix H, Table H9 and Figure 19). The relative contribution of the Alaskan winter troll, and spring hatchery troll fisheries can be estimated from Figure 3. The winter troll fishery (October to April) accounted for 13.5% of the expanded Alaska commercial recoveries of Kitsumkalum chinook, the late May early June hatchery access fisheries accounted for 10.8% of the recoveries.

Canadian Tidal Fisheries

Incidental Harvest in Canadian Trawl Fisheries

CWT recoveries have been reported for Canadian fisheries, however the data is not organised or readily accessible (Skip McKinnell pers. comm.).

Troll

The 1985 Pacific Salmon Treaty chinook rebuilding program established an all gear chinook catch ceiling of 263,000 in northern British Columbia. Domestically, this ceiling was initially partitioned with 203,000 to the troll fleet and 60,000 for the combined sport and net fisheries. This was changed in 1989 to gear allocations of 186,000 troll, 42,000 recreational and 35,000 net. The troll catch ceiling is adjusted annually to reflect accumulated catch overages or underages from previous seasons, the troll share of increases to the 263,000 ceiling which occurred in 1989 (39,000) and 1990 (10,000). The management measures implemented to manage the chinook catch to the annual catch ceilings include elimination of the early May-June chinook opening, a delay in the all species fishery until July 1, area closures to trolling (portions of Statistical Areas 10 and 11, and the west coast of the Queen Charlotte Islands in mid-August) and closure of the troll season in early to mid-September to minimise chinook shaking in years when coho are in low abundance. In addition, there is a closure of a large section of northern Hecate Strait after August 25 to reduce the catch of undersize chinook that are relatively common in this area. The chinook harvest may be further reduced in response domestic conservation concerns, as in 1995 and 1996.

Chinook non-retention days in the troll fleet have increased since chinook have been managed to the PST North Coast chinook ceiling of 263,000 (there were zero non-retention days prior to the ceiling closures). The impact of these days is difficult to interpret since the North Coast fishery has been managed to close the areas where chinook are abundant (all of the west coast and a portion of the north side of the Queen Charlotte Islands) once the ceiling is reached. There are still chinook shakers, however the rate of adult encounter is far less than the catch rate in the regular fishing period, although there has been no direct measure. The impact of the chinook non-retention period on Skeena chinook is likely negligible since, almost all Skeena chinook have escaped into the river before the August non-retention period begins.

Troll chinook catch information for Statistical Areas 1-10 combined (Figure 20) and for Statistical Areas 3, 4 and 5 are provided in Appendix K. The chinook harvests in all these fisheries are broad aggregates of chinook stocks and chinook catch trends reflect management actions or coastal chinook abundance more than trends in Skeena chinook.

The Skeena chinook CWT fishery harvest proportions by stock, by year for Canadian troll are summarised in Table 24. There are few recoveries for the Cedar, Copper, Kispiox are most years (and other stocks in some years) which makes the data highly variable. The Morice (26.4% BC TROLL) and Fulton (63.7% BC TROLL) again represent the pre-PST Canadian harvest proportions. The early stocks again had a low relative harvest in Canadian troll fisheries (Cedar 0% BC TROLL and Bulkley 1.7% BC TROLL). The average Canadian troll harvest percentage, using Kitsumkalum and Babine only is 26.9%.

The detailed CWT recovery breakdown by area for Kitsumkalum stocks (Appendix H, Table H9 and Figure 19) indicates the Area 1 troll fishery on average harvested 55.3% of the Canadian troll harvest, with the Area 3 troll fishery taking 36.6% (Figure 20). Please note that the commercial sampling protocol is applied to the aggregate catch region (northern troll Statistical Areas 1, 2E, 2W, 3, 4 and 5 for example) and sampling proportions by statistical area may be inconsistent.

Net Fisheries

The Skeena chinook CWT recovery patterns by stock, by year for Canadian net recoveries are also summarised in Table 24. There were no net recoveries for the Cedar, but the Canadian net recoveries accounted for an average 11.8% of the annual Bulkley tag recoveries. The net harvests of Fulton stocks averaged 18.2% and for the Morice stock only 5.9%. Canadian net recoveries were 35.4% for the Babine and 35.3% for the Kitsumkalum.

Net chinook catch information for Statistical Areas 1-10 combined (Figure 20) and for Statistical Areas 3, 4 and 5 are provided in Appendix K.

Area 1 Seine Fishery

The Area 1 net fishery on passing stocks, including Skeena sockeye and pink occurred from mid-July to mid-August and was concentrated in the Langara Island region off the Northwest corner of the Queen Charlotte Islands (Figure 20). We use the past tense as the Area 1 Langara seine fishery has been cancelled for 1996 to conserve WCVI chinook. A domestic chinook net catch ceiling of 35,000 was assigned for the North Coast in the chinook reallocation of 1989. The Area 1 and 2W fisheries were each assigned a chinook ceiling of 4,400 and the fisheries were closed if this ceiling is reached.

The detailed CWT recovery breakdown by area for Kitsumkalum stocks (Appendix H, Table H9 and Figure 19) indicates very few recoveries (.9% of the 426 Canadian net recoveries) from Area 1 net fisheries.

Area 3

Net fisheries occurring in the outer portions of Area 3 (subareas 3-1 to 3-4) target primarily on Skeena and Nass sockeye and pink stocks. Chinook are harvested incidentally in this fishery. Historical weekly effort and chinook catch for Area 3 are provided in Appendix K, Table K 2. The trends in chinook harvest in Area 3 are related more to management actions, fishing effort (based on sockeye and pink abundance) and coastal chinook abundance rather than the abundance of Skeena chinook.

However, the management actions to conserve chinook commencing in 1983 (delay in the season opening from the third week of June to the third week of August) had a positive impact on the Skeena chinook escapements as the seine fisheries were closed during a peak period of Skeena chinook migration through Area 3 (Appendix K, Table K2). The direct benefit for Skeena chinook is not known, but on average (previous 10 years) 44% of the annual Area 3 chinook catch had been taken during the fishing period that was closed in 1983. Recent coastal management changes that caused the whole seine fleet to concentrate in Area 3, and these management actions coupled with very high overall pink and sockeye abundance over the last decade, have resulted in a progressive increase in seine effort in Area 3 (Appendix K, Table K 1). Although some of this increase occurred in August, there has been a 2 to 4 times increase in the 1980's and 1990's effort in the fishing weeks of July, compared to the 1960's and 1970's.

The detailed CWT recovery breakdown by area for Kitsumkalum stocks (Appendix H, Table H9 and Figure 19) indicates the Area 3 fishery harvests 15.0% of the Canadian net harvest.

Area 4

The historic development of the Skeena commercial fisheries have been documented by Milne (1955). Sprout and Kadowaki (1987) reviewed the Skeena management system. The Area 4 net fishery is primarily a gillnet fishery which targets on surplus Skeena River sockeye and pink salmon returns. The Skeena River salmon fisheries involve multiple stocks of all salmon species. The commercial fishery is driven by harvestable surpluses of Babine Lake sockeye and area 4 pinks.

The historical pattern of weekly effort and chinook catch for Area 4 are provided in Appendix K, Table K6. This data illustrates the impact of the management actions first implemented in 1972 in response to reduced chinook abundance (Ginetz 1976). There is no direct measure of the harvest reduction on Skeena chinook, but the early gillnet fishery that was eliminated accounted for 21% of the total Area 4 chinook harvest in the previous 10 years. Further restrictions on early gillnet fisheries beginning in 1980 further reduced the Skeena chinook harvests.

In 1992, the Skeena Watershed Committee (SWC), comprised of commercial, recreational, native, provincial and federal government representatives, was formed to address fishery and habitat issues in the Skeena Watershed. The SWC agreed to the following maximum allowable harvest rates for coho and steelhead in Area 4: early coho 19%; early steelhead 33%; and steelhead aggregate 21%. Adjustment to the Area 4 gillnet fishing plan advanced the timing of the fishery earlier to concentrate on sockeye abundance and greatly reduced the fishery in August during the peak of the coho and steelhead runs. The SWC also reintroduced an early directed chinook fishery in 1994. Two, one day, daylight only, fisheries are scheduled annually in June,

with a total catch ceiling of 4,000 (chinook salmon harvests have been well below this level, 1995 hail catch estimate 329).

The detailed CWT recovery breakdown by area for Kitsumkalum stocks (Appendix H, Table H9 and Figure 19) indicates the Area 4 net fishery harvests 84% of the Canadian net harvest of Kitsumkalum River chinook.

Skeena Terminal Exclusion

Canada implemented a program in 1989 to exclude a portion of the terminal chinook catch (chinook greater than 5 lb. in excess of the base period catch of 2,900) in the Skeena, Kitimat and Bella Coola areas. The logic was that the chinook ceilings were intended to cap intercepting fisheries and therefore areas that were purely local stocks should be excluded from the PST ceiling particularly if the local chinook stocks had exceeded PST escapement targets. Initially, a relatively large portion of the Area 4 gillnet fishery was proposed for exclusion, but an analysis of CWT recoveries in Area 4 indicated any fisheries operating outside of the river proper quickly became mixed stock chinook fisheries. The most terminal portions of the Skeena fishery (Figure 11) met these conditions and Canada has subtracted a portion of the terminal area Skeena harvest from the PST ceiling since 1989. The technical details are reported by the Chinook Technical Committee (1991). The terminal area gillnet catches are outlined in Table 25.

Biological sampling programs to confirm exclusion area stocks are of Skeena origin are available from annual reports submitted to DFO (Barb Snyder pers. comm.). The RGS CWT recoveries clearly indicate the RGS exclusion area chinook are predominantly (99.5%) of Skeena origin:

Year	Total CWT	Skeena CWT	Non-Skeena CWT
1991	41	41	0
1992	29	28	1
1993	13	13	0
1994	8	8	0
1995	15	15	0
Total:	106	105	1

The stock composition changes quickly in the areas seaward of the river. The Smith Island fishing area (4-12, Figure 11) harvests are a broad mix of chinook from other areas, and the

rest of Area 4 is clearly a complex mix of chinook stocks from Washington, Oregon and British Columbia (J.O. Thomas and Associates 1994).

FIRST NATION FISHERIES

First nations people have used the Skeena salmon resource for at least 4,000 years (Morrell 1985). Chinook, while not the most abundant food fish in the Skeena river, were important as the first salmon of the season. The current native chinook fisheries include the traditional food, social and ceremonial fisheries in the freshwater and tidal areas of the Skeena. Traditional native fisheries have the first priority for harvesting surpluses after conservation objectives are met. The native fisheries include tidal harvests by drift gillnet and seine during periods when the commercial fishery is closed, and in freshwater, dipnet, setnet, gaff, drift gillnet and more recently beach seine, fishwheel and weir harvests. In recent years, allocation agreements have been signed as part of the Aboriginal Fisheries Strategy (AFS) fishery agreements. The Skeena River allocations for 1995 are summarised in Table 26.

There are First Nation, excess to salmon spawning requirement (ESSR), fisheries in the Skeena for sockeye and pink, using selective harvest techniques, but chinook are not included in these arrangements as a surplus has not been established for any chinook stock.

Tsimshian

The Tsimshian Tribal Council represents member bands (Metlakatla, Lak K'waalams, Kitkatla, Kitsumkalum, Kitselas and Hartley Bay) with population centres in Metlakatla, Port Simpson, Kitkatla, Terrace area, Hartley Bay and a large off reserve population in Prince Rupert (Figure 21). Traditional Section 35 (meaning native fishing rights described in Section 35 of the Canadian Constitution) fishing is conducted in the vicinity of all villages and in tidal approach waters using commercial gillnet and seine gear and in the Skeena River up to Lorne Creek Figure 22 using set and drift gillnets and more recently, fishwheels.

Gitksan-Wet'suwet'en

The Gitksan-Wet'suwet'en bands (Kitwanga, Kitsegukla, Gitanmaax, Hagwilget, Glen Vowell, Kispiox, Kitwancool and Moricetown) are represented by the Gitksan-Wet'suwet'en Watershed Authority (GWWA). These bands are all associated with a village of the same name (Figure 22). Section 35 fishing is currently conducted in the Skeena River upstream of Lorne Creek, in the Babine River to Kisgagaas, and in the Bulkley River. The bulk of the harvest is taken by setnet in the Skeena, Bulkley and Babine Rivers. In the Moricetown canyon, gaffing and dipnetting are the most common harvest method. Palmer (1987) provides an extensive review (63 pages) of the

evolution of the Gitksan-Wet'suwet'en traditional fisheries from 1868 to 1984. Morrell (1985) describes the Gitksan mainstem Skeena chinook fishery,

> "In spring, as soon as there are large stretches of open water on the Skeena, a few individuals begin fishing with drift gillnets. This early fishery targets first on pre-spawning steelhead and later on chinook salmon. This fishery begins in the lower reaches of the Skeena and spreads upriver as conditions permit. From late April through June a few large mesh set nets are fished for steelhead and early chinooks. Catches in this spring fishery are low in most years, and fishing conditions are difficult due to rising water and drifting debris. ...The first sockeye reach Gitksan territory in late June or early July, along with the main body of the chinook run. This marks the beginning of the major summer set net fishery."

Lake Babine Nation

The Lake Babine Nation has villages located at Fort Babine, Topley, Old Fort and Burns Lake. The Section 35 fishery occurs mainly in Nilkitkwa Lake and to a lesser extent in Babine Lake (Figure 7).

Takla Lake Band

The Takla Lake Band is represented by the Carrier-Sekani Tribal Council and their village is located in Takla Lake (located approximately 50 km east of Fort Babine). Their fishery takes place on Bear River and Lake and on the Sustut River.

Yechooche Band

The Yechooche Band also belongs to the Carrier-Sekani Tribal Council. Their harvest occurs on Babine Lake in the vicinity of the Sutherland River, and consists entirely of sockeye.

First Nation Chinook Catches

First Nation chinook harvests are summarised in Table 27 and include: the current DFO records from 1951 to 1995 by subarea, estimates for total Area 4 from 1925 to 1950 (Argue et. al. 1986), and Moricetown (1930 to 1983) and Hagwilget (1929 to 1962) catch records from Palmer (1987). The catch estimates from all sources represent compilations of DFO historical records of First Nation harvests from guardian and Fishery Officer observations. These records presumably give an indication of the relative magnitude of the harvests but generally the information is available only as annual summaries with no documentation of survey areas, effort or specific

methodologies. Even the most recent estimates are uncertain because of changes in the DFO fishery officer effort to collect the data, and because some of the recent information is from First Nation catch reporting initiatives that have not been evaluated or compared to the historical DFO methods.

Catch reporting areas do not always facilitate separating First Nation chinook catches by Band or Band aggregates, or by river system. The Tsimshian chinook harvests are best indicated by the DFO records for the lower Skeena plus the Terrace area after 1979. The lower Skeena chinook harvests represent 16%, and the Terrace area, 9%, of the Skeena Section 35 harvests for 1980 to 1995. The Gitksan-Wet'suwet'en catches are generally represented by the Hazelton and Smithers reported catches after 1979, and they represent 52% (Hazelton) and 26% (Smithers) of the Skeena chinook harvests for 1980 to 1995. The Smithers catch includes a relatively small number of chinook harvested by the Babine Lake First Nation.

The Gitksan-Wet'suwet'en estimated chinook harvests in their area in 1985 to be between 7,797 and 9,736 (Morrell et al. 1985). This compares closely to the fishery officer estimate of 10,300.

Sport Fisheries

Tidal

Important recreational fisheries that concentrate on chinook in the early season occur in the tidal areas adjacent to the Skeena. The Area 3 and 4 recreational fishing effort and chinook catch by subarea for 1995 (Figure 23) is outlined in Table 28. The chinook fishery is quite diversified, however in Area 4 effort directed at catching chinook is often concentrated in Edye Pass (Subarea D) and the northern tip of Stephens Island (Subarea F). The majority (80%) of the recreational fishing trips in 1995 were unguided based on the interviews conducted as part of the 1995 creel survey (J.O.Thomas & Associates 1995). The creel survey accurately reflects the Area 4 proportions, but underestimates the contribution of fixed station lodge operations operating in Area 3 that were not sampled at the interview sites.

Historical recreational catch data for chinook in Area 4 is summarised in Table 29. The data is a summary table maintained by DFO, Prince Rupert from historical fishery officer and guardian reports. The methods and reporting are inconsistent and the data is best used to indicate general trends. The only data of known reliability is the 1995 creel survey of Area 4 and a portion of Area 3 conducted from May 15 to September 15, 1995. A total of 1,053 interviews were taken from an estimated 6,262 boat trips. The chinook catch estimate totalled 1,995 (1,540 were taken in Area 4). The estimate is lower than many recent years however the chinook fishing was reported to be very poor in 1995 (Steve Cox-Rogers, pers. comm.).

The Skeena chinook CWT fishery harvest proportions by stock, by year for Canadian tidal sport fisheries are summarised in Table 24. The Morice (12.3% BC SPORT) and Fulton (0.9% BC SPORT) again represent the pre-PST Canadian harvest proportions. The BC SPORT harvest proportions for other stocks were Cedar 7.1%, Copper1.7%, Kitsumkalum 6.4%, Kispiox .3%, Bulkley 17.9% and Babine 1.9%.

The detailed CWT recovery breakdown by area for Kitsumkalum stocks (Appendix H, Table H9 and Figure 19) indicates the Area 1 tidal sport fishery on average harvested 55.3% of the Canadian tidal sport harvest, and the Area 4 sport fishery taking 41.3%.

Freshwater

The Skeena River supports an important river recreational fishery for chinook and other salmon species. The most intensive chinook fishery is concentrated in the lower Skeena River mainstem in the 100 kilometres below Terrace, but other chinook fisheries occur on the Kitsumkalum, Kispiox, Babine and Bulkley Rivers in addition to the Skeena mainstem upstream of Terrace and the tributaries of the lower Skeena.

Historical recreational catch data for chinook is summarised in Table 29. Subarea catch reports (from guardian and fishery officer annual records) available up to 1991 indicate the Terrace area was the major recreational fishing area, followed by Smithers, Hazelton and finally the lower Skeena.

There is little creel survey data available for the Skeena freshwater recreational fisheries. The results of the 1995 creel survey (Tallman 1995) of the Lower Skeena River (Figure 24) recreational fishery are summarised in Table 30. The chinook catch estimate for 218, 142 angler hours was 2,784 (jacks and large not separated). Local anglers comprised 50% of the fishers interviewed of which 16% were guided.

The only previous detailed creel survey in the Lower Skeena freshwater recreational fishery was in 1984 (O'Neill and Lewynsky 1985). For the period July 1 to October 15, 1984, 76,334 angler hours (10,602 angler days) were expended to capture 499 large chinook and 1,791 chinook jacks. In comparison to the 1984 study, local anglers comprised 57% of the fishers interviewed of which 14% were guided.

In the lower Skeena freshwater recreational fishery in 1995, Tallman (1995) reported 2 adipose clipped chinook were observed from a sample of 134 fish (mark incidence 1.5 %). A total of 5 CWT recoveries (from an estimated catch of 2,784) were voluntarily submitted from the survey area by recreational fishers. Since 42 returns would be expected if the compliance rate was 100% and the recreational catch was marked at the same rate as the observed sample, this data indicates a submission rate of 11.9 % from voluntary returns. If this is true, the MRP standard expansion of 4 would be an underestimate for this Skeena freshwater fishery.

The Skeena chinook CWT fishery harvest proportions by stock, by year for Canadian freshwater sport fisheries are summarised in Table 24. The BCFW SPORT harvest proportions were Cedar 72.3%, Copper 30.4%, Kitsumkalum 3.4%, Kispiox 0.0%, Bulkley 68.0%, Morice 7.9%, Babine 1.9% and Fulton 0.0%.

DISCUSSION

Escapement Accuracy

Shardlow et al. (1987) demonstrated that visual counts underestimate the actual number of salmon present. This is consistent with the evaluations for surveys of large terrestrial animals (Caugley 1974) and marine mammals (Eberhardt et al. 1979). Sockeye counting fences on the Sustut and Johanson Lakes, installed in 1993 resulted in sockeye escapement estimates 5 and 10 times the recent DFO averages (pers. comm. Ken Shortreed). A study of the 1992 chinook escapement to the Nass River system found the actual escapement was 2.3 times the DFO escapement estimate of 6,730 (Koski et al. 1993). The study determined that the Bell-Irving system was the single largest chinook spawning area. Previous spawning estimates for the Bell Irving had been zero (because of the turbid water conditions). The extent that the Skeena chinook escapement estimates are underestimated is not known but there is the potential for significant underestimates. The Skeena escapement record is not believed to provide an accurate assessment of the absolute chinook escapement with the exception of the Babine Weir, Kitsumkalum mark recovery and the Upper Bulkley Weir programs.

The Skeena test fishery and the Fishery Officer visual estimates are believed to provide useful indices of escapement. This is based mainly on the correlation between the Skeena test fishery chinook indices and an index of Skeena Fishery Officer escapement counts which were demonstrated by Riddell and Snyder, (1989) to be significant (but explained only 36% of the variation in observed escapements). The relationship between Babine escapements and the test fishery index to 1988 was not significant because the large increases in the test fishery index in the years 1984 to 1988 were not reflected in the Babine data (Riddell and Snyder 1989). There has been a relative increase in the Babine escapements from 1989 to 1993, but a severe drop in 1994 and 1995. In general, the Babine escapements have not varied in parallel with the Skeena test fishery or the overall Fishery Officer escapement estimates. The plots of individual stream chinook escapements in Figure 6 illustrates there is a lot of variation among streams although there are no patterns by size of stream, or by geographical subareas (Figure 5).

There is a need to document and calibrate chinook escapement methods for the Skeena.

Bias in Biological Sampling Techniques

Biological data for the Skeena watershed is available from a wide variety of sources. Methodologies for collecting the samples varies widely and are often not fully documented. Adult age, size and sex structure are particularly susceptible to the bias introduced from different sampling methodologies. All sampling methods likely have a bias, and few have been evaluated and documented. An important source of biological samples for Skeena chinook are from the Skeena test fishery which has a well documented salmon size bias (Kadowaki 1985) and Figure 25 (from Cox-Rogers and Jantz 1993). This bias results from larger fish being susceptible to capture in more panels of the test net since large fish can tangle in small mesh but small fish rarely are caught in larger mesh sizes. The effect for chinook would be expected to be far more pronounced than for sockeye. This would skew the biological data collection to the older/larger chinook. This problem may be further exaggerated because the smallest chinook sizes would have a low catchability in the test net (minimum mesh size 3.5 in, 8.9 cm mesh). A test fishery using a seine boat was operated in 1988 and the age structure from the biological samples indicates a much higher proportion of younger age classes, although this is also not believed to be a representative sample as the gear was not able to capture large chinook (Les Jantz, per. comm.).

Biological samples from Skeena tributary carcass recovery programs should generally be representative, although the assumption that the availability of carcasses does not vary with size and sex requires evaluation. There is an undersampling of chinook jack at the Babine Fence in some years because the smaller chinook carcasses are mixed with very large numbers of similar size pink salmon, all in various stages of decomposition, and in recent years an increased number of chinook carcasses are removed by grizzly bears (Mike Jakubowski, pers. comm.). Brood stock collections, another common source of biological samples, are often biased by the gear, time and areas where the collections occur. Another general problem with data analysis is the samples should be taken, or at least evaluated, based on a weighting in proportion to the abundance at the time of the sample. This was not done for any of the evaluations in this report, mainly because the data is not readily available, with the exception of recent years for the Skeena test fishery.

Accuracy of Chinook Age Determination

Although both the Vancouver and PBS scale labs have careful documented approaches to chinook age determination, the methodologies for scale reading appear to rely on subjective expertise to determine both the freshwater and total age for chinook. The summary of chinook life history information by Healey (1991) referenced Skeena age structure data (48.1% stream type) published in Godfrey (1968) and Ginetz (1976). This indicates either a lack of knowledge or the lack of acceptance of

the current scale age interpretations that have been in effect since 1980. There is a need to provide a consistent scale interpretation based on calibrated techniques, perhaps used fin rays or CWT chinook to verify ageing.

Relative Brood year Strength at the Test Fishery

The Skeena River test fishery annual chinook age proportions were multiplied by the annual test fishery index to create relative indices of abundance for age 4, 5 and 6 year old chinook (Table 31). The jack index was used to represent the jack abundance since the sampling data for 2 and 3 year old chinook was inconsistent. The results are presented in Figure 26 which has been adjusted so that the returns at age from any brood year line up vertically to allow for easier comparison of whether relative brood year strength is consistent across age of return. The data clearly indicate a failure of the 1985 brood year that was first evident in the jack index of 1988 and carried forward in the relatively poor returns of the brood in 1989, 1990 and 1991 (Figure 26).

We tested the relationships between the jack index and the subsequent 4 year old returns the next year, and the 4 to 5 and 5 to 6 year old sibling comparisons. The regression results indicated:

		R^2	P
Figure 27	Jack predicting age 4	.30	.033,
Figure 28	Age 4 predicting age 5	.48	.004,
Figure 29	Age 5 predicting age 6	.46	.006.

Forecasts using the regression relationships suggest 1996 abundance as follows:

4 year old contribution	20.9	index points,
5 year old contribution	79.7	index points,
6 year old contribution	38.7	index points,
Total	139.3	index points.

An index of 140 would be higher than the 1995 index of 113.8 but lower than the 175.7 index of 1994 and the 196.9 index for the 10 year average (1986 to 1995). The data indicate there has not been a dramatic shift to lower production levels as is evident for WCVI stocks. The drop in the jack index in recent years is of concern, however the relationship between this index and the subsequent return of 4 year olds is poor, an example being the moderately high index for 1995 4 year olds in contrast to the poor 1994 jack index.

Terminal Run Timing

The analysis of aggregate Skeena chinook run timing all support a terminal area peak migration past the test fishery during the first 10 days of July and a general chinook

abundance spanning the second week of June until the fourth week of July. The extended period of chinook abundance is presumed to result from a series of individual chinook runs that peak from mid-June until mid-July. The Skeena management model uses a normally distributed chinook run timing with a peak of July 5 (at Tyee test fishery) and a standard deviation of 12.5 days (Figure 30, from Cox-Rogers 1994). The evidence in this report indicates a timing proportion curve that reflects this flat timing distribution would better represent the Skeena chinook timing in the terminal area. The previous unreferenced chinook migration timing in Figure 17 corresponds well with the determinations of stock specific timing in this report. Stock ID methodologies under development represent the best opportunities to resolve Skeena chinook stock specific timing.

Skeena Chinook Harvests

High Seas Fisheries

The harvest of Skeena chinook in the high seas fisheries does not appear to be an important issue because catches are believed to be very low.

Alaskan Trawl Fisheries

We did not obtain information on the total chinook harvest or the CWT sampling rates in the Alaskan trawl fisheries. We do not know what information is available.

Terminal Run Size and Harvest Rates

Terminal Skeena River chinook abundance is summarised in Table 25. The terminal harvest rates (excluding RGS) have been generally stable over time. Assuming the information in Table 25 is correct, the 1966 to 1983 average harvest rate of 26% is the same for the more recent period 1984 to 1995. During the last two years when overall abundance has declined the harvest rate were essential unchanged indicating terminal fisheries take a fixed proportion of the chinook run seemingly independent of run size. If the RGS chinook catch is added the terminal harvest rate increases to an average of 34% for the period 1984 to 1995 again with no apparent trends. The total terminal chinook run (including RGS) catch ranged between 50,000 and 109,000 with an average of 83,600 (1984 to 1995).

Skeena Model Analysis

The Skeena Model (Cox-Rogers 1994) although specifically designed to analyse sockeye, coho and steelhead harvest rates under various fishing scenarios also gives an estimate of a relative chinook harvest rate index. The key model assumptions include a chinook peak migration timing entering the Area 4 fishery July 1, a normally distributed run timing curve (S.D. 12.5 days) and chinook catchability equal to sockeye.

Indicated harvest rates should be considered only as indices, particularly given the untested assumption of chinook catchability equal to sockeye. The Area 4 harvest rate indices for various model runs are indicated below:

Year	Harvest Rate Indicator
1986-1991 Average	.20
1994 Pre-season	.28
1994 Post-season	.22
1995 Pre-season	.31
1995 Post-season	.28
1996 Pre-season	.33

Model analysis indicates recent changes to the Area 4 gillnet fishery have increased the chinook harvest rate index, mainly because of the shift to an earlier timing in the fishery, and to a very small extent from the directed chinook fishery. This shift represents a significant increase in terminal chinook harvest rates that should be considered in future management decisions, particularly given the lower chinook abundance of 1994 and 1995.

Exploitation Rate Analysis

The calculations of ocean exploitation rates for Kitsumkalum and upper Bulkley chinook stocks are presented in Table 32 (derived from SEP data Appendix J). The last complete brood year is 1988 since the 1995 escapement information has not been entered into the SEP database. Native harvest estimates are not included, because of the lack of CWT recovery. The total exploitation rate averaged 48% (45% ocean) for Kitsumkalum and 16% (11% ocean) for upper Bulkley chinook. The Alaskan proportion of the total exploitation averaged 18% for Kitsumkalum and 0% for Bulkley chinook. The Canadian commercial proportion of the total exploitation averaged 24% for Kitsumkalum and 2% for Bulkley chinook. The Canadian tidal sport proportion was 3% for Kitsumkalum and 1% for Bulkley. The Skeena freshwater fisheries took 2% of the Kitsumkalum chinook and 11% of the Bulkley. The Terrace area tag return rate for 1995 was estimated to be 11% from the 1995 creel survey, and 25% is assumed for this analysis. The Upper Bulkley awareness factor is unknown.

Hankin and Healey (1986), suggested probable MSY exploitation rates for mid-maturing stocks (like the Skeena) of 40 %. Even without the native harvest factored in, the exploitation rate on Kitsumkalum chinook is above this level.

Hankin and Healey (1986), predicted sex specific age composition of chinook under unexploited and on the verge of collapse (Figure 31, from Hankin and Healey 1986). Skeena River stocks were used as an example of mid-maturing stocks. Comparing the Skeena test fishery data (Table 8) the recent sex specific age structure indicates there is not a clear match. The Skeena data does not fit the mid-maturing chinook stock type as the proportion of age 6 females are higher than the age 5 (more towards a late maturing stock). The male age distribution for the Skeena is spread almost evenly among the age 4, 5 and 6 chinook, which suggests more of a late maturing schedule. We could not conclude whether the Skeena chinook age structure pattern best fit the stock at collapse or the unexploited equilibrium. Possibly the Skeena stocks are an aggregate of maturation types, or the test fishery provides a biased sample of the escapement.

Productive Potential

Trends in Stock Productivity

The survival information from the analysis of SEP chinook releases in the Skeena was too variable to indicate trends or even weak or strong brood year survivals (Table 20). The increase in chinook escapement to the Skeena that occurred coincident with the PST management measures is generally attributed to reduced ocean harvests. There are no Skeena exploitation rate indicators that represent the before and after so there is no technical confirmation to rule out another plausible explanation that there was a concomitant increase in survivals. The Fulton survivals from spring fry releases (1975 to 1979) suggest an increasing trend in survivals beginning in the 1978 brood that would result in increased escapements beginning in 1982 with much larger escapements expected in 1983 and 1984 (Table 20). The shift in the terminal area run timing associated with the PST management actions does not support the theory of a general increase in productivity as the explanation for the increased escapements in the early 1980's, because a shift in productivity should affect all segments of the run equally and there should be no timing shift.

The Salmon Treaty Experiment

If reduced harvest rates caused the increase in escapements coincident with the PST management measures and this reduction was maintained (the management scenarios have been stable) the large escapements of 1986, 1987 and 1988 should produce a test of whether the escapement levels in 1986 to 1988 have reached optimum levels. If the escapement levels are still well below optimum and the fishing and productivity regimes remain stable, a large increase in escapement would be expected in the return

years 1991 to 1993. This increase did not occur and escapements were stable or slightly lower. Given the assumptions in this test, the conclusion was the aggregate Skeena chinook stock is at or above optimum escapement level. The fisheries management regime for chinook has changed little during the period in question and the fishery exploitation rates appear to be relatively stable. The validity of the assumption of a stable ocean environment is unknown. As discussed previously the hatchery release survival data is a mix of release types and determining survival trends is not possible. If escapement levels were well below optimum and ocean survival of chinook decreased, the observed trend in escapements could result.

Historical Production Levels

Riddell and Snyder (1989) reviewed historical Skeena chinook production estimates and concluded it was plausible the Skeena chinook catch peaked at up to 150,000. A draft report by Argue suggests even greater values, well over 200,000 for decade high average catches (pers. comm. Sandy Argue).

Target Escapements

There are no biologically derived escapement targets for Skeena chinook. The basis for the interim target of 41,770 established in the Pacific Salmon Treaty process is to double the baseline 1979 to 1982 escapement over the 15 year course of the rebuilding program. The objective was met for the Skeena from the first year of the rebuilding program and has exceeded this rebuilding target each year from 1995-1994 (Figure 32, Chinook Technical Committee 1996). The 1995 escapement was slightly below the PST target.

Fishery Officers assigned escapement targets to each Skeena tributary based on subjective evaluations of spawning ground capacity. These escapement targets total 99,610 (Table 33). There is no way to assess the accuracy of these target escapements and they are no longer in use, other than to provide one indication of the general magnitude of the productive potential.

Stocks of Concern

The overall escapement increase in response to the Pacific Salmon Treaty (PST) management changes beginning in 1983 are evident in the overall escapements and in each subarea escapement pattern (Figures 4, and 5). However, Figure 6 illustrates that all Skeena chinook stocks did not increase during this period and of those that did, many returned to relatively low levels in 1994 and 1995. Further research is required to document specific systems where escapements have declined significantly from historical levels.

Upper Bulkley Chinook

Although the Upper Bulkley chinook stock appears to have an extremely low ocean harvest rate, there are still concerns over the total exploitation rates. Milne (1950) observed during the years 1945 - 1947 that 35% of the salmon gaffed at Moricetown were lost in a damaged condition. Harding (1969) reports 44% of the salmon gaffed in the 1967 Moricetown fishery were lost. Palmer (1964) also observed over several years that virtually no gaff injured sockeye reach the spawning grounds. Mike O'Neill (pers. comm.) also reported that chinook observed in the Upper Bulkley very rarely show any gaffing injuries and makes the inference that injured chinook do not make it to the spawning grounds. The estimate for Moricetown chinook harvests in a 1990 study (Mike O'Neill, pers. comm.) were a native harvest of 7,247 and an associated mortality of 7,267 for a total mortality of 14,523 chinook. The reported chinook escapement for systems above Moricetown was 12,300 giving a Moricetown fishery an estimated harvest rate of 54.1%. The Moricetown fishery harvests a mix of stocks and the Bulkley River probably represents a small proportion of the chinook harvests (Bulkley escapement in the 1980's was 5% of total Bulkley and Morice subarea).

The escapement, native harvest (adjusted for gaffing mortality) and estimated harvest rate for chinook at Moricetown for the period 1951 to 1963 (Table 34) was calculated by Palmer (1964). The estimated average chinook harvest rate for the period was 24.9 percent. DFO record keeping methods have changed and we could not locate Native catch records specific to Moricetown, so we did not upgrade the table to include the more recent time periods. Harding (1969) reports a 15% harvest rate on chinook at Moricetown in 1967. This appears to be based on the tagging of 224 chinook below the falls at Moricetown. Subsequently, 26 were returned by Natives and 5 were observed on 237 fish which used the left bank fishway. These numbers indicate a Native harvest rate of 11.6% and a chinook escapement past Moricetown of 10,618. There is no information provided to access the proportion of the Native caught tags that were recovered, tagging mortalities, or other assumptions. The author does note that the early portion of the chinook migration was missed in the sampling.

Significant progress in communication regarding the Moricetown chinook harvest has occurred in the SWC. Continued progress is important to assess this potentially large harvest impact.

During the planning of the Area 4 June directed gillnet chinook fishery, the SWC expressed concerns that the fishery may harvest some Bulkley chinook. Chinook samples (approximately 30% of the 1995 RGS gillnet fishery catch of 329) were taken for GSI analysis to identify the proportion of upper Bulkley chinook in the early June chinook fishery. Bulkley chinook are very distinct and easily separable from other Skeena stocks (Chris Wood pers. comm.). The samples have not yet been analysed.

Cedar River Chinook

This stock is a concern in part because of the low escapement numbers and a local targeted recreation fishery, even though there has not been a major decrease from historic reported escapements. The Cedar River chinook issue is being addressed by the local recreational community as a result of the Skeena Green Plan radio tagging study.

Babine River Chinook

Babine chinook need to be considered more closely as a stock of concern given the particularly low escapements is the last 2 years and the possible impacts of the net management changes. The outside fisheries in Alaska, particularly the troll fisheries, were greatly reduced in June, but intensified in the July period which would impact the late timing Babine stock more than the earlier Skeena chinook stocks. Similarly, the British Columbia troll harvest is now concentrated during July and is coincident with the Babine chinook timing. The Skeena-Nass net fisheries have also concentrated their harvests from July 10 to August 10 which would be expected to differentially impact the later migrating Skeena chinook stocks.

Stock ID Potential

Stock specific information from the test fishery and commercial catches is essential if chinook management is to become more stock specific. Research on chinook stock identification techniques is underway on a number of fronts. Data from chinook GSI allozyme research conducted by the National Marine Fisheries Service indicates potential for chinook stock separation within the Skeena River for certain stock aggregates (Figure 33 from David Teel, NMFS pers. comm.) Additional information provided GSI analyses of mixtures of known composition. However the trials grouped Skeena stocks as follows: Group 1. Bear-Babine-Morice: Group 2 Kispiox-Kitwanga: Group 3 Kitsumkalum-Cedar: and Group 4 Bulkley. The analyses indicated estimated proportions deviated from 0% to 5 % from the true proportion. We are not clear whether these groupings represent the results of trials to determine the groupings that give the best definition. The technique is of interest even at the levels of definition indicated although the Bear Babine Morice aggregation combines three of the four largest Skeena stocks.

Beacham et. al. (1996 in press) evaluated geographic variation in chinook minisatellite DNA. Estimates of stock composition from simulated mixtures within the Fraser and Skeena drainages were accurate and precise, suggesting that discrimination among stocks within river drainages may be possible (Table 35).

Two additional research programs evaluating microsatellite DNA and laser ablation techniques for differentiation of Skeena chinook stocks are currently being sponsored

by the Skeena Green Plan for 1996 to 1997 (Chris Wood pers. comm.). The DNA and laser ablation methods are particularly useful for assessments since archived scale samples can be used for historic stock specific assessments.

Skeena Chinook PSARC Recommendations 1989

The recommendations for Skeena chinook presented in PSARC paper S89-18 (Riddell and Snyder 1989) were as follows:

Achievement of maximum biological yield from the Skeena chinook stock is unlikely to be a realistic management objective in the near to medium term. It is recommended that the requirements of the various users be identified and a stock management plan developed to meet these needs while more quantitative information is collected. Specifically, an information system should involve:

1) Establishment of a harvest sharing policy for terminal runs in excess of the interim escapement goal. This policy would include a set of rules, agreed to by the user groups and the Department, on how to utilise large returns to increase fishing opportunities and also evaluate production from spawning escapements larger than the interim goal. A fixed harvest rate on returns above a minimum escapement level is suggested as a policy to evaluate.

2) Annual biological sampling of the escapement in specified populations to provide data on variation in brood year survival , age composition of the separate populations, age at maturity by sex, and biological traits useful for stock identification. Hankin and Healey's (1986) analysis clearly indicates the necessity of collecting age composition and maturity data in chinook populations. Without this information we will not be able to assess the biological productivity of Skeena chinook.

3) Priorization of the streams to be monitored for escapement so that the streams which have been consistently surveyed continue to be annually monitored, and in a standardised and reproducible method. Included in this priorization must be a process for collecting the data recommended in point (2).

4 A program should be developed to investigate the stock structure of Skeena River chinook salmon. This program will be essential to developing an appropriate escapement goal for the Skeena system. The program should initially evaluate how to discriminate between spawning populations and collect basic age composition data. At present in the chinook rebuilding program, Skeena chinook are treated as a single aggregate stock. However, the differences in escapement recoveries between stream since 1984 suggest that the populations do function independently from each other and that there may therefore be discrete stocks. At least the populations within major run-timing segments should be identified.

5) The Skeena River test fishery should be conducted earlier to collect data on run timing, abundance, and biological samples. How early the fishery might start is uncertain and will likely require some experimental fishing. This will be particularly important if terminal fisheries on increased returns of chinook are anticipated. During evaluation of when to start fishing, the number of weeks to be monitored could be increased by reducing the number of days fished per week.

Action on the 1989 PSARC Recommendations

1) The SWC allowed a directed gillnet fishery to be initiated in 1994, in part based on the PSARC assessment that a harvest on stocks above the minimum escapement level was appropriate. Perhaps a bigger impact resulted from the SWC management plan to conserve coho and steelhead by fishing earlier and harder on the sockeye while greatly reducing the fishery on the later run coho and steelhead.

2) Sampling programs at the Skeena test fishery and Babine Weir were improved and the data reported and analysed in this report. Tributary biosampling other than the Babine was not conducted because of fiscal restraints. Even if we collected this information as requested in the 1989 recommendation 2, we would not be able to assess the biological productivity of the Skeena chinook as previously stated.

3) This recommendation was achieved in the Skeena for 1995, mainly as a result of the retooling required after the fishery officer reorganisation of 1993. Further efforts are required to improve the standardisation and documentation of the escapement programs.

4) As reported in this document considerable research effort has been applied to developing a stock identification methodology for Skeena chinook. Results will be reported over the next year, but initial indications are that a number of effective methods of stock separation will be available.

5) The Skeena test fishery was not started earlier as the test fishery continues to have shortfalls in payment fish and has required large subsidies in some years. Payment fish and operating shortfalls continue as an issue in 1996 and may result in the cancellation of the chinook portion of the test fishery after 1996.

PSARC Recommendations

a) The Skeena biological database initiative developed as part of the Skeena Green Plan initiative should be completed, documented and maintained in future years.

b) The Skeena Test Fishery program should be expanded to collect age, length, sex and appropriate tissue samples for all chinook captured in the test fishery including all small chinook 'jacks'.

c) The Babine Counting fence sampling program should be expanded to sample all carcasses recovered and an assessment be conducted of the proportion of the jacks sampled.

d) A documented review and database development for the historical sport catch figures for the Skeena and adjacent areas is necessary to qualify the information currently in use.

e) Native catch figures are currently provided through the AFS programs. We need to review the historical data and use the expertise of the first nations people to reconstruct catches, and to evaluate the current enumeration programs.

f) The current Skeena chinook escapement monitoring program must be evaluated and documented in conjunction with the broader based DFO stock assessment stock assessment initiative to rationalise all aspects of the escapement program on a regional basis.

g) An evaluation of the chinook ageing standards should be a priority of the new amalgamated scale lab.

h) Data on the harvest and CWT mark rate in the Moricetown First Nation fishery is essential to evaluate the exploitation rate for the Upper Bulkley chinook exploitation rate indicator. Estimates of First Nation, and recreational chinook harvests are required to assess the impacts of these terminal fisheries on the Upper Bulkley chinook stocks. Significant progress in communication regarding the Moricetown chinook harvest has occurred in the SWC. Continued progress is important to assess this potentially large harvest impact on a stock of concern.

i) Impact on chinook stocks should be considered as part of the development of the Skeena Area 4 gillnet fishing plan as well as other outside and terminal fishing plans.

j) The Skeena chinook assessments and management should continue to evolve towards more stock specific management. Stock identification programs for chinook are essential and the research program associated with the Skeena Green Plan should be pursued as a priority.

k) We are not able to recommend a biologically based escapement target, or exploitation rate target. The Pacific Salmon Treaty escapement target seems to represent a very conservative risk adverse escapement floor. The terminal fisheries on the Skeena currently seem to harvest at a fixed harvest rate. This allows for increased chinook harvest during periods of high abundance. Taking into consideration this pattern, there is also the potential for modest increased exploitation on escapements well in excess of the PST rebuilding target, consistent with PSARC recommendation 1 in 1989. .

LIST OF REFERENCES.

Alexander, R.F. and Karl K. English. 1996. Distribution, Timing and Numbers of Early-run Chinook Salmon Returning to the Kitsumkalum River Watershed in 1995. Prepared by LGL Ltd. for DFO, Skeena Green Plan, Prince Rupert. 82p. Draft.

Andrew, J.H. and T.M. Webb. 1988. Abundance, age, size sex and coded wire tag recoveries for chinook salmon escapements of Kitsumkalum River, 1984-1986. Can. Manuscr. Rep. Fish. Aquat. Sci. 2004:62p.

Argue, A. W., D. Campbell, P.A. Gee and M.P.Shepard. 1986. Records of Salmonid Harvest by British Columbia Indians Prior to 1951. Draft Report submitted to DFO June, 1986.82p.

Aro, K. V. 1961. Summary of salmon enumeration and sampling data. Babine River counting weir 1946-1960. Fish. Res. Bd. Canada, MS Rept. No. 708.

Beacham, T.D., R.E. Winther, and T.A. Stevens. 1996. Stock identification of chinook salmon using minisatellite DNA variation. Can. J. Fish. Aquat. Sci. 53: (in Press).

Bustard, D. 1992. Juvenile Steelhead Surveys in the Kitwanga, Morice, Sustut and Zymoetz Rivers 1991. Prepared by D. Bustard and Associates for B.C. Environment. Smithers. 201p.

Bustard D. 1994a. Evaluation of Downstream Fish Movements in the Upper Sustut River Using a Rotary Screw Trap, May-June 1994. Prepared by D. Bustard and Associates for DFO, Nanaimo. 44p.

Bustard, D. 1994b. Juvenile steelhead surveys in the Sustut River 1993. Report prepared by D. Bustard and Associates for B.C. Environment. Smithers.

Carolsfeld, J., K.K. English, P. Frank, and T. M. Webb. 1990. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapements of Kitsumkalum River, 1987-1988. Can. MS Rep. Fish. Aquat. Sci. 2074: viii+54p.

Caughley, G. 1974. Bias in aerial survey. J. Wildl. Manage. 40:921-933.

Chinook Technical Committee. 1991. Review of Canadian Proposal for Terminal Area Exclusion of Chinook Catches from the All-gear North and Central B.C. Catch Ceiling. Pacific Salmon Commission, TCCHINOOK (91)-2.

Chinook Technical Committee. 1996. 1994 Annual Report . Pacific Salmon Commission, TCCCHINOOK (96)-. 155p.

Cox-Rogers, S. 1994. Description of a daily simulation model for the Area 4 (Skeena River) commercial gillnet fishery. Can. Manuscr. Rep. Fish. Aquat. Sci. 2256:iv+46p.

Cox-Rogers, S. and L. Jantz. 1993. Recent trends in the catchability of sockeye salmon in the Skeena River gillnet test fishery, and impacts on escapement estimation. Can. Manuscr. Rep. Fish. Aquat. Sci. 2219:iii+19p.

Eberhardt, L.L., D.G. Chapman and J.R. Gilbert. 1979. A review of marine mammal census methods. Wildl. Monogr. No. 63. 46p.

Gilbert, C. H., and W.H. Rich. 1927. Second experiment in tagging salmon in the Alaska Peninsula fisheries reservation, summer of 1923. Bull. Bur. Fish. (U.S.) 42:27-75.

Ginetz, R. M. J. 1976. Chinook salmon in the north coastal division. Fisheries and Marine Serv, Tech. Rept. Ser. No. PAC/T-76-12:96pp.

Godfrey, H. 1968. Ages and physical characteristics of maturing chinook salmon of the Nass, Skeena, and Fraser Rivers in 1964, 1965, and 1966. Fish. Res. Bd. Manus. Rept. Ser. No. 967:38p.

Hankin, D.G. and M.C. Healey. 1986. Dependence of exploitation rates for maximum yield and stock collapse on age and sex structure of Chinook salmon (Oncorhynchus tshawytscha) stocks. Can. J. Fish. Aquat. Sci. 43:1746-1759.

Harding, D. R. 1969. The Status of the Nanika-Morice Sockeye Salmon Population and The Moricetown Native Food Fishery in 1967 and 1968. DFO Internal Report, Vancouver.

Harding D. R. and J.D. Buxton. 1971. Meristic Characters of Pacific Salmon and Steelhead Trout captured at Moricetown Falls, 1961-1966. Dept. of Fisheries and Forestry, Fisheries Service, Vancouver. Manuscript Report 1971-3.

Healey, M.C. 1991. Life History of Chinook Salmon (Oncorhynchus tshawytscha), p. 311-394: In C. Groot and L. Margolis (eds.) Pacific Salmon Life Histories. UBC Press Vancouver, B.C. .

Healey, M.C. 1983. Coastwide distribution and ocean migration patterns of stream - and ocean - type chinook salmon, Oncorhynchus tshawytscha. Can. Field-Nat. 97:427-433.

Jakubowski, M. J. 1990a. A Review of the Babine River Counting Fence Biological Program 1987 and 1988. Can. Data Rep. Fish. Aquat. Sci. 792:iii+96p.

Jakubowski, M. J. 1990b. A Review of the Babine River Counting Fence Biological Program 1989. Can. Data Rep. Fish. Aquat. Sci. 792:iii+96p.

Jakubowski, M. J. 1996. A Review of the Babine River Counting Fence Biological Program 1990-1994. Can. Data Rep. Fish. Aquat. Sci. In preparation.

Jantz, L., B. Rosenburger and S. Hildebrandt. 1989. Salmon Escapement and Timing Data for Statistical Area 4 of the North Coast of British Columbia. Unpublished MS DFO Prince Rupert.

Jantz, L., R. Kadowaki and B. Spilsted, 1990. Skeena River Salmon Test Fishery, 1987. Can. Data Rep. Fish. Aquat. Sci. 804: iv + 151p.

Jordan F. P. 1967. Summary of Salmon Enumeration and Sampling Data. Babine River Counting Fence, 1961-66. Fish. Res. Bd. Can, Tech Rept. 24. 29p.

Kadowaki, R. 1977. The Skeena River gillnet test fishery, 1955 to 1976. DFO internal report (Published as an appendix to Jantz et al. 1987).

Kadowaki, R. 1985. A refinement of the Skeena River test fishing estimate of sockeye escapement. Unpubl. MS. DFO, Prince Rupert, B.C.

Koo, T.S.Y. 1962. Age designation in Salmon. Pages 41-48 in T.S.Y. Koo, editor. Studies of Alaska red salmon. Univ. Wash. Publ. Fish. New Ser. 1.

Koski, W.R., M.R. Link and K.K. English. 1993. Distribution, Timing and Numbers of Chinook Salmon Returning to the Nass River Watershed in 1992. Report from LGL Ltd., Sidney, B.C. to Nisga'a Tribal Council, New Aiyansh, B.C.

Kussat, R. 1973. Upper Skeena Counting Fences: Bear, Sustat and Johanson Rivers. DFO Internal memo R. Kussat to W. J. Schouwenburg Jan. 31, 1973. 5p.

Milne, D. J.. 1948. Interim report: Skeena River salmon investigation. Fish. Res. Bd. Can, Pac. Biol. Stn, Nanaimo: Appendix 1:60p.

Milne, D. J. 1950. Moricetown falls as a hazard to salmon migration. Bull. Fish. Res. Bd. Can. 86: 1-16.

Milne, D. J. 1955. The Skeena River salmon fishery with special reference to sockeye salmon. J. Fish. Res. Bd. Can. 12(3):451-485.

Morgan, J. D. 1985. Biophysical Reconnaissance of the Kitsumkalum River System, 1975-1980. Prepared for SEP, Vancouver by E.V.S. Consultants, North Vancouver. 134p.

Morrell, M. 1985. The Gitksan and Wet'suwet'en Fishery in the Skeena River system: Final Report- Gitksan -Wet'suwet'en Fish Management Study. Prepared for the Gitksan -Wet'suwet'en Tribal Council. 216p.

Morrell, M., C. Barnes and G. Harris. 1985. The Gitksan and Wet'suwet'en Fisheries in the Skeena River System: 1985 Data Report. Report prepared for the Gitksan-Wet'suwet'en Tribal Council, Hazelton, B.C.

Nass, B. L. and R. C. Bocking. 1992. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapement of Kitsumkalum River, 1989-1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2147:viii+62 p.

Neilson, J. D. and G.H. Geen. 1981. Enumeration of Spawning Salmon from Spawner Residence Time and Aerial Counts. Trans. Amer. Fish. Soc 110:554-556.

Nelson, T. C. 1993a. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapement of Kitsumkalum River, 1991. Can. Manuscr. Rep. Fish. Aquat. Sci. 2182:viii+43 p.

Nelson, T. C. 1993b. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapement of Kitsumkalum River, 1992. Can. Manuscr. Rep. Fish. Aquat. Sci. 2201:viii+44 p.

Nelson, T. C. 1994. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapement of Kitsumkalum River, 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. 2249:viii+47 p.

Nelson, T. C. 1995. Abundance, age, size, sex and coded wire tag recoveries for chinook salmon escapement of Kitsumkalum River, 1994. Can. Manuscr. Rep. Fish. Aquat. Sci. 2332:viii+48 p.

O'Neill, M., Lewynsky, V. 1985. Lower Skeena Creel Survey, 1984. Unpublished report prepared for the Canadian Dept. of Fish. and Oceans under DSS Contract No. 03SB.FP576-4-0261.

Palmer, R. N. 1964. A re-assessment of Moricetown Falls as an Obstruction to Salmon Migration. DFO internal report. Vancouver. 32p.

Palmer, R. N. 1987. Management and regulation of the fishery resources of the Gitksan-Wet'suwet'en land claim area. Prepared for the Attorney General of Canada.:291p.

Pritchard, A.L. 1948. Interim report: Skeena River salmon investigation. Fish. Res. Bd. Can, Pac. Biol. Stn, Nanaimo:30p.

Riddell, B. and B. Snyder. 1989. Stock Assessment of Skeena River Chinook Salmon. PSARC Working Paper S89-18.

Saimoto, R.K. 1993. Enumeration of Adult Steelhead in the Upper Sustut River 1993. Report by SKR Environmental Consultants for Fisheries Branch, B.C. Environment, Smithers.

Saimoto, R.K. 1994. Enumeration of Adult Steelhead in the Upper Sustut River 1994. Report by SKR Environmental Consultants for Fisheries Branch, B.C. Environment, Smithers.

Serbic, G. 1991. The Salmon Escapement Database and Reporting System. Can. Tech. Rep. Fish. Aquat. Sci. 1791:104 p.

Shardlow, T. F. , T.M. Webb, and D.T. Lightly. 1986. Chinook salmon escapement estimation on the Campbell and Quinsam River in 1984:accuracy and precision of mark/recapture techniques using tagged salmon carcasses. Can. Tech. Rept. Fish. Aquat. Sci. No. 1507:52p.

Shaw, W. 1994. Biological Sampling Manual For Salmonids - A Standardised Approach For The Pacific Region. Can. Tech. Rep. Fish. Aquat. Sci. 1998:xiii + 167 p.

Shepherd B.G., J.E. Hillaby and R.J. Hutton. 1986. Studies on Pacific Salmon (Oncorhynchus spp.) in Phase I of the Salmonid Enhancement Program. Volume I: SUMMARY. Can. Tech. Rep. Fish Aquat. Sci. 1482:vii+pp 1-180 (two volumes).

Shepherd B.G. 1979. Salmon Studies Associated with the Potential Kemano II Hydroelectric Development: Volume 5 Salmon Studies on Nanika and Morice Rivers and Morice Lake. Dept. of Fish and Envir. Vancouver. 194p.

Smith, J. L. and G. F. Berezay. 1983. Biophysical Reconnaissance of the Morice River System, 1878-1980. SEP Operations, DFO Vancouver. 77p.

Smith, H. D. and J. Lucop. 1966. Catalogue of salmon spawning grounds and tabulation of escapements in the Skeena River and Department of Fisheries Statistical Area 4. Fish. Res. Bd. Canada, MS Rept. 882: 5 sections.

Sprout, P. and R. Kadowaki. 1987. Managing the Skeena River sockeye salmon (Oncorhynchus nerka) fishery- the process and the problems. p. 385-395. In H. D. Smith, L. Margolis, and C.C. Wood. [ed.] Sockeye salmon (Oncorhynchus nerka) population biology and future management. Can. Spec. Publ. Fish. Aquat. Sci. 96.

Takagi, K. and H. D. Smith. 1973. Timing and Rate of Migration of Babine Sockeye Stocks through the Skeena and Babine Rivers. Fish. Res. Board Can. Tech. Rep. 419. 61 p.

Tallman, D. 1995. . 1995 Lower Skeena River Sport Fishing Creel Survey. Draft report submitted to DFO Prince Rupert.

Terrace Salmonid Enhancement Society. 1988. Project Manager's Report Cedar River Project. Report of the Terrace Salmonid Enhancement Society to DFO, SEP Terrace. 18p.

Terrace Salmonid Enhancement Society. 1989. Cedar River Project. Report of the Terrace Salmonid Enhancement Society to DFO, SEP Terrace. 30p.

J.O. Thomas & Associates Ltd. 1995. 1995 Area 3 and 4 Sport Fishing Tidal Creel Survey. Report submitted to DFO Prince Rupert. 75p.

Thomas J. 1994. Areas 4, 6 and 8 1993 Chinook Biological and CWT Data. Report submitted to Barb Snyder DFO, Vancouver.

Tutty, B. D. and F. Y. E. Yole. 1978. Overwintering Chinook Salmon in the Upper Fraser River System. Fisheries and Marine Service, Manuscript Report NO. 1460.

Williams, R. A., G.O. Stewart and P.R. Murray. 1985. Juvenile Salmonid Studies in the Sustut and Bear Rivers, B.C., 1984. Report prepared for DFO Vancouver, by Envirocon Limited, Vancouver B.C. 146p.

FIGURE 1. MAP SHOWING THE SKEENA RIVER WATERSHED AND ADJACENT CANADIAN AND U.S. FISHING AREAS.

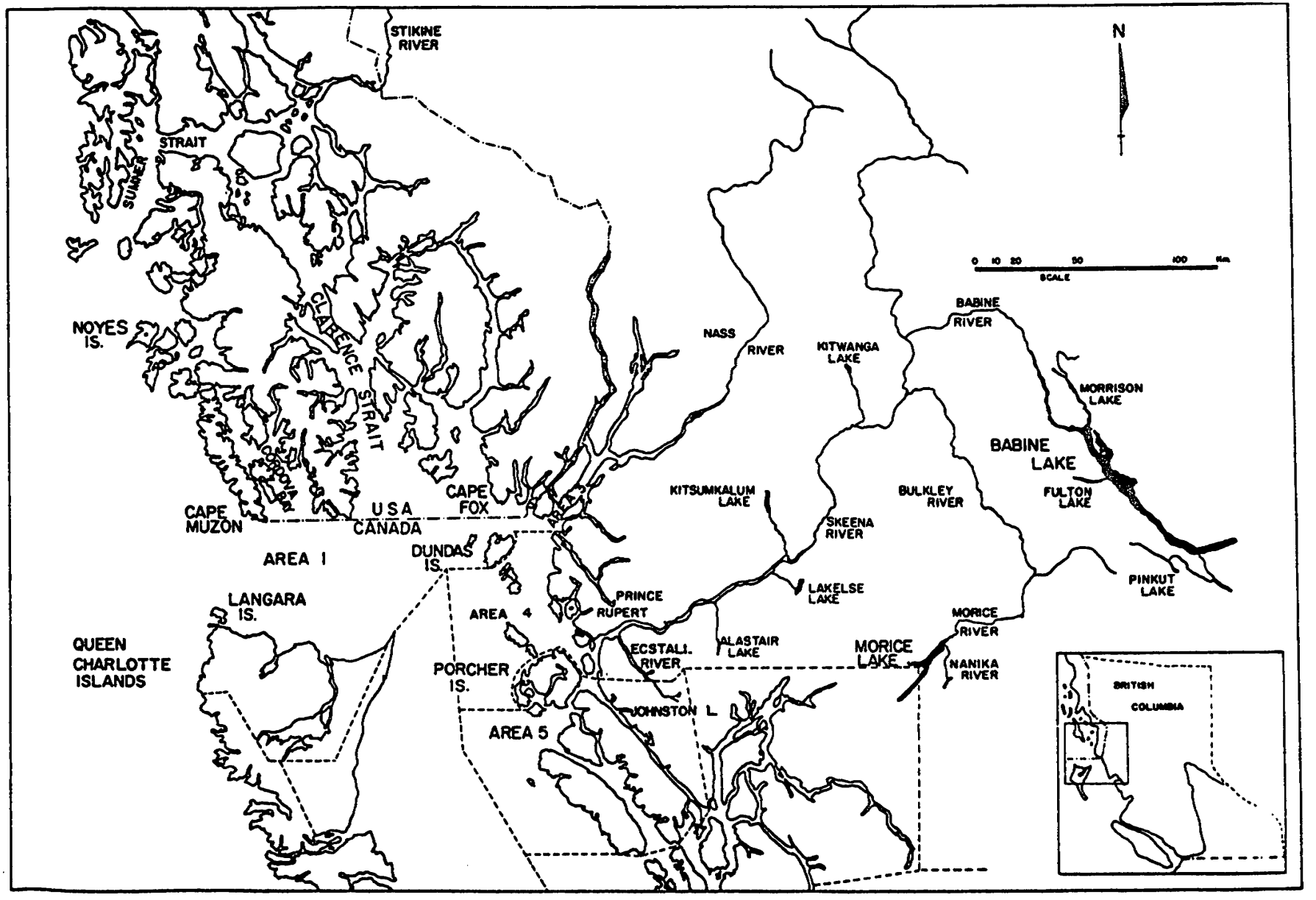


FIGURE 2. PICTURE OF A LARGE CHINOOK SALMON.

This male chinook was measured at 55 inches long with a 38 inch girth, which equates to 105 pounds. The angled world record is 97 pounds.

The fish was recovered in 1987 from the Kitsumkalum River, a tributary of the Skeena River, by Deep Creek Hatchery Staff under the auspices of the Terrace Salmonid Enhancement Society on behalf of the Department of Fisheries and Oceans.

FIGURE 3. MAP OF THE SKEENA RIVER WATERSHED SHOWING ESCAPEMENT SUBAREAS.

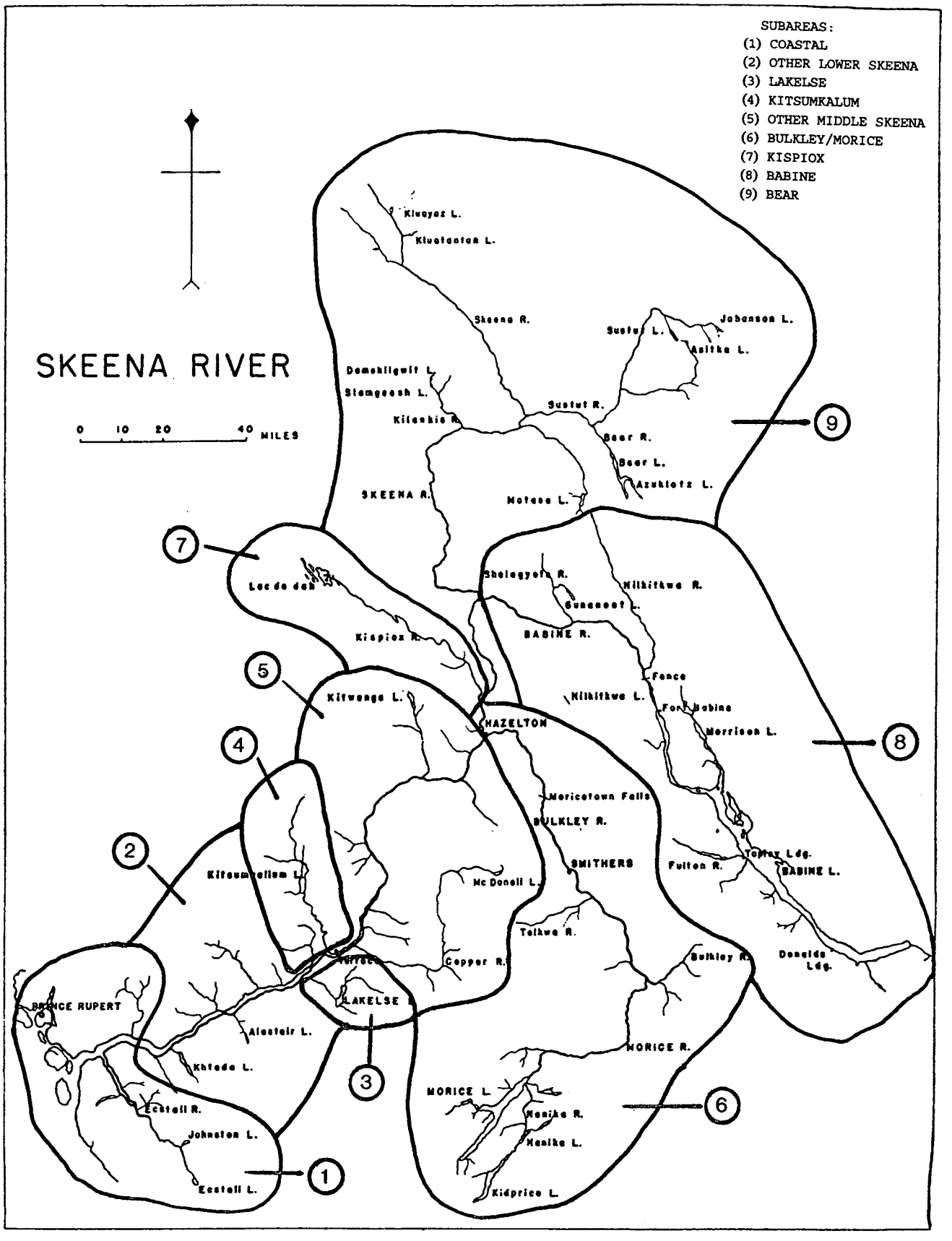


FIGURE 4. ANNUAL SKEENA CHINOOK ESCAPEMENT, TEST FISHERY INDICIES AND BABINE WEIR COUNTS.

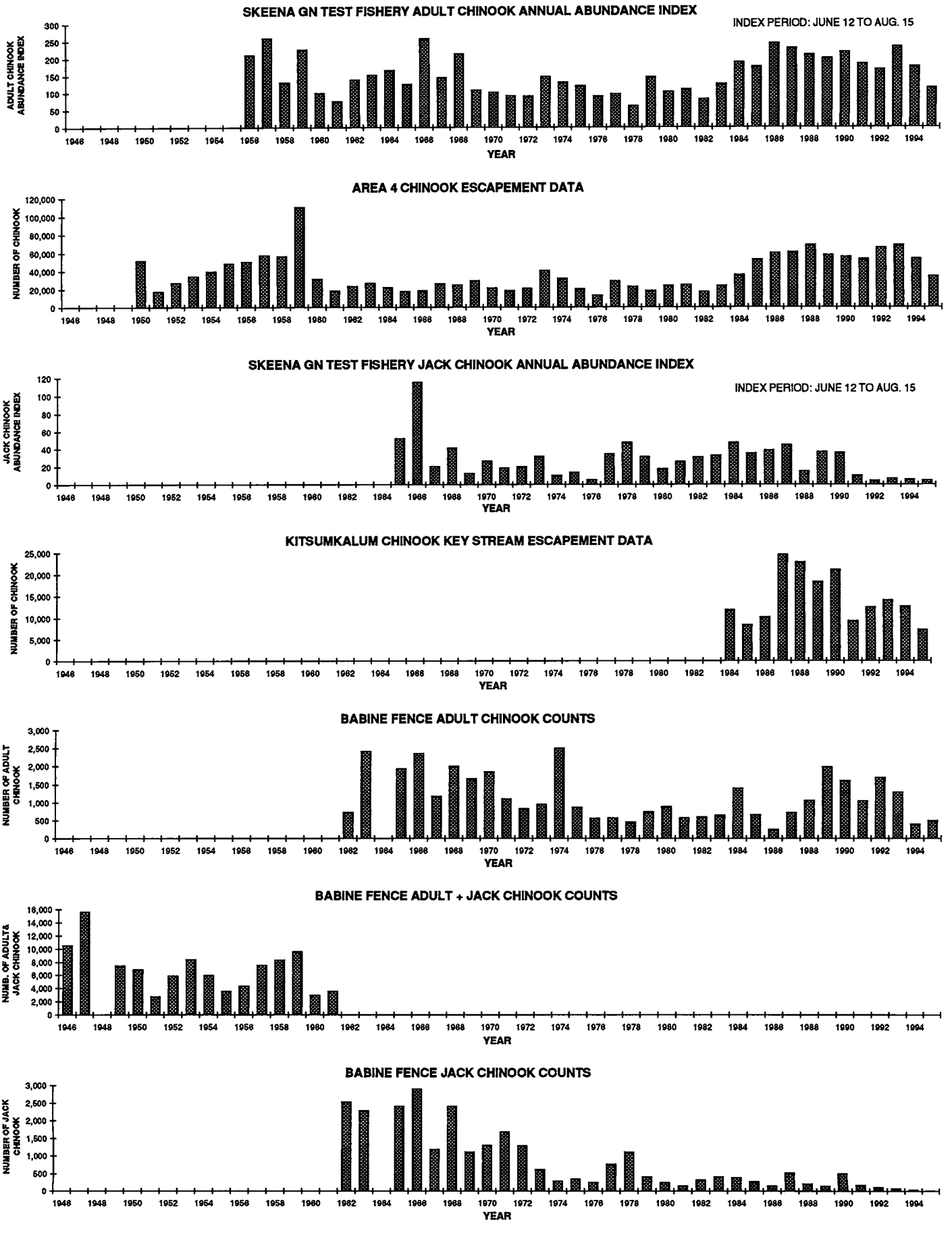


FIGURE 5. AREA 4 CHINOOK ESCAPEMENT DATA BY SUBAREA, 1970 TO 1995.

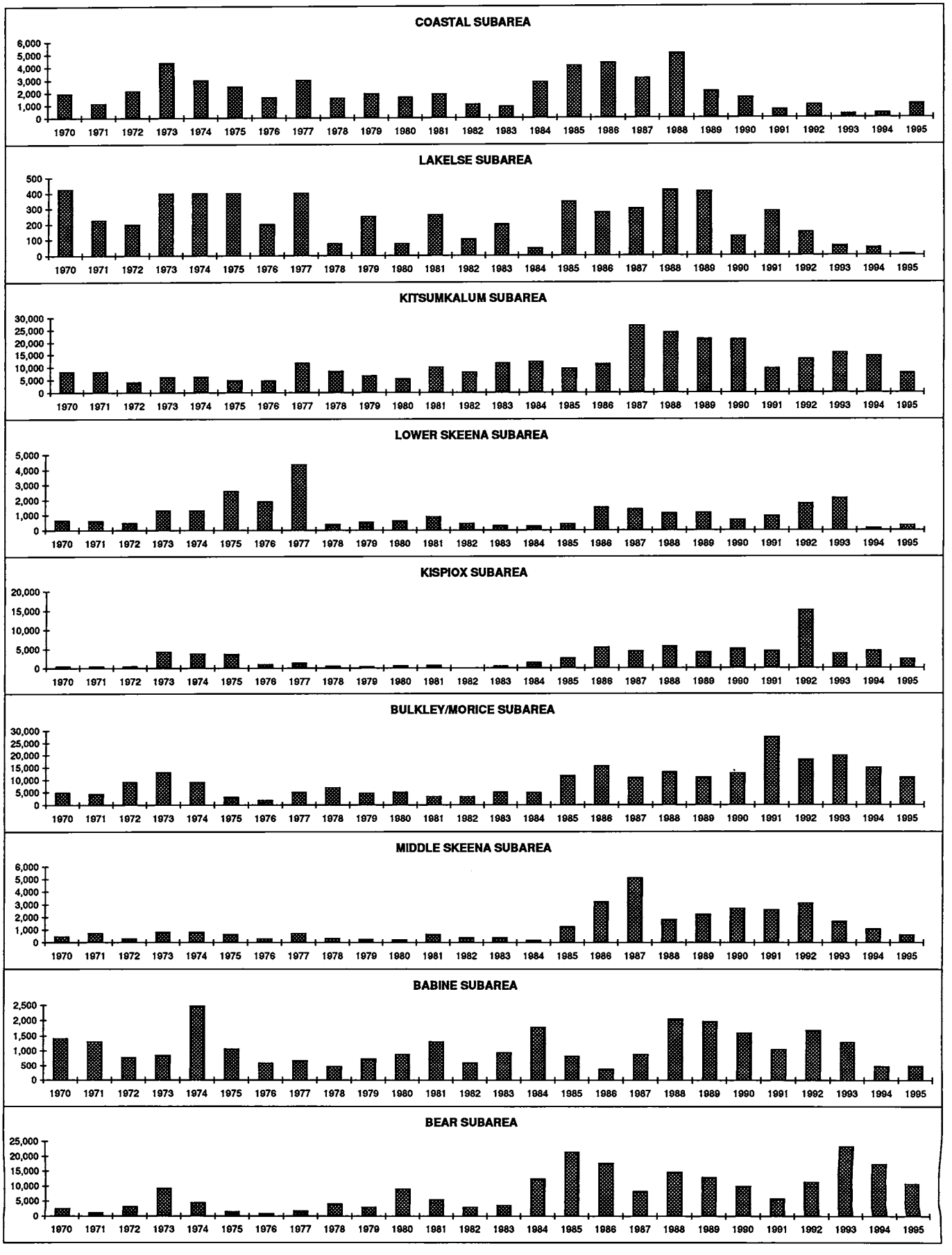


FIGURE 6. ANNUAL ESCAPEMENTS FOR SKEENA RIVER CHINOOK STREAMS THAT WERE REGULARLY SURVEYED (12 OF 15 YEAR DURING 1981 TO 1995.

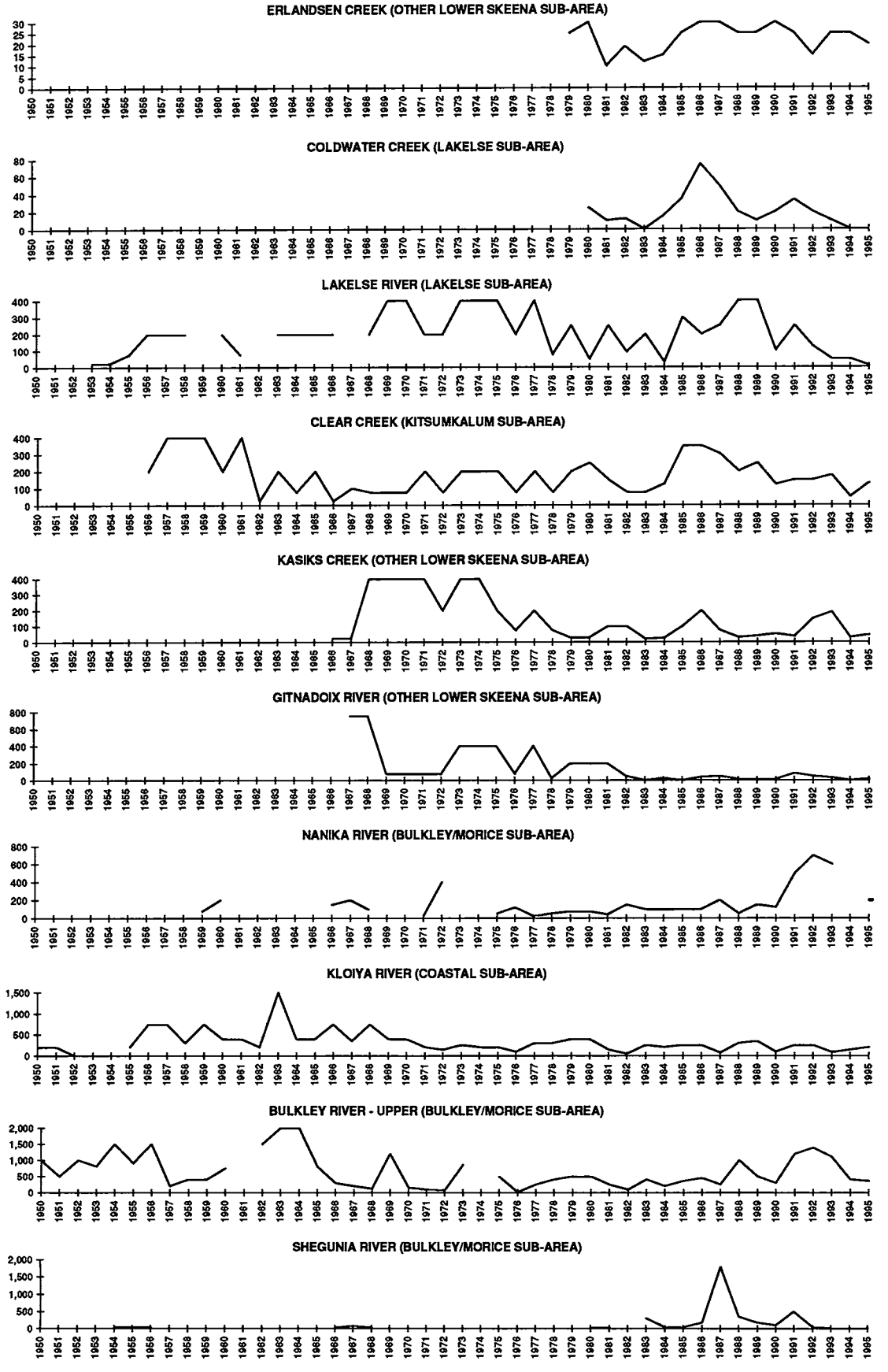


FIGURE 6 CONT. ANNUAL ESCAPEMENTS FOR SKEENA RIVER CHINOOK STREAMS THAT WERE REGULARLY SURVEYED (12 OF 15 YEARS) DURING 1981 TO 1995.

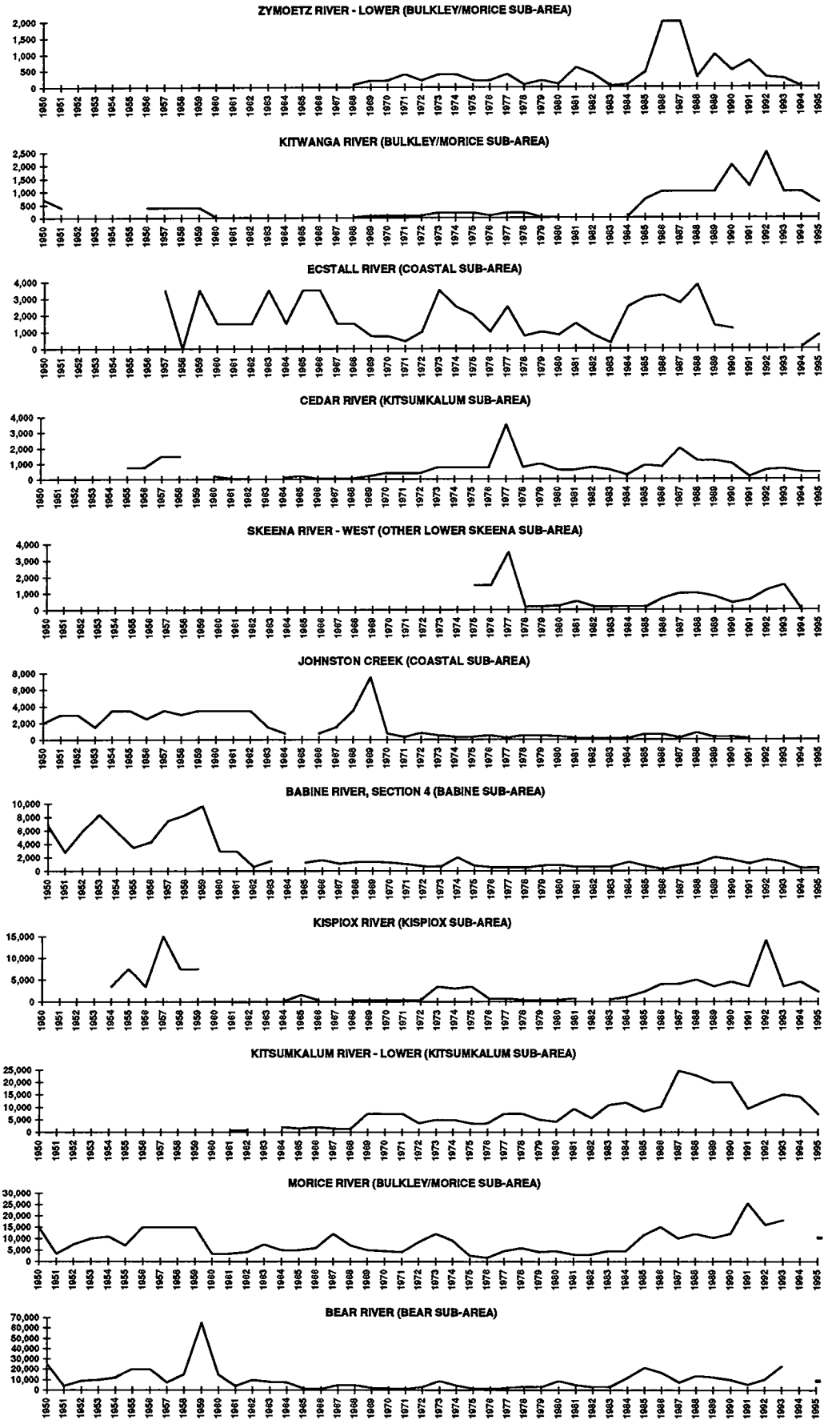


FIGURE 7. MAP OF BABINE LAKE SHOWING THE LOCATION OF THE BABINE RIVER COUNTING FENCE.

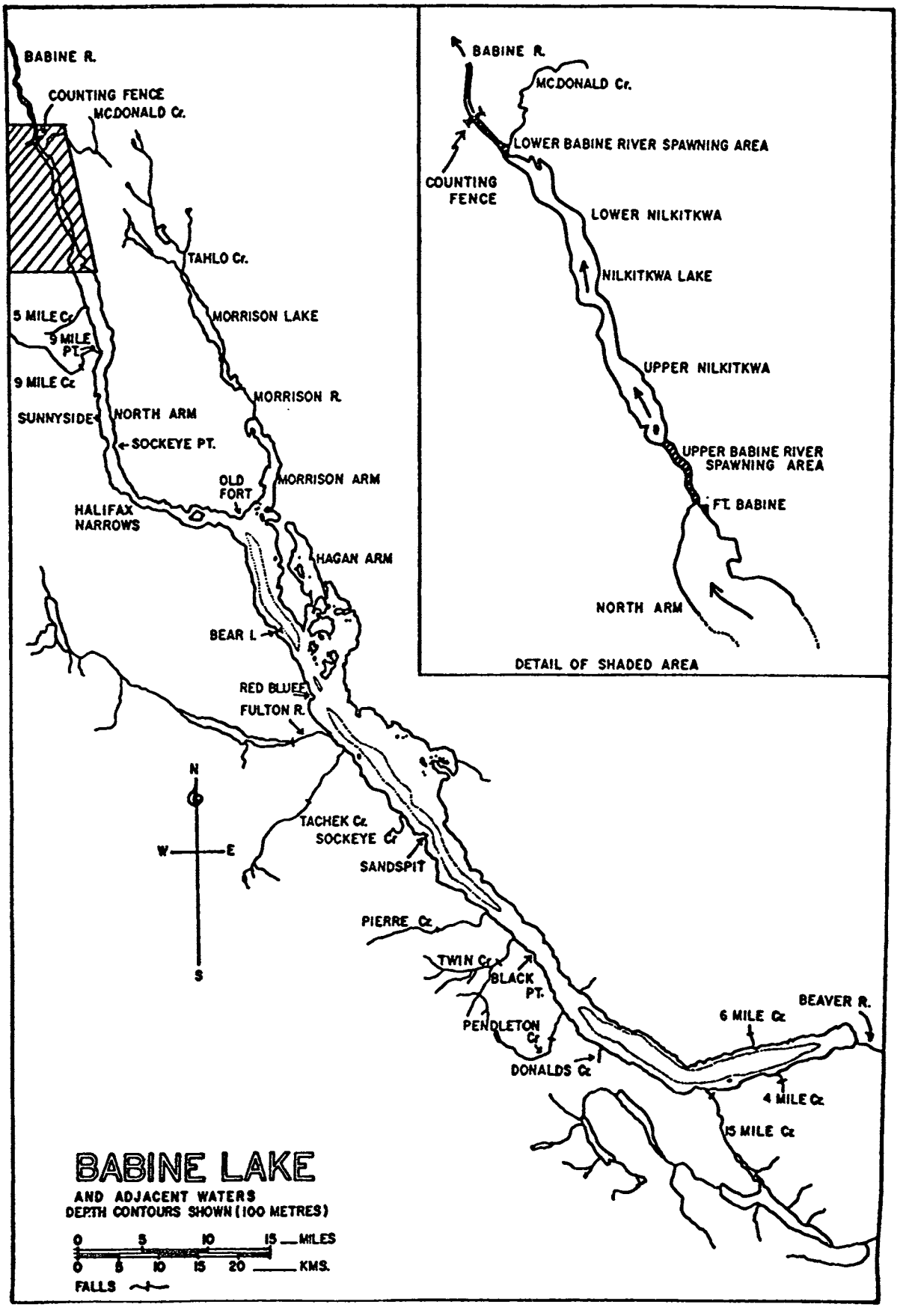


FIGURE 8. MAP OF KITSUMKALUM RIVER AND GROUND SURVEY AREAS USED FOR THE DETERMINATION OF CHINOOK SALMON MARK RATES DURING THE 1995 KITSUMKALUM RIVER TELEMETRY PROGRAM.

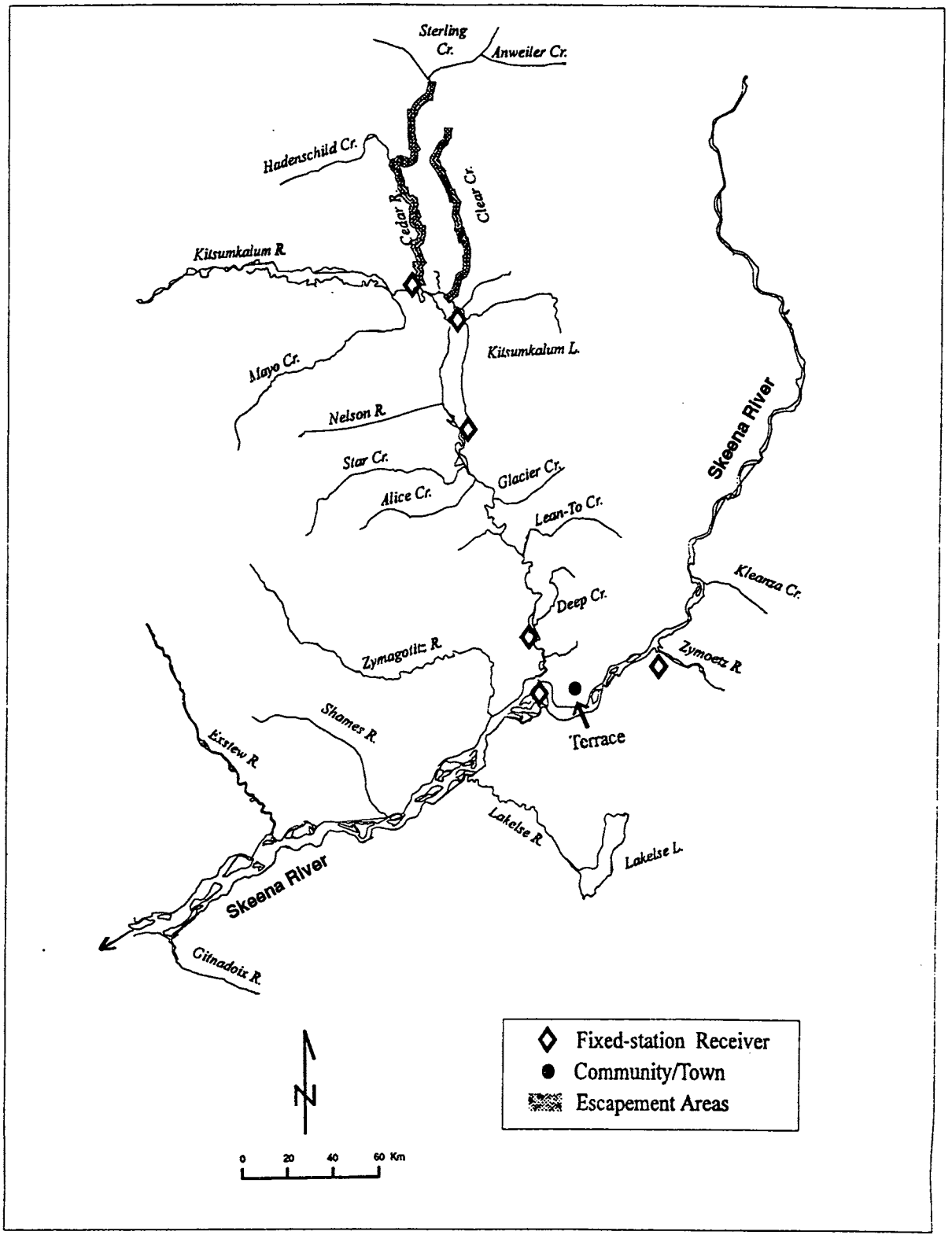
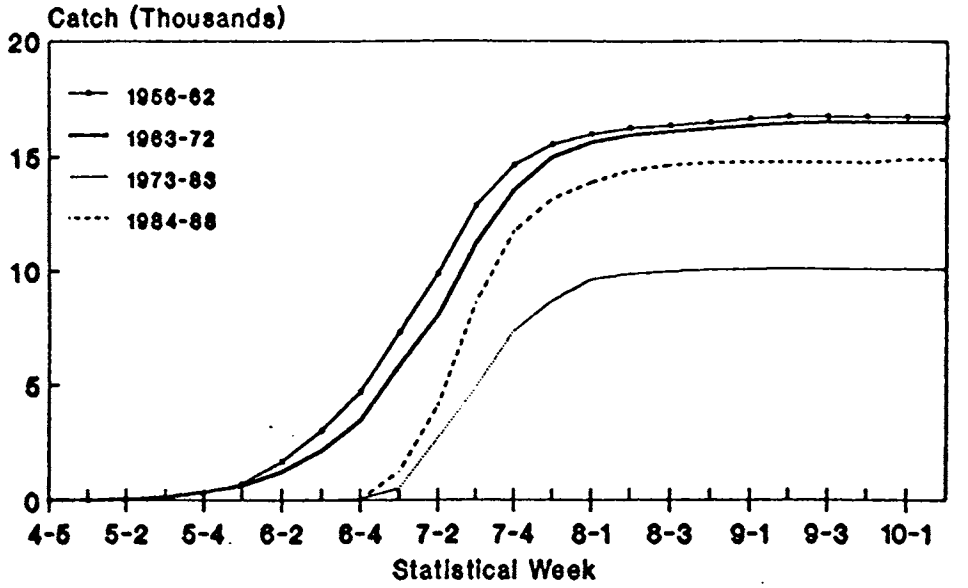


FIGURE 9. CUMULATIVE CATCHES OF CHINOOK IN THE SKEENA RIVER GILLNET AND TEST FISHERIES (from RIDDELL AND SNYDER 1989).



Average catches within periods

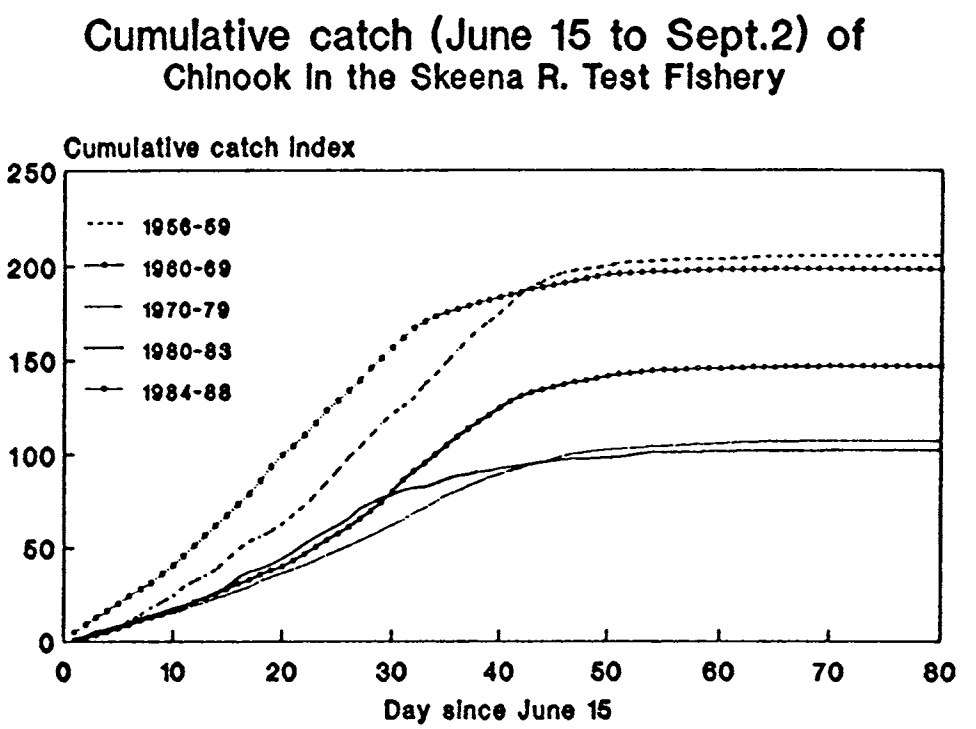


FIGURE 10. TYEE TEST FISHERY DAILY CHINOOK ESCAPEMENT INDEX, 1990 TO 1993 AVERAGE.

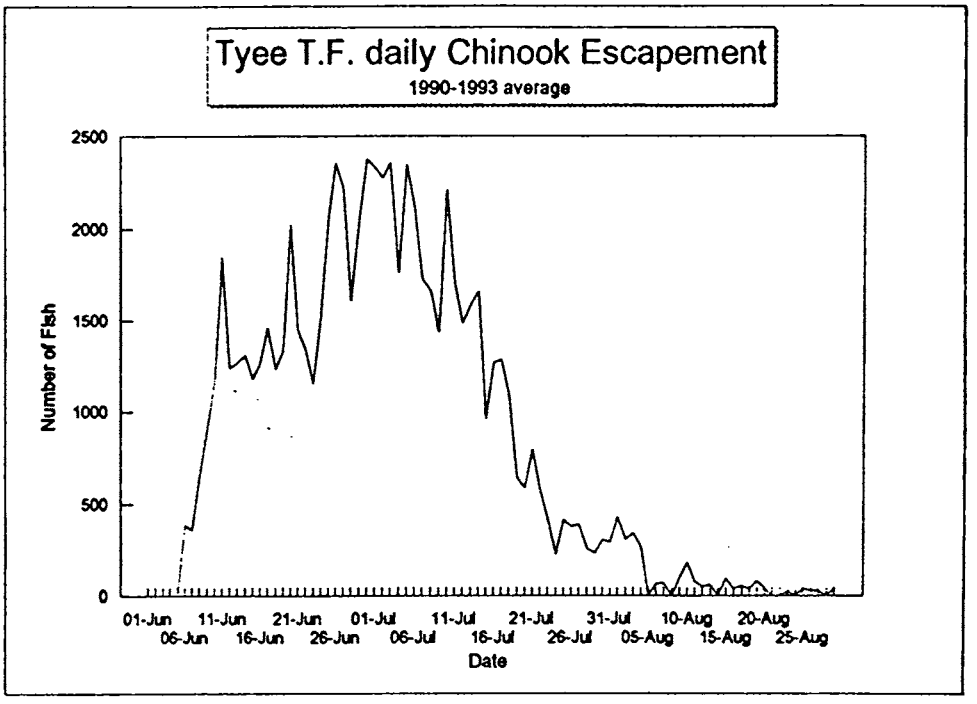


FIGURE 11. STATISTICAL AREA 4, SKEENA RIVER TERMINAL EXCLUSION AREA. EXCLUSION AREA OUTLINED IN BOLD.

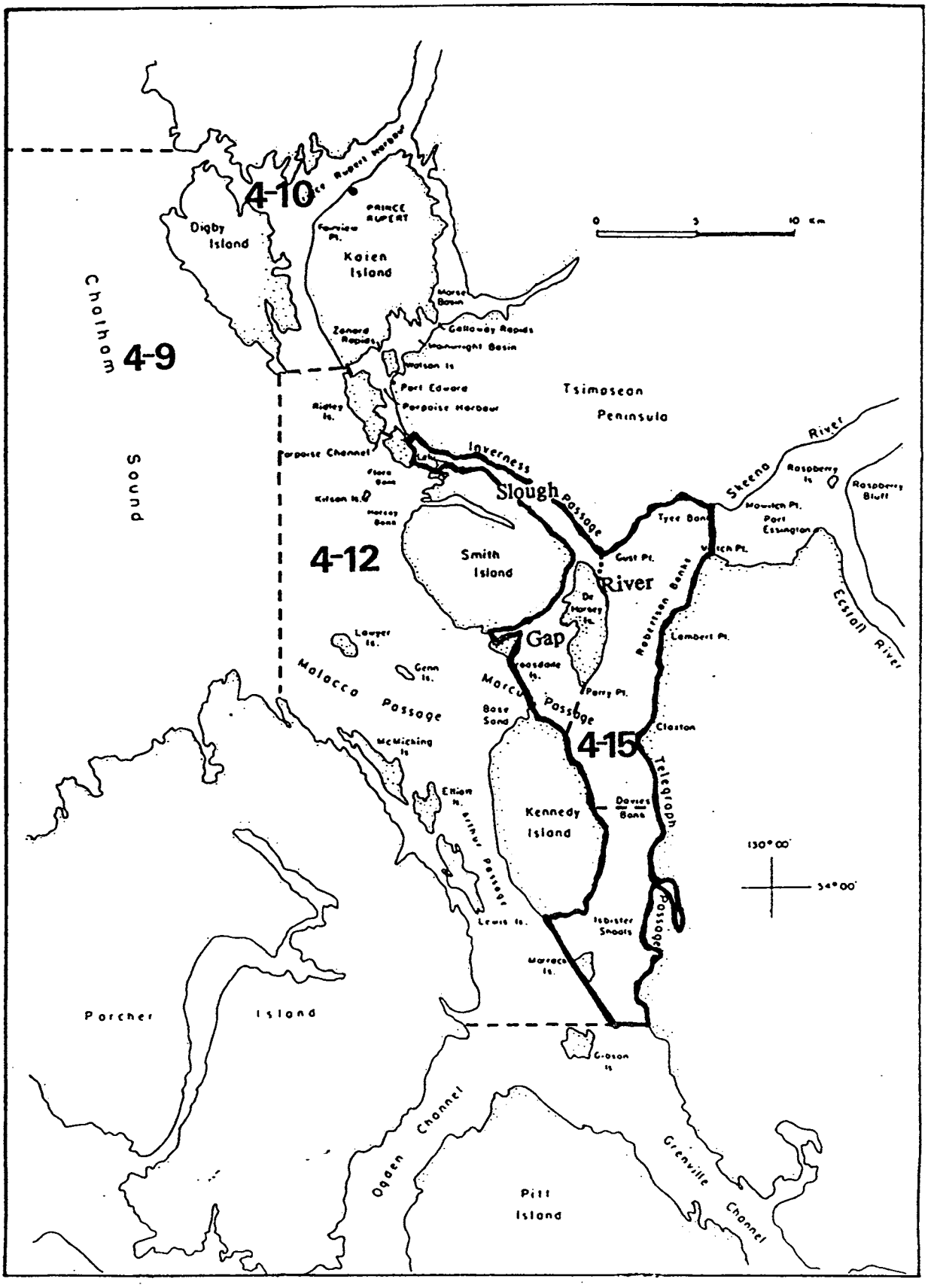
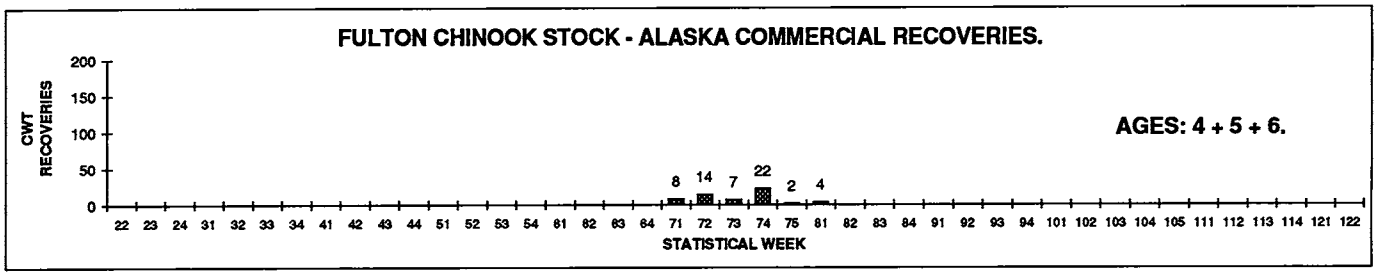
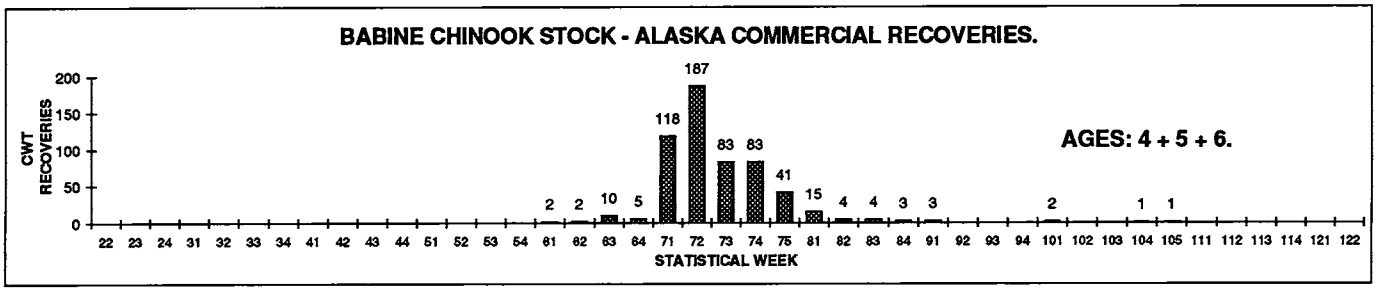
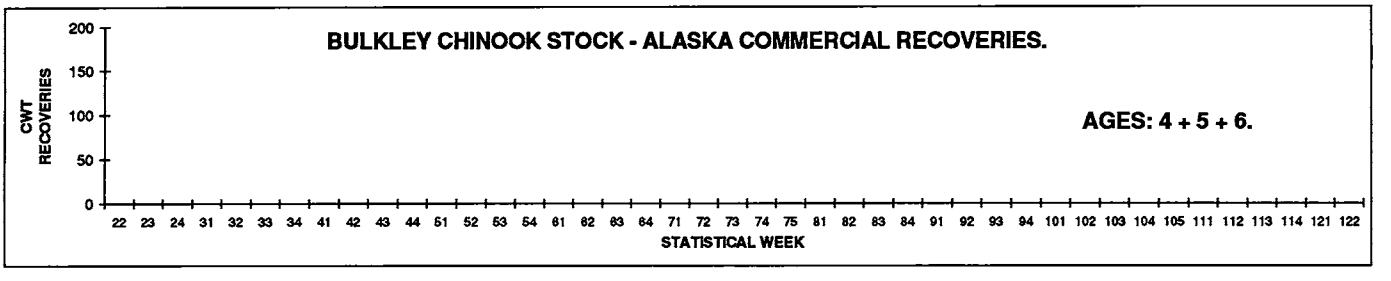


FIGURE 12. WEEKLY ALASKA CWT RECOVERY INFORMATION.







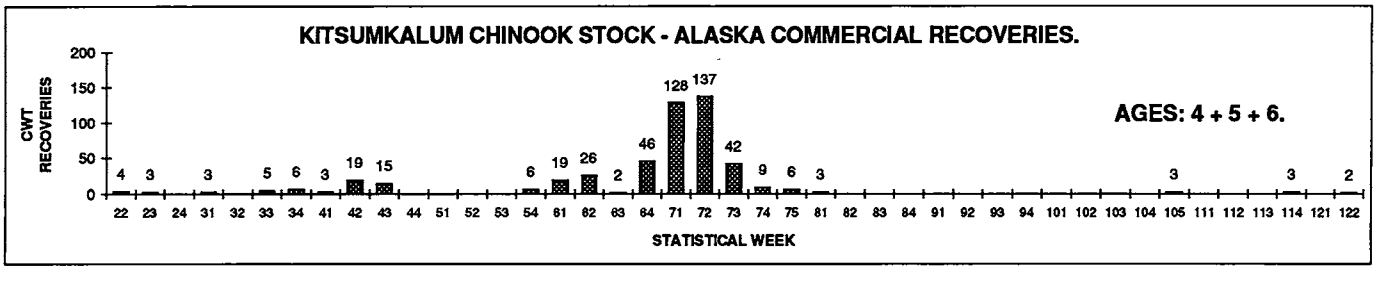
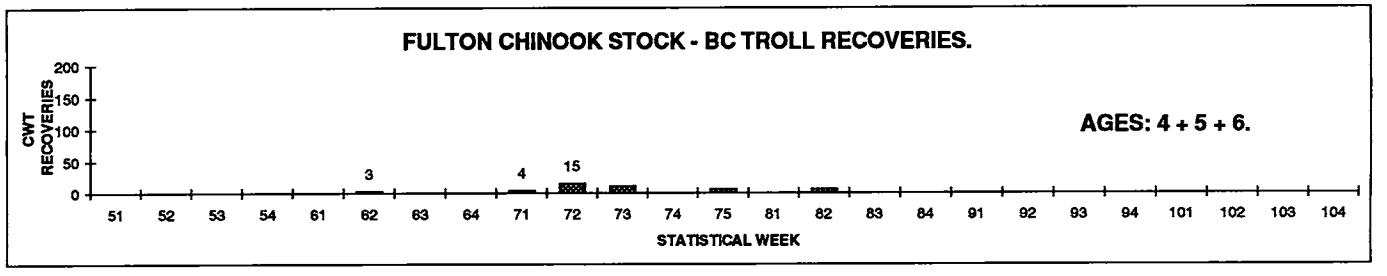
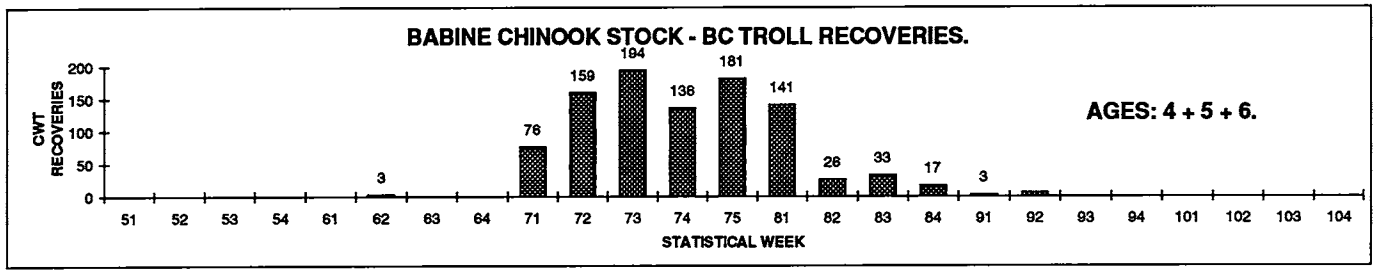
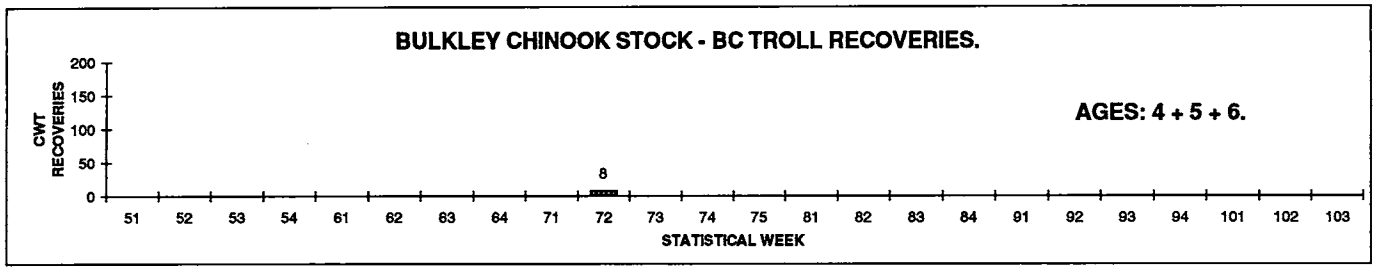


FIGURE 13. WEEKLY BC TROLL CWT RECOVERY INFORMATION.







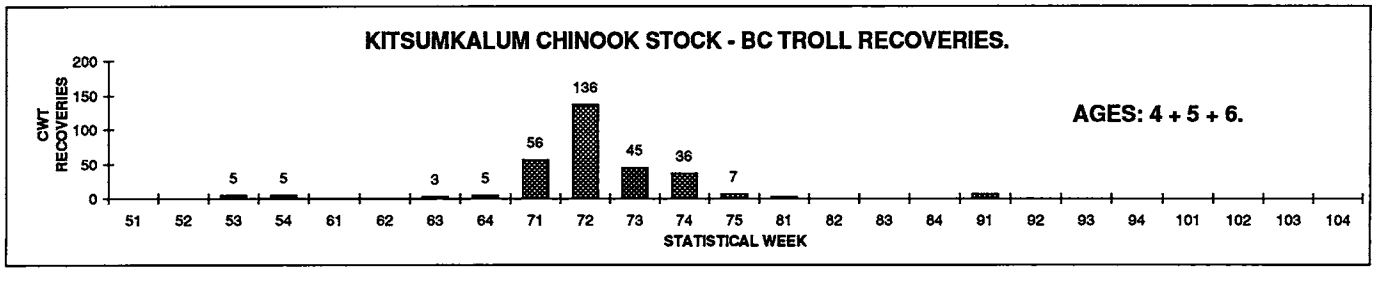


FIGURE 14. WEEKLY BC NET CWT RECOVERY INFORMATION.

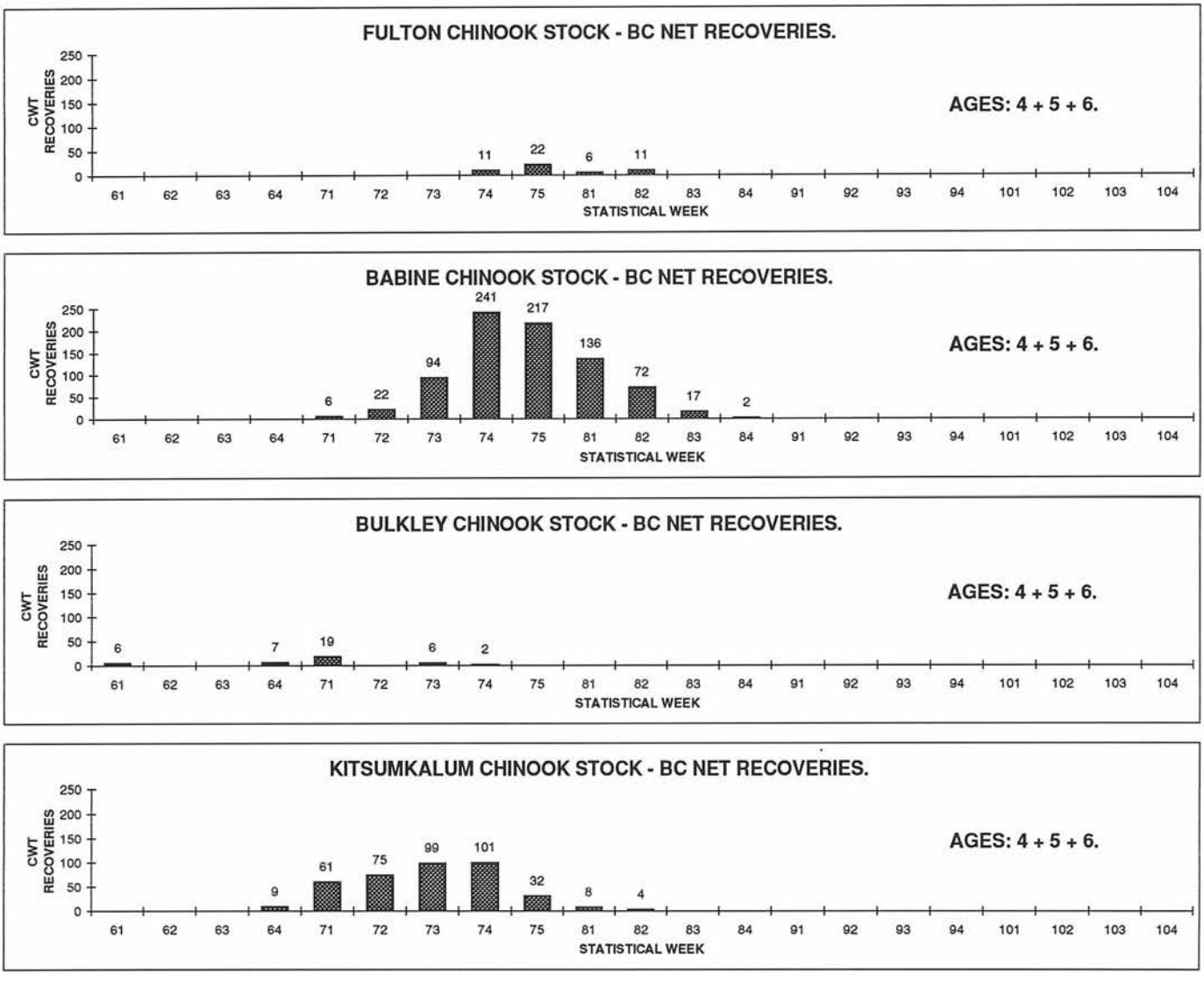
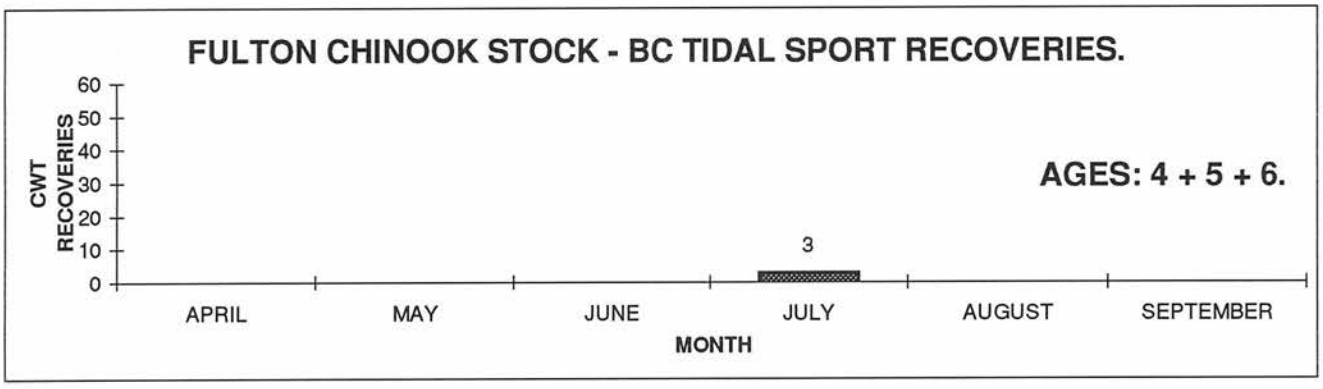
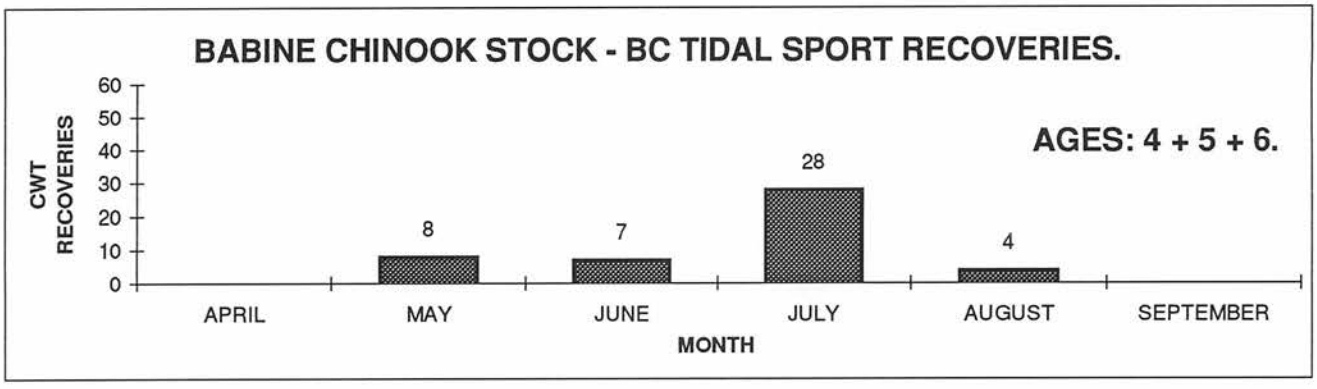
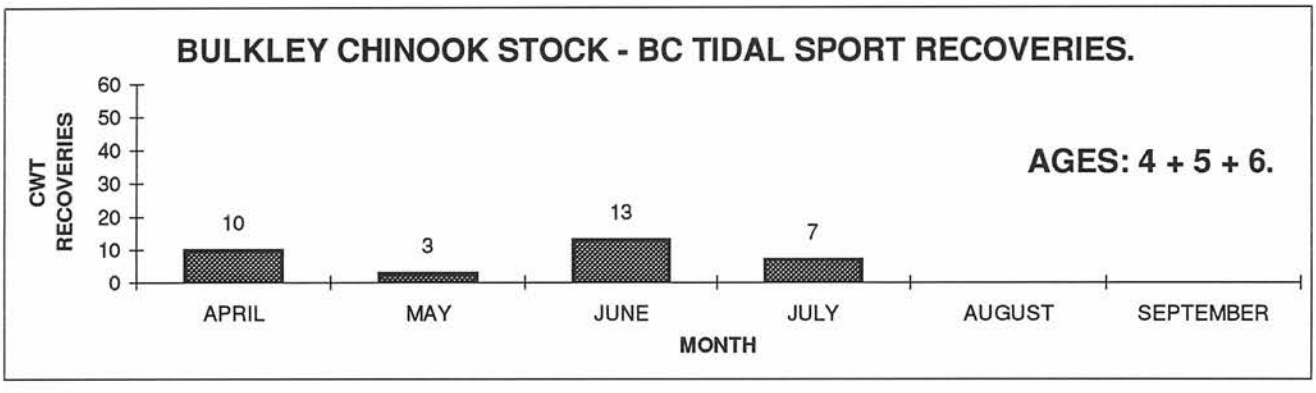


FIGURE 15. MONTHLY BC TIDAL SPORT CWT RECOVERY INFORMATION.







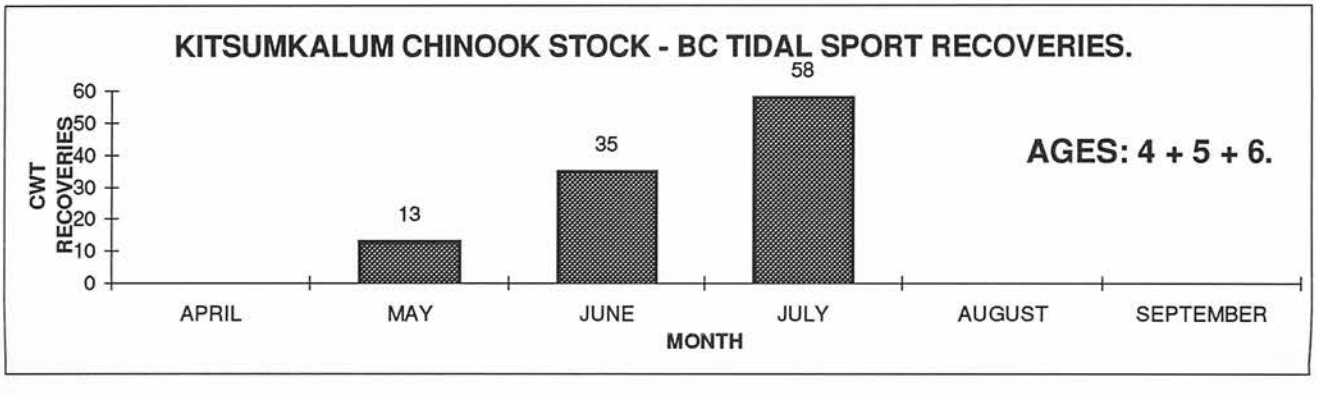
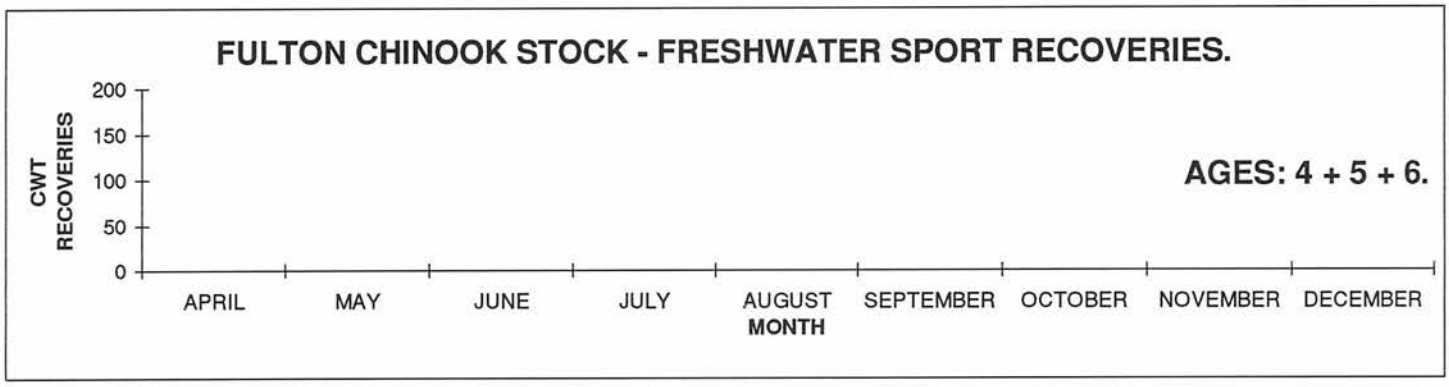
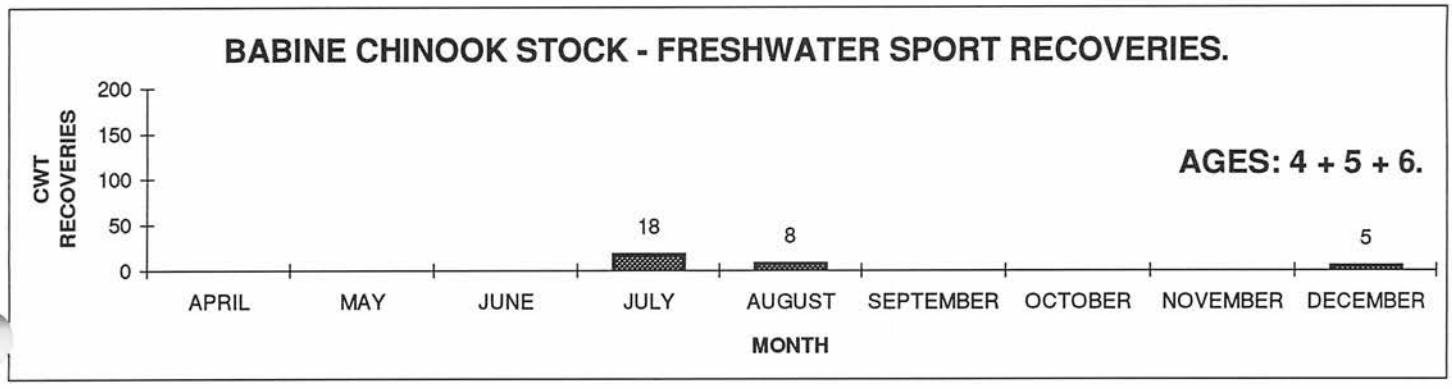
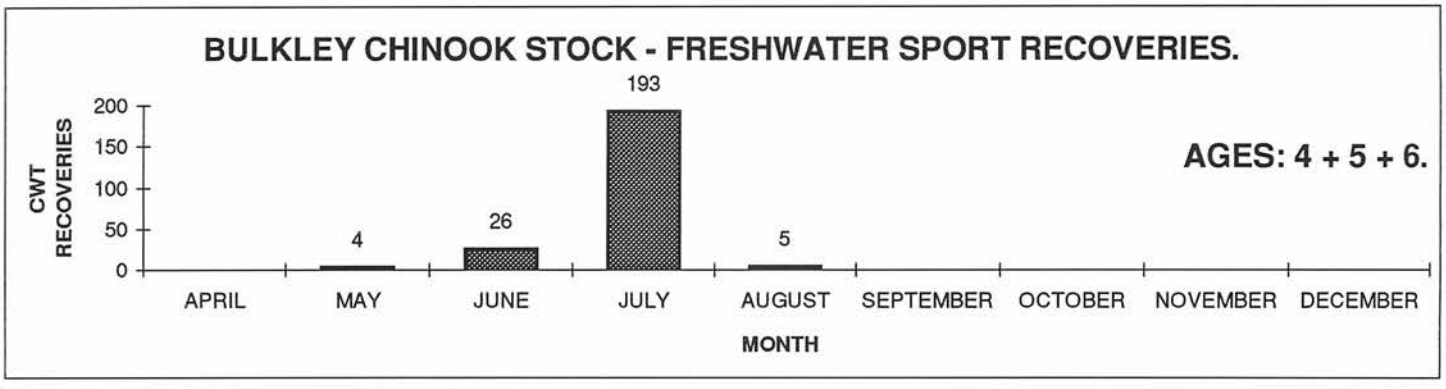


FIGURE 16. MONTHLY BC FRESHWATER SPORT CWT RECOVERY INFORMATION.







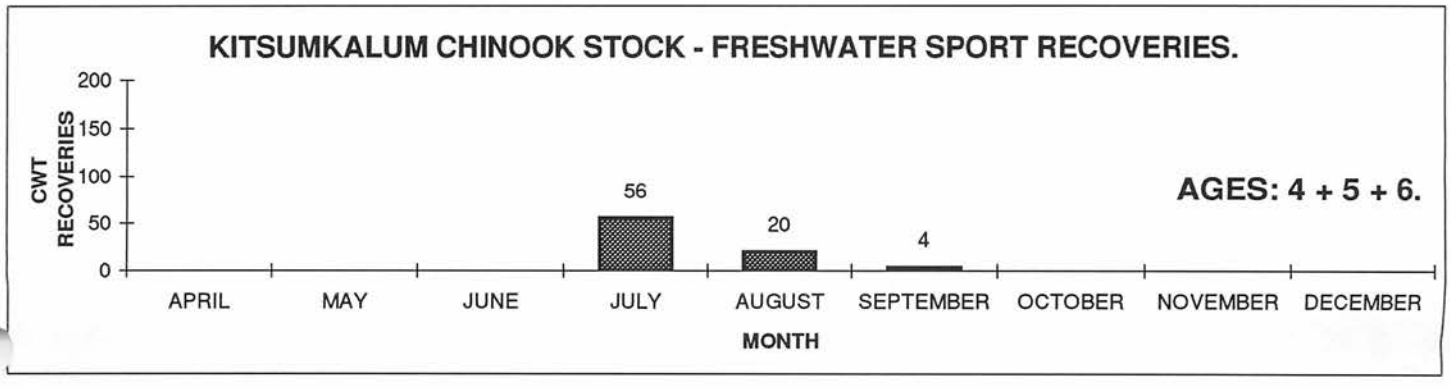
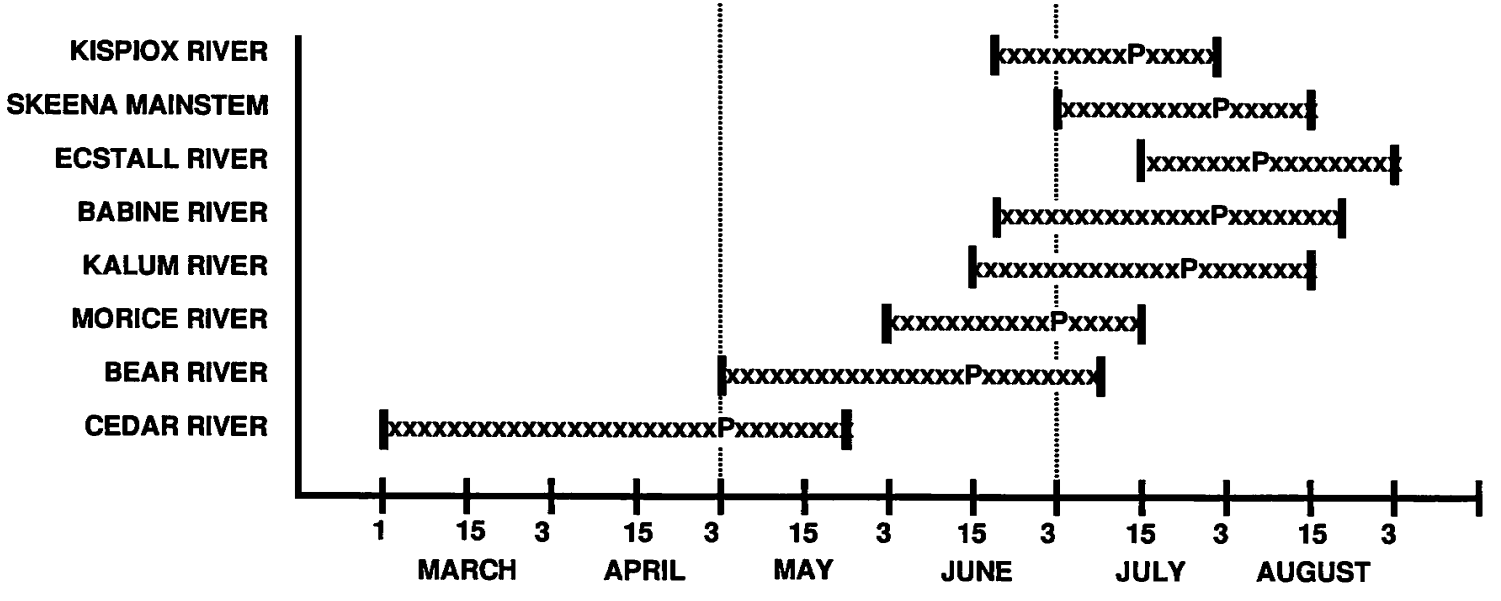
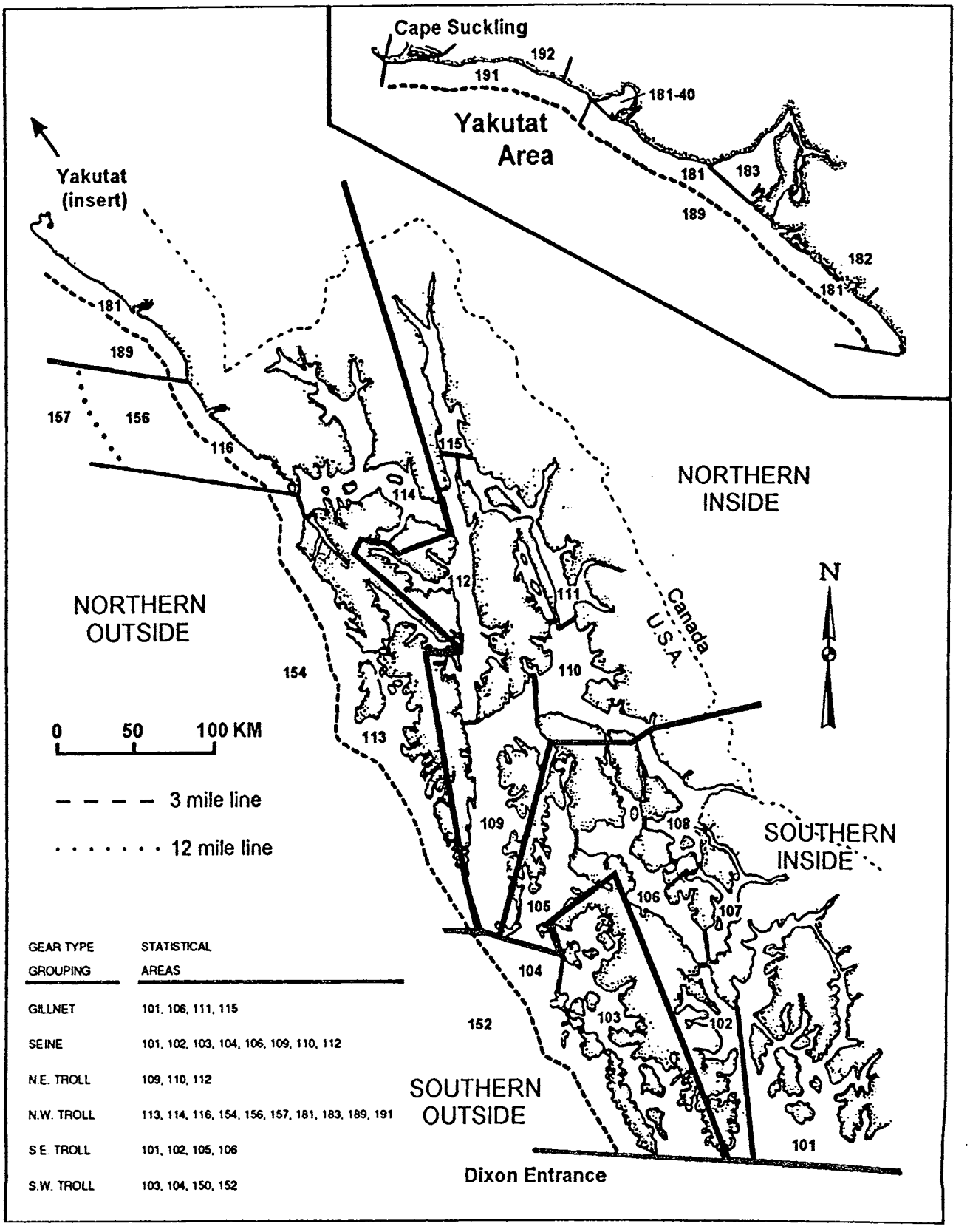


FIGURE 17. SKEENA CHINOOK RUN TIMING THROUGH THE TYEE TEST FISHERY (from unreferenced DFO report 1980).



NOTE: P = PEAK OF MIGRATION

FIGURE 18. MAP OF ALASKAN STATISTICAL AREAS.



GEAR TYPE GROUPING	STATISTICAL AREAS
GILLNET	101, 106, 111, 115
SEINE	101, 102, 103, 104, 106, 109, 110, 112
N.E. TROLL	109, 110, 112
N.W. TROLL	113, 114, 116, 154, 156, 157, 181, 183, 189, 191
S.E. TROLL	101, 102, 105, 106
S.W. TROLL	103, 104, 150, 152

FIGURE 19. KITSUMKALUM CHINOOK ESTIMATED ADJUSTED CWT COMMERCIAL RECOVERIES BY STATISTICAL AREA BY WEEK FOR ALL BROOD YEARS COMBINED.

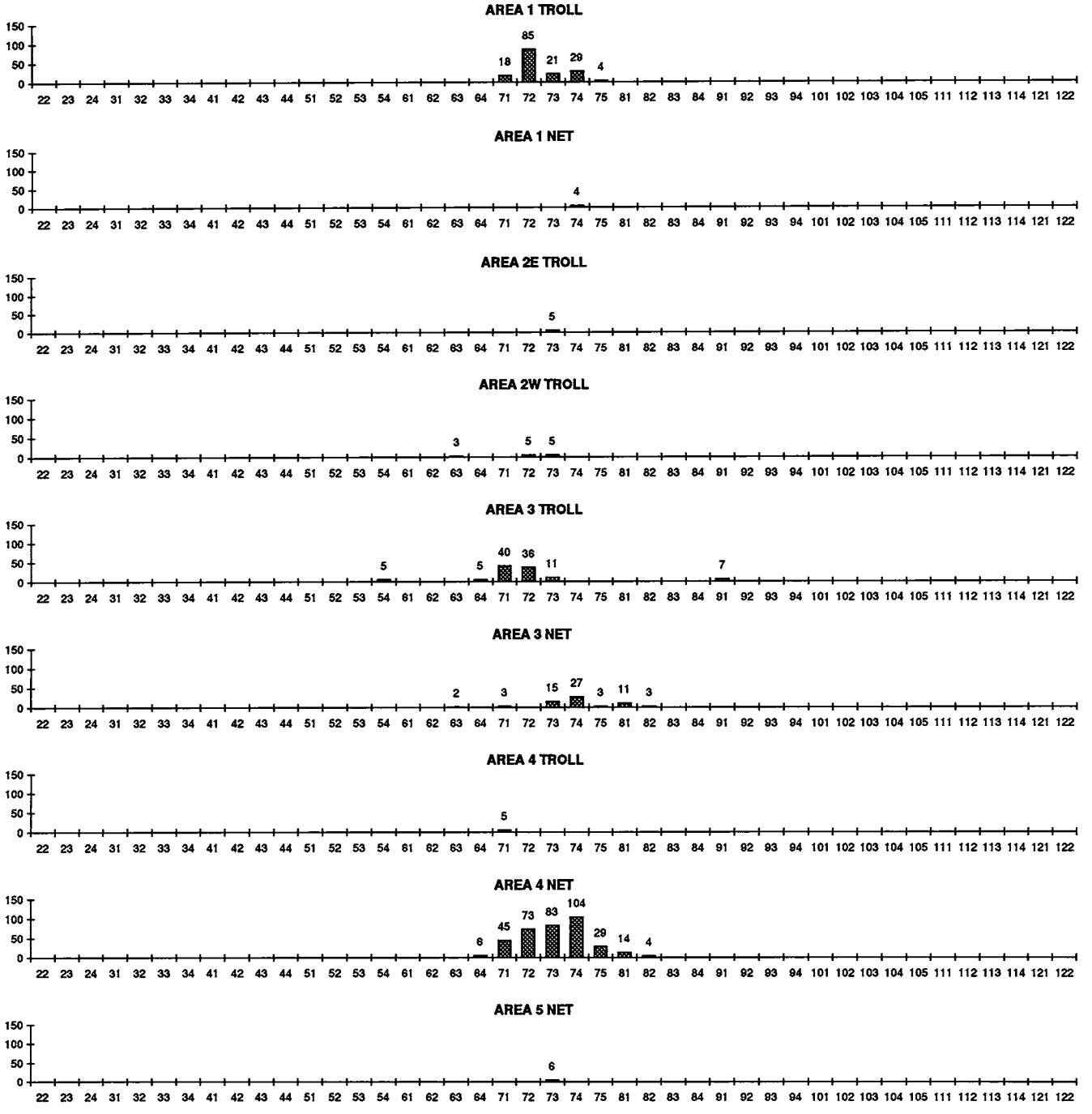


FIGURE 19 CONT. KITSUMKALUM CHINOOK ESTIMATED ADJUSTED CWT COMMERCIAL RECOVERIES BY STATISTICAL AREA BY WEEK FOR ALL BROOD YEARS COMBINED.

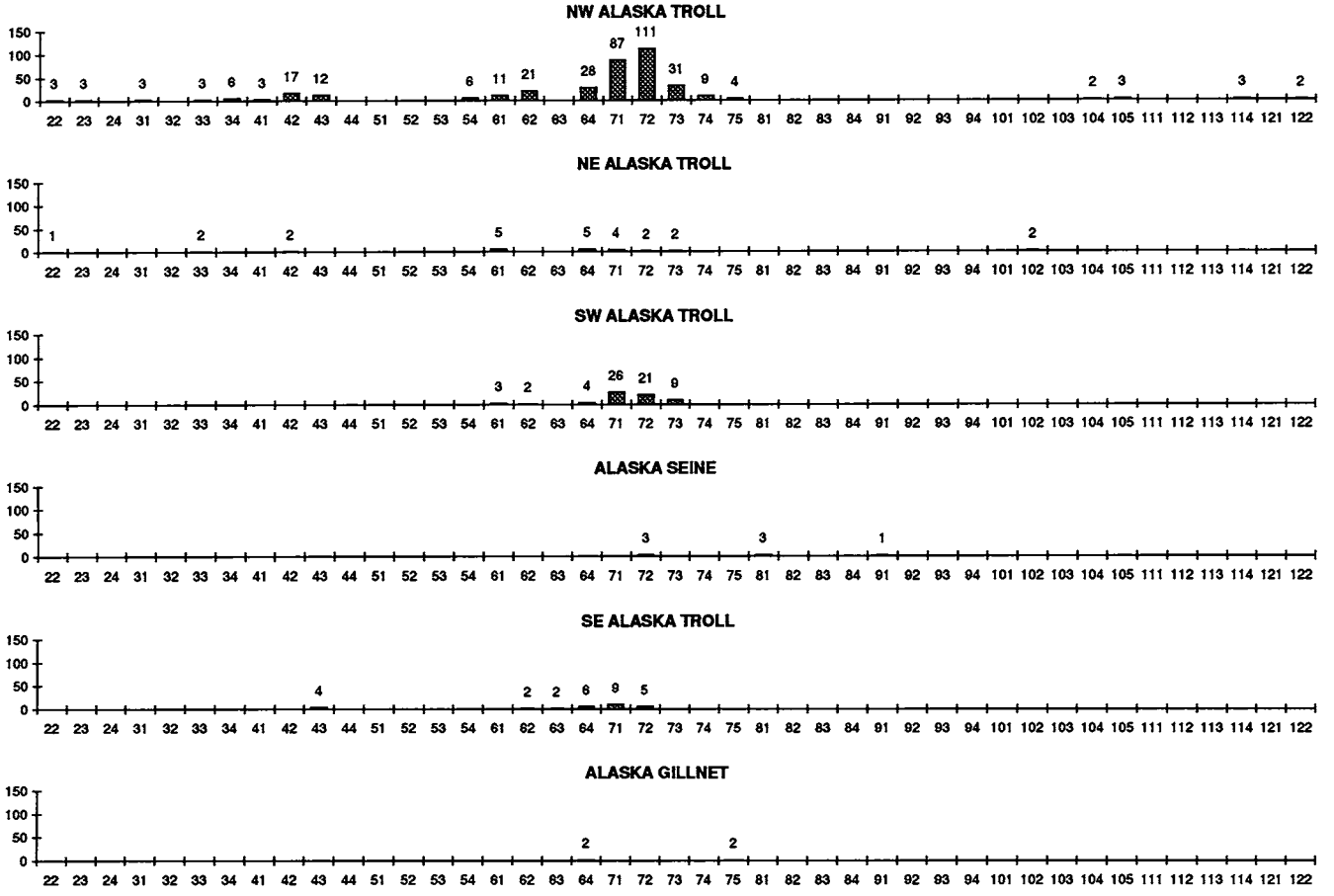


FIGURE 19 CONT. KITSUMKALUM CHINOOK ESTIMATED ADJUSTED CWT SPORT RECOVERIES BY STATISTICAL AREA BY MONTH FOR ALL BROOD YEARS COMBINED.

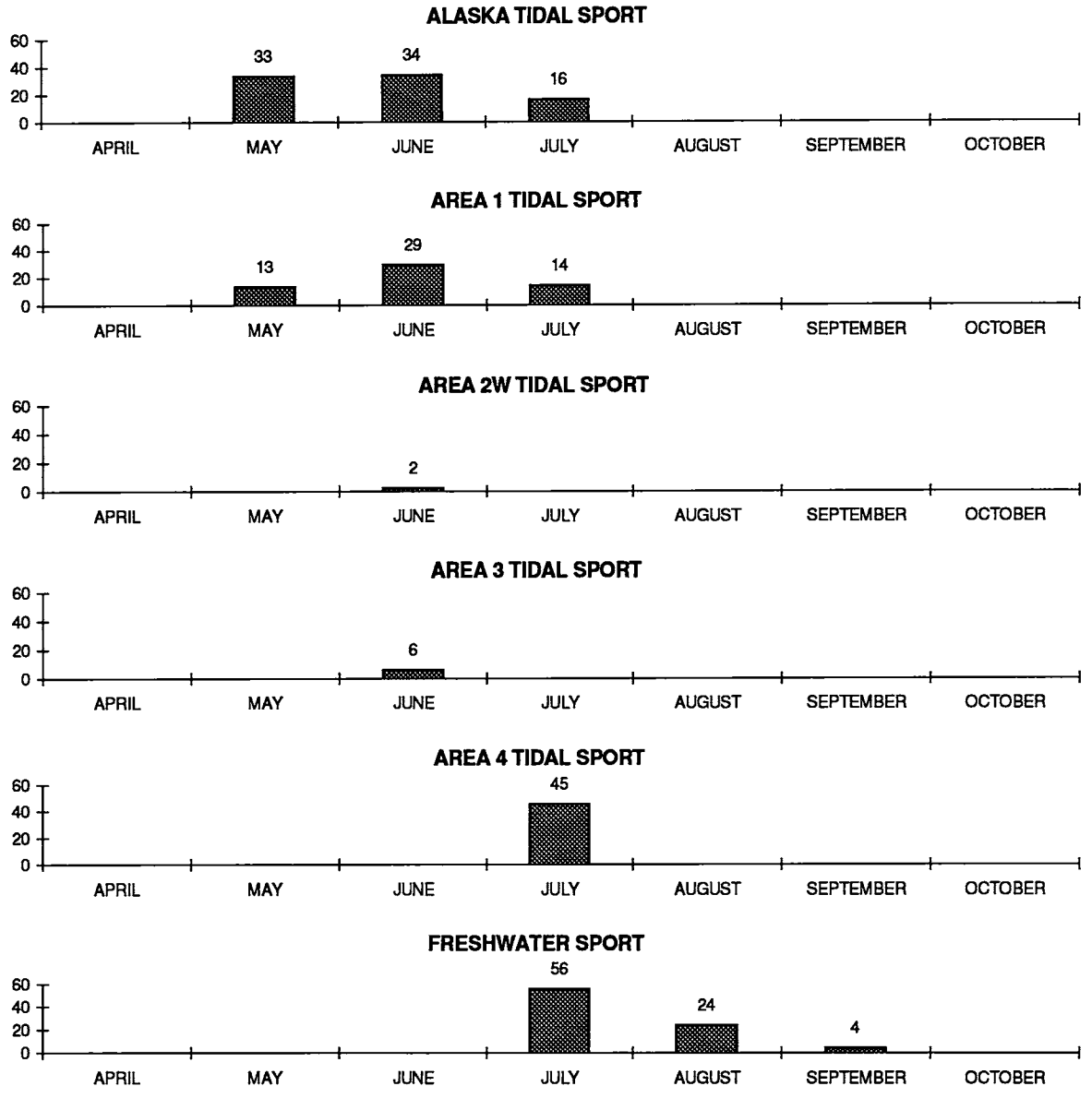


FIGURE 20. STATISTICAL AREA MAP OF NORTHERN BRITISH COLUMBIA.

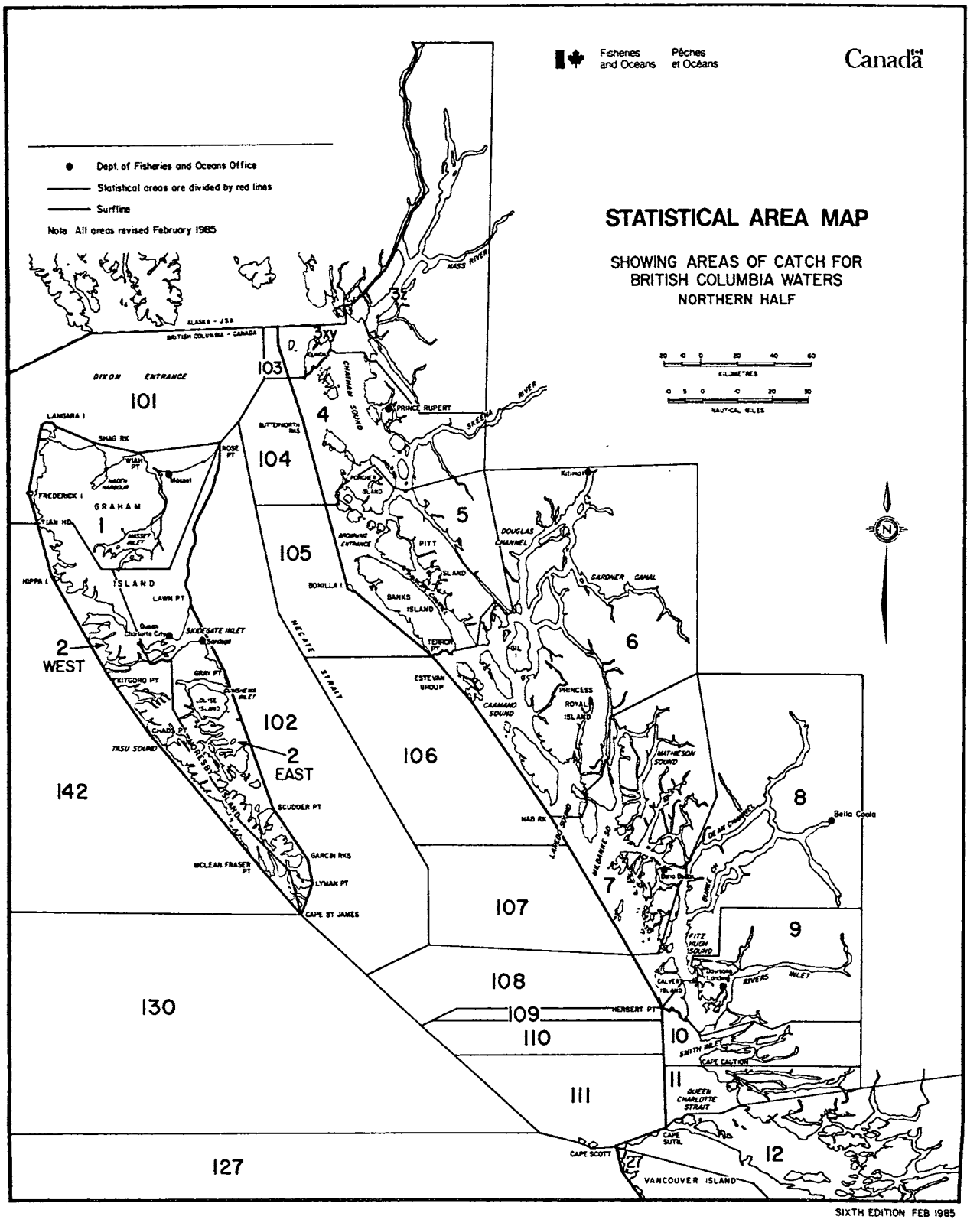


FIGURE 21. MAP SHOWING TSIMSHIAN COASTAL COMMUNITIES.

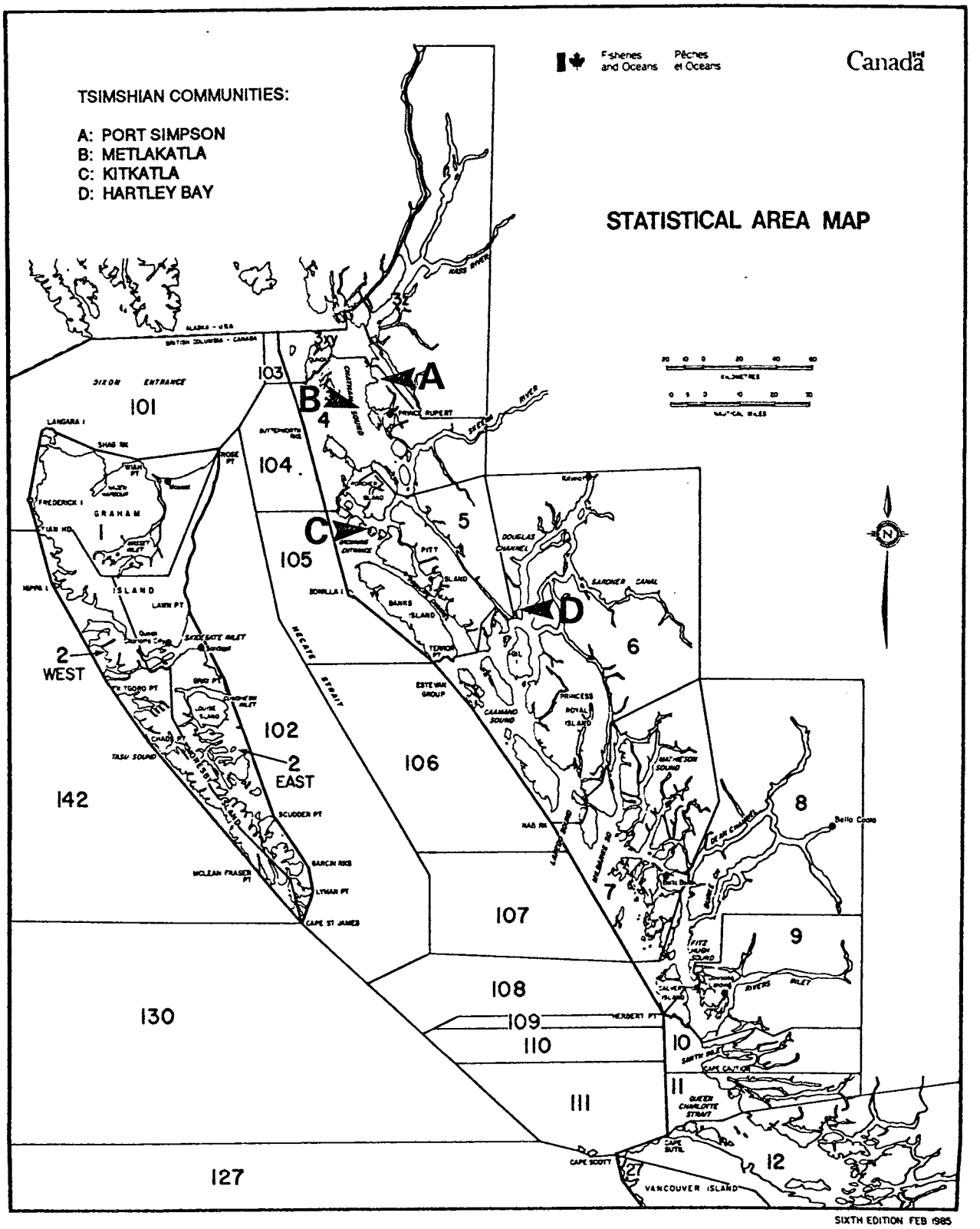


FIGURE 22. MAP OF GITKSAN-WET'SUWET'EN AND LAKE BABINE NATIONS COMMUNITIES.

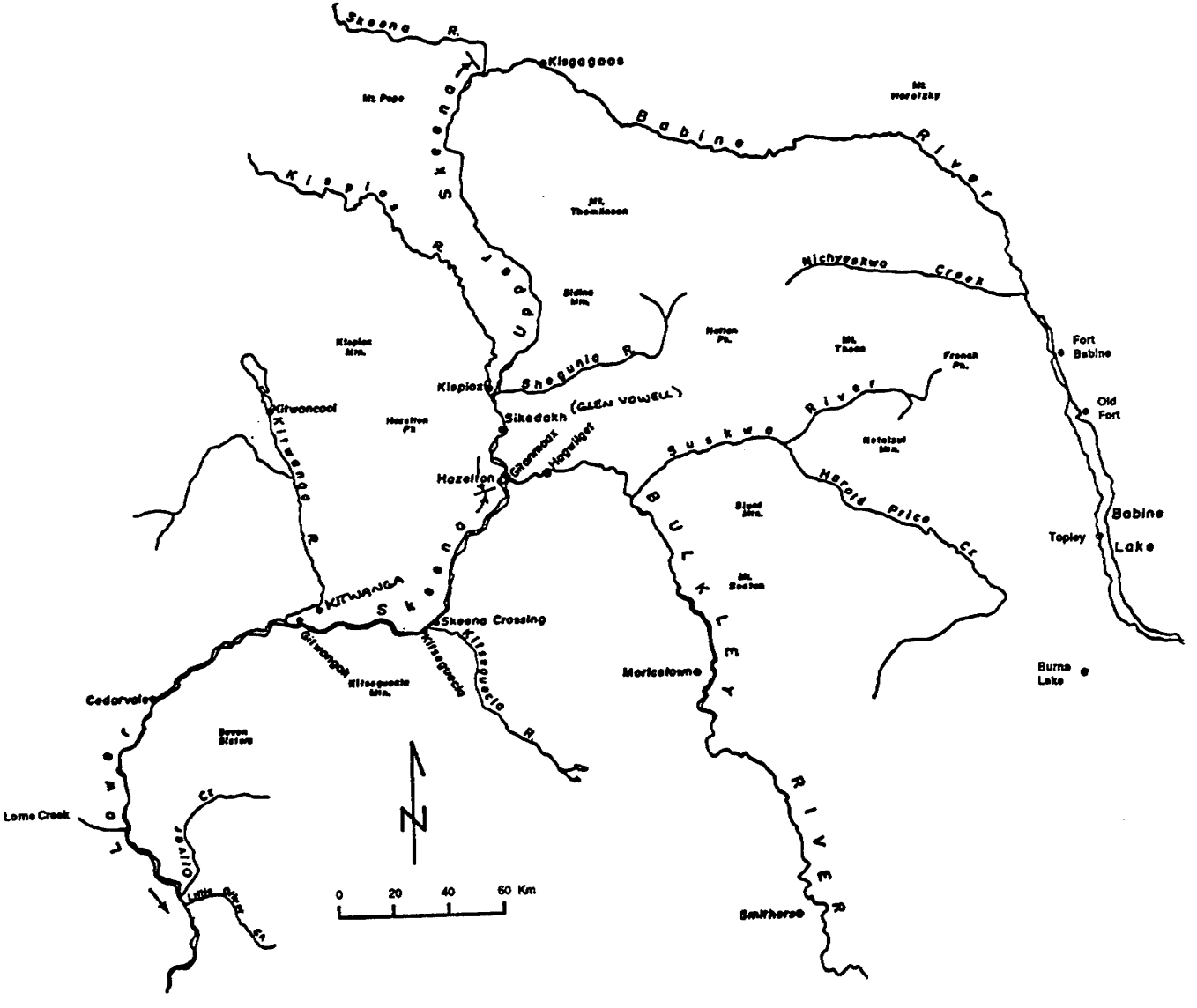


FIGURE 23. MAP SHOWING AREAS 3 AND 4 CREEL SURVEY SUB-AREAS.

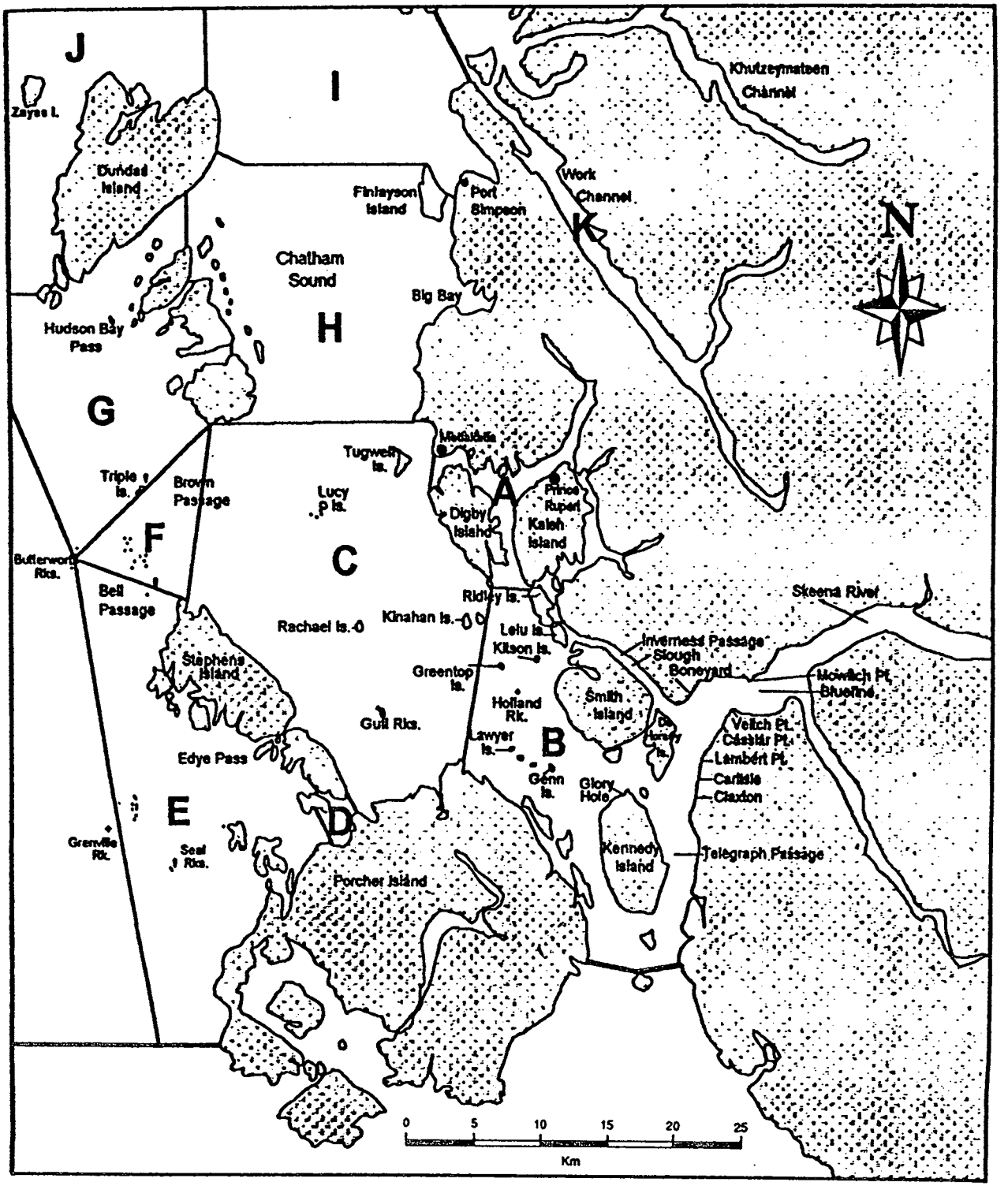


FIGURE 24. 1995 LOWER SKEENA RIVER SPORT FISHERY SURVEY AREA, ZONES AND ACCESS POINTS.

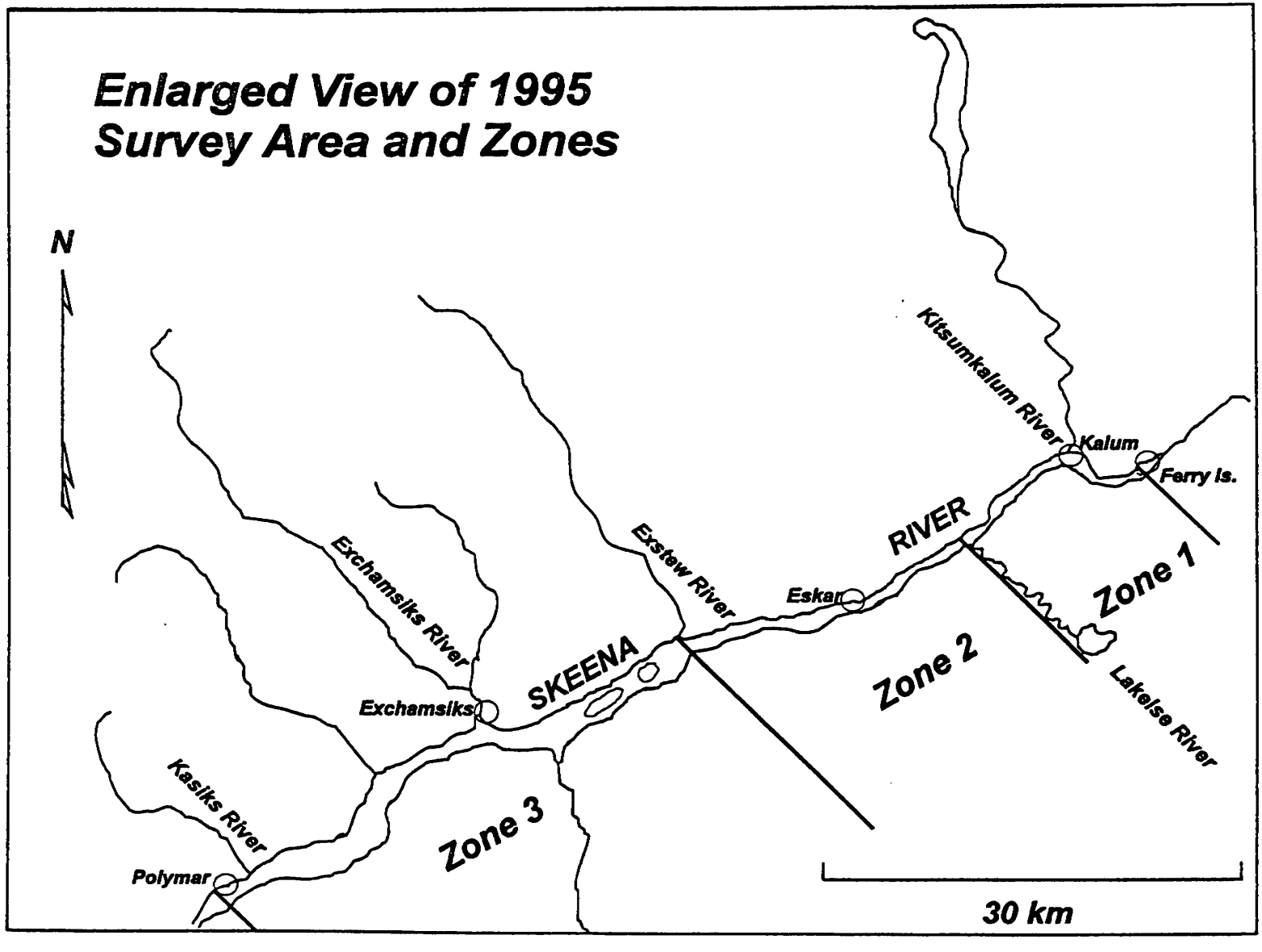


FIGURE 25. THE RELATIONSHIP BETWEEN ANNUAL SOCKEYE CATCHABILITY (q) AND MEAN POSTORBITAL-HYPURAL LENGTH (mm) FOR SOCKEYE SAMPLED IN THE SKEENA RIVER GILLNET TEST FISHERY FROM 1970 - 1992. ($y = 1.66E\text{-}10(x)+6.69E\text{-}04$, $r = 0.66$, $r^2 = 0.43$).

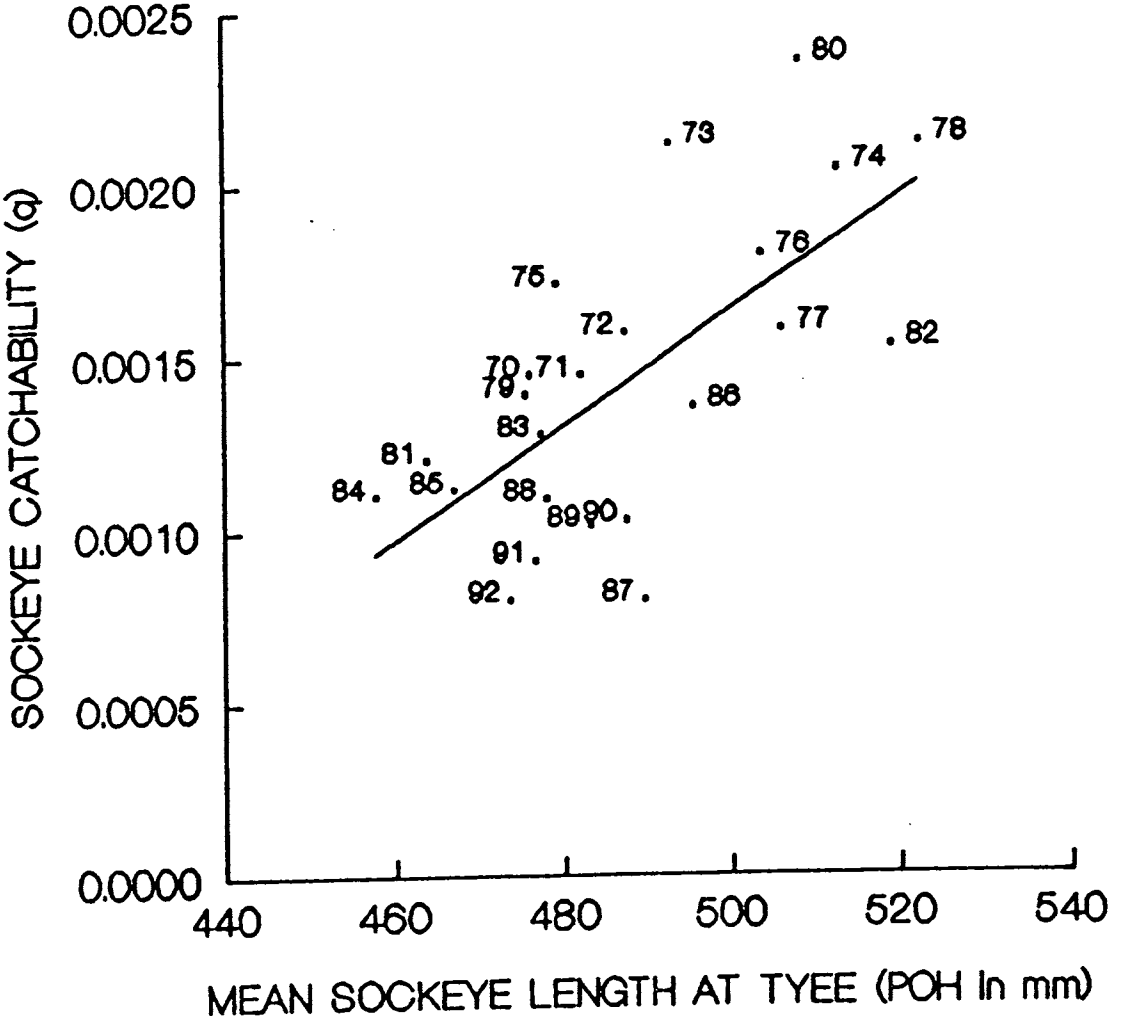


FIGURE 26. RELATIVE INDICIES OF ABUNDANCE OF SKEENA RIVER CHINOOK.

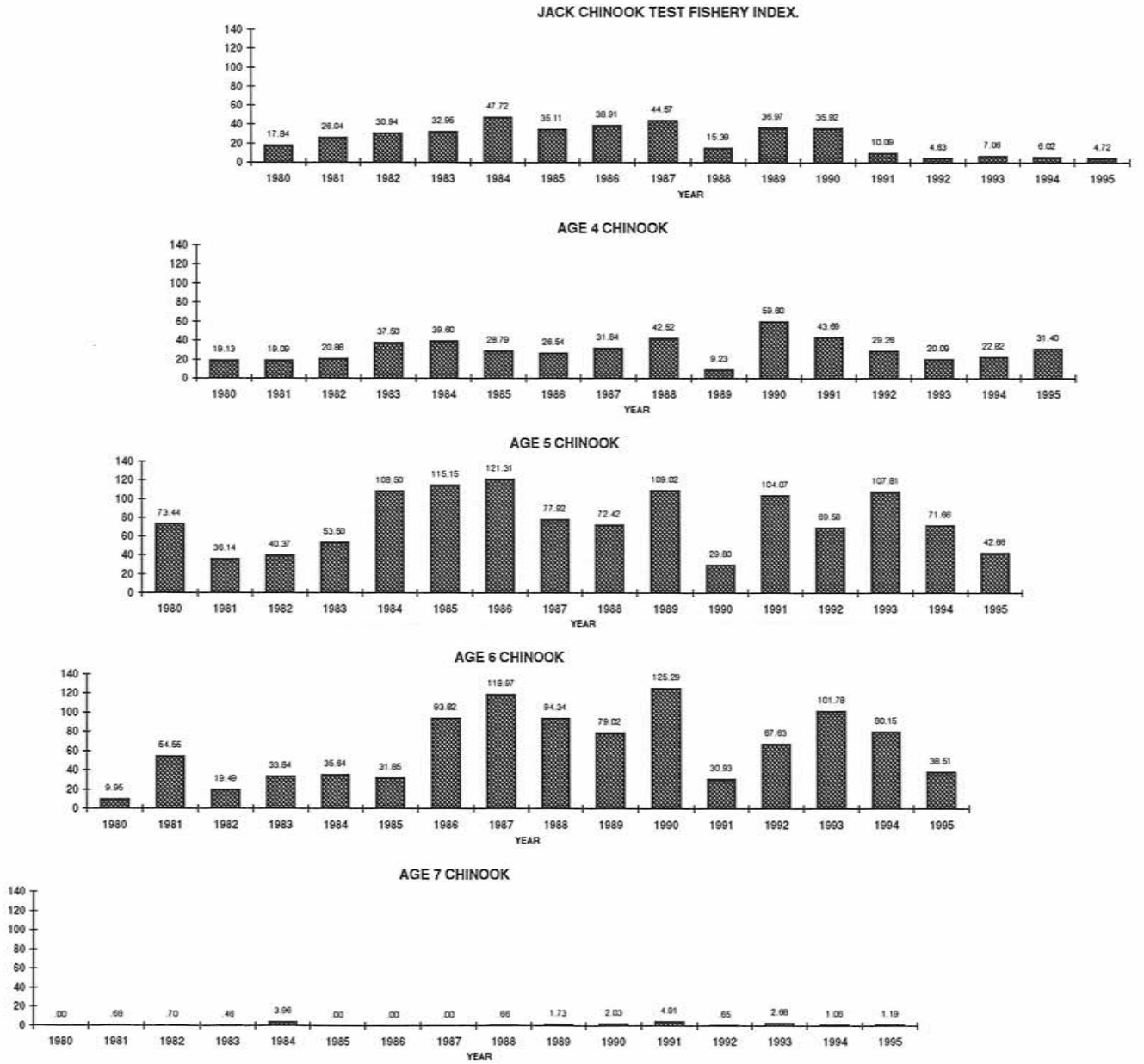


FIGURE 27. REGRESSION ANALYSIS OF JACK CHINOOK.

JACK INDEX YEAR		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
JACK SUM		17.84	26.04	30.94	32.95	47.72	35.11	38.91	44.57	15.39	36.97	35.92	10.09	4.63	7.06	6.02	4.72
AGE 4 SUM	19.13	19.09	20.88	37.50	39.60	28.79	26.54	31.84	42.52	9.23	59.60	43.69	29.26	20.09	22.82	31.40	
AGE 4 INDEX YEAR	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
PLOT SITE		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	

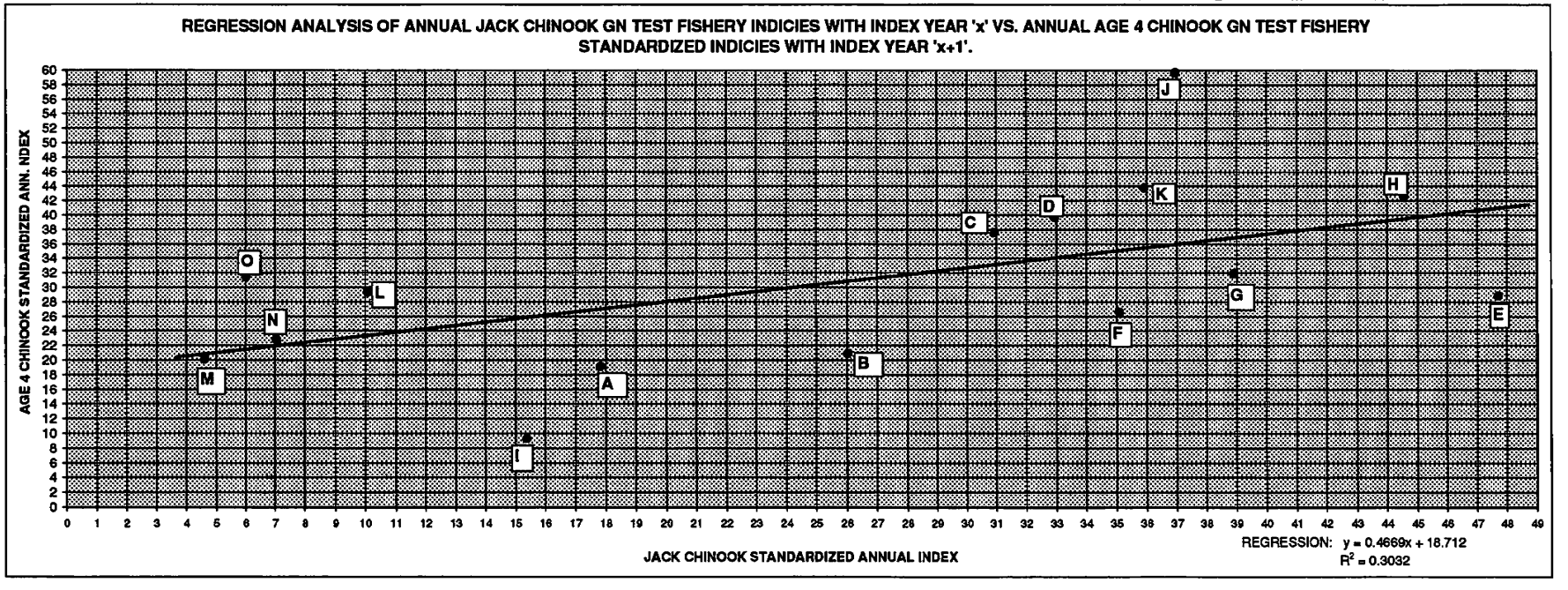


FIGURE 28. REGRESSION ANALYSIS OF AGE 4 CHINOOK.

AGE 4 INDEX YEAR		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
AGE 4 SUM		19.13	19.09	20.88	37.50	39.60	28.79	26.54	31.84	42.52	9.23	59.60	43.69	29.26	20.09	22.82	31.40
AGE 5 SUM	73.44	36.14	40.37	53.50	108.50	115.15	121.31	77.92	72.42	109.02	29.80	104.07	69.58	107.81	71.66	42.66	
AGE 5 INDEX YEAR	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
PLOT SITE		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	

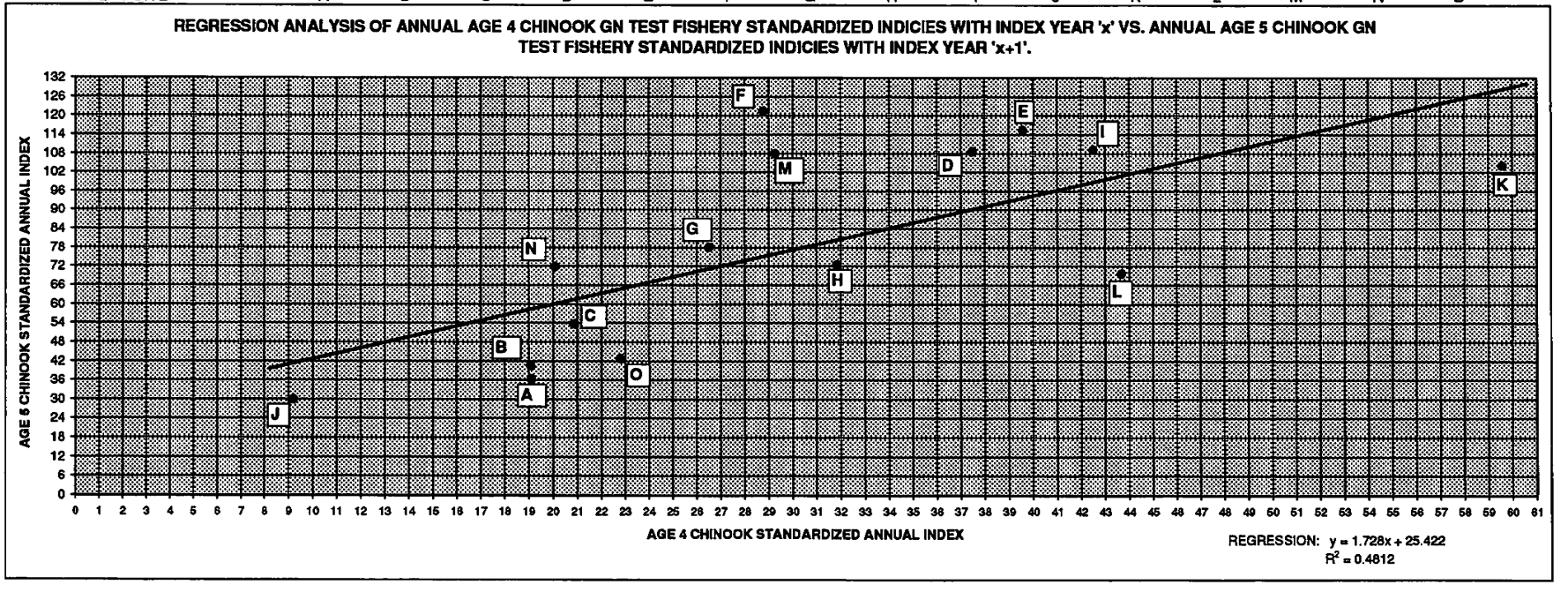


FIGURE 29. REGRESSION ANALYSIS OF AGE 5 CHINOOK.

AGE 5 INDEX YEAR		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
AGE 5 SUM		73.44	36.14	40.37	53.50	108.50	115.15	121.31	77.92	72.42	109.02	29.80	104.07	69.58	107.81	71.66	42.66
AGE 6 SUM	9.95	54.55	19.49	33.84	35.64	31.85	93.82	118.97	94.34	79.02	125.29	30.93	67.63	101.78	80.15	38.51	
AGE 6 INDEX YEAR	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
PLOT SITE		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	

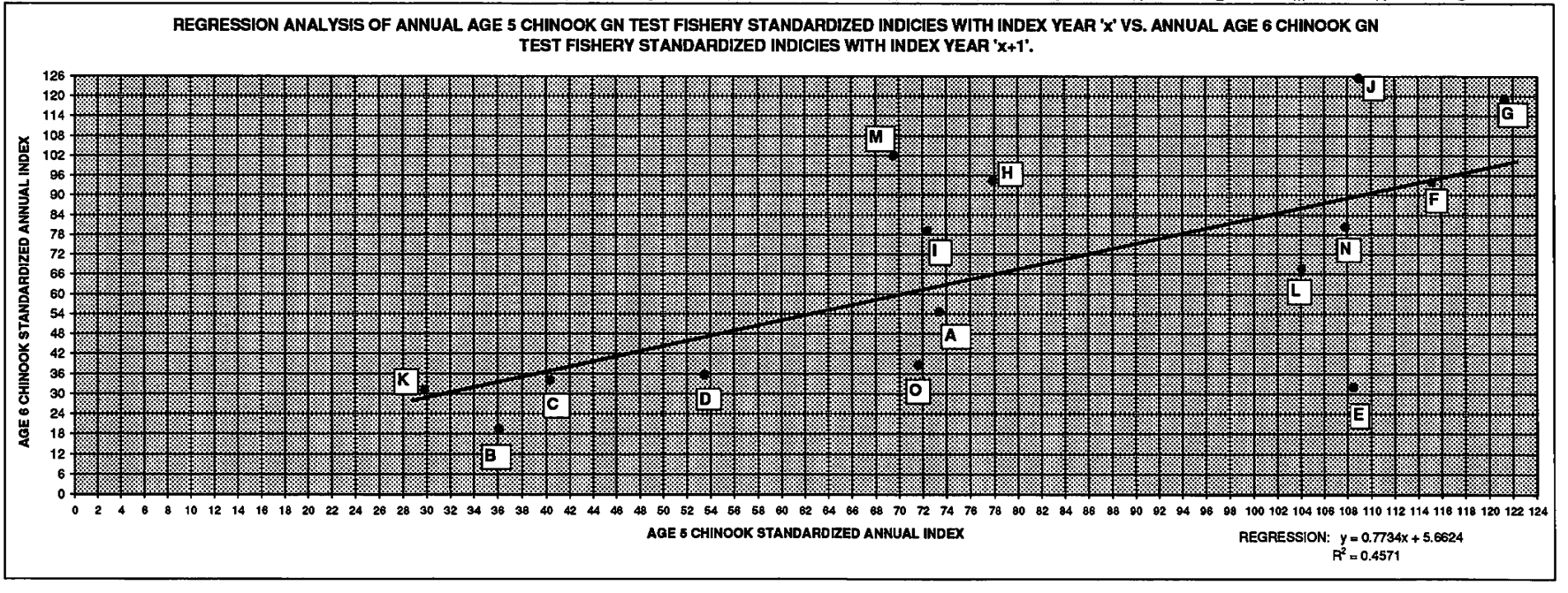


FIGURE 30. AVERAGE 1985 - 1991 RUN TIMING FOR CHINOOK, SOCKEYE, STEELHEAD, COHO AND PINK SALMON ENTERING AREA 4.

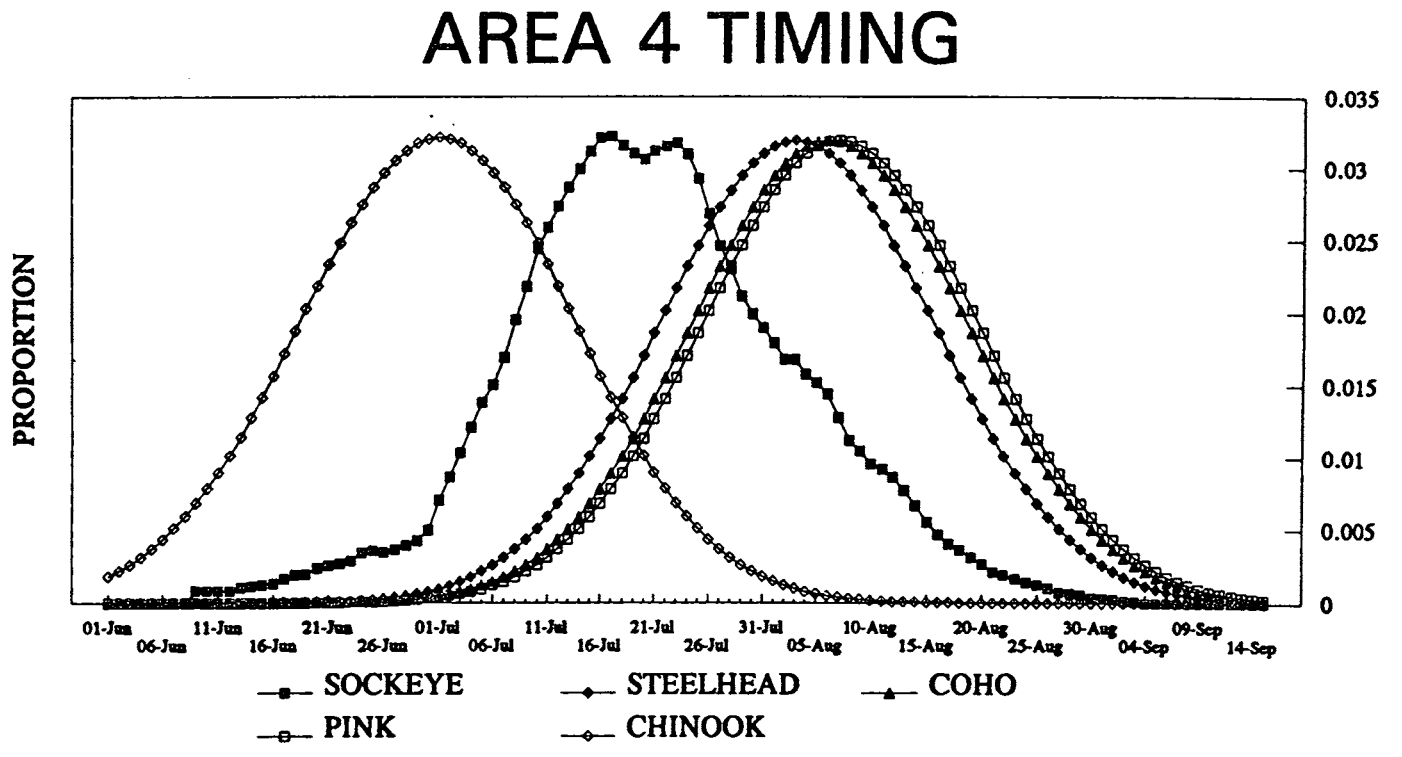


FIGURE 31. MODEL PREDICTIONS OF EQUILIBRIUM AGE AND SEX COMPOSITIONS (FEMALES SHADED, MALES OPEN) IN ESCAPEMENT FOR UNEXPLOITED EARLY-, MID-, AND LATE-MATURING CHINOOK STOCKS PLOTTED ABOVE MODEL PREDICTIONS OF AGE AND SEX COMPOSITIONS AT THE POINT OF STOCK COLLAPSE FOR THESE SAME STOCKS. MODEL PREDICTIONS ASSUMED THAT $p^2 = 0.8$ AND USED THE "MOST PLAUSIBLE" VALUES FOR RICKER α PARAMETERS ($\alpha = 10$ FOR EARLY- AND MID-MATURING STOCKS, $\alpha = 15$ FOR LATE-MATURING STOCKS.

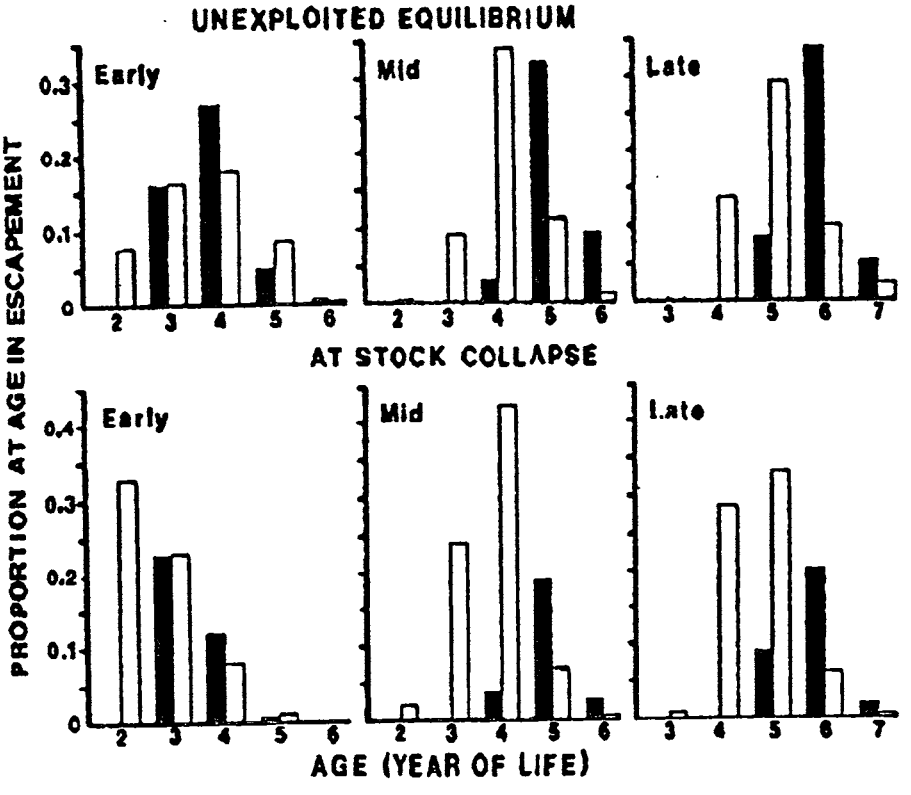


FIGURE 32. SKEENA RIVER CHINOOK ESCAPEMENTS ABOVE GOAL.

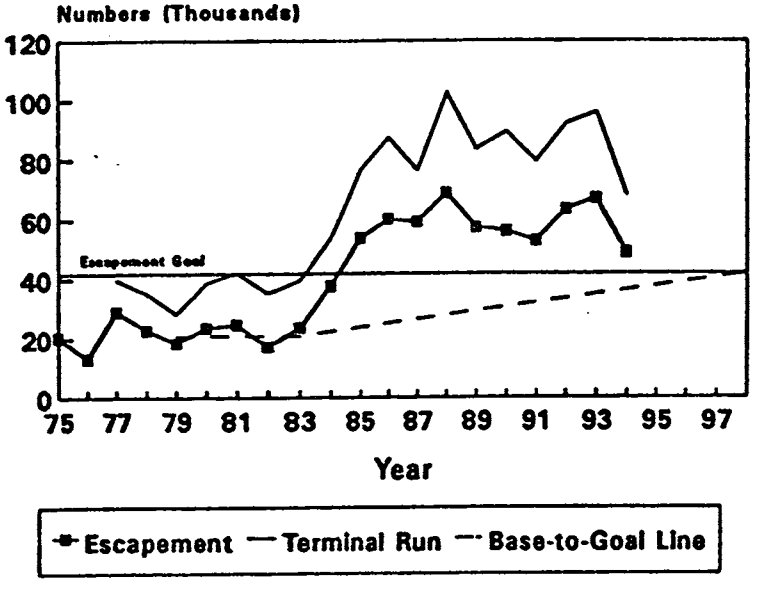


FIGURE 33. CHINOOK GSI ALLOZYME RESEARCH INDICATING POTENTIAL FOR CHINOOK STOCK SEPARATION WITHIN THE SKEENA RIVER FOR CERTAIN STOCK AGGREGATES (from D. TEAL, SEATTLE NMFS, pers. comm.).

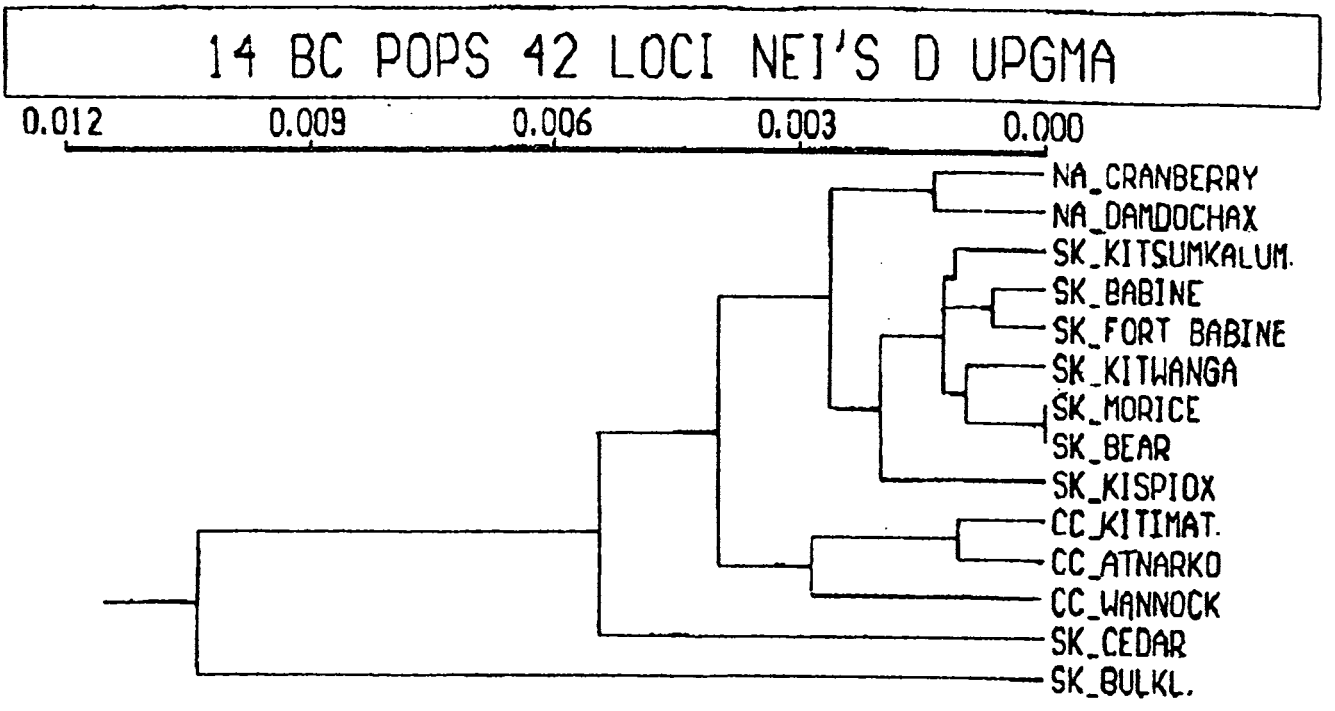


TABLE 1. COMPARISON OF NORTH COAST STOCK ASSESSMENT DATABASE ANNUAL CHINOOK ESCAPEMENT WITH THE S.E.D.S. ESCAPEMENT DATA.

YEAR	NORTH COAST CHINOOK DATA	P.B.S. CHINOOK DATA	VALUE DIFFERENCE OF NORTH COAST NUMBERS FROM P.B.S. NUMBERS	
1995	34,390			
1994	22,611	23,106	-	495
1993	68,286	67,870	+	416
1992	65,623	66,541	-	918
1991	52,792	52,792		0
1990	55,541	44,442	+	11,099
1989	57,192	56,942	+	250
1988	68,307	68,703	-	396
1987	60,948	59,094	+	1,854
1986	59,719	59,741	-	22
1985	52,407	51,887	+	520
1984	35,864	35,944	-	80
1983	23,602	23,604	-	2
1982	16,992	16,700	+	292
1981	24,523	23,980	+	543
1980	23,400	23,463	-	63
1979	18,488	18,597	-	109
1978	22,676	22,749	-	73
1977	29,018	29,104	-	86
1976	13,053	13,080	-	27
1975	20,319	20,590	-	271
1974	31,576	32,001	-	425
1973	40,341	40,320	+	21
1972	20,651	20,505	+	146
1971	18,500	20,000	-	1,500
1970	21,150	21,425	-	275
1969	29,555	29,475	+	80
1968	24,725	25,500	-	775
1967	25,890	26,875	-	985
1966	18,283	20,783	-	2,500
1965	17,300	19,100	-	1,800
1964	21,675	24,175	-	2,500
1963	26,405	27,905	-	1,500
1962	23,355	25,725	-	2,370
1961	18,550	18,150	+	400
1960	31,533	31,077	+	456
1959	110,250	109,650	+	600
1958	56,250	54,450	+	1,800
1957	57,125	55,625	+	1,500
1956	50,150	49,875	+	275
1955	48,150	47,100	+	1,050
1954	39,475	39,575	-	100
1953	34,125	33,725	+	400
1952	27,100			
1951	17,455			
1950	51,450			

TABLE 2. LIST OF SYSTEMS TO BE ENUMERATED FOR SPAWNERS IN 1995 AND RANKING FOR IMPORTANCE OF INFORMATION.

(RESULTS FROM SKEENA ESCAPEMENT WORKSHOP, 1995)

TRIBUTARY	SOCKEYE	COHO	PINK	CHUM	CHINOOK	INVESTIGATOR
ECSTALL		C	B	B	B	D. WAGNER
McNEIL		B				SAD - WALK/FENCE OR TRAP
KHYEX		C	B	B	C	C & P - BOAT/WALK
KASIKS		C			B	J. HIPP
EXCHAMSIKS		C			C	J. HIPP
GITNADOIX / ALASTAIR	B	C		B	B	J. HIPP
L. SKEENA & S. CHAN.			B	B	C	J. HIPP
LAKELSE & TRIBS.	A	A	A			J. HIPP
ZYMACORD & TRIBS.		C			C	J. HIPP / SEP
KITSUMKALUM & TRIBS.	B	A	B	B	A	J. HIPP / SEP(CK)
CEDAR					B	J. HIPP / SEP
ZYMOETZ / McDONNELL	C	B			C	J. HIPP
KITWANGA	C	C	A	B	B	J. HIPP
KITSEGUECLA		C			C	J. HIPP
MORICE / NANIKA & TRIBS.	A	A	A		A	J. HIPP
U. BULKLEY		A			A	SEP
SUSKWA		C			C	J. HIPP
TELKWA		B				SAD/GREEN PLAN
TOBOGGAN		A				SEP/GREEN PLAN
KISPIOX & TRIBS.	B	A	A	B	A	J. HIPP
SHEGUNIA					C	J. HIPP
BABINE & TRIBS.	A	A	A		B	SAD
BEAR	C	C			A	J. HIPP
SUSTUT	B	A			A	SAD

TABLE 3. REVIEW OF BC16 INSPECTION DATA FOR STEPHENS CREEK, 1929 TO 1995.

STREAM NAME	YEAR	NUMBER OF VISITS (INSPECTION METHODS: 1 TO 10). (1) WALK	(2) FLOAT	(3) PLANE	(4) HELICOPTER	(5) REDD COUNTS	(6) SPOT CHECKS	(7) STRIP COUNTS	(8) DEAD PITCH	(9) TAG RECOVERY	(10) UNKNOWN	SUM OF VISITS	1 (LOW) TO 5 (HIGH) RELIABILITY OF FINAL ESTIMATE	DAYS OF INSPECTION.
STEPHENS CREEK	1995				2							2	3	AUG 30, SEPT 16.
STEPHENS CREEK	1994											0		
STEPHENS CREEK	1993				2							2	4	AUG 31, SEPT 16.
STEPHENS CREEK	1992				1							1	UNK	SEPT 16.
STEPHENS CREEK	1991											UNK	UNK	UNK
STEPHENS CREEK	1990				YES							UNK	3	UNK
STEPHENS CREEK	1989				YES							UNK	3	AUG (UNK), OCT (UNK).
STEPHENS CREEK	1988				YES							UNK	3	AUG (UNK), OCT (UNK).
STEPHENS CREEK	1987				1							1	4	SEP 29.
STEPHENS CREEK	1986				2							2	3	AUG 21, SEP 10.
STEPHENS CREEK	1985											0		
STEPHENS CREEK	1984										1	1	UNK	SEPT (UNK).
STEPHENS CREEK	1983											0		
STEPHENS CREEK	1982										1	1	UNK	SEPT (UNK).
STEPHENS CREEK	1981											0		
STEPHENS CREEK	1980											UNK	UNK	UNK
STEPHENS CREEK	1979										YES	UNK	UNK	AUG (UNK), SEPT (UNK), OCT (UNK).
STEPHENS CREEK	1978										YES	UNK	UNK	AUG (UNK), SEPT (UNK).
STEPHENS CREEK	1977										1	1	UNK	OCT 5.
STEPHENS CREEK	1976										1	1	UNK	OCT 1.
STEPHENS CREEK	1975										2	2	UNK	SEPT 4, 18.
STEPHENS CREEK	1974										1	1	UNK	SEPT 24.
STEPHENS CREEK	1973										1	1	UNK	SEPT 29.
STEPHENS CREEK	1972										1	1	UNK	SEPT 25.
STEPHENS CREEK	1971										1	1	UNK	SEPT 25.
STEPHENS CREEK	1970										1	1	UNK	SEPT 20.
STEPHENS CREEK	1969										2	2	UNK	SEPT 12, 25.
STEPHENS CREEK	1968										YES	UNK	UNK	SEPT (UNK).
STEPHENS CREEK	1967											0		
STEPHENS CREEK	1966				1						2	3	UNK	AUG 28-31, SEPT 24, OCT 14.
STEPHENS CREEK	1965				1						2	3	UNK	AUG 22, 26, SEPT 22.
STEPHENS CREEK	1964										1	1	UNK	SEPT 28.
STEPHENS CREEK	1963										2	2	UNK	SEPT 18, OCT 2.
STEPHENS CREEK	1962				2							2	UNK	SEPT 8, 28.
STEPHENS CREEK	1961											1	UNK	SEPT 10-11.
STEPHENS CREEK	1960				1							1	UNK	SEPT 29.
STEPHENS CREEK	1959										2	2	UNK	SEPT 14, 22.
STEPHENS CREEK	1958										2	2	UNK	AUG 29, SEPT 19.
STEPHENS CREEK	1957										3	3	UNK	SEPT 14, 27, AUG 27.
STEPHENS CREEK	1956										2	2	UNK	AUG 27, SEPT 23.
STEPHENS CREEK	1955										3	3	UNK	AUG 25, SEPT 19, OCT 7.
STEPHENS CREEK	1954										2	2	UNK	SEPT 6, 30.
STEPHENS CREEK	1953										2	2	UNK	SEPT 27, 29.
STEPHENS CREEK	1952										2	2	UNK	SEPT 6, OCT 5.
STEPHENS CREEK	1951										1	1	UNK	OCT 6.
STEPHENS CREEK	1950										1	1	UNK	SEPT 30.
STEPHENS CREEK	1949										1	1	UNK	SEPT 20.
STEPHENS CREEK	1948										1	1	UNK	SEPT 22.
STEPHENS CREEK	1947										2	2	UNK	SEPT 19, OCT 10.
STEPHENS CREEK	1946										3	3	UNK	AUG 3, SEPT 4, 6.
STEPHENS CREEK	1945											0		
STEPHENS CREEK	1944											0		
STEPHENS CREEK	1943											0		
STEPHENS CREEK	1942										YES	UNK	UNK	UNK
STEPHENS CREEK	1941										YES	UNK	UNK	AUG (UNK), SEPT (UNK), OCT (UNK).
STEPHENS CREEK	1940										YES	UNK	UNK	UNK
STEPHENS CREEK	1939											0		
STEPHENS CREEK	1938											0		
STEPHENS CREEK	1937											0		
STEPHENS CREEK	1936										YES	UNK	UNK	UNK
STEPHENS CREEK	1935										YES	UNK	UNK	UNK
STEPHENS CREEK	1934										YES	UNK	UNK	UNK
STEPHENS CREEK	1933										YES	UNK	UNK	UNK
STEPHENS CREEK	1932											0		
STEPHENS CREEK	1931										YES	UNK	UNK	UNK
STEPHENS CREEK	1930											0		
STEPHENS CREEK	1929										YES	UNK	UNK	UNK

TABLE 4. REVIEW OF BC16 INSPECTION DATA FOR THE KLOIYA RIVER, 1928 TO 1995.

STREAM NAME	YEAR	NUMBER OF VISITS (INSPECTION METHODS: 1 TO 10). (1) WALK	(2) FLOAT	(3) PLANE	(4) HELICOPTER	(5) REDD COUNTS	(6) SPOT CHECKS	(7) STRIP COUNTS	(8) DEAD PITCH	(9) TAG RECOVERY	(10) UNKNOWN	SUM OF VISITS	1 (LOW) TO 5 (HIGH) RELIABILITY OF FINAL ESTIMATE	DAYS OF INSPECTION.
KLOIYA RIVER	1995										YES	UNK	UNK	OBS. FROM HATCHERY CREW.
KLOIYA RIVER	1994	7										7	2	AUG 10,16,22,28, SEPT 6,20,25.
KLOIYA RIVER	1993	1									YES	UNK	3	OBS. FROM HATCHERY CREW.
KLOIYA RIVER	1992	2										2	UNK	AUG 19 SEPT 26.
KLOIYA RIVER	1991	5										5	4	SEPT 1,15,25,30 OCT 1.
KLOIYA RIVER	1990											0		
KLOIYA RIVER	1989	3										3	UNK	AUG 24 SEPT 8,30.
KLOIYA RIVER	1988	3										3	3	AUG 30 SEPT 10 OCT 11.
KLOIYA RIVER	1987	3										3	3	SEPT 15,23,24.
KLOIYA RIVER	1986											0		
KLOIYA RIVER	1985	7										7	4	AUG (UNK) SEPT (UNK) OCT (UNK).
KLOIYA RIVER	1984	6										6	3	JULY (UNK) TO OCT (UNK).
KLOIYA RIVER	1983	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1982	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1981	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1980	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1979	YES										UNK	UNK	"NUMEROUS".
KLOIYA RIVER	1978	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1977	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1976		YES									UNK	UNK	AUG (UNK).
KLOIYA RIVER	1975	YES										UNK	UNK	SEPT (UNK).
KLOIYA RIVER	1974	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1973	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1972	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1971	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1970	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1969	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1968	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1967	YES										UNK	UNK	"REGULARLY".
KLOIYA RIVER	1966	YES										UNK	UNK	"DAILY THROUGH SUMMER", SEPT 25 OCT 25.
KLOIYA RIVER	1965	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1964	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1963	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1962	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1961	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1960	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1959	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1958	YES										UNK	UNK	"DAILY".
KLOIYA RIVER	1957	YES										UNK	UNK	FREQUENTLY IN AUG SEPT OCT.
KLOIYA RIVER	1956	YES										UNK	UNK	AUG (UNK) TO SEPT (UNK).
KLOIYA RIVER	1955	YES										UNK	UNK	AUG (UNK) TO SEPT (UNK).
KLOIYA RIVER	1954	1										1	UNK	AUG 23.
KLOIYA RIVER	1953	YES										UNK	UNK	"PERIODICALLY".
KLOIYA RIVER	1952	3										3	UNK	AUG 20 OCT 10,25.
KLOIYA RIVER	1951	YES										UNK	UNK	JULY 16 TO OCT 21.
KLOIYA RIVER	1950	1										1	UNK	OCT 4.
KLOIYA RIVER	1949	2										2	UNK	SEPT 9,14.
KLOIYA RIVER	1948	1										1	UNK	AUG 20.
KLOIYA RIVER	1947	YES										UNK	UNK	UNK.
KLOIYA RIVER	1946	YES										UNK	UNK	UNK.
KLOIYA RIVER	1945	YES										UNK	UNK	UNK.
KLOIYA RIVER	1944	YES										UNK	UNK	UNK.
KLOIYA RIVER	1943	YES										UNK	UNK	UNK.
KLOIYA RIVER	1942	YES										UNK	UNK	UNK.
KLOIYA RIVER	1941	YES										UNK	UNK	UNK.
KLOIYA RIVER	1940	YES										UNK	UNK	UNK.
KLOIYA RIVER	1939	YES										UNK	UNK	UNK.
KLOIYA RIVER	1938	YES										UNK	UNK	UNK.
KLOIYA RIVER	1937	YES										UNK	UNK	UNK.
KLOIYA RIVER	1936	YES										UNK	UNK	UNK.
KLOIYA RIVER	1935	YES										UNK	UNK	UNK.
KLOIYA RIVER	1934	YES										UNK	UNK	UNK.
KLOIYA RIVER	1933	YES										UNK	UNK	UNK.
KLOIYA RIVER	1932	YES										UNK	UNK	UNK.
KLOIYA RIVER	1931	YES										UNK	UNK	UNK.
KLOIYA RIVER	1930	YES										UNK	UNK	UNK.
KLOIYA RIVER	1929	YES										UNK	UNK	UNK.
KLOIYA RIVER	1928	YES										UNK	UNK	UNK.

TABLE 5. REVIEW OF BC16 INSPECTION DATA FOR THE KITWANGA RIVER, 1929 TO 1995.

STREAM NAME	YEAR	NUMBER OF VISITS (INSPECTION METHODS: 1 TO 10). (1) WALK	(2) FLOAT	(3) PLANE	(4) HELICOPTER	(6) REDD COUNTS	(6) SPOT CHECKS	(7) STRIP COUNTS	(8) DEAD PITCH	(9) TAG RECOVERY	(10) UNKNOWN	SUM OF VISITS	1 (LOW) TO 5 (HIGH) RELIABILITY OF FINAL ESTIMATE	DAYS OF INSPECTION.
KITWANGA RIVER	1995				2							2	3	AUG 30 SEPT 16.
KITWANGA RIVER	1994				2							2	2	AUG 12,25.
KITWANGA RIVER	1993				2							2	4	AUG 31 SEPT 16.
KITWANGA RIVER	1992				4							4	4	AUG 24 SEPT 8,15 OCT (UNK).
KITWANGA RIVER	1991				2							2	UNK	SEPT 1,11.
KITWANGA RIVER	1990				1							1	4	OCT (UNK).
KITWANGA RIVER	1989				YES							UNK	4	AUG (UNK) SEPT (UNK) NOV (UNK).
KITWANGA RIVER	1988				YES							UNK	4	AUG (UNK) SEPT (UNK) NOV (UNK).
KITWANGA RIVER	1987				YES							UNK	4	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1986				YES							UNK	5	AUG (UNK) SEPT 10 OCT (UNK).
KITWANGA RIVER	1985											UNK	UNK	UNK
KITWANGA RIVER	1984										YES	UNK	UNK	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1983										YES	UNK	UNK	UNK
KITWANGA RIVER	1982										YES	UNK	UNK	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1981										YES	UNK	UNK	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1980										YES	UNK	UNK	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1979										YES	UNK	UNK	AUG (UNK) SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1978										YES	UNK	UNK	SEPT (UNK) OCT (UNK).
KITWANGA RIVER	1977										3	3	UNK	AUG 18 SEPT 10,20.
KITWANGA RIVER	1976										3	3	UNK	AUG 20 SEPT 15 NOV 10.
KITWANGA RIVER	1975										3	3	UNK	AUG 26 SEPT 9 OCT 28.
KITWANGA RIVER	1974										2	2	UNK	SEPT 8,25.
KITWANGA RIVER	1973										YES	UNK	UNK	SEPT (UNK).
KITWANGA RIVER	1972										YES	UNK	UNK	SEPT (UNK) OCT 24.
KITWANGA RIVER	1971										YES	UNK	UNK	AUG (UNK) TO NOV (UNK).
KITWANGA RIVER	1970										3	3	UNK	AUG 12,24 SEPT 12.
KITWANGA RIVER	1969										YES	UNK	UNK	AUG (UNK) TO SEPT (UNK).
KITWANGA RIVER	1968										YES	UNK	UNK	JULY (UNK) TO NOV (UNK).
KITWANGA RIVER	1967										9	9	UNK	AUG 24,29,29,31 SEPT 2,13,14,16,23.
KITWANGA RIVER	1966										YES	UNK	UNK	"WEEKLY IN SEASON"
KITWANGA RIVER	1965										YES	UNK	UNK	UNK
KITWANGA RIVER	1964										YES	UNK	UNK	UNK
KITWANGA RIVER	1963										YES	UNK	UNK	"WEEKLY"
KITWANGA RIVER	1962										3	3	UNK	AUG 11 SEPT 29 OCT 3
KITWANGA RIVER	1961										YES	UNK	UNK	UNK
KITWANGA RIVER	1960										YES	UNK	UNK	UNK
KITWANGA RIVER	1959										YES	UNK	UNK	"BY GUARDIAN AND FENCE COUNT".
KITWANGA RIVER	1958										9	9	UNK	AUG 2,16,21,26 SEPT 8,13,18,29 OCT 17.
KITWANGA RIVER	1957										5	5	UNK	AUG 19 SEPT 3,17,25 OCT 3.
KITWANGA RIVER	1956										4	4	UNK	AUG 6,16 SEPT 1,15.
KITWANGA RIVER	1955										3	3	UNK	SEPT 7,22 OCT 5.
KITWANGA RIVER	1954										2	2	UNK	SEPT 3,13.
KITWANGA RIVER	1953										2	2	UNK	SEPT 2 OCT 29.
KITWANGA RIVER	1952										1	1	UNK	SEPT 17.
KITWANGA RIVER	1951										2	2	UNK	SEPT 15 OCT 4.
KITWANGA RIVER	1950										3	3	UNK	AUG 7 SEPT 12 NOV 8.
KITWANGA RIVER	1949										2	2	UNK	SEPT 8 AUG 9.
KITWANGA RIVER	1948											0		
KITWANGA RIVER	1947										YES	UNK	UNK	UNK
KITWANGA RIVER	1946										YES	UNK	UNK	UNK
KITWANGA RIVER	1945										YES	UNK	UNK	UNK
KITWANGA RIVER	1944										YES	UNK	UNK	UNK
KITWANGA RIVER	1943											0		
KITWANGA RIVER	1942										YES	UNK	UNK	UNK
KITWANGA RIVER	1941										YES	UNK	UNK	UNK
KITWANGA RIVER	1940										YES	UNK	UNK	UNK
KITWANGA RIVER	1939										YES	UNK	UNK	UNK
KITWANGA RIVER	1938										YES	UNK	UNK	UNK
KITWANGA RIVER	1937											0		
KITWANGA RIVER	1936										YES	UNK	UNK	UNK
KITWANGA RIVER	1935										YES	UNK	UNK	UNK
KITWANGA RIVER	1934										YES	UNK	UNK	UNK
KITWANGA RIVER	1933										YES	UNK	UNK	UNK
KITWANGA RIVER	1932										YES	UNK	UNK	UNK
KITWANGA RIVER	1931										YES	UNK	UNK	UNK
KITWANGA RIVER	1930										YES	UNK	UNK	UNK
KITWANGA RIVER	1929										YES	UNK	UNK	UNK

TABLE 6. REVIEW OF BC16 INSPECTION DATA FOR THE BEAR RIVER, 1946 TO 1995.

STREAM NAME	YEAR	NUMBER OF VISITS (INSPECTION METHODS: 1 TO 10). (1) WALK	(2) FLOAT	(3) PLANE	(4) HELICOPTER	(5) REDD COUNTS	(6) SPOT CHECKS	(7) STRIP COUNTS	(8) DEAD PITCH	(9) TAG RECOVERY	(10) UNKNOWN	SUM OF VISITS	1 (LOW) TO 5 (HIGH) RELIABILITY OF FINAL ESTIMATE	DAYS OF INSPECTION.
BEAR RIVER	1995				2							2	3	SEPT 5,23.
BEAR RIVER	1994				1							1	UNK	SEPT 12.
BEAR RIVER	1993				3							3	4	SEPT 3,13,23.
BEAR RIVER	1992				2							2	3	SEPT 10,25.
BEAR RIVER	1991				2							2	3	SEPT 3,17.
BEAR RIVER	1990				4							4	3	AUG 24 SEPT 5,14 NOV 8.
BEAR RIVER	1989				2							2	4	AUG 25 SEPT 5.
BEAR RIVER	1988				3							3	4	AUG 30 SEPT 12,17.
BEAR RIVER	1987				2							2	4	SEPT 2,16
BEAR RIVER	1986				3							3	3	AUG 18 SEPT 2,16.
BEAR RIVER	1985				2							2	3	AUG 31 SEPT 16
BEAR RIVER	1984			1	1							2	UNK	SEPT 4,14.
BEAR RIVER	1983			1								1	UNK	SEPT 17.
BEAR RIVER	1982										1	1	UNK	SEPT 15.
BEAR RIVER	1981										4	4	UNK	AUG 8,21,30 SEPT 10.
BEAR RIVER	1980			2								2	UNK	AUG 1 SEPT 12.
BEAR RIVER	1979			2								2	UNK	AUG 26 SEPT 15
BEAR RIVER	1978			YES	YES							UNK	UNK	UNK
BEAR RIVER	1977			1								1	UNK	SEPT 7
BEAR RIVER	1976				1							1	UNK	SEPT 18
BEAR RIVER	1975			2								2	UNK	AUG 24 SEPT 7
BEAR RIVER	1974			1								1	UNK	SEPT 18
BEAR RIVER	1973	YES		1								1+	UNK	SEPT 11 +
BEAR RIVER	1972											UNK	UNK	"PERIODICALLY"
BEAR RIVER	1971			1								1	UNK	SEPT 16
BEAR RIVER	1970			3								3	UNK	AUG 18 SEPT 16 OCT 2
BEAR RIVER	1969											0		NOT INSPECTED
BEAR RIVER	1968										1	1	UNK	SEPT 13
BEAR RIVER	1967										2	2	UNK	AUG 19 SEPT 1-7.
BEAR RIVER	1966			YES								UNK	UNK	UNK
BEAR RIVER	1965			YES								UNK	UNK	UNK
BEAR RIVER	1964										2	2	UNK	SEPT 1,25.
BEAR RIVER	1963										2	2	UNK	AUG 22 SEPT 25
BEAR RIVER	1962										2	2	UNK	SEPT 5-20 OCT 10.
BEAR RIVER	1961										3	3	UNK	AUG 29 SEPT 30 OCT 24
BEAR RIVER	1960										3	3	UNK	AUG 30 SEPT 12-18 OCT 5
BEAR RIVER	1959										2	2	UNK	AUG 30 SEPT 12-18
BEAR RIVER	1958											UNK	UNK	"PERIODICALLY"
BEAR RIVER	1957										4	4	UNK	AUG 25 SEPT 9-11,21-24 OCT 10-11.
BEAR RIVER	1956										2	2	UNK	SEPT 7-11, 21-26.
BEAR RIVER	1955										2	2	UNK	SEPT 7-11,23-24.
BEAR RIVER	1954										2	2	UNK	SEPT 7-11,22-24.
BEAR RIVER	1953										3	3	UNK	SEPT 3-8,26-29 OCT 17.
BEAR RIVER	1952										1	1	UNK	SEPT 20-30.
BEAR RIVER	1951										1	1	UNK	SEPT 20-29.
BEAR RIVER	1950										1	1	UNK	SEPT 15-23.
BEAR RIVER	1949										1	1	UNK	SEPT 17-21.
BEAR RIVER	1946											UNK	UNK	UNK

TABLE 7. SUMMARY BY STREAM OF NUMBER OF CHINOOK FROM THE SKEENA WATERSHED AGED BY VANCOUVER AND PACIFIC BIOLOGICAL STATION SCALE LABS (1973 TO 1995).

| YEAR | TOTAL AGED | SAMPLE SITE/SCALE LAB PROVIDING READING | ESCAPEMENT SUB AREA | | |

TABLE 8. ANNUAL AGE STRUCTURE FROM SCALES FOR THE SKEENA TEST FISHERY, KITSUMKALUM AND BABINE RIVERS.

SKEENA RIVER GILLNET TEST FISHERY AGE STRUCTURE BY YEAR.																								
																								MEAN
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1980-1995
Prop of 21					.03	.07					.00				.01			.00						.001
Prop of 31	.16	.04		.01	.20	.19	.12	.02	.01	.03	.01	.01		.01	.00	.03		.01	.00		.01			.008
Prop of 32							.00				.00			.01	.07	.03	.05	.07	.01	.02	.01		.02	.019
Prop of 41	.33	.34	.03	.01	.43	.27	.16	.08	.04	.05	.01	.02	.01	.03	.01	.01	.01	.01	.04	.01	.02		.01	.021
Prop of 42	.10	.07	.02	.10	.01	.07	.13	.10	.13	.20	.29	.19	.15	.08	.12	.19	.03	.24	.19	.16	.07	.13	.27	.159
Prop of 51	.26	.11	.03	.01	.16	.16	.14	.04	.01	.07	.00	.03	.01	.05	.01	.02	.05	.03	.00	.04	.03	.00		.024
Prop of 52	.11	.26	.38	.39	.04	.14	.34	.66	.31	.41	.42	.54	.64	.45	.30	.30	.47	.10	.55	.37	.42	.40	.37	.420
Prop of 53		.01		.01						.01			.00			.00		.00	.00	.00				.002
Prop of 54																								
Prop of 61		.01			.01			.01							.00		.00	.00	.00					.001
Prop of 62	.05	.16	.53	.46	.14	.11	.10	.08	.49	.23	.27	.18	.18	.38	.48	.42	.37	.53	.15	.38	.42	.45	.33	.334
Prop of 63							.00	.01				.01	.00	.00			.00		.01	.01	.00	.00	.01	.004
Prop of 71																		.00						.000
Prop of 72	.01		.01	.01						.01	.00	.02				.00	.01	.01	.02	.00	.01		.01	.006
Prop of 73									.01										.00		.01	.01		.001

KITSUMKALUM RIVER AGE STRUCTURE BY YEAR.																								
																								MEAN
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1980-1995
Prop of 21					.00																.00			.000
Prop of 31				.02	.05	.00	.02									.00		.01						.001
Prop of 32								.01	.00	.02		.01	.01	.02	.01	.01	.00	.01	.00		.00			.008
Prop of 41			.15	.07	.17	.19	.08	.02						.00		.01	.01	.00	.01	.00	.00			.004
Prop of 42				.04	.07	.01		.06	.01	.02		.06	.06	.05	.03	.04	.00	.03	.02	.01	.02	.02		.028
Prop of 51			.19	.23	.18	.61	.74	.04		.01		.03	.01	.06	.04	.02	.07	.05	.00	.11	.02	.00	.03	.034
Prop of 52			.23	.11	.20	.08	.04	.62	.44	.23		.25	.63	.34	.16	.10	.13	.07	.24	.19	.09	.16	.14	.253
Prop of 53								.00																.000
Prop of 54																								
Prop of 61			.04	.02	.00	.03	.02	.01							.01	.00		.05	.02		.01			.007
Prop of 62			.38	.50	.31	.08	.11	.22	.54	.69		.59	.29	.53	.76	.80	.76	.76	.55	.67	.85	.77	.82	.640
Prop of 63																								
Prop of 71																.00								.000
Prop of 72				.02	.01			.02		.03		.05		.00		.02	.02	.01	.15	.01	.00	.03	.01	.024
Prop of 73												.01							.00					.001

BABINE RIVER AGE STRUCTURE BY YEAR.																								
																								MEAN
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1980-1995
Prop of 21			.00	.03	.01	.07	.27						.01											.001
Prop of 31		.03		.05	.03	.03	.27						.01											.001
Prop of 32		.03	.05	.18	.15	.25		.36		.03	.33	.01	.24		.02	.01	.02	.08				.14		.088
Prop of 41		.03	.02	.01	.07	.06	.29											.01						.000
Prop of 42		.26	.10	.28	.33	.32	.02	.13		.37	.36	.23	.19	.06	.08	.43	.06	.24	.05	.29	.08	.11		.191
Prop of 51			.04	.00		.02	.07									.01		.01						.001
Prop of 52		.54	.55	.25	.32	.20	.08	.40		.47	.24	.71	.46	.88	.63	.35	.84	.29	.85	.45	.71	.54		.560
Prop of 53						.01											.00							.000
Prop of 54																								
Prop of 61				.00																				
Prop of 62		.11	.22	.19	.07	.03		.11		.13	.07	.05	.10	.06	.27	.20	.07	.37	.11	.26	.20	.20		.156
Prop of 63			.00		.01																			
Prop of 71																								
Prop of 72				.00													.00				.00	.01		.001
Prop of 73																								

TABLE 9. CHINOOK AGE DATA BY SEX FROM THE SKEENA GILLNET TEST FISHERY, 1990 TO 1995.

	NUMBER AT AGE OF MALE CHINOOK SAMPLED														
YEAR SAMPLED	21	31	32	41	42	43	51	52	53	61	62	63	72	73	TOTAL
1995			2	1	48			41			19	1			112
1994					40		1	62			45	3			151
1993		4	5	2	23		5	77			55	2			173
1992			7	1	44		3	45	1		38	1	1		141
1991		1	5	10	71			109	1	1	26	2	2	1	229
1990	1	2	24	2	77		2	15	1		60		2		186
AVERAGE:	0	1	7	3	51		2	58	1	0	41	2	1	0	165

	NUMBER AT AGE OF FEMALE CHINOOK SAMPLED														
YEAR SAMPLED	21	31	32	41	42	43	51	52	53	61	62	63	72	73	TOTAL
1995					2			26			44	1	2		75
1994					3			63			96	5		2	169
1993				4		1	7	73			91	2	2	2	182
1992					1		3	48			61				113
1991				6	2		1	99			32	2	5		147
1990				1	5		7	18			120	2			153
AVERAGE:				2	2	0	3	55			74	2	2	1	140

	PROPORTION AT AGE OF MALE CHINOOK SAMPLED													
YEAR SAMPLED	21	31	32	41	42	43	51	52	53	61	62	63	72	73
1995			.02	.01	.43			.37			.17	.01		
1994					.26		.01	.41			.30	.02		
1993		.02	.03	.01	.13		.03	.45			.32	.01		
1992			.05	.01	.31		.02	.32	.01		.27	.01	.01	
1991		.00	.02	.04	.31			.48	.00	.00	.11	.01	.01	.00
1990	.01	.01	.13	.01	.41		.01	.08	.01		.32		.01	
AVERAGE:	.00	.01	.04	.01	.31		.01	.35	.00	.00	.25	.01	.00	.00

	PROPORTION AT AGE OF FEMALE CHINOOK SAMPLED													
YEAR SAMPLED	21	31	32	41	42	43	51	52	53	61	62	63	72	73
1995					.03			.35			.59	.01	.03	
1994					.02			.37			.57	.03		.01
1993				.02		.01	.04	.40			.50	.01	.01	.01
1992					.01		.03	.42			.54			
1991				.04	.01		.01	.67			.22	.01	.03	
1990				.01	.03		.05	.12			.78	.01		
AVERAGE:				.01	.02	.00	.02	.39			.53	.01	.01	.00

TABLE 10. SKEENA RIVER CHINOOK FRESHWATER AGE PROPORTIONS BY SUB-AREA.

NOTE: SKEENA-GENERAL RECOVERIES WITH THE EXCEPTION OF SKEENA GN TEST NOT INCLUDED.

1. VANCOUVER SCALE LAB AGE DATA, 1980 TO 1995.

NUMBER OF SUB 1, SUB 2, SUB 3 AND SUB 4 CHINOOK:

SAMPLING SUB-AREA	SUB 1 TOTAL	SUB 2 TOTAL	SUB 3 TOTAL	SUB 4 TOTAL
COASTAL	25	117	8	
LAKELSE		5		
KITSUMKALUM	251	4,831	4	
OTHER LOWER SKEENA		1		
SKEENA GN TEST	217	4,108	28	
KISPIOX	4	261		
BULKLEY/MORICE	14	804	1	1
OTHER MIDDLE SKEENA	3	174	1	
BABINE	6	1,813	1	
SUSTUT		105		
TOTAL ALL SKEENA	520	12,219	43	1

SUB 1, SUB 2, SUB 3 AND SUB 4 RESULTS EXPRESSED AS PERCENT:

SAMPLING SUB-AREA	SUB 1 TOTAL	SUB 2 TOTAL	SUB 3 TOTAL	SUB 4 TOTAL
COASTAL	16.7	78.0	5.3	
LAKELSE		100.0		
KITSUMKALUM	4.9	95.0	0.1	
OTHER LOWER SKEENA		100.0		
SKEENA GN TEST	5.0	94.4	0.6	
KISPIOX	1.5	98.5		
BULKLEY/MORICE	1.7	98.0	0.1	0.1
OTHER MIDDLE SKEENA	1.7	97.8	0.6	
BABINE	0.3	99.6	0.1	
SUSTUT		100.0		
TOTAL ALL SKEENA	4.1	95.6	0.3	0.0

2. PACIFIC BIOLOGICAL STATION SCALE LAB AGE DATA, 1984 TO 1995:

NUMBER OF SUB 1, SUB 2, SUB 3 AND SUB 4 CHINOOK:

SAMPLING SUB-AREA	SUB 1 TOTAL	SUB 2 TOTAL	SUB 3 TOTAL	SUB 4 TOTAL
COASTAL				
LAKELSE				
KITSUMKALUM	4	108		
OTHER LOWER SKEENA				
SKEENA GN TEST				
KISPIOX				
BULKLEY/MORICE	1	177		
OTHER MIDDLE SKEENA				
BABINE				
SUSTUT	15	1,503	28	
TOTAL ALL SKEENA	20	1,788	28	

SUB 1, SUB 2, SUB 3 AND SUB 4 RESULTS EXPRESSED AS PERCENT:

SAMPLING SUB-AREA	SUB 1 TOTAL	SUB 2 TOTAL	SUB 3 TOTAL	SUB 4 TOTAL
COASTAL				
LAKELSE				
KITSUMKALUM	3.6	96.4		
OTHER LOWER SKEENA				
SKEENA GN TEST				
KISPIOX				
BULKLEY/MORICE	0.6	99.4		
OTHER MIDDLE SKEENA				
BABINE				
SUSTUT	1.0	97.2	1.8	
TOTAL ALL SKEENA	1.1	97.4	1.5	

TABLE 11. SKEENA RIVER CHINOOK POSTORBITAL-HYPURAL LENGTH (mm) DATA FOR SELECTED SAMPLE SITES:

				SEX = ALL (MALE + FEMALE) SAMPLE AGE:												SEX = MALE SAMPLE AGE:												SEX = FEMALE SAMPLE AGE:											
				ALL AGE			$AGE\ 4_2$			$AGE\ 5_2$			$AGE\ 6_2$			ALL AGE			$AGE\ 4_2$			$AGE\ 5_2$			$AGE\ 6_2$			ALL AGE			$AGE\ 4_2$			$AGE\ 5_2$			$AGE\ 6_2$		
SOURCE	YEAR	SAMPLE SITE	SAMPLE METHOD	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV	n	MEAN	STDV
N/C STOCK ASSMT.	1994	BABINE FENCE	D. PITCH	97	622	151										61	569	164	11	553	25	33	684	55				36	711	59				20	705	39	15	733	51
N/C STOCK ASSMT.	1993	BABINE FENCE	D. PITCH	207	688	68										90	661	77	12	612	62	61	656	73	17	714	78	117	709	50				87	701	50	23	732	52
N/C STOCK ASSMT.	1992	BABINE FENCE	D. PITCH	20	696	97										11	674	124										9	723	39									
N/C STOCK ASSMT.	1991	BABINE FENCE	D. PITCH	130	689	64										94	682	68				83	684	59				36	706	48				27	696	39			
N/C STOCK ASSMT.	1995	SKEENA-TYEE	TEST FISH.	187	703	113	50	570	50	67	714	54	63	804	56	112	659	120	48	566	46	41	701	60	19	827	69	75	769	52				26	734	33	44	794	46
N/C STOCK ASSMT.	1994	SKEENA-TYEE	TEST FISH.	321	747	92	43	587	63	126	728	49	141	810	57	151	725	116	40	580	47	62	729	58	45	844	65	169	768	57				63	727	39	96	794	45
N/C STOCK ASSMT.	1993	SKEENA-TYEE	TEST FISH.	355	740	102	23	558	43	150	720	64	146	803	63	173	720	130	23	558	43	77	717	78	55	829	67	182	759	61				73	724	45	91	787	56
N/C STOCK ASSMT.	1992	SKEENA-TYEE	TEST FISH.	254	719	118	45	584	43	93	713	54	99	808	58	141	680	138	44	580	33	45	703	63	38	821	75	113	767	57				48	723	42	61	801	44
N/C STOCK ASSMT.	1991	SKEENA-TYEE	TEST FISH.	377	702	116	73	547	64	208	724	55	58	826	73	229	671	131	71	544	62	109	720	64	26	855	73	148	750	64				99	729	42	32	803	66
N/C STOCK ASSMT.	1990	SKEENA-TYEE	TEST FISH.	339	712	157	82	687	59	33	727	58	180	818	57	186	645	178	77	556	56	15	714	70	60	842	72	153	793	61				18	738	44	120	806	43
THOMAS, 1993.	1993	RIVER-GAP-SL.	COMM. GN	86	877	158	4	611	84	33	862	84	42	965	85																										
NELSON, 1995.	1994	KALUM - UPPR.	DP.& BROOD													56	840	57							46	846	57	23	810	121							15	883	46
NELSON, 1994.	1993	KALUM - UPPR.	DP.& BROOD													60	837	111				14	770	71	43	881	66										70	848	39
NELSON, 1993b.	1992	KALUM - UPPR.	DP.& BROOD													183	858	99				27	773	75	33	933	40	113	858	47				36	824	41	77	874	41
NELSON, 1993.	1991	KALUM - UPPR.	DP.& BROOD													19	841	126										61	836	67				25	797	59	30	855	60
NASS&BOCKING,1992	1990	KALUM - UPPR.	DP.& BROOD													105	825	90	21	808	149	19	777	93	57	903	43	107	853	47	12	849	36	10	820	56	85	858	47
NASS&BOCKING,1992	1989	KALUM - UPPR.	DP.& BROOD													42	885	83							32	931	39	59	870	62				10	821	50	47	881	65
NELSON, 1995.	1994	KALUM - LOWR.	DP.& BROOD													79	858	54				10	837	67	65	860	53	45	848	107				10	791	70	32	888	73
NELSON, 1994.	1993	KALUM - LOWR.	DP.& BROOD													43	885	107							35	914	86	170	874	41				13	826	51	157	879	38
NELSON, 1993b.	1992	KALUM - LOWR.	DP.& BROOD													39	829	98				22	783	72	15	899	47	90	851	40				27	823	37	63	863	35
NELSON, 1993.	1991	KALUM - LOWR.	DP.& BROOD													56	864	119				11	807	65	29	906	66	107	854	57				19	802	51	70	858	43
NASS&BOCKING,1992	1990	KALUM - LOWR.	DP.& BROOD													77	872	91	11	833	165	10	823	77	53	894	71	149	857	66	14	866	22	17	843	47	112	864	69
NASS&BOCKING,1992	1989	KALUM - LOWR.	DP.& BROOD													90	888	69				22	835	90	63	912	58	152	863	41				20	813	42	129	871	39
CAROLSFELD ET AL.	1988	KALUM	D. PITCH													340	878	88				31	791	26	296	887	39	145	910	45	14	588	53	20	922	57	99	962	65
CAROLSFELD ET AL.	1987	KALUM	D. PITCH													89	878	30				16	778	62	66	933	38	182	955	34				28	814	44	145	987	42
ANDREW&WEBB,1988	1986	KALUM	D. PITCH													162	864	140	21	589	67	56	801	68	64	940	118	283	884	57				103	820	86	161	898	50
ANDREW&WEBB,1988	1985	KALUM	D. PITCH													134	850	102	22	598	55	64	786	73	42	923	36	284	861	59				197	805	42	77	879	47
ANDREW&WEBB,1988	1984	KALUM	DP&TAGG.													85	816	114	18	576	66	17	759	95	44	892	51	257	824	68				65	782	52	164	865	50
TSES, 1989	1989	CEDAR	D. PITCH													179	739	150										242	775	63									
MIKE ONEIL	1995	BULKLEY-UPPR.	CWT/BROD							34	660	42																											

TABLE 12. EGG RETENTION OF CHINOOK FEMALES SAMPLED AT THE BABINE FENCE, 1991 TO 1994.

EGG RETENTION (%):

YEAR	0%	1% - 5%	6% - 50%	51% - 100%	SAMPLE SIZE (n)
1991	21	2	8	5	36
1992	5	0	1	3	9
1993	106	3	8	0	117
1994	28	3	2	3	36

EGG RETENTION (PROPORTION OF SAMPLE SIZE):

YEAR	0%	1% - 5%	6% - 50%	51% - 100%
1991	.58	.06	.22	.14
1992	.56	.00	.11	.33
1993	.91	.03	.07	.00
1994	.78	.08	.06	.08

TABLE 13. SKEENA WATERSHED JUVENILE CHINOOK FORK LENGTH (mm) AND WEIGHT (gm) DATA BY TRIBUTARY.

SOURCE	SAMPLE SITE	SAMPLE YEAR	SAMPLING START DATE	SAMPLING END DATE	SAMPLE AGE: AGE 0+ LENGTH n	MEAN	RANGE	STDV	WEIGHT n	MEAN	RANGE	STDV	SAMPLE AGE: AGE 1+ LENGTH n	MEAN	RANGE	STDV	WEIGHT n	MEAN	RANGE	STDV	SAMPLE AGE: AGE 2+ LENGTH n	MEAN	RANGE	STDV	WEIGHT n	MEAN	RANGE	STDV
SPRING FRY:																												
WOOD, 1996 (PERS COMM.)	SUSTUT R.	1995	May		688	38.90							49	84.50							5	107.00						
BUSTARD, 1994a	SUSTUT R.	1994	20-May	18-Jun	322	38.80		1.4	297	0.400		0.1	47	75.50		9.7	47	4.500		1.9								
SHEPERD, 1986	BEAR R.	1984					39 - 42																					
MORGAN, 1985	KITSUMKALUM-LOWER	1980	21-Apr	21-May									68	92.04			68	9.980										
SMITH, 1983	MORICE R.	1980	18-Apr		50	36.80			50	0.570																		
SMITH, 1983	MORICE R.	1980	18-May										86	90.00			86	6.970			10	120.90			10	16.60		
MORGAN, 1985	KITSUMKALUM-LOWER	1979	18-Mar	18-May									80	84.20			80	7.001										
SMITH, 1983	MORICE R.	1979	25-Apr	30-Apr	50	39.30			50	0.520			50	83.60			50	7.670										
SMITH, 1983	MORICE R.	1979	24-May										12	84.60			12	6.370			4	119.30			4	18.03		
MORGAN, 1985	KITSUMKALUM-LOWER	1978	15-Apr	24-Apr	54	40.40	37 - 43		54	0.620			9	80.10	71.0 - 91.0													
SHEPERD, 1979	MORICE R.	1975	April	June	367	38.00			367	0.400																		
FALL FRY:																												
BUSTARD, 1994b	SUSTUT R.	1993		Sept	484	58.20	38 - 87																					
BUSTARD, 1992	KITWANGA R.	1991	15-Aug	19-Aug	149	56.32	42 - 80		149	2.522																		
BUSTARD, 1992	MORICE R.	1991	27-Aug	3-Oct	412	65.90	37 - 92		412	3.836																		
BUSTARD, 1992	SUSTUT R.	1991	9-Sep	18-Sep	212	62.30	42 - 100		212	2.816																		
BUSTARD, 1992	ZYMOETZ R.	1991	17-Sep	20-Sep	93	70.90	52 - 96		93	5.193																		
MORGAN, 1985	KITSUMKALUM-LOWER	1978	28-Aug		27	70.70	64 - 83		27	4.474	4.3 - 4.8																	
MORGAN, 1985	CEDAR R.	1978	28-Aug		2	70.00	69 - 71		2	4.650	4.6 - 4.7																	
SMOLTS:																												
WILLIAMS ET AL., 1985	BEAR R.	1984	2-Apr	7-Jul			39.3 - 41.8						13	90.00	61.0 - 138.0		13	7.310	2.31 - 21.50									

TABLE 14. SKEENA RIVER TEST FISHERY, DECADE AVERAGE CUMULATIVE CHINOOK DAILY TEST FISHERY INDEX.

DATE	56-59 AVG CUM INDEX	cum %	60-69 AVG CUM INDEX	cum %	70-79 AVG CUM INDEX	cum %	80-89 AVG CUM INDEX	cum %	90-93 AVG CUM INDEX	cum %	56-93 AVG CUM INDEX	cum %
01-Jun	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
02-Jun	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
03-Jun	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
04-Jun	0.89	0.3%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.14	0.1%
05-Jun	0.89	0.3%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.14	0.1%
06-Jun	1.77	0.6%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.11	0.5%	0.58	0.3%
07-Jun	2.77	1.3%	0.00	0.0%	0.00	0.0%	0.00	0.0%	2.14	1.0%	0.98	0.6%
08-Jun	3.26	1.5%	0.00	0.0%	0.00	0.0%	0.65	0.4%	4.01	1.9%	1.58	0.9%
09-Jun	3.84	1.8%	0.09	0.1%	0.00	0.0%	1.91	1.1%	6.62	3.1%	2.49	1.4%
10-Jun	5.01	2.3%	0.19	0.1%	0.00	0.0%	3.49	2.0%	9.96	4.6%	3.73	2.2%
11-Jun	6.00	2.8%	0.48	0.3%	0.15	0.1%	4.93	2.9%	15.31	7.1%	5.37	3.1%
12-Jun	6.99	3.3%	0.85	0.6%	0.29	0.3%	7.16	4.2%	18.89	8.7%	6.83	4.0%
13-Jun	7.88	3.7%	1.74	1.2%	0.89	0.8%	9.76	5.7%	22.54	10.4%	8.56	5.0%
14-Jun	8.63	4.0%	2.69	1.8%	1.91	1.8%	12.58	7.3%	26.32	12.2%	10.42	6.1%
15-Jun	9.68	4.5%	3.33	2.2%	2.60	2.4%	16.18	9.4%	29.72	13.7%	12.30	7.2%
16-Jun	11.27	5.3%	4.38	2.9%	3.83	3.5%	19.12	11.1%	33.38	15.4%	14.38	8.4%
17-Jun	12.73	6.0%	6.07	4.1%	5.23	4.8%	22.54	13.1%	37.60	17.4%	16.84	9.8%
18-Jun	13.92	6.5%	7.56	5.1%	6.67	6.2%	25.38	14.8%	41.16	19.0%	18.94	11.0%
19-Jun	16.14	7.5%	9.65	6.5%	8.47	7.8%	28.48	16.6%	45.01	20.8%	21.54	12.5%
20-Jun	19.56	9.1%	11.28	7.6%	10.55	9.7%	31.43	18.3%	50.85	23.5%	24.74	14.4%
21-Jun	22.62	10.6%	13.62	9.1%	12.00	11.1%	35.10	20.4%	55.04	26.4%	27.67	16.1%
22-Jun	26.47	12.4%	15.42	10.3%	13.62	12.6%	37.77	22.0%	58.93	27.2%	30.44	17.7%
23-Jun	29.47	13.8%	17.49	11.7%	14.84	13.5%	41.45	24.1%	62.26	28.8%	33.06	19.2%
24-Jun	32.53	15.2%	19.02	12.7%	16.69	15.4%	44.86	26.1%	66.66	30.8%	35.95	20.9%
25-Jun	37.39	17.5%	21.13	14.2%	18.09	16.7%	47.87	27.9%	72.60	33.5%	39.42	22.9%
26-Jun	40.60	19.0%	23.74	15.9%	20.70	19.1%	51.98	30.3%	79.40	36.7%	43.28	25.2%
27-Jun	44.30	20.7%	25.59	17.1%	21.99	20.3%	55.98	32.6%	85.81	39.6%	46.73	27.2%
28-Jun	46.57	21.8%	28.06	18.8%	24.14	22.3%	60.06	35.0%	90.48	41.8%	49.86	29.0%
29-Jun	51.84	24.1%	30.75	20.6%	26.41	24.4%	64.78	37.7%	96.36	44.5%	53.99	31.4%
30-Jun	57.23	26.8%	33.49	22.4%	28.34	26.2%	70.23	40.9%	103.22	47.7%	58.50	34.0%
01-Jul	61.93	29.0%	35.61	23.8%	30.36	28.0%	74.91	43.6%	109.95	50.8%	62.55	36.4%
02-Jul	64.15	30.0%	38.40	25.7%	33.47	30.9%	80.00	46.6%	116.51	53.8%	66.51	38.7%
03-Jul	67.33	31.5%	40.44	27.1%	35.66	32.9%	84.82	49.4%	123.31	57.0%	70.31	40.9%
04-Jul	71.63	33.5%	42.68	28.6%	37.71	34.8%	89.98	52.4%	128.40	59.3%	74.06	43.1%
05-Jul	76.37	35.7%	45.70	30.6%	39.92	36.9%	94.40	55.0%	135.17	62.4%	78.31	45.5%
06-Jul	81.45	38.1%	49.11	32.9%	42.05	38.8%	99.95	58.2%	141.30	65.3%	82.77	48.1%
07-Jul	87.22	40.8%	52.93	35.4%	44.27	40.9%	105.30	61.3%	146.30	67.6%	87.20	50.7%
08-Jul	93.58	43.7%	57.00	38.2%	47.06	43.6%	110.41	64.3%	151.10	69.8%	91.79	53.4%
09-Jul	100.04	46.8%	60.44	40.5%	50.00	46.2%	114.54	66.7%	155.24	71.7%	96.05	55.9%
10-Jul	106.80	49.9%	64.25	43.0%	52.48	48.5%	119.23	69.4%	161.63	74.7%	100.88	58.7%
11-Jul	112.17	52.9%	68.83	46.0%	56.11	50.9%	124.28	72.3%	166.56	77.0%	105.35	61.3%
12-Jul	118.19	55.3%	72.60	48.6%	58.12	53.7%	128.89	75.0%	170.85	78.9%	109.77	63.8%
13-Jul	124.61	58.3%	77.25	51.7%	60.81	56.1%	132.86	77.3%	175.45	81.1%	114.20	66.4%
14-Jul	129.59	60.6%	83.28	55.8%	63.99	59.1%	137.05	79.8%	180.25	83.3%	118.83	69.1%
15-Jul	133.59	62.5%	89.13	59.7%	66.75	61.6%	141.21	82.2%	183.01	84.6%	122.74	71.4%
16-Jul	138.20	64.6%	93.71	62.8%	70.31	64.9%	144.88	84.3%	186.68	86.3%	126.76	73.7%
17-Jul	145.22	67.9%	97.82	65.5%	73.06	67.5%	147.12	85.6%	190.39	88.0%	130.72	76.0%
18-Jul	150.72	70.5%	102.43	68.6%	76.57	70.7%	149.39	87.0%	193.55	89.4%	134.53	78.2%
19-Jul	157.12	73.5%	107.37	71.9%	79.73	73.6%	151.68	88.3%	195.40	90.3%	138.28	80.4%
20-Jul	163.55	76.5%	111.78	74.9%	81.90	75.6%	153.37	89.3%	197.09	91.1%	141.54	82.3%
21-Jul	169.04	79.0%	116.02	77.7%	84.85	78.3%	154.84	90.1%	199.40	92.1%	144.83	84.2%
22-Jul	174.89	81.8%	119.96	80.3%	86.96	80.3%	156.31	91.0%	201.06	92.9%	147.84	86.0%
23-Jul	178.82	83.6%	123.42	82.6%	89.23	82.4%	157.51	91.7%	202.26	93.5%	150.25	87.4%
24-Jul	183.13	85.6%	127.20	85.2%	91.11	84.1%	158.59	92.3%	202.92	93.8%	152.59	88.7%
25-Jul	188.63	88.2%	130.57	87.4%	92.74	85.6%	159.82	93.0%	204.11	94.3%	155.17	90.2%
26-Jul	193.81	90.6%	133.37	89.3%	94.23	87.0%	160.85	93.6%	205.19	94.8%	157.49	91.6%
27-Jul	197.44	92.3%	135.47	90.7%	95.80	88.4%	162.11	94.4%	206.32	95.3%	159.43	92.7%
28-Jul	200.13	93.6%	137.06	91.8%	97.11	89.7%	162.86	94.8%	207.05	95.7%	160.84	93.5%
29-Jul	202.83	94.8%	138.13	92.5%	98.93	91.3%	164.13	95.6%	207.72	96.0%	162.35	94.4%
30-Jul	204.99	95.9%	139.79	93.6%	100.41	92.7%	164.94	96.0%	208.60	96.4%	163.75	95.2%
31-Jul	205.86	96.3%	141.03	94.4%	101.86	93.9%	165.78	96.5%	209.43	96.8%	164.78	95.8%
01-Aug	206.45	96.5%	141.77	94.9%	102.63	94.7%	166.72	97.1%	210.68	97.3%	165.65	96.3%
02-Aug	207.44	97.0%	142.92	95.7%	103.36	95.4%	167.34	97.4%	211.53	97.7%	166.52	96.8%
03-Aug	208.22	97.4%	144.08	96.5%	103.92	95.9%	168.14	97.9%	212.51	98.2%	167.37	97.3%
04-Aug	209.84	98.1%	145.13	97.2%	104.27	96.3%	168.58	98.1%	213.26	98.5%	168.22	97.8%
05-Aug	210.32	98.3%	145.82	97.5%	104.77	96.7%	168.96	98.4%	213.26	98.5%	168.59	98.0%
06-Aug	210.57	98.5%	146.57	98.0%	105.07	97.0%	169.58	98.7%	213.45	98.6%	169.01	98.3%
07-Aug	210.91	98.6%	146.89	98.4%	105.54	97.4%	170.10	99.0%	213.65	98.7%	169.42	98.5%
08-Aug	211.01	98.7%	147.30	98.6%	105.81	97.7%	170.25	99.1%	213.65	98.7%	169.60	98.6%
09-Aug	211.36	98.8%	147.42	98.7%	106.04	97.9%	170.34	99.2%	213.94	98.8%	169.82	98.8%
10-Aug	211.67	99.0%	147.77	99.0%	106.27	98.1%	170.48	99.2%	214.45	99.1%	170.13	98.9%
11-Aug	211.96	99.1%	147.92	99.1%	106.52	98.3%	170.67	99.3%	214.67	99.2%	170.35	99.1%
12-Aug	211.96	99.1%	148.04	99.1%	106.61	98.6%	170.78	99.4%	214.81	99.2%	170.48	99.1%
13-Aug	211.96	99.1%	148.18	99.2%	107.17	98.9%	170.95	99.5%	214.96	99.3%	170.65	99.2%
14-Aug	212.13	99.2%	148.35	99.3%	107.52	99.3%	171.02	99.6%	214.96	99.3%	170.80	99.3%
15-Aug	212.29	99.3%	148.53	99.5%	107.85	99.6%	171.19	99.6%	215.26	99.5%	171.02	99.5%
16-Aug	212.76	99.5%	148.60	99.5%	107.85	99.6%	171.25	99.7%	215.37	99.5%	171.16	99.5%
17-Aug	213.06	99.6%	148.72	99.6%	108.06	99.8%	171.36	99.7%	215.52	99.6%	171.35	99.7%
18-Aug	213.06	99.6%	148.88	99.7%	108.13	99.8%	171.44	99.8%	215.64	99.6%	171.43	99.7%
19-Aug	213.14	99.7%	149.02	99.8%	108.18	99.9%	171.53	99.8%	215.87	99.7%	171.54	99.8%
20-Aug	213.49	99.8%	149.05	99.8%	108.23	99.9%	171.56	99.9%	215.99	99.8%	171.66	99.8%
21-Aug	213.49	99.8%	149.11	99.9%	108.28	100.0%	171.56	99.9%	215.99	99.8%	171.69	99.8%
22-Aug	213.49	99.8%	149.11	99.9%	108.32	100.0%	171.59	99.9%	215.99	99.8%	171.70	99.9%
23-Aug	213.49	99.8%	149.29	100.0%	108.32		171.64	99.9%	216.06	99.8%	171.76	99.9%
24-Aug	213.49	99.8%	149.33	100.0%	108.32		171.72	100.0%	216.06	99.8%	171.78	99.9%
25-Aug	213.49	99.8%	149.33		108.32		171.79	100.0%	216.17	99.9%	171.82	99.9%
26-Aug	213.61	99.9%	149.33		108.32		171.79		216.25	99.9%	171.86	99.9%
27-Aug	213.61	99.9%	149.33		108.32		171.79		216.32	99.9%	171.87	100.0%
28-Aug	213.73	99.9%	149.33		108.32		171.79		216.32	99.9%	171.90	100.0%
29-Aug	213.85	100.0%	149.33		108.32		171.79		216.44	100.0%	171.95	100.0%

TABLE 15. FISHERY WEEK DESIGNATION INFORMATION.

JULIAN WEEK	STATISTICAL WEEK	CALENDAR WEEK	JULIAN WEEK	STATISTICAL WEEK	CALENDAR WEEK
1	011	Jan 1 - 7	27	071	July 2 - 8
2	012	Jan 8 - 14	28	072	July 9 - 15
3	013	Jan 15 - 21	29	073	July 16 - 22
4	014	Jan 22 - 28	30	074	July 23 - 29
5	015	Jan 29 - Feb 4	31	075	July 30 - Aug 5
6	021	Feb 5 - 11	32	081	Aug 6 - 12
7	022	Feb 12 - 18	33	082	Aug 13 - 19
8	023	Feb 19 - 25	34	083	Aug 20 - 26
9	024	Feb 26 - Mar 4	35	084	Aug 27 - Sept 2
10	031	Mar 5 - 11	36	091	Sept 3 - 9
11	032	Mar 12 - 18	37	092	Sept 10 - 16
12	033	Mar 19 - 25	38	093	Sept 17 - 23
13	034	Mar 26 - Apr 1	39	094	Sept 24 - 30
14	041	Apr 2 - 8	40	101	Oct 1 - 7
15	042	Apr 9 - 15	41	102	Oct 8 - 14
16	043	Apr 16 - 22	42	103	Oct 15 - 21
17	044	Apr 23 - 29	43	104	Oct 22 - 28
18	045	Apr 30 - May 6	44	105	Oct 29 - Nov 4
19	051	May 7 - 13	45	111	Nov 5 - 11
20	052	May 14 - 20	46	112	Nov 12 - 18
21	053	May 21 - 27	47	113	Nov 19 - 25
22	054	May 28 - June 3	48	114	Nov 26 - Dec 2
23	061	June 4 - 10	49	121	Dec 3 - 9
24	062	June 11 - 17	50	122	Dec 10 - 16
25	063	June 18 - 24	51	123	Dec 17 - 23
26	064	June 25 - July 1	52	124	Dec 24 - 30

TABLE 16. SKEENA CHINOOK TERMINAL MIGRATION TIMING RECONSTRUCTION FROM THE SKEENA MODEL (COX-ROGERS 1994) USING AN INDEX OF AREA 4 CATCH AND ESCAPEMENT FOR THE PERIOD 1990 TO 1993.

DATE	90 - 93 AVG CUM INDEX	INDEX OF CUMULATIVE DAILY ESC.	DAILY ESCAPEMENT	WEEKLY MID-POINT W/E DATE	WEEKLY ESCAPEMENT	90 - 93 AVG. WEEKLY CATCH	RECONSTRUCTED TIMING C + E
1-Jun	0.00	0	0				
2-Jun	0.00	0	0				
3-Jun	0.00	0	0				
4-Jun	0.00	0	0				
5-Jun	0.00	0	0				
6-Jun	1.11	385	385				
7-Jun	2.14	743	358	61	742	0	742
8-Jun	4.01	1,388	645				
9-Jun	6.62	2,294	906				
10-Jun	9.98	3,457	1,163				
11-Jun	15.31	5,304	1,847				
12-Jun	18.89	6,544	1,240				
13-Jun	22.54	7,811	1,267				
14-Jun	26.32	9,119	1,308	62	8,377	0	8,377
15-Jun	29.72	10,298	1,179				
16-Jun	33.38	11,565	1,267				
17-Jun	37.60	13,028	1,463				
18-Jun	41.16	14,262	1,234				
19-Jun	45.01	15,597	1,335				
20-Jun	50.85	17,622	2,025				
21-Jun	55.04	19,071	1,449	63	9,952	520	10,472
22-Jun	58.93	20,419	1,348				
23-Jun	62.26	21,574	1,155				
24-Jun	66.66	23,100	1,526				
25-Jun	72.80	25,158	2,058				
26-Jun	79.40	27,513	2,355				
27-Jun	85.81	29,735	2,222				
28-Jun	90.46	31,346	1,611	64	12,274	1,088	13,362
29-Jun	96.36	33,392	2,046				
30-Jun	103.22	35,767	2,375				
1-Jul	109.95	38,099	2,332				
2-Jul	116.51	40,374	2,275				
3-Jul	123.31	42,729	2,355				
4-Jul	128.40	44,492	1,763				
5-Jul	135.17	46,838	2,346	71	15,492	1,677	17,169
6-Jul	141.30	48,963	2,125				
7-Jul	146.30	50,695	1,732				
8-Jul	151.10	52,359	1,664				
9-Jul	155.24	53,795	1,436				
10-Jul	161.63	56,007	2,212				
11-Jul	166.58	57,715	1,708				
12-Jul	170.85	59,202	1,487	72	12,365	2,325	14,690
13-Jul	175.45	60,796	1,594				
14-Jul	180.25	62,458	1,662				
15-Jul	183.01	63,415	957				
16-Jul	186.68	64,688	1,273				
17-Jul	190.39	65,976	1,288				
18-Jul	193.55	67,068	1,092				
19-Jul	195.40	67,709	641	73	8,506	3,435	11,941
20-Jul	197.09	68,295	586				
21-Jul	199.40	69,095	800				
22-Jul	201.06	69,671	576				
23-Jul	202.26	70,094	423				
24-Jul	202.92	70,316	222				
25-Jul	204.11	70,730	414				
26-Jul	205.19	71,104	374	74	3,395	2,002	5,397
27-Jul	206.32	71,493	389				
28-Jul	207.05	71,748	255				
29-Jul	207.72	71,978	230				
30-Jul	208.60	72,283	305				
31-Jul	209.43	72,572	289				
1-Aug	210.66	72,998	426				
2-Aug	211.53	73,300	302	75	2,197	1,272	3,469
3-Aug	212.51	73,637	337				
4-Aug	213.26	73,899	262				
5-Aug	213.26	73,899	0				
6-Aug	213.45	73,963	64				
7-Aug	213.65	74,033	70				
8-Aug	213.65	74,033	0				
9-Aug	213.94	74,132	99	81	833	497	1,330
10-Aug	214.45	74,311	179				
11-Aug	214.67	74,386	75				
12-Aug	214.81	74,435	49				
13-Aug	214.98	74,493	58				
14-Aug	214.98	74,493	0				
15-Aug	215.26	74,589	96				
16-Aug	215.37	74,626	37	82	496	174	670
17-Aug	215.52	74,680	54				
18-Aug	215.64	74,720	40				
19-Aug	215.87	74,801	81				
20-Aug	215.99	74,842	41				
21-Aug	215.99	74,842	0				
22-Aug	215.99	74,842	0				
23-Aug	216.06	74,866	24	83	240	148	388
24-Aug	216.06	74,866	0				
25-Aug	216.17	74,904	38				
26-Aug	216.25	74,931	27				
27-Aug	216.32	74,957	26				
28-Aug	216.32	74,957	0				
29-Aug	216.44	74,999	42				
				84	133	0	133
					75,002	13,138	88,140

TABLE 17. MORICETOWN FISHWAY DAILY CHINOOK COUNTS, 1959 TO 1967.

	Moricetown	Moricetown	Total	Moricetown	Moricetown	Total	Moricetown		Total				
Date	Right 1959	Left 1959	1959	Right 1961	Left 1961	1961	Right 1962	Left 1962	1962	Left 1964	Left 1965	Left 1966	Left 1967
17-Jul				0		0							
18-Jul			0	0	0	0							14
19-Jul			0	2	0	2							14
20-Jul			0	11	0	11							7
21-Jul			0	1	0	1							15
22-Jul			0	0	0	0							8
23-Jul			0	0	1	1	0	0	0		0	1	2
24-Jul			0	3	1	4	0	0	0		1	0	2
25-Jul			0	65	0	65	0	0	0		8	0	3
26-Jul			0	16	0	16	0	0	0		29	0	20
27-Jul			0	154	3	157	0	2	2		15	3	5
9-Jan			0	45	0	45	1	3	4		49	7	11
29-Jul			0	2	0	2	6	14	20		88	12	29
30-Jul			0	14	0	14	45	4	49		55	22	18
31-Jul			0	22	0	22	60	1	61		12	0	2
1-Aug			0	13	0	13	50	1	51		41	3	1
2-Aug			0	8	0	8	102	1	103		84	0	10
3-Aug			0	106	4	110	27	23	50		0	0	2
4-Aug			0	21	3	24	0	1	1		9	2	13
5-Aug			0	2	0	2	14	7	21		33	9	24
6-Aug			0	3	0	3	25	6	31		10	2	5
7-Aug			0	4	1	5	15	0	15		6	3	1
8-Aug			0	0	0	0	44	14	58		5	1	3
9-Aug			0	9	0	9	52	6	58		5	0	5
10-Aug			0	9	0	9	10	0	10		2	0	5
11-Aug	7		7	12	0	12	3	0	3		2	0	3
12-Aug	37		37	3	0	3	4	1	5	7	8	0	11
13-Aug	9		9	2	0	2	27	1	28	19	1	0	2
14-Aug	4	11	15	3	0	3	42	0	42	8	1	0	2
15-Aug	16	14	30	3	0	3	33	2	35	7	0	0	0
16-Aug	9	4	13	2	0	2	49	7	56	6	0	0	0
17-Aug	4	8	12	4	0	4		3	3	7	0	0	0
18-Aug	9	3	12	2	1	3				4	0	0	0
19-Aug	27	14	41	0	0	0				1	0	0	1
20-Aug	1	0	1	1	0	1				2	0	0	0
21-Aug	9	2	11	1	0	1				0	0	0	0
22-Aug	10	1	11	0	0	0				0	0	0	0
23-Aug	6	0	6	0	0	0				2	0	0	0
24-Aug	0	1	1	1	0	1				0	0	0	0
25-Aug	2	0	2	4	0	4				0	0	0	0
26-Aug	30	0	30	1	0	1				0	0	0	0
27-Aug	3	5	8	0	0	0				0	0	0	0
28-Aug	1	0	1	0	0	0				0	0		0
29-Aug	1	0	1	0	0	0				0	0		0
30-Aug	1	0	1	0	0	0				0	0		0
31-Aug	3	0	3	2	0	2				0	0		0
1-Sep	4	0	4	0	1	1							0
2-Sep	10	1	11	0	0	0							0
3-Sep	5	0	5	0	0	0							0
4-Sep	1	0	1	0	0	0							
5-Sep	1	0	1	0	0	0							
6-Sep	3	0	3	0	0	0							
7-Sep	0	1	1	0	0	0							
8-Sep	0	0	0		0	0							
9-Sep					0	0							
10-Sep													
11-Sep													
12-Sep													
13-Sep													
14-Sep													
	213	65	278	551	15	566	609	97	706	63	464	65	238

Data from Harding and Buxton 1971.

TABLE 18. RIVER MILES BETWEEN PRINCIPAL RIVERS AND LAKES WITHIN THE SKEENA RIVER DRAINAGE SYSTEM.

	TEST FISHING	GITNADOIX R. - (JCT. SKEENA)	ALASTAIR LAKE	LAKELSE R. - (JCT. SKEENA)	LAKELSE L. - (HERMAN CR.)	COPPER R. - (JCT. SKEENA)	MCDONELL LAKE	KITWANGA R. - (JCT. SKEENA)	KITWANGA LAKE	BULKLEY R. - (JCT. SKEENA)	KISPIOX R. - (JCT. SKEENA)	SWEETIN RIVER	STEPHENS LAKE	BABINE R. - (JCT. SKEENA)	FRB FENCE - BABINE LAKE	SUSTUT R. - (JCT. SKEENA)	BEAR R. - (JCT. SKEENA)	BEAR LAKE	SUSTUT LAKE	JOHANSON CR. - (JCT. SKEENA)	JOHANSON LAKE	KLUATANTAN R. - (JCT. SKEENA)	KLUATANTAN LAKE	MORICETOWN FALLS	MORICE RIVER	MORICE LAKE
TEST FISHING																										
GITNADOIX R. - (JCT. SKEENA)	36																									
ALASTAIR LAKE	49	13																								
LAKELSE R. - (JCT. SKEENA)	56	20	33																							
LAKELSE L. - (HERMAN CR.)	66	30	43	10																						
COPPER R. - (JCT. SKEENA)	58	36	59	16	26																					
MCDONELL LAKE	140	104	117	84	94	68																				
KITWANGA R. - (JCT. SKEENA)	119	83	101	68	78	52	120																			
KITWANGA LAKE	145	109	122	89	99	73	141	21																		
BULKLEY R. - (JCT. SKEENA)	148	112	125	92	102	76	144	24	45																	
KISPIOX R. - (JCT. SKEENA)	156	120	133	100	110	84	152	32	53	8																
SWEETIN RIVER	200	164	177	144	154	128	196	76	97	50	42															
STEPHENS LAKE	214	178	191	158	168	142	210	90	111	64	56	14														
BABINE R. - (JCT. SKEENA)	188	152	165	132	142	116	184	64	85	38	30	72	86													
FRB FENCE - BABINE LAKE	236	200	213	180	190	164	232	112	133	88	80	122	136	50												
SUSTUT R. - (JCT. SKEENA)	262	226	239	206	216	190	258	138	159	114	106	148	162	76	126											
BEAR R. - (JCT. SKEENA)	280	244	257	224	234	208	276	156	177	132	124	166	180	94	144	18										
BEAR LAKE	286	250	263	230	240	214	282	162	183	138	130	172	186	100	150	24	6									
SUSTUT LAKE	318	282	205	262	272	246	314	194	215	170	162	204	218	132	182	56	38	44								
JOHANSON CR. - (JCT. SKEENA)	328	292	310	272	282	256	324	204	225	180	172	184	198	142	192	64	48	42	14							
JOHANSON LAKE	351	305	323	285	295	269	337	217	238	193	185	197	211	155	205	77	61	55	27	13						
KLUATANTAN R. - (JCT. SKEENA)	401	355	368	335	345	319	387	267	286	243	235	277	291	261	311	50	68	74	106	114	127					
KLUATANTAN LAKE	411	365	378	345	555	329	397	277	298	253	245	287	301	271	321	60	78	84	116	124	137	10				
MORICETOWN FALLS	176	140		120		104		52		28	36															
MORICE RIVER	234	198		178		162		110		86	94														58	
MORICE LAKE	276	242		222		206		154		130	138														102	44

TABLE 19. SUMMARY OF SKEENA CHINOOK ENHANCEMENT RELEASES BY LIFE STAGE, BY PROJECT, BY BROOD YEAR (from S.E.P. DATABASE, provided by SUE LEHMANN).

PROJECT	STOCK	BROOD	STAGE	TOTAL RELEASE
KALUM	CEDAR+CLEAR CR	1981	SPR FRY	56,800
KALUM	CEDAR+CLEAR CR	1982	SPR FRY	77,255
TERRACE	CEDAR R	1984	FALL 15+	33,255
TERRACE	CEDAR R	1985	FALL 15+	56,289
TERRACE	CEDAR R	1985	SPR FRY	33,294
TERRACE	CEDAR R	1986	FALL 15+	33,011
TERRACE	CEDAR R	1987	FALL8-12	96,362
TERRACE	CEDAR R	1988	FALL 15+	39,739
TERRACE	CEDAR R	1988	SM 1+<30	58,449
TERRACE	CEDAR R	1988	SPR FRY	15,354
TERRACE	CEDAR R	1989	FALL8-12	56,992
TERRACE	CEDAR R	1989	SM 1+<30	77,803
TERRACE	CEDAR R	1990	FALL8-12	50,000
TERRACE	CEDAR R	1990	SM 1+<30	50,000
TERRACE	CEDAR R	1990	SPR FRY	15,017
TERRACE	CEDAR R	1991	SM 1+<30	55,947
TERRACE	CEDAR R	1992	FALL8-12	22,820
TERRACE	CEDAR R	1992	SM 1+<30	71,000
TERRACE	CEDAR R	1992	SPR FRY	47,788
TERRACE	CEDAR R	1993	FALL8-12	48,383
TERRACE	CEDAR R	1993	SM 1+<30	74,853
KALUM	KITSUMKALUM R	1980	SPR FRY	63,115
KALUM	KITSUMKALUM R	1981	SPR FRY	100,650
KALUM	KITSUMKALUM R	1982	SPR FRY	62,680
TERRACE	KITSUMKALUM R	1983	SMOLT 0+	30,716
TERRACE	KITSUMKALUM R	1983	SPR FRY	30,466
KITSUMKALUM R	KITSUM.R LOW	1984	SPR FRY	22,803
TERRACE	KITSUMKALUM R	1984	SPR FRY	210,309
TERRACE	KITSUMKALUM R	1985	SPR FRY	181,939
TERRACE	KITSUMKALUM R	1986	SPR FRY	138,588
TERRACE	KITSUMKALUM R	1987	SMOLT 0+	199,770
TERRACE	KITSUMKALUM R	1988	SPR FRY	199,487
TERRACE	KITSUMKALUM R	1989	SPR FRY	222,529
TERRACE	KITSUMKALUM R	1990	SPR FRY	252,869
TERRACE	KITSUMKALUM R	1991	SPR FRY	225,000
TERRACE	KITSUMKALUM R	1992	SPR FRY	186,637
TERRACE	KITSUMKALUM R	1993	SPR FRY	200,497
TERRACE	KITSUMKALUM R	1994	SPR FRY	203,916
TERRACE	ERLANDSEN CR	1985	SM 1+30+	19,798
TERRACE	ERLANDSEN CR	1986	FALL 15+	25,425
TERRACE	ERLANDSEN CR	1987	SM 1+30+	28,037
TERRACE	ERLANDSEN CR	1989	SM 1+<30	29,205
TERRACE	ERLANDSEN CR	1990	SM 1+<30	16,000
TERRACE	COLDWATER CR	1986	SMOLT 0+	10,464
TERRACE	COLDWATER CR	1988	SPR FRY	26,200
TERRACE	COLDWATER CR	1990	SPR FRY	32,509
TERRACE	COLDWATER CR	1991	SPR FRY	4,973
TERRACE	COPPER R	1980	SPR FRY	18,998
TERRACE	COPPER R	1981	SPR FRY	85,157
TERRACE	COPPER R	1981	UNFED	50,000
TERRACE	COPPER R	1982	SPR FRY	100,605
TERRACE	COPPER R	1983	FALL 15+	10,173
TERRACE	COPPER R	1984	FALL 15+	16,309
TERRACE	COPPER R	1984	SM 1+30+	17,268
TERRACE	COPPER R	1985	FALL 15+	35,869
TERRACE	COPPER R	1986	FALL 15+	38,362
TERRACE	COPPER R	1987	SM 1+<30	45,047
TERRACE	COPPER R	1988	SPR FRY	12,355
KISPIOX RIVER	KISPIOX R	1979	SMOLT 0+	12,093
KISPIOX RIVER	KISPIOX R	1980	SPR FRY	67,602
KISPIOX RIVER	KISPIOX R	1981	FALL8-12	33,398
KISPIOX RIVER	KISPIOX R	1983	SM 1+30+	115
KISPIOX RIVER	KISPIOX R	1984	FALL 15+	52,885
KISPIOX RIVER	KISPIOX R	1984	SMOLT 0+	40,017
KISPIOX RIVER	KISPIOX R	1985	FALL 15+	88,056
KISPIOX RIVER	KISPIOX R	1985	SMOLT 0+	70,870
KISPIOX RIVER	KISPIOX R	1986	FALL 15+	154,341
KISPIOX RIVER	KISPIOX R	1986	SMOLT 0+	145,323
KISPIOX RIVER	KISPIOX R	1987	FALL 15+	22,947
KISPIOX RIVER	KISPIOX R	1987	SMOLT 0+	336,635
KISPIOX RIVER	KISPIOX R	1988	FALL 15+	54,097
KISPIOX RIVER	KISPIOX R	1988	SMOLT 0+	69,392
KISPIOX RIVER	KISPIOX R	1989	FALL8-12	49,773
KISPIOX RIVER	KISPIOX R	1989	SPR FRY	74,055
KISPIOX RIVER	KISPIOX R	1990	FALL 15+	1,385
KISPIOX RIVER	KISPIOX R	1991	SPR FRY	89,874
KISPIOX RIVER	KISPIOX R	1992	SMOLT 0+	141,042
KISPIOX RIVER	KISPIOX R	1993	SMOLT 0+	88,960
KISPIOX RIVER	KISPIOX R	1994	SMOLT 0+	119,000
KISPIOX RIVER	SHEGUNIA R	1986	SMOLT 0+	14,244
KISPIOX RIVER	SHEGUNIA R	1987	SMOLT 0+	15,018
KISPIOX RIVER	SHEGUNIA R	1988	FALL8-12	12,358
KISPIOX RIVER	SHEGUNIA R	1989	SMOLT 0+	40,641
KISPIOX RIVER	SHEGUNIA R	1990	FALL8-12	42,440
KISPIOX RIVER	SHEGUNIA R	1991	SPR FRY	40,100
KISPIOX RIVER	SHEGUNIA R	1992	SM 1+<30	4,096
KISPIOX RIVER	SHEGUNIA R	1993	SM 1+<30	11,000
KISPIOX RIVER	SHEGUNIA R	1994	SMOLT 0+	23,000

TABLE 19 CONT. SUMMARY OF SKEENA CHINOOK ENHANCEMENT RELEASES BY LIFE STAGE, BY PROJECT, BY BROOD YEAR (from S.E.P. DATABASE, provided by SUE LEHMANN).

PROJECT	STOCK	BROOD	STAGE	TOTAL RELEASE
BULK.VALLEY SC	TOBOGGAN CR	1983	SPR FRY	340
TOBOGGAN CR	SUSKWA R	1991	SM 1+<30	7,511
TOBOGGAN CR	SUSKWA R	1992	SM 1+<30	10,009
EMERSON CREEK	BULKLEY R	1981	SPR FRY	39,000
BULKLEY RIVER	BULKLEY R	1981	SMOLT 0+	352
BULKLEY RIVER	BULKLEY R	1982	SMOLT 0+	300
EMERSON CREEK	BULKLEY R	1982	SMOLT 0+	12,500
EMERSON CREEK	BULKLEY R	1983	SPR FRY	50,000
TOBOGGAN CR	BULKLEY R UPP	1985	SM 1+<30	21,721
TOBOGGAN CR	BULKLEY R UPP	1986	SM 1+<30	123,619
TOBOGGAN CR	BULKLEY R UPP	1987	SM 1+<30	114,095
TOBOGGAN CR	BULKLEY R UPP	1988	SM 1+<30	102,172
TOBOGGAN CR	BULKLEY R UPP	1989	SM 1+<30	48,787
TOBOGGAN CR	BULKLEY R UPP	1989	SMOLT 0+	35,000
TOBOGGAN CR	BULKLEY R UPP	1990	SM 1+<30	51,857
TOBOGGAN CR	BULKLEY R UPP	1990	SMOLT 0+	8,700
TOBOGGAN CR	BULKLEY R UPP	1991	FALL 8-12	6,908
TOBOGGAN CR	BULKLEY R UPP	1991	SM 1+<30	51,840
TOBOGGAN CR	BULKLEY R UPP	1992	SM 1+<30	83,033
TOBOGGAN CR	BULKLEY R UPP	1993	SM 1+<30	84,829
TOBOGGAN CR	BULKLEY R UPP	1993	SMOLT 0+	12,347
EMERSON CREEK	MORICE R	1981	SPR FRY	8,000
BULKLEY RIVER	MORICE R	1982	SMOLT 0+	850
EMERSON CREEK	MORICE R	1982	SMOLT 0+	95,000
EMERSON CREEK	MORICE R	1983	SPR FRY	94,000
TOBOGGAN CR	MORICE R	1985	SM 1+<30	34,886
FORT BABINE	BABINE R	1984	SM 1+<30	21,992
FORT BABINE	BABINE R	1985	FALL 8-12	101,339
FORT BABINE	BABINE R	1985	SM 1+<30	41,653
FORT BABINE	BABINE R	1986	FALL 8-12	32,329
FORT BABINE	BABINE R	1986	SM 1+<30	78,744
FORT BABINE	BABINE R	1987	FALL 5-8	23,456
FORT BABINE	BABINE R	1987	SM 1+<30	24,132
FORT BABINE	BABINE R	1988	FALL 5-8	21,686
FORT BABINE	BABINE R	1988	SM 1+<30	72,640
FORT BABINE	BABINE R	1988	SMOLT 0+	97,046
FORT BABINE	BABINE R	1989	SM 1+<30	25,307
FORT BABINE	BABINE R	1990	FALL 5-8	2,536
FORT BABINE	BABINE R	1990	FALL 8-12	30,965
FORT BABINE	BABINE R	1990	SM 1+<30	38,912
FORT BABINE	BABINE R	1991	FALL 5-8	8,678
FORT BABINE	BABINE R	1991	SM 1+<30	81,931
FORT BABINE	BABINE R	1992	SM 1+<30	85,015
FORT BABINE	BABINE R	1992	SPR FRY	1,188
FORT BABINE	BABINE R	1993	SM 1+<30	69,648
FORT BABINE	BABINE R	1994	SPR FRY	29,244
FULTON RIVER	FULTON R	1975	SPR FRY	49,365
FULTON RIVER	FULTON R	1976	SM 1+<30	1,216
FULTON RIVER	FULTON R	1976	SPR FRY	127,544
FULTON RIVER	FULTON R	1977	SM 1+<30	1,226
FULTON RIVER	FULTON R	1977	SPR FRY	98,587
FULTON RIVER	FULTON R	1978	SPR FRY	77,070
FULTON RIVER	FULTON R	1979	SPR FRY	51,283

TABLE 20. SUMMARY OF SKEENA CHINOOK HATCHERY ANNUAL SURVIVALS BY RELEASE TYPE (from S.E.P. DATABASE provided by SUE LEHMANN).

FACILITY	STOCK	BROOD YEAR	ESTIMATED CWT RECOVERIES: CATCH	ESCAPEMENT	TOTAL	CALCULATION TYPE	RELEASE TYPE	SURVIVAL (%)
KALUM	KITSUMKALUM R.	1980	151	78	229	DIRECT	SPR FRY	0.5
KALUM	KITSUMKALUM R.	1981	124	185	309	DIRECT	SPR FRY	0.6
TERRACE	KITSUMKALUM R.	1983	40	80	120	DIRECT	SMOLTS	0.4
TERRACE	KITSUMKALUM R.	1984	410	580	990	DIRECT	SPR FRY	0.5
TERRACE	KITSUMKALUM R.	1985	207	220	427	DIRECT	SPR FRY	0.2
TERRACE	KITSUMKALUM R.	1986	34	40	74	DIRECT	SPR FRY	0.1
TERRACE	KITSUMKALUM R.	1987	413	482	895	DIRECT	SMOLTS	0.6
FORT BABINE	BABINE RIVER	1984	57	173	230	DIRECT	YEARLING	1.0
FORT BABINE	BABINE RIVER	1985	158	315	473	DIRECT	YEARLING	1.5
FORT BABINE	BABINE RIVER	1986	814	3,523	4,337	DIRECT	YEARLING	5.5
FORT BABINE	BABINE RIVER	1987	296	577	873	DIRECT	YEARLING	3.6
KALUM	CEDAR R. + CLEAR CR.	1981	7	9	16	EXTRAPOLATED	SPR FRY	0.0
KALUM	CEDAR R. + CLEAR CR.	1982	11	0	11	NOT EXPANDED	SPR FRY	0.0
TERRACE	CEDAR R./SKEENA R.	1984	16	12	28	EXTRAPOLATED	FALL FRY	0.1
TERRACE	CEDAR R./SKEENA R.	1985	36	0	36	NOT EXPANDED	FALL FRY	0.1
TERRACE	CEDAR R./SKEENA R.	1986	74	27	101	EXTRAPOLATED	FALL FRY	0.3
TERRACE	CEDAR R./SKEENA R.	1987	47	86	133	EXTRAPOLATED	FALL FRY	0.2
TERRACE	ERLANDSEN CR.	1985	11	4	15	EXTRAPOLATED	YEARLING	0.1
TERRACE	ERLANDSEN CR.	1986	4	17	21	EXTRAPOLATED	FALL FRY	0.1
TERRACE	ERLANDSEN CR.	1987	12	23	35	EXTRAPOLATED	YEARLING	0.2
TERRACE	COPPER R.	1980	14	13	27	EXTRAPOLATED	SPR FRY	0.1
TERRACE	COPPER R.	1983	5	20	25	EXTRAPOLATED	FALL FRY	0.3
TERRACE	COPPER R.	1984	48	98	146	EXTRAPOLATED	FALL FRY	0.9
TERRACE	COPPER R.	1984	110	248	358	EXTRAPOLATED	YEARLING	2.1
KISPIOX	KISPIOX R.	1980	33	51	84	EXTRAPOLATED	SPR FRY	0.1
KISPIOX	KISPIOX R.	1981	8	16	24	EXTRAPOLATED	FALL FRY	0.1
KISPIOX	KISPIOX R.	1984	29	87	116	EXTRAPOLATED	FALL FRY	0.2
KISPIOX	KISPIOX R.	1984	52	156	208	EXTRAPOLATED	SMOLTS	0.5
KISPIOX	KISPIOX R.	1987	3	5	8	EXTRAPOLATED	FALL FRY	0.0
FULTON	FULTON R.	1975	6	15	21	EXTRAPOLATED	SPR FRY	0.0
FULTON	FULTON R.	1976	85	208	293	EXTRAPOLATED	SPR FRY	0.3
FULTON	FULTON R.	1977	46	113	159	EXTRAPOLATED	SPR FRY	0.2
FULTON	FULTON R.	1978	167	408	575	EXTRAPOLATED	SPR FRY	0.8
FULTON	FULTON R.	1979	226	551	777	EXTRAPOLATED	SPR FRY	1.5
TOBOGGAN	UPPER BULKLEY	1985	4	0	4	NOT EXPANDED	YEARLING	0.0
TOBOGGAN	UPPER BULKLEY	1986	405	355	760	EXTRAPOLATED*	YEARLING	2.4
TOBOGGAN	UPPER BULKLEY	1987	462	278	740	EXTRAPOLATED*	YEARLING	2.3

* TERMINAL RATE OF HARVEST ASSUMED TO BE 50% OF RUN PAST MORICETOWN.

TABLE 21. OBSERVED CWT RECOVERIES OF CANADIAN CHINOOK FROM ALASKAN TRAWL FISHERIES, 1982 TO 1994.

RELEASE LOCATION	RECOVERY YEAR													TOTAL
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
ADAMS R, UPP	0	0	0	0	0	0	0	0	0	0	0	1	1	2
ATNARKO R	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ATNARKO R, L	0	0	3	2	0	0	0	0	0	0	2	3	3	13
ATNARKO R, U	0	0	0	0	0	0	0	0	0	0	2	3	5	10
BABINE R	0	0	0	0	0	0	0	0	1	2	3	1	0	7
BIG QUALICUM	0	0	0	0	0	0	0	0	0	1	0	0	0	1
BIRKENHEAD R	0	0	1	0	1	0	0	0	0	0	0	0	0	2
BONAPARTE R	0	0	1	0	0	0	0	0	0	0	1	3	0	5
BOWRON R	0	0	3	1	0	0	0	0	0	0	0	0	0	4
BULKLEY R	0	0	0	0	0	0	0	0	0	1	1	0	0	2
BULKLEY R UP	0	0	0	0	0	0	0	0	0	1	0	0	0	1
BURMAN R	0	0	0	0	0	0	1	1	0	0	0	0	0	2
CARIBOU CR U	0	0	0	0	0	0	0	0	0	0	2	0	0	2
CEDAR CR - S	0	0	1	0	0	0	0	0	0	0	0	0	0	1
CEDAR R/SKEE	0	0	0	0	0	0	0	0	0	0	0	0	1	1
CHEHALIS R	0	0	0	0	0	0	0	0	2	0	2	2	0	6
CHEHALIS R -	0	0	1	0	1	0	3	1	0	0	0	0	0	6
CHILCOTIN R	0	0	0	0	0	0	0	0	0	0	1	0	0	1
CHILKO R	0	0	0	0	0	0	0	0	0	0	1	0	0	1
CHILLIWACK R	0	1	3	1	0	0	2	1	1	0	1	4	1	15
CHINA CR	0	0	0	0	0	0	0	0	0	1	1	2	0	4
CHINA CR SWV	0	0	0	0	0	0	0	0	1	0	0	0	0	1
CLEARWATER R	0	0	0	0	0	0	0	0	0	0	0	2	0	2
COLDWATER R	0	0	0	0	1	0	0	0	0	0	1	1	0	3
COMOX BAY	0	0	0	0	0	0	0	0	0	0	0	0	1	1
CONUMA ESTUA	0	0	0	0	1	0	0	1	1	0	3	9	3	18
CONUMA R	0	0	2	1	0	0	0	0	0	0	1	5	1	10
CONUMA R - E	0	0	0	0	0	0	0	0	0	0	1	1	0	2
COPPER R	0	0	0	1	0	0	0	0	0	0	0	0	0	1
COPPER R, UP	0	0	1	0	0	0	0	0	0	0	0	0	0	1
DATE CR - KI	0	0	2	0	0	0	0	0	0	0	0	0	0	2
DEADMAN R	0	0	0	0	0	0	0	0	0	1	0	0	0	1
DEEP COVE	0	0	0	0	0	0	0	0	0	1	1	3	0	5
DOME CR	0	0	0	0	0	0	0	0	0	0	0	2	1	3
DOME CR UPPE	0	0	0	0	0	0	0	0	1	0	0	0	0	1
EAGLE R	0	0	0	0	0	0	0	0	0	0	0	2	1	3
FULTON/BABIN	1	0	0	0	0	0	0	0	0	0	0	0	0	1
GOLD R	0	0	0	0	0	0	0	0	0	0	0	5	2	7
GOLD R NWVI	0	0	0	0	0	0	0	0	0	0	1	4	0	5
HARRIS CR	0	0	1	0	0	0	0	0	0	0	0	0	0	1
HIRSCH CR	0	0	0	0	0	0	0	0	0	0	0	3	0	3
KAYON CR	0	0	1	0	0	0	0	0	0	0	0	0	0	1
KENNEDY LAKE	0	0	0	0	0	0	0	0	0	0	0	1	1	2
KENNEDY R, L	0	0	0	0	0	0	0	0	2	2	0	3	1	8
KILDALA R	0	0	0	0	0	0	0	0	0	0	0	1	0	1
KING CR, LOW	0	0	1	0	0	0	0	0	0	0	0	0	0	1
KING CR, UPP	0	0	1	0	0	0	0	0	0	0	0	0	0	1
KITIMAT R	0	1	0	0	0	0	0	0	0	0	0	0	0	1
KITIMAT R, L	0	0	0	0	0	0	0	0	0	0	0	4	1	5
KITSUMKALUM	0	0	2	1	0	0	0	0	0	0	1	1	0	5
LITTLE NITIN	0	1	0	0	0	0	0	0	0	0	0	0	0	1
MARBLE R	0	0	2	0	2	0	0	0	0	0	0	1	2	7
NAHMINT ESTU	0	0	0	0	0	0	0	0	0	0	1	0	0	1
NAHMINT R	0	0	0	0	0	0	0	0	0	0	1	1	0	2
NAPOLEON CR	0	0	0	0	0	0	0	0	0	0	1	0	0	1
NICOLA R	0	0	0	0	0	0	1	0	0	1	0	7	1	10
NITINAT L	0	0	0	0	0	0	0	0	0	0	0	0	1	1
NITINAT LAKE	0	0	0	0	0	0	0	0	0	0	0	5	0	5
NITINAT R	0	1	5	3	1	0	0	1	1	2	1	6	2	23
POETS NOOK	0	0	0	0	0	0	0	0	0	1	0	0	0	1
QUESNEL R	0	0	5	0	0	0	0	1	0	0	1	3	0	10
QUESNEL R, H	0	0	0	0	0	0	0	0	0	0	0	0	1	1
RAFT R	0	0	0	0	0	0	0	0	0	0	0	3	2	5
ROBERTSON CR	0	0	10	1	0	0	1	0	9	4	1	10	2	38
SALMON R - T	0	0	0	0	1	0	0	0	0	0	1	1	0	3
SALMON R, PR	0	0	0	0	0	0	0	0	0	0	0	1	0	1
SAN JUAN R	0	0	1	0	0	0	0	0	0	0	0	0	0	1
SHUSWAP R, L	0	0	0	0	1	0	0	0	0	0	0	0	0	1
SHUSWAP R, M	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SLIM CR	0	0	2	0	0	0	0	0	0	0	0	0	0	2
SOOKE R	0	0	3	0	0	0	0	0	0	0	0	0	1	4
STAMP R	0	0	0	0	0	0	0	0	0	1	0	0	0	1
STERLING CR	0	0	0	0	0	0	0	0	0	0	1	0	0	1
STUART R	0	0	7	1	1	0	0	0	0	0	0	0	0	9
SUCWOA R	0	0	0	0	0	1	0	0	0	0	0	0	0	1
THOMPSON R,	0	0	0	0	0	0	0	0	1	0	0	0	0	1
WEST ROAD R	0	0	0	0	0	0	0	0	0	0	2	2	0	4
YAKOUN R	0	0	0	0	0	0	0	0	0	0	1	2	0	3
YOUNGS R & B	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL	1	4	59	12	10	1	8	6	20	19	37	108	38	323

TABLE 22. SUMMARY BY RELEASE SITE OF OBSERVED CWT RECOVERIES (1982 TO 1994) OF CANADIAN CHINOOK FROM ALASKAN TRAWL FISHERIES.

US TRAWL RECOVERIES	PERCENT ALL RECOVERIES	TAG RELEASE SITE	NORTH COAST	SKEENA
2	0.62%	ADAMS R, UPP		
1	0.31%	ATNARKO R	*	
13	4.00%	ATNARKO R, L	*	
10	3.08%	ATNARKO R, U	*	
7	2.15%	BABINE R	*	*
1	0.31%	BIG QUALICUM		
2	0.62%	BIRKENHEAD R		
5	1.54%	BONAPARTE R		
4	1.23%	BOWRON R		
2	0.62%	BULKLEY R	*	*
1	0.31%	BULKLEY R UP	*	*
2	0.62%	BURMAN R		
2	0.62%	CARIBOU CR U		
1	0.31%	CEDAR CR - S	?	?
1	0.31%	CEDAR R/SKEE	*	*
6	1.85%	CHEHALIS R		
6	1.85%	CHEHALIS R -		
1	0.31%	CHILCOTIN R		
1	0.31%	CHILKO R		
15	4.62%	CHILLIWACK R		
4	1.23%	CHINA CR		
1	0.31%	CHINA CR SWV		
2	0.62%	CLEARWATER R		
3	0.92%	COLDWATER R		
1	0.31%	COMOX BAY		
18	5.54%	CONUMA ESTUA		
10	3.08%	CONUMA R		
2	0.62%	CONUMA R - E		
1	0.31%	COPPER R	?	?
1	0.31%	COPPER R, UP	?	?
2	0.62%	DATE CR - KI		
1	0.31%	DEADMAN R		
5	1.54%	DEEP COVE		
3	0.92%	DOME CR		
1	0.31%	DOME CR UPPE		
3	0.92%	EAGLE R		
1	0.31%	FULTON/BABIN	*	*
7	2.15%	GOLD R		
5	1.54%	GOLD R NWVI		
1	0.31%	HARRIS CR		
3	0.92%	HIRSCH CR	* KITIMAT	
1	0.31%	KAYON CR		
2	0.62%	KENNEDY LAKE		
8	2.46%	KENNEDY R, L		
1	0.31%	KILDALA R	* KITIMAT	
1	0.31%	KING CR, LOW		
1	0.31%	KING CR, UPP		
1	0.31%	KITIMAT R	*	
5	1.54%	KITIMAT R, L	*	
5	1.54%	KITSUMKALUM	*	*
1	0.31%	LITTLE NITIN		
7	2.15%	MARBLE R		
1	0.31%	NAHMINT ESTU		
4	1.23%	NAHMINT R		
1	0.31%	NAPOLEON CR		
10	3.08%	NICOLA R		
1	0.31%	NITINAT L		
5	1.54%	NITINAT LAKE		
23	7.08%	NITINAT R		
1	0.31%	POETS NOOK		
10	3.08%	QUESNEL R		
1	0.31%	QUESNEL R, H		
5	1.54%	RAFT R		
38	11.69%	ROBERTSON CR		
3	0.92%	SALMON R - T		
1	0.31%	SALMON R, PR		
1	0.31%	SAN JUAN R		
1	0.31%	SHUSWAP R, L		
1	0.31%	SHUSWAP R, M		
2	0.62%	SLIM CR		
4	1.23%	SOOKE R		
1	0.31%	STAMP R		
1	0.31%	STERLING CR		
9	2.77%	STUART R		
1	0.31%	SUCWOA R		
1	0.31%	THOMPSON R,		
4	1.23%	WEST ROAD R		
3	0.92%	YAKOUN R	*	
1	0.31%	YOUNGS R & B		
325				

TABLE 23. SUMMARY OF NORTH COAST (DFO STATISTICAL AREAS 1 - 10) OBSERVED CWT RECOVERIES (1982 TO 1994) OF SKEENA ORIGIN CHINOOK FROM ALASKAN TRAWL FISHERIES.

OBSERVED RECOVERIES	PERCENT ALL RECOVERIES	TAG RELEASE SITE
SKEENA:		
7	2.15%	BABINE
1	0.31%	FULTON
3	0.92%	BULKLEY
1	0.31%	CEDAR
5	1.54%	KITSUMKALUM
QCI:		
1	0.31%	YAKOUN
CENTRAL:		
10	3.08%	KITIMAT
24	7.38%	ATNARKO
TOTAL NORTH COAST:		
52	16.00%	

TABLE 24. RELATIVE HARVEST (PERCENT OF CWT RECOVERIES) OF CHINOOK STOCK BY RECOVERY AREA AND GEARTYPE.

STOCK	BROOD YEAR	n	RECOVERY AREA AND GEAR TYPE				
			ALASKA - ALL GEAR	BC TROLL	BC NET	BC TIDAL SPORT	BC FW SPORT
CEDAR R.	1981	3	0.0	0.0	0.0	0.0	100.0
CEDAR R.	1982	8	0.0	0.0	0.0	0.0	100.0
CEDAR R.	1984	16	43.8	0.0	0.0	0.0	56.3
CEDAR R.	1988	10	0.0	0.0	0.0	50.0	50.0
CEDAR R.	1989	4	0.0	0.0	0.0	0.0	100.0
CEDAR R.	1990	6	0.0	0.0	0.0	0.0	100.0
CEDAR R.	1991	5	40.0	0.0	60.0	0.0	0.0
CEDAR R.	AVERAGE:	7	12.0	0.0	8.6	7.1	72.3
COPPER R.	1980	5	100.0	0.0	0.0	0.0	0.0
COPPER R.	1981	3	0.0	0.0	0.0	0.0	100.0
COPPER R.	1983	5	0.0	0.0	100.0	0.0	0.0
COPPER R.	1984	163	19.6	4.9	47.2	6.7	21.5
COPPER R.	AVERAGE:	44	29.9	1.2	36.8	1.7	30.4
KITSUMKALUM R.	1975	5	0.0	100.0	0.0	0.0	0.0
KITSUMKALUM R.	1976	43	53.5	7.0	39.5	0.0	0.0
KITSUMKALUM R.	1977	93	37.6	26.9	21.5	14.0	0.0
KITSUMKALUM R.	1979	56	85.7	0.0	14.3	0.0	0.0
KITSUMKALUM R.	1980	150	32.7	26.7	38.0	0.0	2.7
KITSUMKALUM R.	1981	122	41.8	34.4	20.5	3.3	0.0
KITSUMKALUM R.	1983	39	43.6	0.0	43.6	12.8	0.0
KITSUMKALUM R.	1984	262	34.7	13.7	33.6	6.5	11.5
KITSUMKALUM R.	1985	217	32.8	19.4	18.9	12.0	17.1
KITSUMKALUM R.	1986	35	42.9	0.0	42.9	0.0	14.3
KITSUMKALUM R.	1987	296	34.8	28.0	26.4	9.5	1.4
KITSUMKALUM R.	1988	110	31.9	20.0	38.2	10.0	0.0
KITSUMKALUM R.	1989	58	22.4	13.8	53.4	3.4	6.9
KITSUMKALUM R.	1990	50	46.0	16.0	30.0	8.0	0.0
KITSUMKALUM R.	1991	45	17.8	15.6	66.7	0.0	0.0
KITSUMKALUM R.	1992	9	0.0	0.0	77.8	22.2	0.0
KITSUMKALUM R.	AVERAGE:	99	34.9	20.1	35.3	6.4	3.4
KISPIOX R.	1980	35	25.7	74.3	0.0	0.0	0.0
KISPIOX R.	1984	488	0.4	0.0	98.8	0.8	0.0
KISPIOX R.	1987	3	0.0	0.0	100.0	0.0	0.0
KISPIOX R.	AVERAGE:	175	8.7	24.8	66.3	0.3	0.0
BULKLEY R.	1985	5	0.0	0.0	0.0	100.0	0.0
BULKLEY R.	1986	45	2.2	8.9	0.0	17.8	71.1
BULKLEY R.	1987	85	0.0	4.7	14.1	4.7	76.5
BULKLEY R.	1988	45	0.0	0.0	6.7	6.7	86.7
BULKLEY R.	1989	11	0.0	0.0	36.4	0.0	63.6
BULKLEY R.	1990	116	3.4	0.0	7.8	9.5	79.3
BULKLEY R.	1991	48	0.0	0.0	29.2	4.2	66.7
BULKLEY R.	1992	11	0.0	0.0	0.0	0.0	100.0
BULKLEY R.	AVERAGE:	46	0.7	1.7	11.8	17.9	68.0
MORICE R.	1978	34	52.9	26.5	11.8	8.8	0.0
MORICE R.	1979	19	42.1	26.3	0.0	15.8	15.8
MORICE R.	AVERAGE:	27	47.5	26.4	5.9	12.3	7.9
BABINE R.	1975	3	100.0	0.0	0.0	0.0	0.0
BABINE R.	1976	93	33.3	14.0	44.1	8.6	0.0
BABINE R.	1977	45	26.7	48.9	24.4	0.0	0.0
BABINE R.	1979	228	37.3	24.1	37.7	0.9	0.0
BABINE R.	1984	56	44.6	33.9	21.4	0.0	0.0
BABINE R.	1985	156	28.2	37.2	31.4	0.0	3.2
BABINE R.	1986	901	29.0	33.4	33.9	2.2	1.6
BABINE R.	1987	310	15.8	47.7	33.9	1.0	1.6
BABINE R.	1988	400	3.8	50.8	42.3	2.3	1.0
BABINE R.	1989	139	15.1	51.1	28.8	5.0	0.0
BABINE R.	1990	102	26.4	54.9	18.6	0.0	0.0
BABINE R.	1991	81	7.4	40.7	43.2	4.9	3.7
BABINE R.	1992	10	0.0	0.0	100.0	0.0	0.0
BABINE R.	AVERAGE:	194	28.3	33.6	35.4	1.9	0.9
FULTON R.	1975	2	0.0	100.0	0.0	0.0	0.0
FULTON R.	1978	165	34.5	27.3	36.4	1.8	0.0
FULTON R.	AVERAGE:	84	17.3	63.7	18.2	0.9	0.0

TABLE 25. SKEENA TERMINAL CHINOOK ABUNDANCE AND HARVEST RATES, 1966 TO 1995.

YEAR	GILLNET RGS	FRESHWATER RECREATIONAL	TIDAL RECREATIONAL	FIRST NATION	FISHERY OFFICER ESCAPEMENT	TERMINAL ABUNDANCE INCLUDES RGS	TERMINAL HARVEST RATE INCLUDES RGS	TERMINAL ABUNDANCE EXCLUDES RGS	TERMINAL HARVEST RATE EXCLUDES RGS
1966		1,400	2,824	2,330	18,283			24,837	26%
1967		1,500	-	2,855	25,890			30,245	14%
1968		1,325	3,894	2,223	24,725			32,167	23%
1969		872	2,460	1,561	29,555			34,448	14%
1970		916	3,421	3,338	21,150			28,825	27%
1971		754	1,277	4,051	18,500			24,582	25%
1972		653	1,870	2,141	20,651			25,315	18%
1973		938	1,240	2,037	40,341			44,556	9%
1974		775	2,080	2,266	31,576			36,697	14%
1975		1,050	2,911	3,526	20,319			27,806	27%
1976		990	1,167	2,388	13,053			17,598	26%
1977		1,100	1,758	4,940	29,018			36,816	21%
1978		1,090	5,710	4,203	22,676			33,679	33%
1979		1,372	1,410	3,843	18,488			25,113	26%
1980		1,320	2,550	8,660	23,400			35,930	35%
1981		1,950	2,210	9,901	24,523			38,584	36%
1982		2,000	2,230	11,700	16,992			32,922	48%
1983		2,517	4,366	10,276	23,602			40,761	42%
1984	4,318	1,550	2,976	9,468	35,864	54,176	34%	49,858	28%
1985	11,428	2,500	2,025	13,430	52,407	81,790	36%	70,362	26%
1986	6,104	3,200	3,010	16,889	59,719	88,922	33%	82,818	28%
1987	4,083	3,750	2,825	12,218	60,948	83,824	27%	79,741	24%
1988	14,774	4,200	4,095	17,445	68,307	108,821	37%	94,047	27%
1989	8,787	2,500	4,521	14,814	57,192	87,814	35%	79,027	28%
1990	8,136	2,600	3,660	22,967	55,541	92,904	40%	84,768	34%
1991	8,757	2,500	4,440	14,867	52,792	83,356	37%	74,599	29%
1992	10,302	3,800	3,200	11,361	65,623	94,286	30%	83,984	22%
1993	10,086	1,341	6,832	13,545	68,286	100,090	32%	90,004	24%
1994	8,589	1,990	3,000	9,685	53,511	76,775	30%	68,186	22%
1995	5,160	1,540	2,784	6,569	34,390	50,443	32%	45,283	24%
								1966 to 1983 avg,	26%
						1984 to 1995 avg.	34%	1984 to 1995 avg.	26%

TABLE 26. SKEENA FIRST NATIONS HARVEST ALLOCATIONS AND CATCH DATA FOR 1995.

FIRST NATION	SOCKEYE	COHO	PINK	CHUM	CHINOOK
TSIMSHIAN					
ALLOCATION	80,000	2,500	5,000	500	5,000
CATCH	45,691	1,538	7,763	1,425	1,094
GITKSAN WET'SUWET'EN					
ALLOCATION	100,000	2,500	25,000	500	10,000
CATCH	75,265	818	8,210	3	5,475
NAT'00T'EN					
ALLOCATION	35,000				
CATCH	18,491				
TAKLA LAKE					
ALLOCATION	1,050				550
CATCH					
YEKOOCHE					
ALLOCATION	500				
CATCH					
TOTAL ALLOCATION	216,550	5,000	30,000	1,000	15,550
TOTAL CATCH	139,447	2,356	15,973	1,428	6,569

NOTE: CHINOOK DATA INCLUDES JACKS.

TABLE 27. SKEENA SECTION 35 CHINOOK HARVESTS BY AREA, 1925 TO 1995.

SOURCE:	JANTZ DFO RECORDS	JANTZ DFO RECORDS	JANTZ DFO RECORDS	JANTZ DFO RECORDS	JANTZ DFO RECORDS		ARGUE 1986	PALMER 1987	PALMER 1987
YEAR	SMITHERS	HAZELTON	TERRACE	LOWER SKEENA	AREA 4 TOTAL		AREA 4 TOTAL	MORICETOWN	HAGWILGET
1925							24,096		
1926							31,928		
1927							30,120		
1928							8,193		
1929							11,446		1,000
1930							18,083	3,075	2,235
1931							8,006	1,860	2,568
1932							11,250	5,294	1,514
1933							53,290	2,363	1,287
1934							8,562	1,681	496
1935							5,268	685	1,075
1936							7,828	1,897	1,564
1937							13,161	3,546	1,841
1938							12,185	1,941	1,066
1939							8,463	960	995
1940							6,004	336	625
1941							4,603	1,611	250
1942							3,746	1,259	49
1943							6,338	230	240
1944							1,979	1,000	145
1945							1,696	1,230	
1946							1,792	759	127
1947							4,236	1,145	314
1948							5,273	1,122	355
1949							2,624	1,500	78
1950							3,754	1,437	159
1951	948			730	1,678			780	103
1952	2,232		995		3,227			1,196	240
1953	2,081		1,125		3,206			1,271	270
1954	2,688		1,690		4,378			1,885	700
1955	2,455		1,310	3	3,768			1,320	500
1956	4,060		2,000		6,060			3,200	800
1957	2,892		3,170	10	6,072			2,450	600
1958	3,266		2,400	63	5,729			2,874	100
1959	2,587		5,541	50	8,178			2,513	40
1960	859		841	60	1,760			677	
1961	3,163		1,508	60	4,731			3,006	20
1962	2,874		969	40	3,883			2,533	28
1963	2,725		940	200	3,865			2,618	
1964	1,721		772	20	2,513			1,564	
1965	1,585		1,425	110	3,120			1,413	
1966	1,382		895	53	2,330			1,233	
1967	1,680		1,158	17	2,855			1,608	
1968	1,064		1,124	35	2,223			1,017	
1969	550		845	166	1,561			485	
1970	853		2,425	60	3,338			728	
1971	905		3,100	46	4,051			255	
1972	733		900	508	2,141			683	
1973	303		1,500	234	2,037			303	
1974	591		1,500	175	2,266			581	
1975	826		2,500	200	3,526			826	
1976	88		2,000	300	2,388			88	
1977	190		4,500	250	4,940			170	
1978	3		4,000	200	4,203			200	
1979		2,500	1,000	343	3,843				
1980	60	6,000	800	1,800	8,660				
1981	521	7,100	300	1,980	9,901			1,545	
1982	200	9,000	1,500	1,000	11,700			3,500	
1983	400	7,900	500	1,476	10,276			3,475	
1984	200	7,700	500	1,068	9,468				
1985	2,000	8,300	1,000	2,130	13,430				
1986	2,653	8,000	3,400	2,836	16,889				
1987	2,900	5,000	1,700	2,618	12,218				
1988	8,200	5,500	745	3,000	17,445				
1989	4,400	5,000	1,622	3,792	14,814				
1990	12,355	5,500	1,660	3,452	22,967				
1991	6,200	5,500	1,339	1,828	14,867				
1992	5,361	6,000			11,361	14,865 *			
1993		9,239	2,791	1,515	13,545	16,886 *			
1994		7,011	1,360	1,314	9,685	13,026 *			
1995	1,482	3,221	258	592	5,553				
Mean 1980-1995	3,352	6,623	1,192	2,063	12,674	13,310			
% Total Skeena	26%	52%	9%	16%	100%				

* Extrapolated using 1980 to 1991 average for 1992-1994 cells with no estimates.

TABLE 28. SKEENA AREA RECREATIONAL EFFORT AND CHINOOK CATCH BY SUB-AREA. (Data from J.O Thomas and Associates 1995, Sub-areas as outlined in Figure 23).

AREA	SUBAREA	EFFORT (BOAT TRIPS)	CHINOOK CATCH
4	A	329	2
4	B	562	138
4	C	857	119
4	D	705	795
4	E	159	27
4	F	959	425
4	G	95	15
4	H	241	19
3	I	481	96
3	J	685	297
3	K	1,189	62
TOTAL:		6,262	1,995

TABLE 29. SKEENA RECREATIONAL CHINOOK CATCHES BY AREA, 1966 TO 1995.

YEAR	SMITHERS	HAZELTON	TERRACE	LOWER SKEENA	FRESHWATER TOTAL	TIDAL	TIDAL EFFORT	AREA 4 TOTAL
1966	2,084		740		2,824	1,400	7,700	4,224
1967						1,500	6,875	1,500
1968	2,184		1,710		3,894	1,325	5,950	5,219
1969	1,125		1,335		2,460	872	5,750	3,332
1970	1,636		1,727	58	3,421	916	3,750	4,337
1971	248		817	212	1,277	754	2,988	2,031
1972	1,370		500		1,870	653	5,188	2,523
1973	1,240				1,240	938	3,623	2,178
1974	680		1,400		2,080	775	4,520	2,855
1975	411		2,500		2,911	1,050	1,230	3,961
1976	67		1,100		1,167	990	4,713	2,157
1977	258		1,500		1,758	1,100	6,270	2,858
1978	210		5,500		5,710	1,090	6,140	6,800
1979	160		1,250		1,410	1,372	6,023	2,782
1980	250		2,300		2,550	1,320	7,331	3,870
1981	110	150	1,950		2,210	1,950	15,217	4,160
1982	130	1,000	900	200	2,230	2,000	9,367	4,230
1983	116	750	3,000	500	4,366	2,517	15,828	6,883
1984	726	150	1,800	300	2,976	1,550	14,960	4,526
1985	510	75	1,300	140	2,025	2,500	16,557	4,525
1986	1,150	250	1,500	110	3,010	3,200	31,128	6,210
1987	1,150	100	1,500	75	2,825	3,750	18,905	6,575
1988	1,445	125	2,500	25	4,095	4,200	11,545	8,295
1989	970	525	3,000	26	4,521	2,500		7,021
1990	1,020	625	2,000	15	3,660	2,600		6,260
1991	1,175	750	2,500	15	4,440	2,500		6,940
1992					3,200	3,800		7,000
1993					6,832	1,341		8,173
1994					3,000	1,990		4,990
1995					2,784	1,540		4,324

TABLE 30. SUMMARY OF 1995 LOWER SKEENA RIVER SPORT FISHERY CREEL SURVEY.

SURVEY SUMMARY:

ROVING SURVEY					ACCESS POINT SURVEY				
PERIOD	ROVING SHIFTS	INTERVIEWS	ANGLERS	OBSERVED EFFORT	PERIOD	ACCESS SHIFTS	INTERVIEWS	ANGLERS	ANGLER HOURS
1 (June 26 - Aug 6)	73	1,605	4,744	25,501	1	24	162	401	1,042
2 (Aug 7 - Aug 31)	14	167	360	1,049	2	4	9	26	39
3 (Sept 1 - Sept 30)	15	169	485	1,971	3	6	11	21	49
4 (Oct 1 - Oct 15)	12	58	108	257	4	0	0	0	0
TOTAL	114	1,999	5,697	28,778	TOTAL	34	182	448	1,130

CATCH AND HARVEST ESTIMATES:

	CATCH ESTIMATES				HARVEST ESTIMATES			
SPECIES	ZONE 1	ZONE 2	ZONE 3	ALL ZONES	ZONE 1	ZONE 2	ZONE 3	ALL ZONES
CHINOOK	1,630	995	893	3,518	1,461	727	596	2,784
COHO	88	199	1,567	1,853	81	199	1,211	1,491
STEELHEAD	159	350	306	815	0	0	0	0
PINK	11,209	4,937	5,525	21,670	2,694	863	1,173	4,730
SOCKEYE	2,033	112	81	2,226	799	91	44	934
CHUM	0	15	58	72	0	0	58	58
CUTTHROAT	79	19	170	268	28	0	38	66
D. VARDEN	285	306	524	1,115	242	92	196	530

ANGLER ESTIMATES (ROD HOURS):

	ZONE 1	ZONE 2	ZONE 3	ALL ZONES
EFFORT (ROD HOURS):	93,744	49,991	74,407	218,142

TABLE 31. SKEENA GILLNET TEST FISHERY AGE ANALYSIS FOR JUVENILE AND ADULT CHINOOK.

START DATE FOR INDEX DATA = JUNE 12.
END DATE FOR INDEX DATA = AUG 15.

JACK CHINOOK TOTAL (ANNUAL) CHINOOK INDEX:

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995

LARGE CHINOOK TOTAL (ANNUAL) CHINOOK INDEX:

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
102.51	110.47	81.43	125.29	187.69	175.79	241.67	228.73	209.94	199.00	216.72	183.60	167.13	232.36	175.69	113.76

JACK CHINOOK PROPORTIONAL AGE STRUCTURE BY YEAR:

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Prop of 21				.25				.09			.03					
Prop of 31	1.00	1.00	1.00	.50	1.00		.50	.04	.47		.14	.17		.44		
Prop of 32				.25			.50	.87	.53	1.00	.83	.83	1.00	.56		1.00

ADULT CHINOOK PROPORTIONAL AGE STRUCTURE BY YEAR:

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Prop of 41	.08	.04	.05	.01	.02	.01	.03	.01	.01	.01	.01	.04	.01	.02		.01
Prop of 42	.10	.14	.21	.29	.19	.15	.08	.13	.20	.03	.27	.20	.17	.07	.13	.27

Prop of 51	.04	.01	.07	.00	.03	.01	.05	.01	.02	.05	.03	.00	.04	.03	.00	
Prop of 52	.68	.31	.42	.42	.55	.64	.45	.33	.32	.50	.11	.56	.37	.43	.40	.38
Prop of 53			.01			.00			.00		.00	.00	.00			
Prop of 54																

Prop of 61	.01							.00		.00	.00	.00				
Prop of 62	.08	.49	.24	.27	.18	.18	.38	.52	.45	.39	.58	.16	.39	.44	.45	.33
Prop of 63	.01				.01	.00	.00			.00		.01	.01	.00	.00	.01

Prop of 71											.00					
Prop of 72			.01	.00	.02				.00	.01	.01	.02	.00	.01		.01
Prop of 73		.01										.00		.01	.01	

CHINOOK AGE STRUCTURE PROPORTIONS STANDARDIZED BY TEST FISHERY INDEX FACTOR.

JACK CHINOOK STANDARDIZED PROPORTIONAL AGE STRUCTURE BY YEAR (TYEE TEST FISHERY JACK INDICIES):

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
JACK SUM	17.84	26.04	30.94	32.95	47.72	35.11	38.91	44.57	15.39	36.97	35.92	10.09	4.63	7.06	6.02	4.72

ADULT CHINOOK STANDARDIZED PROPORTIONAL AGE STRUCTURE BY YEAR:

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Prop of 41	8.42	4.09	4.18	.91	3.17	2.45	6.63	2.51	1.33	2.88	2.03	7.85	1.30	4.02		.59
Prop of 42	10.71	15.00	16.70	36.58	36.43	26.34	19.90	29.32	41.19	6.34	57.57	35.84	27.96	16.07	22.82	30.81
AGE 4 SUM	19.13	19.09	20.88	37.50	39.60	28.79	26.54	31.84	42.52	9.23	59.60	43.69	29.26	20.09	22.82	31.40

Prop of 51	3.83	1.36	5.57	.46	5.54	1.84	11.37	2.51	3.99	9.81	6.10	.49	6.50	8.04	.53	
Prop of 52	69.62	34.78	34.10	53.04	102.95	112.70	109.94	75.41	67.77	99.21	23.03	103.09	62.43	99.77	71.13	42.66
Prop of 53			.70			.61			.66		.68	.49	.65			
Prop of 54																
AGE 5 SUM	73.44	36.14	40.37	53.50	108.50	115.15	121.31	77.92	72.42	109.02	29.80	104.07	69.58	107.81	71.66	42.66

Prop of 61	.77							.84		.58	.68	.49				
Prop of 62	8.42	54.55	19.49	33.84	34.05	31.24	92.88	118.14	94.34	77.87	124.61	28.47	65.68	101.11	79.62	37.92
Prop of 63	.77				1.58	.61	.95			.58		1.96	1.95	.67	.53	.59
AGE 6 SUM	9.95	54.55	19.49	33.84	35.64	31.85	93.82	118.97	94.34	79.02	125.29	30.93	67.63	101.78	80.15	38.51

Prop of 71											.68					
Prop of 72			.70	.46	3.96				.66	1.73	1.35	4.42	.65	1.34		1.19
Prop of 73		.68										.49		1.34	1.06	
AGE 7 SUM		.68	.70	.46	3.96				.66	1.73	2.03	4.91	.65	2.68	1.06	1.19

TABLE 32. EXPLOITATION RATES FOR KITSUMKALUM AND UPPER BULKLEY CHINOOK EXPLOITATION RATE INDICATORS.

ESTIMATED RECOVERIES

BROOD YEAR	ALASKAN	CANADIAN COMMERCIAL	CANADIAN TIDAL SPORT	TOTAL OCEAN	FRESHWATER SPORT	ESCAPEMENT	TOTAL
KITSUMKALUM:							
1980	49	94	0	146	4	78	229
1981	51	65	4	124	0	185	309
1983	18	18	5	40	0	80	120
1984	164	174	33	371	39	580	991
1985	71	83	22	176	31	220	427
1986	15	15	0	30	4	40	74
1987	162	203	38	405	8	482	896
1988	34	62	11	107	0	69	175
UPPER BULKLEY:							
1986	1	4	7	12	29	355	408
1987	0	16	0	16	60	278	370
1988	0	3	3	6	36	377	425

PROPORTIONS

BROOD YEAR	ALASKAN	CANADIAN COMMERCIAL	CANADIAN TIDAL SPORT	TOTAL OCEAN	FRESHWATER SPORT	ESCAPEMENT	TOTAL
KITSUMKALUM:							
1980	0.21	0.41	0.00	0.64	0.02	0.34	1.00
1981	0.17	0.21	0.01	0.40	0.00	0.60	1.00
1983	0.15	0.15	0.04	0.33	0.00	0.67	1.00
1984	0.17	0.18	0.03	0.37	0.04	0.59	1.00
1985	0.17	0.19	0.05	0.41	0.07	0.52	1.00
1986	0.20	0.20	0.00	0.41	0.05	0.54	1.00
1987	0.18	0.23	0.04	0.45	0.01	0.54	1.00
1988	0.19	0.35	0.06	0.61	0.00	0.39	1.00
Mean	0.18	0.24	0.03	0.45	0.02	0.52	1.00
UPPER BULKLEY:							
1986	0.00	0.01	0.02	0.03	0.07	0.87	1.00
1987	0.00	0.04	0.00	0.04	0.16	0.75	1.00
1988	0.00	0.01	0.01	0.01	0.08	0.89	1.00
Mean	0.00	0.02	0.01	0.03	0.11	0.84	1.00

TABLE 33. SUMMARY OF FISHERY OFFICER STREAM ESCAPEMENT TARGETS FOR SKEENA CHINOOK.

COASTAL SUB AREA STREAMS:	TARGET ESC.
BIG FALLS CREEK	75
DIANA CREEK	350
ECSTALL RIVER	7,500
JOHNSTON CREEK	3,500
JOHNSTON LAKE	100
KHYEX RIVER	400
KLOIYA RIVER	750
SHAWATLAN CREEK	600
SILVER CREEK	25
SUB AREA TOTAL	13,300

KITSUMKALUM SUB AREA STREAMS:	TARGET ESC.
CEDAR RIVER	3,000
CLEAR CREEK	500
COHOE CREEK	1,000
DEEP CREEK	200
GOAT CREEK	50
HADENSHILD CREEK	50
KITSUMKALUM RIVER - LOWER	15,000
KITSUMKALUM RIVER - UPPER	400
LEAN-TO CREEK	25
SPRING CREEK	50
STAR CREEK	50
SUB AREA TOTAL	20,325

BULKLEY/MORICE SUB AREA STREAMS:	TARGET ESC.
BUCK CREEK	50
BULKLEY RIVER - LOWER	500
BULKLEY RIVER - UPPER	2,000
HAROLD PRICE CREEK	50
MAXAN CREEK	50
MORICE RIVER	15,000
NANIKA RIVER	200
RICHFIELD CREEK	100
SUSKWA RIVER	200
TOBOGGAN CREEK	25
SUB AREA TOTAL	18,175

BABINE SUB AREA STREAMS:	TARGET ESC.
BABINE RIVER (SECTION 1 - 4)	7,000
BABINE RIVER (SECTION 5)	2,500
BOUCHER CREEK	50
FULTON RIVER	50
NICHYESKWA RIVER	500
NILKITKWA RIVER	200
SUB AREA TOTAL	10,300

BEAR SUB AREA STREAMS:	TARGET ESC.
BEAR LAKE	500
BEAR RIVER	12,500
DEEP CANOE CREEK	50
JOHANSON LAKE	100
SLAMGEESH RIVER	1,000
SUSTUT LAKE	500
SUB AREA TOTAL	14,650

LAKELSE SUB AREA STREAMS:	TARGET ESC.
COLDWATER CREEK	250
LAKELSE RIVER	400
SOCKEYE CREEK	25
WHITE CREEK	25
WILLIAMS CREEK	25
SUB AREA TOTAL	725

OTHER LOWER SKEENA SUB AREA STREAMS:	TARGET ESC.
ALWYN CREEK	10
ANWEITER CREEK	50
DOG-TAG CREEK	25
ERLANDSEN CREEK	225
EXCHAMSIKS RIVER	300
EXSTEW RIVER	200
GITNADOIX RIVER	750
KADEEN CREEK	50
KASIKS CREEK	400
MAGAR CREEK	100
SKEENA RIVER - WEST	5,000
ZYMAGOTITZ RIVER	200
SUB AREA TOTAL	7,310

KISPIOX SUB AREA STREAMS:	TARGET ESC.
CLUB CREEK - LOWER	25
CLUB CREEK - UPPER	25
CULLON CREEK	25
DATE CREEK	200
KISPIOX RIVER	7,500
MCCULLY CREEK	200
MCQUEEN CREEK	100
NANGEESE RIVER	300
STEPHENS CREEK	400
SWEETIN RIVER	500
SUB AREA TOTAL	9,275

OTHER MIDDLE SKEENA SUB AREA STREAMS:	TARGET ESC.
COMEAU CREEK	50
FIDDLER CREEK	200
KITSEGUECLA RIVER	300
KITWANGA RIVER	1,000
KLEANZA CREEK	100
LIMONITE CREEK	200
SHEGUNIA RIVER	300
THOMAS CREEK	200
ZYMOETZ RIVER - LOWER	3,000
ZYMOETZ RIVER - UPPER	200
SUB AREA TOTAL	5,550

SUMMARY CHINOOK TARGET ESCAPEMENTS:	
SUB AREA:	TARGET ESC.
COASTAL	13,300
LAKELSE	725
KITSUMKALUM	20,325
LOWER SKEENA	7,310
KISPIOX	9,275
BULKLEY/MORICE	18,175
MIDDLE SKEENA	5,550
BABINE	10,300
BEAR	14,650
AREA 4 TOTAL	99,610

TABLE 34. MORICE RIVER CHINOOK ESCAPEMENT, NATIVE HARVEST (ADJUSTED FOR GAFFING MORTALITY) AND ESTIMATED HARVEST RATE FOR THE PERIOD 1951 TO 1963.

YEAR	SPAWNING GROUND ESCAPEMENT	ADJUSTED INDIAN FISHERY CATCH	CALCULATED POPULATION AT MORICETOWN	PERCENT EXPLOITATION AT MORICETOWN
1951	4,250	1,231	5,481	22.5
1952	8,250	1,846	10,096	18.3
1953	10,750	1,846	12,596	14.7
1954	12,500	2,923	15,423	19.0
1955	7,750	2,000	9,750	20.5
1956	16,500	4,923	21,423	23.0
1957	15,200	3,692	18,892	19.5
1958	15,200	4,462	19,662	22.7
1959	15,400	3,846	19,246	20.0
1960	4,250	1,077	5,327	20.2
1961	3,500	3,846	7,346	52.4
1962	5,500	3,846	9,346	41.2
1963	9,500	4,000	13,500	29.6
MEAN:	9,900	3,041	12,924	24.9

TABLE 35. ESTIMATED PERCENTAGE COMPOSITION OF 100-FISH MIXTURES OF SKEENA RIVER AND NASS RIVER (KWINAGEESE) CHINOOK SALMON. ALL SEVEN STOCKS WERE INCLUDED IN THE BASELINE USED TO ESTIMATE THE STOCK COMPOSITION OF THE MIXTURES. STANDARD DEVIATION IS IN PARENTHESES (from Beacham et. al. 1996).

TYPE	BULKLEY	KITWANGA	MORICE	BEAR	L. KITSUMKALUM	U. KITSUMKALUM	KWINAGEESE
				EXAMPLE 1:			
TRUE	0.0	0.0	0.0	0.0	0.0	0.0	100.0
FIXED	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	100.0 (0.0)
RESAMPLED	0.6 (2.7)	1.7 (4.7)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	97.6 (5.4)
				EXAMPLE 2:			
TRUE	25.0	25.0	15.0	15.0	10.0	10.0	0.0
FIXED	25.0 (0.0)	25.0 (0.0)	15.0 (0.0)	15.0 (0.0)	10.0 (0.0)	10.0 (0.0)	0.0 (0.0)
RESAMPLED	24.4 (3.1)	24.0 (3.7)	15.0 (2.9)	15.0 (3.2)	10.7 (2.9)	10.8 (3.5)	0.0 (0.0)
				EXAMPLE 3:			
TRUE	30.0	5.0	5.0	30.0	25.0	5.0	0.0
FIXED	30.0 (0.0)	5.0 (0.0)	5.0 (0.0)	30.0 (0.0)	25.0 (0.0)	5.0 (0.0)	0.0 (0.0)
RESAMPLED	28.4 (4.5)	6.2 (2.4)	5.5 (2.0)	28.0 (4.2)	25.0 (3.6)	6.8 (3.2)	0.0 (0.0)
				EXAMPLE 4:			
TRUE	100.0	0.0	0.0	0.0	0.0	0.0	0.0
FIXED	100.0 0.0	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
RESAMPLED	98.1 (2.8)	0.3 (1.1)	0.2 (0.7)	0.0 (0.0)	0.9 (1.2)	0.5 (1.5)	0.0 (0.0)
				EXAMPLE 5:			
TRUE	0.0	0.0	0.0	0.0	100.0	0.0	0.0
FIXED	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	100.0 (0.0)	0.0 (0.0)	0.0 (0.0)
RESAMPLED	0.2 (1.2)	0.3 (1.0)	0.2 (1.0)	0.0 (0.0)	98.5 (2.4)	0.8 (1.7)	0.0 (0.0)

APPENDIX A. A HISTORICAL REVIEW OF THE USE OF THE D.F.O. ESCAPEMENT FORMS (BC16'S).

Key Streams

This section outlines the rationale, data sources and the final summaries of the "Key Stream" program developed for the North Coast. The "Key Streams" are generally the major salmon (primarily sockeye, pink and chum) producers most important for in-season management of the North Coast net fisheries.

"BC16" - ANNUAL REPORT OF SALMON STREAM AND SPAWNING GROUNDS

A Historical Review

The Annual Report of Salmon Stream and Spawning Grounds or "BC16", as it was commonly referred to by its form number, had its beginning in the late 1920's. It was a part of a significant reorganization in the Region (then the "Western Division") when, over the period from 1929 to 1931, new personnel were taken on strength, and new reporting and operating procedures were instituted. Except for revisions in 1934, 1948 and 1967 the stream report would change little in over 50 years until the mid-1980's.

Prior to 1927, spawning reports, like other annuals, took the form of a personal letter to the Supervisor. Runs were described using terms such as "good", "average", "adequate", "satisfactory", "well seeded", etc.. Sockeye producers and a few of the major producers for other species were target of mention. There was no reporting structure.

Under instructions from the Chief Supervisor of Fisheries, all three Districts (Prince Rupert, Nanaimo and New Westminster) were submitting spawning reports on separate forms for each stream "commencing with the season 1929". District 2 (North of Cape Caution) used this new "Report on Salmon Stream" starting in 1927.

The "Report on Salmon Stream" became form "BC16" in 1932.

In 1934 a new column was added beside "size of run - light, medium, heavy", this being "number on grounds" with accompanying letter ranges:

A	1 - 50	E	500 - 1,000	K	10,000 - 20,000
B	50 - 100	F	1,000 - 2,000	L	20,000 - 50,000
C	100 - 300	G	2,000 - 5,000	M	50,000 - 100,000
D	300 - 500	H	5,000 - 10,000	N	100,000 and over

In a letter from Major J.A. Motherwell, Chief Supervisor of Fisheries, to James Boyd, Supervisor, Prince Rupert, dated January 8th, 1934, the reason for instituting the range system was that the reports "gave no indication of the size of the stream dealt with, or its importance as a spawning area. It is not intended that any effort should be made to tell the actual number but the inspecting officer is so familiar with conditions that he realizes that a small stream well seeded could probably have only one hundred parent salmon, but a larger stream equally well seeded would have perhaps five hundred parent salmon on the spawning grounds".

It would appear that this additional information was intended only to give some perspective as to the size of the stream when used in conjunction with the size of the run - light, medium or heavy. At some time over the years, this letter range began to be construed and used as a more finite estimation of actual escapement numbers. It is likely that this began to occur in the 1970's when more detailed salmon expectations began to be produced. This annual exercise involved calculations of returning stocks based on escapement numbers and return rates. The use of this information for which it was never intended has led to a great deal of criticism of the BC16 in recent years which has grown to include a more general criticism of the methods of spawner enumeration. Salmon Expectations was only one of a number of exercises which looked for "hard numbers".

Where finite numbers were sought in compiling escapement data by stream and by Sub-district (for example, the Stream Catalogue), letter ranges for "total no. on grounds" were split:

E (500 - 1,000) became 750

F (1,000 - 2,000) became 1,500

G (2,000 - 5,000) became 3,500

H (5,000- 10,000) became 7,500

K (10,000 - 20,000) became 15,000

M (50,000 - 100,000) became 75,000

N (over 100,000) ???

The use of the information in this way has the potential of substantially changing a stream escapement with only a slight change in the estimation of abundance. For example, an escapement of 9,900 fish would fall in the 5-10,000 (H) category and would appear as 7,500 (the split). An increase of one percent would put the escapement in the next category of 10-20,000 (K) and would appear as 15,000 (the split). Hence, a one percent increase in the estimation of spawner abundance could mean a one hundred percent difference when manipulating information on the BC16.

In 1948 the stream report was revised to reflect a few basic physical and biological conditions with the addition of space for comment on:

Physical Conditions on Spawning Grounds

(A) Evidence of erosion and silting

(B) Particulars of scouring of spawning beds

(C) Water levels (low, normal, high, abnormal)

Biological Conditions

(A) Particulars of distribution

(B) Comments re: predators

(C) Evidence of digging up eggs by later spawning fish

The section on obstructions remained and a general comments section was added.

In the late 1940's a "Key Stream Program" was undertaken, but was abandoned by the mid-1950's on the basis of cost-benefit. The "Key Stream Reports" were often filed with the BC16. The object of this program was to field monitor selected key streams for overwintering survival of salmon spawn. Winter travel by boat, snow conditions, and water levels posed problems, as did the difficulty of locating redds even in ideal conditions.

In 1958 the BC16 became form "F.381".

An important change to note occurred in 1967 with regards to timing. This has implications in gathering and analyzing timing information. Prior to this year, timing information was required in the form of "Dates and duration of run: start, peak, end". This was changed to a column for "Date of arrival in stream", and "Dates of duration of spawning: start, peak, end".

There may have been some confusion as to the definition of "run" (pre-67) whether it meant migration through the fishing area, that is, the run timing of that stock, or the run up the river. From personal communication, the definition varied with individual interpretation. The change in 1967 is clear as to arrival in stream, and the start, peak and end of spawning. What was not clearly defined was what constituted arrival in the stream, either in numbers present, or in light of the fact that many coastal streams might realize the arrival of spawners at the mouth but that their ascent into the stream might be delayed for days or weeks by low water conditions.

In 1984 changes were made to the annual spawning ground report mainly to improve the reliability of the final escapement by documenting the individual inspections, survey methods, and stream and weather conditions in greater detail. The following year, a field Stream Inspection Log was introduced to document individual inspections. This included a checklist of stream and weather conditions, methods of survey, percent of spawning area surveyed, and details of numbers live, dead, counted and estimated. This continues to date of writing (1989).

HRMCN
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APPENDIX B. ANNUAL SKEENA ESCAPEMENT DATA BY TRIBUTARY.

TABLE B.1 AREA 4 CHINOOK ESCAPEMENT, 1950 TO 1959.

TABLE B.2 AREA 4 CHINOOK ESCAPEMENT, 1960 TO 1969.

TABLE B.3 AREA 4 CHINOOK ESCAPEMENT, 1970 TO 1979.

TABLE B.4 AREA 4 CHINOOK ESCAPEMENT, 1980 TO 1989.

TABLE B.5 AREA 4 CHINOOK ESCAPEMENT, 1990 TO 1995.

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.1 AREA 4 CHINOOK ESCAPEMENT TABLE: 1950-1959.

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
BEAR SUB AREA:											
BEAR LAKE											
BEAR RIVER	25,000	4,000	9,000	10,000	12,000	20,000	20,000	7,500	15,000	65,000	18,750
DEEP CANOE CREEK											
JOHANSON LAKE											
SLAMGEESH RIVER											
SUSTUT LAKE											
SUB AREA TOTAL	25,000	4,000	9,000	10,000	12,000	20,000	20,000	7,500	15,000	65,000	18,750

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
BABINE FENCE COUNT	6,800	2,800	5,900	8,400	5,900	3,500	4,300	7,500	8,300	9,600	6,300
BABINE SUB AREA:											
BABINE RIVER (SECTIONS 1 - 3)											
BABINE RIVER (SECTION 4)	6,800	2,800	5,900	8,400	5,900	3,500	4,300	7,500	8,300	9,600	6,300
BABINE RIVER (SECTION 5)		2,000		2,000	1,000	3,000	500	1,200	2,000	2,500	1,775
BOUCHER CREEK											
FULTON RIVER											
NICHYESKWA RIVER				200	300	500	500	400	500	800	457
NILKITKWA RIVER											
SUB AREA TOTAL	6,800	4,800	5,900	10,600	7,200	7,000	5,300	9,100	10,800	12,900	8,040

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
OTHER MIDDLE SKEENA SUB AREA:											
COMEAU CREEK											
FIDDLER CREEK											
KITSEGUECLA RIVER											
KITWANGA RIVER	700	400		400			400	400	400	400	443
KLEANZA CREEK											
LIMONITE CREEK											
SHEGUNIA RIVER	75				25	50	25				44
THOMAS CREEK											
ZYMOETZ RIVER - LOWER											
ZYMOETZ RIVER - UPPER											
SUB AREA TOTAL	775	400		400	25	50	425	400	400	400	364

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
BULKLEY/MORICE SUB AREA:											
BUCK CREEK											
BULKLEY RIVER - LOWER	500	1,000	500	600	500	100					533
BULKLEY RIVER - UPPER	1,000	500	1,000	800	1,500	900	1,500	200	400	400	820
HAROLD PRICE CREEK											
MAXAN CREEK											
MORICE RIVER	15,000	3,500	7,500	10,000	11,000	7,000	15,000	15,000	15,000	15,000	11,400
NANIKA RIVER										75	75
RICHFIELD CREEK	75	25				25					42
SUSKWA RIVER											
TOBOGGAN CREEK											
SUB AREA TOTAL	16,575	5,025	9,000	11,400	13,000	8,025	16,500	15,200	15,400	15,475	12,560

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
KISPIOX SUB AREA:											
CLUB CREEK - LOWER											
CLUB CREEK - UPPER											
CULLON CREEK											
DATE CREEK											
KISPIOX RIVER					3,500	7,500	3,500	15,000	7,500	7,500	7,417
MCCULLY CREEK											
MCQUEEN CREEK											
NANGEESE RIVER											
STEPHENS CREEK	100		200	200	200	200	25	75	200	400	178
SWEETIN RIVER											
SUB AREA TOTAL	100		200	200	3,700	7,700	3,525	15,075	7,700	7,900	5,122

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.1 CONT. AREA 4 CHINOOK ESCAPEMENT TABLE: 1950-1959.

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
OTHER LOWER SKEENA SUB AREA:											
ALWYN CREEK											
ANWEITER CREEK											
DOG-TAG CREEK											
ERLANDSEN CREEK											
EXCHAMSIKS RIVER											
EXSTEW RIVER											
GITNADOIX RIVER											
KADEEN CREEK											
KASIKS CREEK											
MAGAR CREEK											
SKEENA RIVER - WEST											
ZYMAGOTITZ RIVER											
SUB AREA TOTAL											

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
KITSUMKALUM SUB AREA:											
CEDAR RIVER						750	750	1,500	1,500		1,125
CLEAR CREEK							200	400	400	400	350
COHOE CREEK						750			1,500		1,125
DEEP CREEK											
GOAT CREEK											
HADENSHILD CREEK											
KITSUMKALUM RIVER - LOWER											
KITSUMKALUM RIVER - UPPER											
LEAN-TO CREEK											
SPRING CREEK											
STAR CREEK											
SUB AREA TOTAL						1,500	950	1,900	3,400	400	1,630

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
LAKELSE SUB AREA:											
COLDWATER CREEK											
LAKELSE RIVER		30		25	25	75	200	200	200		108
SOCKEYE CREEK											
WHITE CREEK											
WILLIAMS CREEK											
SUB AREA TOTAL		30		25	25	75	200	200	200		108

STREAM	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
COASTAL SUB AREA:											
BIG FALLS CREEK						75			50	25	50
DIANA CREEK	N/R	N/R								N/R	
ECSTALL RIVER								3,500	N/O	3,500	3,500
JOHNSTON CREEK	2,000	3,000	3,000	1,500	3,500	3,500	2,500	3,500	3,000	3,500	2,900
JOHNSTON LAKE					25	25					25
KHYEX RIVER	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	400	400
KLOIYA RIVER	200	200	N/O	UNK	UNK	200	750	750	300	750	450
SHAWATLAN CREEK											
SILVER CREEK											
SUB AREA TOTAL	2,200	3,200	3,000	1,500	3,525	3,800	3,250	7,750	3,350	8,175	3,975

SUMMARY OF AREA 4 SUBAREA CHINOOK ESCAPEMENTS:

SUB AREA:	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	AVERAGE 1950-59
BEAR	25,000	4,000	9,000	10,000	12,000	20,000	20,000	7,500	15,000	65,000	18,750
BABINE	6,800	4,800	5,900	10,600	7,200	7,000	5,300	9,100	10,800	12,900	8,040
MIDDLE SKEENA	775	400		400	25	50	425	400	400	400	364
BULKLEY/MORICE	16,575	5,025	9,000	11,400	13,000	8,025	16,500	15,200	15,400	15,475	12,560
KISPIOX	100		200	200	3,700	7,700	3,525	15,075	7,700	7,900	5,122
LOWER SKEENA											
KITSUMKALUM						1,500	950	1,900	3,400	400	1,630
LAKELSE		30		25	25	75	200	200	200		108
COASTAL	2,200	3,200	3,000	1,500	3,525	3,800	3,250	7,750	3,350	8,175	3,975
AREA 4 TOTAL	51,450	17,455	27,100	34,125	39,475	48,150	50,150	57,125	56,250	110,250	49,153

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.2 AREA 4 CHINOOK ESCAPEMENT TABLE: 1960-1969.

STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
BEAR SUB AREA:											
BEAR LAKE											
BEAR RIVER	15,000	4,000	10,000	8,000	7,500	1,500	1,200	5,000	5,000	2,000	5,920
DEEP CANOE CREEK											
JOHANSON LAKE											
SLAMGBESH RIVER											
SUSTUT LAKE											
SUB AREA TOTAL	15,000	4,000	10,000	8,000	7,500	1,500	1,200	5,000	5,000	2,000	5,920
STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
BABINE FENCE COUNT	2,900	2,900	630	1,500		1,200	1,600	1,040	1,300	1,380	1,606
BABINE SUB AREA:											
BABINE RIVER (SECTIONS 1 - 3)											
BABINE RIVER (SECTION 4)	2,900	2,900	630	1,500		1,200	1,600	1,040	1,300	1,380	1,606
BABINE RIVER (SECTION 5)	1,000	500	1,000	400	300	300	150	200	200	200	425
BOUCHER CREEK											
FULTON RIVER											
NICHYESKWA RIVER	400	100	50	75	150	100	50	50		200	131
NILKITKWA RIVER	250	50	50								117
SUB AREA TOTAL	4,550	3,550	1,730	1,975	450	1,600	1,800	1,290	1,500	1,780	2,023
STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
OTHER MIDDLE SKEENA SUB AREA:											
COMEAU CREEK											
FIDDLER CREEK							25	75	200	200	125
KITSEGUECLA RIVER							25				25
KITWANGA RIVER	25	25	25			25	25		25	75	32
KLEANZA CREEK							25	25			25
LIMONITE CREEK											
SHEGUNIA RIVER							25	75	25		42
THOMAS CREEK											
ZYMOETZ RIVER - LOWER			25		25				75	200	81
ZYMOETZ RIVER - UPPER	200										200
SUB AREA TOTAL	225	25	50		25	25	125	175	325	475	161
STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
BULKLEY/MORICE SUB AREA:											
BUCK CREEK											
BULKLEY RIVER - LOWER						300	400	500	400	50	330
BULKLEY RIVER - UPPER	750		1,500	2,000	2,000	800	300	200	125	1,200	986
HAROLD PRICE CREEK											
MAXAN CREEK											
MORICE RIVER	3,500	3,500	4,000	7,500	5,000	5,000	6,000	12,000	7,000	5,000	5,850
NANIKA RIVER	200						150	200	100	UNK	163
RICHFIELD CREEK				30	100						65
SUSKWA RIVER	400							50	100	25	144
TOBOGGAN CREEK											
SUB AREA TOTAL	4,850	3,500	5,500	9,530	7,100	6,100	6,850	12,950	7,725	6,275	7,038
STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
KISPIOX SUB AREA:											
CLUB CREEK - LOWER											
CLUB CREEK - UPPER					25	25		100			50
CULLON CREEK							25		25	25	25
DATE CREEK					50			25	25		33
KISPIOX RIVER	UNK	25	25		75	1,500	400		400	400	404
MCCULLY CREEK							25				25
MCQUEEN CREEK											
NANGEESE RIVER							75		75	25	58
STEPHENS CREEK	2	750			25	25	200				200
SWEETIN RIVER							25		25	75	42
SUB AREA TOTAL	2	775	25		175	1,550	750	125	550	525	497

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.2 CONT. AREA 4 CHINOOK ESCAPEMENT TABLE: 1960-1969.

STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
OTHER LOWER SKEENA SUB AREA:											
ALWYN CREEK											
ANWEITER CREEK											
DOG-TAG CREEK								25	25		25
ERLANDSEN CREEK											
EXCHAMSIKS RIVER					300	75	25	200	75	75	125
EXSTEW RIVER			N/O		N/O				N/O		
GITNADOIX RIVER	56							750	750	75	408
KADDEN CREEK											
KASIKS CREEK	25				400		25	25	400	400	213
MAGAR CREEK											
SKEENA RIVER - WEST											
ZYMAGOTITZ RIVER			25		25				25	75	38
SUB AREA TOTAL	81		25		725	75	50	1,000	1,275	625	482

STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
KITSUMKALUM SUB AREA:											
CEDAR RIVER	200	25	25		100	200	25	50	25	200	94
CLEAR CREEK	200	400	25	200	75	200	25	100	75	75	138
COHOE CREEK					500						500
DEEP CREEK					100	400	25	200	75	200	167
GOAT CREEK							25				25
HADENSHILD CREEK											
KITSUMKALUM RIVER - LOWER		750	750		2,000	1,500	2,000	1,500	1,500	7,500	2,188
KITSUMKALUM RIVER - UPPER		25								400	213
LEAN-TO CREEK					25						25
SPRING CREEK							75		25		50
STAR CREEK							25				25
SUB AREA TOTAL	400	1,200	800	200	2,800	2,300	2,200	1,850	1,700	8,375	2,183

STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
LAKELSE SUB AREA:											
COLDWATER CREEK											
LAKELSE RIVER	200	75		200	200	200	200		200	400	209
SOCKEYE CREEK							25		25	25	25
WHITE CREEK											
WILLIAMS CREEK						25					25
SUB AREA TOTAL	200	75		200	200	225	225		225	425	222

STREAM	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
COASTAL SUB AREA:											
BIG FALLS CREEK	75	25	25		25	25	25	N/O	75	25	38
DIANA CREEK	UNK	UNK	UNK	UNK	UNK	N/O	UNK	75	200	400	225
ECSTALL RIVER	1,500	1,500	1,500	3,500	1,500	3,500	3,500	1,500	1,500	750	2,025
JOHNSTON CREEK	3,500	3,500	3,500	1,500	750	N/I	750	1,500	3,500	7,500	2,889
JOHNSTON LAKE							25	25	200		83
KHYEX RIVER	750	UNK	UNK	N/O	25	N/O	25	25	N/O	N/O	206
KLOIYA RIVER	400	400	200	1,500	400	400	750	350	750	400	555
SHAWATLAN CREEK							8	25	200	N/O	78
SILVER CREEK											
SUB AREA TOTAL	6,225	5,425	5,225	6,500	2,700	3,925	5,083	3,500	6,425	9,075	5,408

SUMMARY OF AREA 4 SUBAREA CHINOOK ESCAPEMENTS:

SUB AREA:	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	AVERAGE 1960-69
BEAR	15,000	4,000	10,000	8,000	7,500	1,500	1,200	5,000	5,000	2,000	5,920
BABINE	4,550	3,550	1,730	1,975	450	1,600	1,800	1,290	1,500	1,780	2,023
MIDDLE SKEENA	225	25	50		25	25	125	175	325	475	161
BULKLEY/MORICE	4,850	3,500	5,500	9,530	7,100	6,100	6,850	12,950	7,725	6,275	7,038
KISPIOX	2	775	25		175	1,550	750	125	550	525	497
LOWER SKEENA	81		25		725	75	50	1,000	1,275	625	482
KITSUMKALUM	400	1,200	800	200	2,800	2,300	2,200	1,850	1,700	8,375	2,183
LAKELSE	200	75		200	200	225	225		225	425	222
COASTAL	6,225	5,425	5,225	6,500	2,700	3,925	5,083	3,500	6,425	9,075	5,408
AREA 4 TOTAL	31,533	18,550	23,355	26,405	21,675	17,300	18,283	25,890	24,725	29,555	23,727

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.3 AREA 4 CHINOOK ESCAPEMENT TABLE: 1970-1979.

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
BEAR SUB AREA:											
BEAR LAKE	1,000	400	100	400							475
BEAR RIVER	1,600	800	3,000	8,900	4,500	1,500	950	1,800	3,500	3,000	2,955
DEEP CANOE CREEK											
JOHANSON LAKE									100		100
SLAMGEESH RIVER									300		300
SUSTUT LAKE									150		150
SUB AREA TOTAL	2,600	1,200	3,100	9,300	4,500	1,500	950	1,800	4,050	3,000	3,200

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
BABINE FENCE COUNT	1,250	1,000	671	646	1,976	860	563	568	454	738	873
BABINE SUB AREA:											
BABINE RIVER (SECTIONS 1 - 3)											
BABINE RIVER (SECTION 4)	1,250	1,000	671	646	1,976	754	561	558	444	738	860
BABINE RIVER (SECTION 5)	150	300	100	200	500	200	25	100	12		176
BOUCHER CREEK								10	10		10
FULTON RIVER						106	2				54
NICHYESKWA RIVER											
NILKITKWA RIVER											
SUB AREA TOTAL	1,400	1,300	771	846	2,476	1,060	588	668	466	738	1,031

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
OTHER MIDDLE SKEENA SUB AREA:											
COMEAU CREEK											
FIDDLER CREEK	200	200	25	200	200	200	25	75	25	25	118
KITSEGUECLA RIVER									25		25
KITWANGA RIVER	75	75	75	200	200	200	75	200	200	25	133
KLEANZA CREEK						25		25	0		17
LIMONITE CREEK											
SHEGUNIA RIVER		50									50
THOMAS CREEK											
ZYMOETZ RIVER - LOWER	200	400	200	400	400	200	200	400	75	200	268
ZYMOETZ RIVER - UPPER											
SUB AREA TOTAL	475	725	300	800	800	625	300	700	325	250	530

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
BULKLEY/MORICE SUB AREA:											
BUCK CREEK	50		25								38
BULKLEY RIVER - LOWER	100	100	70	75	N/O	34	N/O	350	500		176
BULKLEY RIVER - UPPER	150	100	55	850		500	15	250	400	500	313
HAROLD PRICE CREEK											
MAXAN CREEK											
MORICE RIVER	4,600	4,200	8,400	12,000	9,000	2,500	1,700	4,500	6,000	4,100	5,700
NANIKA RIVER	UNK	25	400			50	120	25	50	75	106
RICHFIELD CREEK											
SUSKWA RIVER	25										25
TOBOGGAN CREEK											
SUB AREA TOTAL	4,925	4,425	8,950	12,925	9,000	3,084	1,835	5,125	6,950	4,675	6,189

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
KISPIOX SUB AREA:											
CLUB CREEK - LOWER											
CLUB CREEK - UPPER											
CULLON CREEK	25	25	25	25	25	25	25	25			25
DATE CREEK											
KISPIOX RIVER	400	400	400	3,500	3,000	3,500	750	750	400	400	1,350
MCCULLY CREEK				75	75	25	25	25			45
MCQUBBN CREEK											
NANGEESE RIVER	25	25	25	200	200	25	25	75			75
STEPHENS CREEK				25	25	25		400	50		105
SWEETIN RIVER	75	75	75	400	400	75	75	75	25		142
SUB AREA TOTAL	525	525	525	4,225	3,725	3,675	900	1,350	475	400	1,633

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.3 CONT. AREA 4 CHINOOK ESCAPEMENT TABLE: 1970-1979.

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
OTHER LOWER SKEENA SUB AREA:											
ALWYN CREEK											
ANWEITER CREEK											
DOG-TAG CREEK	25		25	25	25	25	25	25	25	25	25
ERLANDSEN CREEK										25	25
EXCHAMSIKS RIVER	75	75	75	75	75	75	75	75	25	15	64
EXSTEW RIVER			25	200	200	200	75	75	25	25	103
GITNADOIX RIVER	75	75	75	400	400	400	75	400	25	200	213
KADEEN CREEK											
KASIKS CREEK	400	400	200	400	400	200	75	200	75	25	238
MAGAR CREEK											
SKEENA RIVER - WEST						1,500	1,500	3,500	200	200	1,380
ZYMAGOTITZ RIVER	75	75	75	200	200	200	75	75	25	25	103
SUB AREA TOTAL	650	625	475	1,300	1,300	2,600	1,900	4,350	400	540	1,414

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
KITSUMKALUM SUB AREA:											
CEDAR RIVER	400	400	400	750	750	750	750	3,500	750	1,000	945
CLEAR CREEK	75	200	75	200	200	200	75	200	75	200	150
COHOE CREEK											
DEEP CREEK	75	25	25	25	25	25	25	25	25	10	29
GOAT CREEK											
HADENSHILD CREEK											
KITSUMKALUM RIVER - LOWER	7,500	7,500	3,500	5,000	5,000	3,500	3,500	7,500	7,500	5,000	5,550
KITSUMKALUM RIVER - UPPER	200	200	200	200	400	400	400	400	25	500	293
LEAN-TO CREEK											
SPRING CREEK											
STAR CREEK											
SUB AREA TOTAL	8,250	8,325	4,200	6,175	6,375	4,875	4,750	11,625	8,375	6,710	6,966

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
LAKELSE SUB AREA:											
COLDWATER CREEK											
LAKELSE RIVER	400	200	200	400	400	400	200	400	75	250	293
SOCKEYE CREEK	25	25									25
WHITE CREEK											
WILLIAMS CREEK											
SUB AREA TOTAL	425	225	200	400	400	400	200	400	75	250	298

STREAM	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
COASTAL SUB AREA:											
BIG FALLS CREEK	N/O	N/O	50	20	N/O	N/O	N/O	N/O	N/O	25	32
DIANA CREEK	UNK	150	100	N/O	N/O	N/O	N/O	N/O	N/O	N/O	125
ECSTALL RIVER	750	450	1,000	3,500	2,500	2,000	1,000	2,500	750	1,000	1,545
JOHNSTON CREEK	750	300	800	500	300	300	500	200	500	500	465
JOHNSTON LAKE											
KHYEX RIVER	N/O	50	30	100	N/O	N/O	30	N/O	10	N/O	44
KLOIYA RIVER	400	200	150	250	200	200	100	300	300	400	250
SHAWATLAN CREEK	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	
SILVER CREEK											
SUB AREA TOTAL	1,900	1,150	2,130	4,370	3,000	2,500	1,630	3,000	1,560	1,925	2,317

SUMMARY OF AREA 4 SUBAREA CHINOOK ESCAPEMENTS:

SUB AREA:	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	AVERAGE 1970-79
BEAR	2,600	1,200	3,100	9,300	4,500	1,500	950	1,800	4,050	3,000	3,200
BABINE	1,400	1,300	771	846	2,476	1,060	588	668	466	738	1,031
MIDDLE SKEENA	475	725	300	800	800	625	300	700	325	250	530
BULKLEY/MORICE	4,925	4,425	8,950	12,925	9,000	3,084	1,835	5,125	6,950	4,675	6,189
KISPIOX	525	525	525	4,225	3,725	3,675	900	1,350	475	400	1,633
LOWER SKEENA	650	625	475	1,300	1,300	2,600	1,900	4,350	400	540	1,414
KITSUMKALUM	8,250	8,325	4,200	6,175	6,375	4,875	4,750	11,625	8,375	6,710	6,966
LAKELSE	425	225	200	400	400	400	200	400	75	250	298
COASTAL	1,900	1,150	2,130	4,370	3,000	2,500	1,630	3,000	1,560	1,925	2,317
AREA 4 TOTAL	21,150	18,500	20,651	40,341	31,576	20,319	13,053	29,018	22,676	18,488	23,577

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.4 AREA 4 CHINOOK ESCAPEMENT TABLE: 1980-1989.

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
BEAR SUB AREA:											
BEAR LAKE										N/O	
BEAR RIVER	9,000	5,100	3,000	3,500	12,000	21,500	17,000	7,200	14,000	12,500	10,480
DEEP CANOE CREEK											
JOHANSON LAKE		10					N/I			N/O	10
SLAMGEESH RIVER		100					700	400	400	N/I	400
SUSTUT LAKE		250			300		N/I	600	350	400	380
SUB AREA TOTAL	9,000	5,460	3,000	3,500	12,300	21,500	17,700	8,200	14,750	12,900	10,831

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
BABINE FENCE COUNT	888	573	600	648	1,400	658	252	711	1,057	1,983	877
BABINE SUB AREA:											
BABINE RIVER (SECTIONS 1 - 3)											
BABINE RIVER (SECTION 4)	880	553	600	648	1,320	658	252	687	1,049	1,983	863
BABINE RIVER (SECTION 5)		723		300	380	164	126	179	1,000		410
BOUCHER CREEK					50						50
FULTON RIVER	8	20			30			24	8		18
NICHYESKWA RIVER											
NILKITKWA RIVER											
SUB AREA TOTAL	888	1,296	600	948	1,780	822	378	890	2,057	1,983	1,164

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
OTHER MIDDLE SKEENA SUB AREA:											
COMEAU CREEK											
FIDDLER CREEK	25										25
KITSEGUECLA RIVER	25	25		50	20	65	50	300	175	60	86
KITWANGA RIVER	25				15	700	1,000	1,000	1,000	1,000	677
KLEANZA CREEK			2	3	2	N/O	N/O		N/O		2
LIMONITE CREEK											
SHEGUNIA RIVER	25	25		300	50	40	175	1,800	350	175	327
THOMAS CREEK											
ZYMOETZ RIVER - LOWER	100	600	400	25	75	450	2,000	2,000	300	1,000	695
ZYMOETZ RIVER - UPPER											
SUB AREA TOTAL	200	650	402	378	162	1,255	3,225	5,100	1,825	2,235	1,543

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
BULKLEY/MORICE SUB AREA:											
BUCK CREEK			12			25	N/I	N/O	50	N/O	29
BULKLEY RIVER - LOWER								100	120	100	107
BULKLEY RIVER - UPPER	500	250	100	400	200	350	450	250	1,000	500	400
HAROLD PRICE CREEK			10	25	UNK		25	N/I	N/O		20
MAXAN CREEK									50		50
MORICE RIVER	4,500	3,000	3,000	4,500	4,500	11,300	15,000	10,000	12,000	10,200	7,800
NANIKA RIVER	75	40	150	100	100	100	100	200	50	150	107
RICHFIELD CREEK										N/I	
SUSKWA RIVER				100	25	N/I	25	250	N/O	10	82
TOBOGGAN CREEK											
SUB AREA TOTAL	5,075	3,290	3,272	5,125	4,825	11,775	15,600	10,800	13,270	10,960	8,399

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
KISPIOX SUB AREA:											
CLUB CREEK - LOWER					12	N/O	25	N/O	N/O		19
CLUB CREEK - UPPER											
CULLON CREEK									N/O		
DATE CREEK							150	N/O		75	113
KISPIOX RIVER	300	725		500	1,100	2,300	4,000	4,000	5,000	3,500	2,381
MCCULLY CREEK						N/O	75	N/O	N/O	N/O	75
MCQUBBN CREEK							50	20	N/O		35
NANGEESE RIVER		25			90	N/O	400	250	275	250	215
STEPHENS CREEK	250				150	200	200	N/O	N/O	100	180
SWEETIN RIVER					10	100	500	50	350	175	198
SUB AREA TOTAL	550	750		500	1,362	2,600	5,400	4,320	5,625	4,100	2,801

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.4 CONT. AREA 4 CHINOOK ESCAPEMENT TABLE: 1980-1989.

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
OTHER LOWER SKEENA SUB AREA:											
ALWYN CREEK	2								N/I		2
ANWEITER CREEK											
DOG-TAG CREEK	25	10	8	2	N/O	75	100	100	30	N/O	44
ERLANDSEN CREEK	30	10	19	12	15	25	30	30	25	25	22
EXCHAMSIKS RIVER	25	25	25			N/O	120	40	UNK	60	49
EXSTEW RIVER	25	25	25			N/O	75	25	UNK	10	31
GITNADOIX RIVER	200	200	50	2	25	N/O	35	50	10	10	65
KADEEN CREEK							50	UNK	10	10	23
KASIKS CREEK	30	100	100	20	25	100	200	75	30	40	72
MAGAR CREEK						80	100	50	20	200	90
SKEENA RIVER - WEST	250	500	200	200	200	150	700	1000	1000	800	500
ZYMAGOTITZ RIVER	25	20	25	50		N/O	100	30	UNK	15	38
SUB AREA TOTAL	612	890	452	286	265	430	1510	1400	1125	1170	814

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
KITSUMKALUM SUB AREA:											
CEDAR RIVER	600	600	750	600	250	900	800	2,000	1,200	1,200	890
CLEAR CREEK	250	150	75	75	125	350	350	300	200	250	213
COHOE CREEK											
DEEP CREEK	25										25
GOAT CREEK											
HADENSHILD CREEK											
KITSUMKALUM RIVER - LOWER	4,200	9,300	5,500	10,690	11,825	8,308	10,151	24,508	22,755	19,900	12,714
KITSUMKALUM RIVER - UPPER	300		1,760	400	100	N/O	UNK	UNK	UNK	N/I	640
LEAN-TO CREEK											
SPRING CREEK											
STAR CREEK											
SUB AREA TOTAL	5,375	10,050	8,085	11,765	12,300	9,558	11,301	26,808	24,155	21,350	14,075

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
LAKELSE SUB AREA:											
COLDWATER CREEK	25	10	12	N/O	15	35	75	50	20	10	28
LAKELSE RIVER	50	250	92	200	30	300	200	250	400	400	217
SOCKEYE CREEK											
WHITE CREEK						10	N/O	N/O	N/O		10
WILLIAMS CREEK											
SUB AREA TOTAL	75	260	104	200	45	345	275	300	420	410	243

STREAM	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
COASTAL SUB AREA:											
BIG FALLS CREEK		27	21	N/O	N/I	N/I				0	16
DIANA CREEK	N/O	N/O	N/O	N/O	N/O	N/O	10	N/O	N/O	UNK	10
ECSTALL RIVER	800	1,500	800	350	2,500	3,020	3,200	2,705	3,800	1,376	2,005
JOHNSTON CREEK	400	200	200	200	100	600	600	200	800	250	355
JOHNSTON LAKE						2				N/O	2
KHYEX RIVER	25	UNK	UNK	100	UNK	250	250	150	180	90	149
KLOIYA RIVER	400	150	50	250	200	250	250	75	300	350	228
SHAWATLAN CREEK		N/O	6	N/O	25	N/O	20	UNK		14	16
SILVER CREEK										4	4
SUB AREA TOTAL	1,625	1,877	1,077	900	2,825	4,122	4,330	3,130	5,080	2,084	2,705

SUMMARY OF AREA 4 SUBAREA CHINOOK ESCAPEMENTS:

SUB AREA:	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	AVERAGE 1980-89
BEAR	9,000	5,460	3,000	3,500	12,300	21,500	17,700	8,200	14,750	12,900	10,831
BABINE	888	1,296	600	948	1,780	822	378	890	2,057	1,983	1,164
MIDDLE SKEENA	200	650	402	378	162	1,255	3,225	5,100	1,825	2,235	1,543
BULKLEY/MORICE	5,075	3,290	3,272	5,125	4,825	11,775	15,600	10,800	13,270	10,960	8,399
KISPIOX	550	750		500	1,362	2,600	5,400	4,320	5,625	4,100	2,801
LOWER SKEENA	612	890	452	286	265	430	1,510	1,400	1,125	1,170	814
KITSUMKALUM	5,375	10,050	8,085	11,765	12,300	9,558	11,301	26,808	24,155	21,350	14,075
LAKELSE	75	260	104	200	45	345	275	300	420	410	243
COASTAL	1,625	1,877	1,077	900	2,825	4,122	4,330	3,130	5,080	2,084	2,705
AREA 4 TOTAL	23,400	24,523	16,992	23,602	35,864	52,407	59,719	60,948	68,307	57,192	42,295

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.5 AREA 4 CHINOOK ESCAPEMENT TABLE: 1990-1995.

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
BEAR SUB AREA:											
BEAR LAKE	N/O	N/O	N/I	N/I	N/I						
BEAR RIVER	10,000	5,500	10,500	23,000	16,250*	9,500					11,700
DEEP CANOE CREEK	10				N/I						10
JOHANSON LAKE	N/O	N/I	70	91	56	200					104
SLAMGEESH RIVER	N/I	N/I	N/I	N/I	N/I						
SUSTUT LAKE	N/O	300	800	199	1,055	972					665
SUB AREA TOTAL	10,010	5,800	11,370	23,290	17,361	10,672					10,376

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
BABINE FENCE COUNT	1,604	1,043	1,685	1,290	395	493					1,085
BABINE SUB AREA:											
BABINE RIVER (SECTIONS 1 - 3)											
BABINE RIVER (SECTION 4)	1,603	1,043	1,685	1,290	395	493					1,085
BABINE RIVER (SECTION 5)		N/I		N/I	40	UNK					40
BOUCHER CREEK		N/I									
FULTON RIVER	1	N/O		N/O	N/O	N/O					1
NICHYESKWA RIVER		N/I		N/I	50	N/O					50
NILKITKWA RIVER		N/O			N/I	N/I					
SUB AREA TOTAL	1,604	1,043	1,685	1,290	485	493					1,100

NOTE: 1. BABINE RIVER FENCE COUNTS PRIOR TO 1962 INCLUDE JACK AND LARGE COMBINED.
2. BABINE RIVER (SECTIONS 1 - 4) IS THAT PORTION OF THE RIVER ABOVE THE WEIR. SECTION 5 IS BELOW THE WEIR.

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
OTHER MIDDLE SKEENA SUB AREA:											
COMEAU CREEK	10				N/I						10
FIDDLER CREEK				N/I	N/I						
KITSEGUECLA RIVER	75	75		N/O	N/I						75
KITWANGA RIVER	2,000	1,200	2,500	975	1,000	600					1,379
KLEANZA CREEK	12			N/O	4						8
LIMONITE CREEK			200	190	15						135
SHEGUNIA RIVER	100	500	50	20	10	8					115
THOMAS CREEK			80	225	10						105
ZYMOETZ RIVER - LOWER	500	800	300	250	20	UNK					374
ZYMOETZ RIVER - UPPER					N/I						
SUB AREA TOTAL	2,697	2,575	3,130	1,660	1,059	608					1,955

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
BULKLEY/MORICE SUB AREA:											
BUCK CREEK	100	N/I	N/I	60	N/I						80
BULKLEY RIVER - LOWER	120	255	N/I	180	N/I						185
BULKLEY RIVER - UPPER	300	1,200	1,400	1,100	400	350					792
HAROLD PRICE CREEK	N/O		50	N/I	N/I						50
MAXAN CREEK				20	N/I						20
MORICE RIVER	12,000	25,500	16,000	18,000	14,250*	10,500					16,400
NANIKA RIVER	120	500	700	600	400*	200					424
RICHFIELD CREEK	N/I	N/I	N/I	N/I	N/I						
SUSKWA RIVER	20	50	60	N/I	N/I						43
TOBOGGAN CREEK			2	1							2
SUB AREA TOTAL	12,660	27,505	18,212	19,961	15,050	11,050					14,965

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
KISPIOX SUB AREA:											
CLUB CREEK - LOWER					N/I						
CLUB CREEK - UPPER			6		N/I						6
CULLON CREEK		20			N/I						20
DATE CREEK	50		25	N/O	N/I						38
KISPIOX RIVER	4,500	3,500	14,000	3,400	4,500	2,300					5,367
MCCULLY CREEK	N/O		40		N/I						40
MCQUEEN CREEK	N/O				N/I						
NANGEESE RIVER	250	500	400	200	N/I						338
STEPHENS CREEK	50			100	N/I	20					57
SWEETIN RIVER	200	450	600	75	N/I	6					266
SUB AREA TOTAL	5,050	4,470	15,071	3,775	4,500	2,326					5,865

APPENDIX B. NORTH COAST - AREA 4 CHINOOK SALMON ESCAPEMENT DATA.

TABLE B.5 CONT. AREA 4 CHINOOK ESCAPEMENT TABLE: 1990-1995.

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
OTHER LOWER SKEENA SUB AREA:											
ALWYN CREEK				N/I	N/I						
ANWEITER CREEK			67		N/I						67
DOG-TAG CREEK	N/O										
ERLANDSEN CREEK	30	25	15	25	25	20					23
EXCHAMSIKS RIVER	25	40	90	200	35	85					79
EXSTEW RIVER	20	N/I	43	95	25	40					45
GITNADOIX RIVER	10	85	50	30	N/O	15					38
KADEEN CREEK	25	50	20	35	6	N/O					27
KASIKS CREEK	50	35	148	190	30	45					83
MAGAR CREEK	120	110	130	40	25	125					92
SKEENA RIVER - WEST	400	600	1,200	1,500	N/O						925
ZYMAGOTITZ RIVER		10	17	20	10	UNK					14
SUB AREA TOTAL	680	955	1,780	2,135	156	330					1,006

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
KITSUMKALUM SUB AREA:											
CEDAR RIVER	1,000	175	600	650	450	450					554
CLEAR CREEK	120	150	150	175	50	130					129
COHOE CREEK											
DEEP CREEK		10	3	N/O	N/O						7
GOAT CREEK				N/O	N/I						
HADENSHILD CREEK			37		N/I						37
KITSUMKALUM RIVER - LOWER	20,000	9,200	12,437	15,000	14,000	7,221					14,127
KITSUMKALUM RIVER - UPPER											
LEAN-TO CREEK					N/I						
SPRING CREEK											
STAR CREEK				N/I	N/I						
SUB AREA TOTAL	21,120	9,535	13,227	15,825	14,500	7,801					12,465

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
LAKELSE SUB AREA:											
COLDWATER CREEK	20	34	20	10	N/O						21
LAKELSE RIVER	100	250	126	50	50	10					98
SOCKEYE CREEK						N/O					
WHITE CREEK				N/I							
WILLIAMS CREEK						N/O					
SUB AREA TOTAL	120	284	146	60	50	10					112

STREAM	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
COASTAL SUB AREA:											
BIG FALLS CREEK	0	N/I	N/I	N/I							0
DIANA CREEK		N/O		N/O	N/O	N/I					
ECSTALL RIVER	1,200	N/I	750	UNK	100	800					713
JOHNSTON CREEK	300	150	N/I	50	50	UNK					138
JOHNSTON LAKE	N/O	N/O	UNK	N/I		N/I					
KHYEX RIVER	N/I	225	2	150	50	100					105
KLOIYA RIVER	100	250	250	90	150	200					173
SHAWATLAN CREEK		N/I		N/O		N/O					
SILVER CREEK						N/O					
SUB AREA TOTAL	1,600	625	1,002	290	350	1,100					828

SUMMARY OF AREA 4 SUBAREA CHINOOK ESCAPEMENTS:

SUB AREA:	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	AVERAGE 1990-99
BEAR	10,010	5,800	11,370	23,290	17,361	10,672					10,376
BABINE	1,604	1,043	1,685	1,290	485	493					1,100
MIDDLE SKEENA	2,697	2,575	3,130	1,660	1,059	608					1,955
BULKLEY/MORICE	12,660	27,505	18,212	19,961	15,050	11,050					14,965
KISPIOX	5,050	4,470	15,071	3,775	4,500	2,326					5,865
LOWER SKEENA	680	955	1,780	2,135	156	330					1,006
KITSUMKALUM	21,120	9,535	13,227	15,825	14,500	7,801					12,465
LAKELSE	120	284	146	60	50	10					112
COASTAL	1,600	625	1,002	290	350	1,100					828
AREA 4 TOTAL	55,541	52,792	65,623	68,286	53,511	34,390					48,670

APPENDIX C. SUMMARY OF SKEENA CHINOOK SPAWNING TIMING, (from JANTZ ET AL. 1989).

TABLE C.1 CHINOOK TIMING OF SPAWNING IN THE COASTAL, LAKELSE, KITSUMKALUM AND OTHER LOWER SKEENA SUB-AREAS, AREA 4.

TABLE C.2 CHINOOK TIMING OF SPAWNING IN THE KISPIOX, BULKLEY/MORICE, OTHER MIDDLE SKEENA, BABINE AND BEAR SUB-AREAS, AREA 4.

Timing of Spawning

This section consists of figures outlining the timing of spawning of all salmon species for each stream, grouped by sub-area (Fig. I-XII). The arrival, start, peak and end of spawning are indicated using the following abbreviations from the Catalogue of Spawning Streams and Spawning Escapements:

ARR = date salmon arrive in stream
ST and S = begin to spawn
PK and P = reach peak in spawn
END = finish spawning
MA, JU, JL, A, S, O, N, D, J = standard abbreviations for the months
E = early
M = mid (11th to 20th of month)
L = late (21st to end of month)

The abbreviations to the right of the stream name indicate the month (JU, A, S) or part of the month (ES, MO, LO) when each of the four spawning periods (either ARR, ST, PK or END) occur. To the right of this the spawning period is illustrated. The x's represent the arriving (ARR) period and appear until the start of the active spawning (S). Once spawning has started the following x's represent the same condition and continue until the peak (P) is reached. The remainder of the spawning period, including the end, is represented by x's.

Each month is represented by nine spaces indicated by x's or S and P as described above. Three x's represent either the E, M or L period of the month; nine x's represent an entire month. An S was placed at the beginning of any time period to indicate start and a P was always placed in the middle of the appropriate time period to indicate the peak. If arrival and start were represented by the same time period, the x would be the first character and S would follow in the next space in the time period.

Timing for the Key Streams were derived from information from the local Fishery Officer and from historical records. Information on data sources is available in the introduction to the Key Stream section. Timing for other streams was taken from information in the Catalogue Of Salmon Streams and Spawning Escapements.

The second section consists of figures outlining the timing of spawning of all salmon species for each stream, by sub-area (Fig. XIV-XXII). The start, peak and end of spawning are indicated. Timing for the Key Streams was derived from information from the local Fishery Officer and from historical records (see Key Streams). Timing for other streams was taken from information in the Catalogue of Salmon Streams and Spawning Escapements.

Figure C1. Chinook timing of spawning in the Coastal, Lakelse, Kitsumkalum and Other Lower Skeena sub-areas, Area 4.

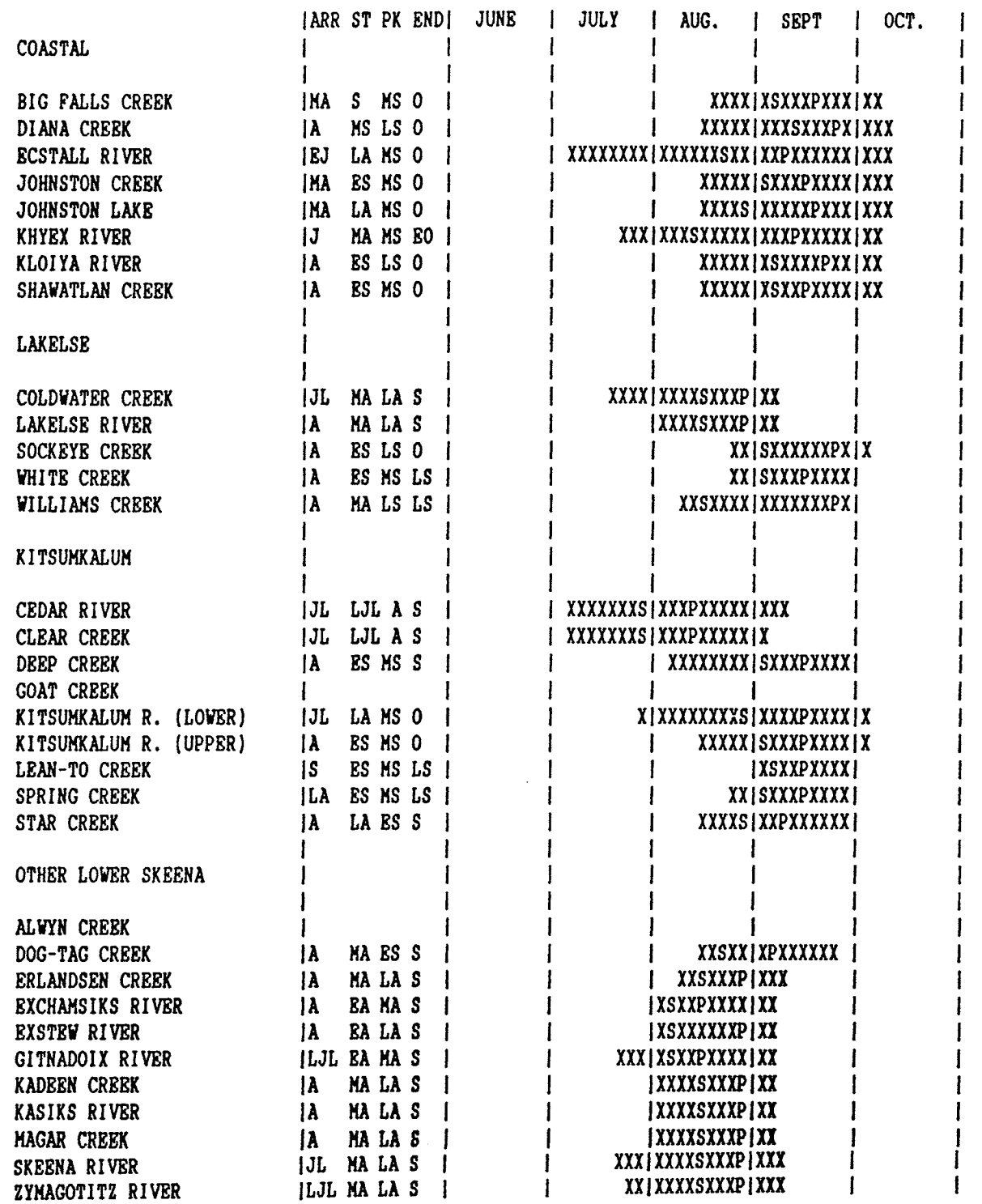
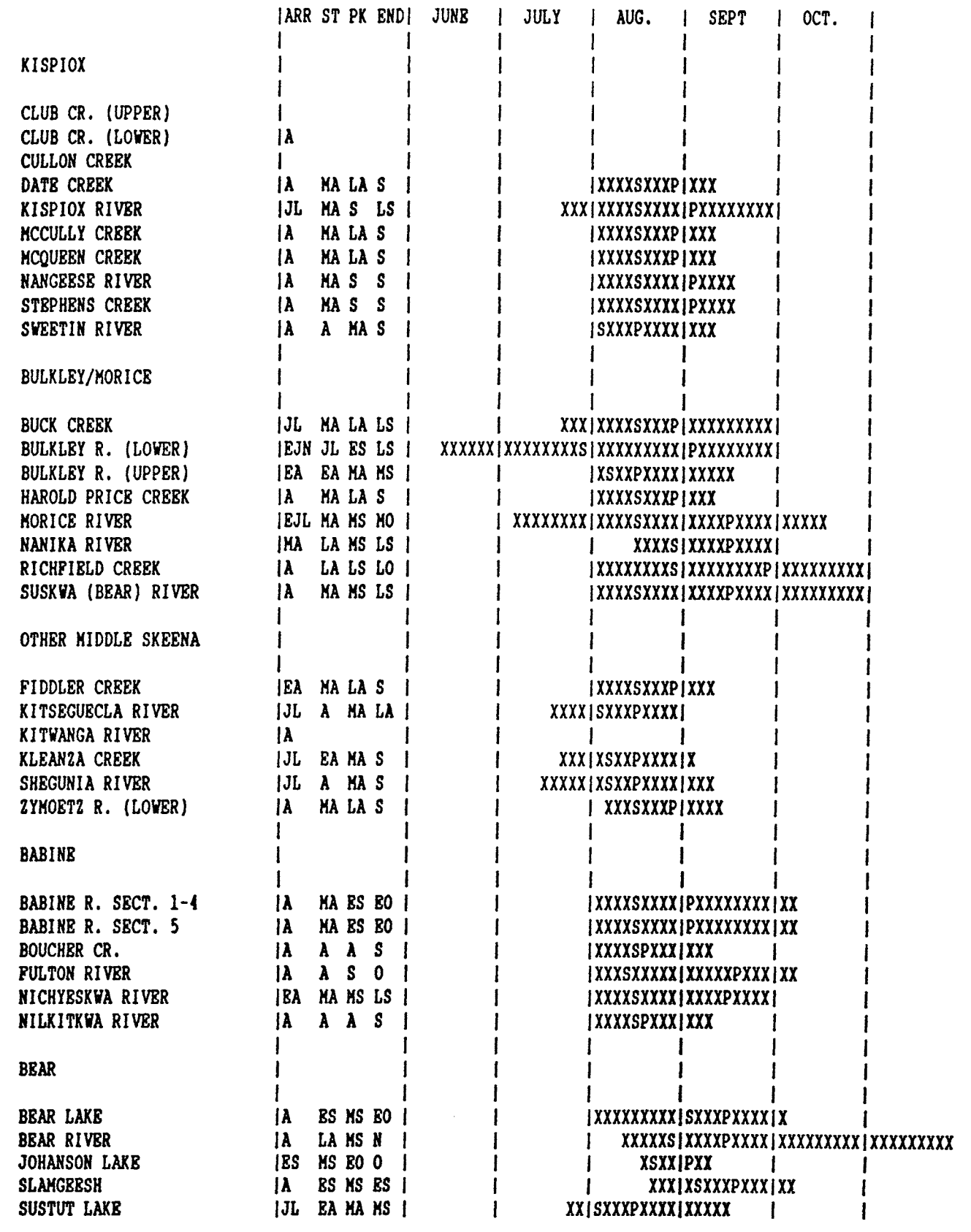


Figure C2. Chinook timing of spawning in the Kispiox, Bulkley/Morice, Other Middle Skeena, Babine and Bear sub-areas, Area 4.



APPENDIX D. DESCRIPTION OF SKEENA WATERSHED SCALE DATABASE AND TABLES OF SKEENA RIVER CHINOOK AGE STRUCTURE BY TRIBUTARY, BY YEAR, 1973 TO 1995.

SKEENA WATERSHED SCALE DATABASE DESCRIPTION.

TABLE D.1 SKEENA RIVER TEST FISHERIES.

TABLE D.2 SKEENA RIVER (GENERAL AREA).

TABLE D.3 COASTAL SUB-AREA (ECSTALL R., JOHNSTON CR. AND KLOIYA CR.).

TABLE D.4 LAKELSE SUB-AREA (COLDWATER CR. AND LAKELSE R.).

TABLE D.5 KITSUMKALUM SUB-AREA (CEDAR R., CEDAR R./SKEENA, CLEAR R., CLEAR R./SKEENA, KITSUMKALUM R., KITSUMKALUM R. - LOWER AND KITSUMKALUM R. - UPPER).

TABLE D.6 OTHER LOWER SKEENA SUB-AREA (EXCHAMSIKS R. AND GITNADOIX R.).

TABLE D.7 KISPIOX SUB-AREA (KISPIOX R. AND NANGEESE R.)

TABLE D.8 BULKLEY/MORICE SUB-AREA (BULKLEY R., BULKLEY R. - UPPER, MORICE R., NANIKA R. AND TOBOGGAN CR.).

TABLE D.9 OTHER MIDDLE SKEENA SUB-AREA (KITWANCOOL R., KITWANGA R., SHEGUNIA R. AND COPPER R.).

TABLE D.10 BABINE SUB-AREA (BABINE R. FENCE, BABINE R. C.I.D., BABINE R. - LOWER, FULTON R. AND PINKUT R.).

TABLE D.11 SUSTUT SUB-AREA (BEAR R. AND SUSTUT R.).

Skeena Watershed Scale Database Description

Information from the Vancouver Ageing Unit from 1989 to present are recorded in the Regional scale age database. Data for the years prior to 1989 was taken directly from the original scale cards. The database fields are as follows: Project Name, Year, (From)Month, (From)Day, (To)Month, (To)Day, Site Name, Sample Type, Gear Type, Book Number, Gilbert-Rich age system data from Number Aged 11 to Number Aged 85 and Total Number of Aged Fish.

Information was obtained from the Biological Station Ageing Unit data sheets from 1980 to present. Results from scale readings for which resolved ages are obtained (eg. "Number Aged 00") and the best estimate of visible annuli on resorbed scales (eg. "Number Aged 00 Resorbed") are noted. European age system information is converted into the Gilbert-Rich age system and represents the number of resolved plus number of resorbed ages for each age class. The following fields were created to record age data: Project Name, Investigator, Year, (From)Month, (From)Day, (To)Month, (To)Day, Species, Age Structure, Site Name, Sample Type, Gear Type, Book Number, European scale age system data from Number Aged 00 and Number Aged 00 Resorbed to Number Aged 43 and Number Aged 43 Resorbed, Total Number of Aged Fish, Gilbert-Rich scale age system data from Total Number Aged 11 to Total Number Aged 85.

TABLE D.1 SKEENA RIVER TEST FISHERY CHINOOK AGE STRUCTURE BY YEAR, BY GEAR TYPES.
LOCATION: TYEE.

		YEAR																					
GEAR TYPE	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
SALMON GILLNET,	Sum of 21					5	9					1				2			1					
COMMERCIAL	Sum of 31	21	6		2	39	26	26	3	1	3	2	2		2	1	9		4	1		4		
	Sum of 32							1				1			2	20	10	19	24	5	6	5		4
	Sum of 41	43	50	4	1	84	37	35	11	6	6	2	4	4	7	3	2	5	3	16	2	6		1
	Sum of 42	13	10	3	15	1	10	29	14	22	24	80	46	43	21	35	62	11	85	73	43	24	43	52
	Sum of 51	34	17	5	1	31	22	31	5	2	8	1	7	3	12	3	6	17	9	1	10	12	1	
	Sum of 52	14	39	61	56	7	19	73	91	51	49	116	130	184	116	90	102	172	34	210	96	149	134	72
	Sum of 53		1		1						1			1			1		1	1	1			
	Sum of 54																							
	Sum of 61		1			2			1							1		1	1	1				
	Sum of 62	6	24	85	66	27	15	21	11	80	28	74	43	51	98	141	142	135	184	58	101	151	150	64
	Sum of 63							1	1				2	1	1			1		4	3	1	1	1
	Sum of 71																		1					
	Sum of 72	1		1	1						1	1	5				1	3	2	9	1	2		2
	Sum of 73									1										1		2	2	
SEINE	Sum of 21																2							
	Sum of 31																4							
	Sum of 32																15							
	Sum of 41																							
	Sum of 42																15							
	Sum of 51																							
	Sum of 52																8							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																8							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.2 SKEENA RIVER (GENERAL AREA) CHINOOK AGE STRUCTURE BY YEAR, BY GEAR TYPES.

		YEAR																					
GEAR TYPE	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
SPORT	Sum of 21										2				3									
	Sum of 31																							
	Sum of 32										8				39									
	Sum of 41										1													
	Sum of 42									1	10				4	1								
	Sum of 51									1														
	Sum of 52									2	2		2		7									
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62									2	3	1	5		1		1							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
DEAD PITCH	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41						2																	
	Sum of 42																							
	Sum of 51						6																	
	Sum of 52						1																	
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62						1																	
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.3 COASTAL SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
ECSTALL RIVER	Sum of 21						1						3											
	Sum of 31						4					1			2									
	Sum of 32						1						2											
	Sum of 41				3		5					8				1								
	Sum of 42											11	5		1	2	3							
	Sum of 51			6	4		16					1	4			4	1							
	Sum of 52						1					24	14		2	6	4							
	Sum of 53											3	1											
	Sum of 54																							
	Sum of 61																							
	Sum of 62				1		6					35	5		1		2							
	Sum of 63												3											
	Sum of 71																							
	Sum of 72																							
	Sum of 73											1												
JOHNSTON CREEK	Sum of 21						1																	
	Sum of 31						1																	
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51						3																	
	Sum of 52						2																	
	Sum of 53																							
	Sum of 54																							
	Sum of 61						1																	
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
KLOIYA CREEK	Sum of 21																							
	Sum of 31									1														
	Sum of 32																							
	Sum of 41								10	5														
	Sum of 42																							
	Sum of 51									3														
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.4 LAKELSE SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
COLDWATER CREEK	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62														3		2							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
LAKELSE RIVER	Sum of 21																							
	Sum of 31							1																
	Sum of 32																							
	Sum of 41							1																
	Sum of 42							6																
	Sum of 51							1																
	Sum of 52							1																
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.5 KITSUMKALUM SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
CEDAR RIVER	Sum of 21																							
	Sum of 31							2								2								
	Sum of 32															1	1							
	Sum of 41						1	6								1								
	Sum of 42												2				4							
	Sum of 51						1	18							1	8								
	Sum of 52							5			10		5		1	7	10							
	Sum of 53																							
	Sum of 54																							
	Sum of 81																							
	Sum of 62							1			6		6		4	24	22							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
CEDAR RIVER/SKEENA	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																				3			
	Sum of 51																							
	Sum of 52																				51			
	Sum of 53																							
	Sum of 54																							
	Sum of 81																							
	Sum of 62																				88			
	Sum of 63																							
	Sum of 71																							
	Sum of 72																				1			
	Sum of 73																							
CLEAR RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51							1								1								
	Sum of 52										4					1								
	Sum of 53																							
	Sum of 54																							
	Sum of 81																							
	Sum of 62															4								
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
CLEAR RIVER/SKEENA	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																				1			
	Sum of 51																							
	Sum of 52																				4			
	Sum of 53																							
	Sum of 54																							
	Sum of 81																							
	Sum of 62																				8			
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
KITSUMKALUM RIVER	Sum of 21																					1		
	Sum of 31				1	5													4					
	Sum of 32										4		2		7	2		2	6	1		1		
	Sum of 41			4	4	15	1								2			3	1	3	1	1		
	Sum of 42				2	8				1	3		12	15	21	2		1	12	5	1	8			
	Sum of 51			5	13	20	3				2		9	2	30	4		31	22	1	12	7		3
	Sum of 52			8	8	28	2			1	34		72	151	159	13		53	29	58	30	32		8
	Sum of 53																							
	Sum of 54																							
	Sum of 81			1	1											2			21	4		5		
	Sum of 62			10	28	28				1	88		171	38	245	88	5	322	314	135	78	300		33
	Sum of 63																							
	Sum of 71																							
	Sum of 72				1	1					1		18		1		1	9	4	37	1	1		1
	Sum of 73												2							1				
KITSUMKALUM RIVER - LOWER	Sum of 21					1																		
	Sum of 31					2	1	1																
	Sum of 32								2	1				6			2							
	Sum of 41					7	34	7	2								2							
	Sum of 42					3	1		12	2	1		3	13		5	8						3	
	Sum of 51					13	108	129	8					2		8	8							1
	Sum of 52					4	10	8	108	59	4		8	134		26	38						21	11
	Sum of 53																							
	Sum of 54																							
	Sum of 81					1	5	3	2							1	1							
	Sum of 62					24	12	19	30	51	13		18	91		97	288						98	63
	Sum of 63																							
	Sum of 71																							
	Sum of 72								4		2						3						5	1
	Sum of 73																							
KITSUMKALUM RIVER - UPPER	Sum of 21																							
	Sum of 31					8		3									1							
	Sum of 32								1				3				3							
	Sum of 41					24	8	10	2								1							
	Sum of 42					7	2		1		1		6				10				2		2	
	Sum of 51					14	29	27	2				3								25		1	
	Sum of 52					22	8	2	29	32	17		13	3			13				32	3	12	3
	Sum of 53								1															
	Sum of 54																							
	Sum of 81						1	1																
	Sum of 62					32	8	4	19	59	81		27	1		3	113				140	22	61	19
	Sum of 63																							
	Sum of 71																1							
	Sum of 72					3					5		2				7				1		2	
	Sum of 73																							

TABLE D.6 OTHER LOWER SKEENA SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
EXCHAMSIKS RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41							1																
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
GITNADOIX RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62											1												
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.7 KISPIOX SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
KISPIOX RIVER	Sum of 21	2						1																
	Sum of 31	10																1						
	Sum of 32	4					2																	
	Sum of 41									1										1				
	Sum of 42	14					1	2	2	5														
	Sum of 51	2		3			1	4										1						
	Sum of 52	10		1		6	6	5	29	17		18	12	15	7	12	4	6	2	11				
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62	2				6	1	6	17	4		10	8	10	16	30	11	3	7	2				
	Sum of 63					1																		
	Sum of 71																							
	Sum of 72								1										1					
	Sum of 73																							
NANGEESE RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51						1																	
	Sum of 52																	1						
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.8 BULKLEY/MORICE SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
BULKLEY RIVER	Sum of 21																							
	Sum of 31																				1			
	Sum of 32																			2				
	Sum of 41																							
	Sum of 42																			9	3			
	Sum of 51																			1				
	Sum of 52															19		3	8	38	32			
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62															7		2	4	1	3			
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
BULKLEY RIVER - UPPER	Sum of 21																							
	Sum of 31									1														
	Sum of 32																					2		
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52									6												56		
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62									2												16		
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
MORICE RIVER	Sum of 21				1		2	1																
	Sum of 31						2	8																
	Sum of 32		4				1	4	3				8											
	Sum of 41	1	12		8		16	26	6															
	Sum of 42	1	21		3		11	41	18		1	1	37											
	Sum of 51		2		4		10	34	2		1		1											
	Sum of 52	8	150		25		13	124	163		34	30	185											
	Sum of 53		1																					
	Sum of 54																							
	Sum of 61								1															
	Sum of 62	2	41		25		2	37	23		7	9	71											
	Sum of 63								1															
	Sum of 71																							
	Sum of 72												1											
	Sum of 73																							
NANIKA RIVER	Sum of 21																							
	Sum of 31		1																					
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
TOBOGGAN CREEK	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																	1						
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.9 OTHER MIDDLE SKEENA SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																						
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
KITWANCOOL RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62										1													
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
KITWANGA RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41						2																	
	Sum of 42						1																	
	Sum of 51						1																	
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
SHEGUNIA RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																			1				
	Sum of 52															2		3		3				
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62														3	4	6	5	4	3				
	Sum of 63																			1				
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
COPPER RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42									1			3				1							
	Sum of 51									1						1								
	Sum of 52						2		10	13	16		20		4	3	2							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62								2	19	15		1		7	3	20							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.10 BABINE SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
BABINE RIVER	Sum of 21			1	10	1	12	24						1										
(BABINE RIVER FENCE)	Sum of 31		1		13	4	5	24						1										
	Sum of 32		1	16	51	18	41		47		2	30	2	29		1	2	5	12				15	
	Sum of 41		1	4	3	8	9	26																
	Sum of 42		9	32	81	39	51	2	17		26	32	36	23	1	4	74	12	37	7	4	18	12	
	Sum of 51			11	1		4	6									1		2					
	Sum of 52		19	173	71	38	33	7	52		33	22	110	57	8	17	42	157	35	113	8	149	51	
	Sum of 53						1											1						
	Sum of 54																							
	Sum of 61				1																			
	Sum of 62		4	70	55	8	5		15		9	6	7	12		4	24	16	54	12	8	40	16	
	Sum of 63			1		1																		
	Sum of 71																							
	Sum of 72				1													1				1		
	Sum of 73																							
BABINE RIVER	Sum of 21																							
(FORT BABINE C.I.D.)	Sum of 31																							
	Sum of 32																							
	Sum of 41																		1					
	Sum of 42																	2			31	1		
	Sum of 51																							
	Sum of 52														7	14		38	10	16	46	18	8	
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62														1	9		1	2	4	23	7	6	
	Sum of 63																							
	Sum of 71																							
	Sum of 72																						1	
	Sum of 73																							
BABINE RIVER - LOWER	Sum of 21																							
(BABINE RIVER FENCE)	Sum of 31																							
	Sum of 32																							
	Sum of 41			3																				
	Sum of 42																							
	Sum of 51			1																				
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
BABINE RIVER - LOWER	Sum of 21																							
(FORT BABINE C.I.D.)	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																2							
	Sum of 51																							
	Sum of 52																20							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																11							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
FULTON RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32								1															
	Sum of 41																							
	Sum of 42								1		1													
	Sum of 51																							
	Sum of 52										5													
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
PINKUT CREEK	Sum of 21																							
	Sum of 31																							
	Sum of 32	1																						
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52																							
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62																							
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

TABLE D.11 SUSTUT SUB-AREA TRIBUTARIES CHINOOK AGE STRUCTURE BY YEAR, ALL GEAR TYPES.

		YEAR																					
SITE NAME	Data	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
BEAR RIVER	Sum of 21			1																				
	Sum of 31			3																				
	Sum of 32			6	2					2														
	Sum of 41			5																				
	Sum of 42			4	3		11			18														
	Sum of 51			4	1																			
	Sum of 52			28	10		35			42														
	Sum of 53						1																	
	Sum of 54																							
	Sum of 61																							
	Sum of 62			14	31		7			11														
	Sum of 63						3																	
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							
SUSTUT RIVER	Sum of 21																							
	Sum of 31																							
	Sum of 32																							
	Sum of 41																							
	Sum of 42																							
	Sum of 51																							
	Sum of 52												21											
	Sum of 53																							
	Sum of 54																							
	Sum of 61																							
	Sum of 62												13											
	Sum of 63																							
	Sum of 71																							
	Sum of 72																							
	Sum of 73																							

APPENDIX E. SKEENA GILLNET TEST FISHERY CHINOOK POSTORBITAL- HYPURAL LENGTH HISTOGRAMS, 1990 TO 1995.

TABLE E.1 AGE 42 MALE LENGTH HISTOGRAMS.

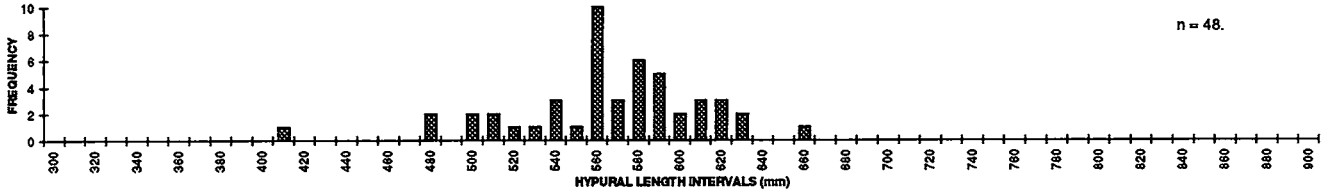
TABLE E.2 AGE 52 MALE LENGTH HISTOGRAMS.

TABLE E.3 AGE 52 FEMALE LENGTH HISTOGRAMS.

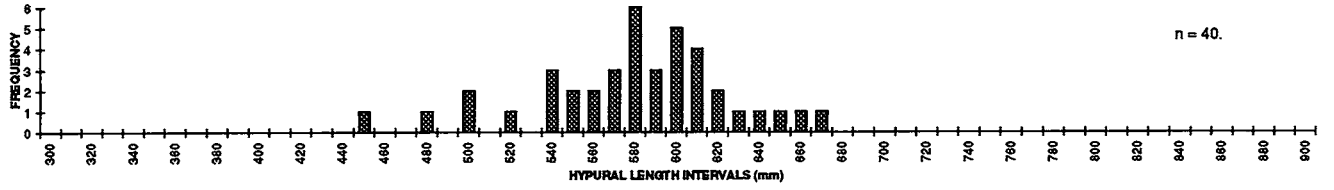
TABLE E.4 AGE 62 FEMALE LENGTH HISTOGRAMS.

TABLE E.1 AGE 42 MALE LENGTH HISTOGRAMS.

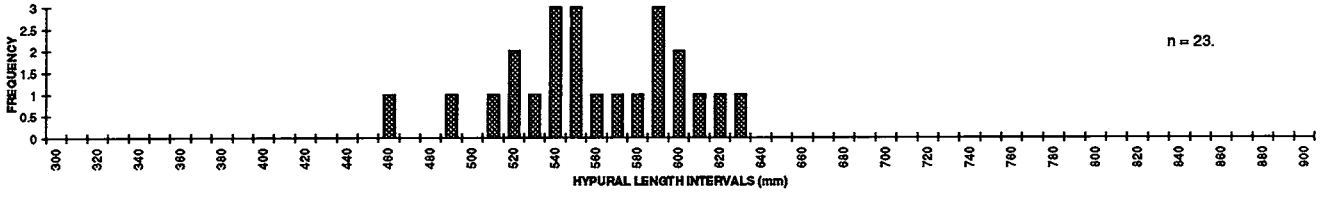
SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1995 SAMPLING PROGRAM.



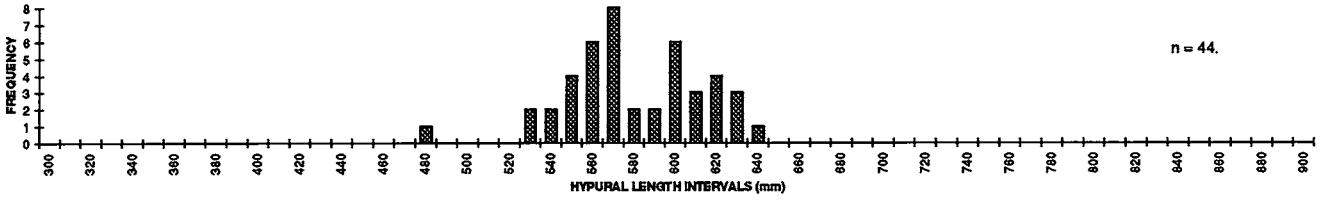
SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1994 SAMPLING PROGRAM.



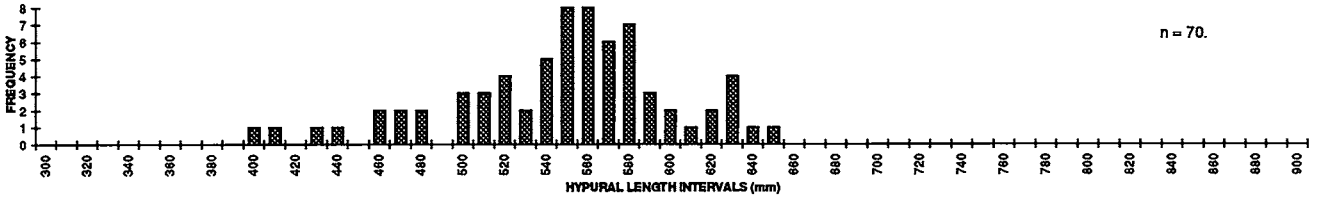
SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1993 SAMPLING PROGRAM.



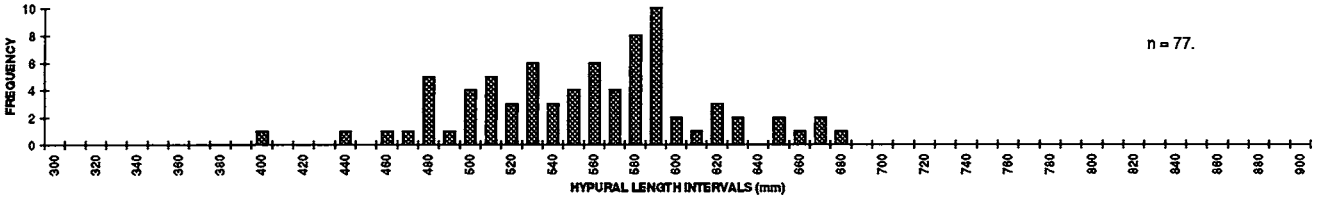
SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1992 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1991 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 42 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 TO 1995 SAMPLING PROGRAM.

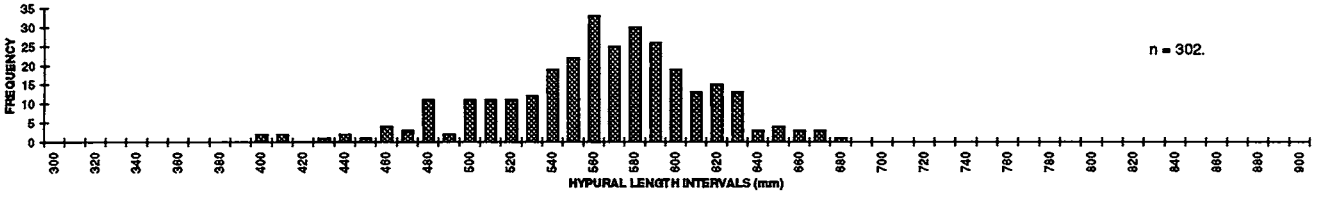
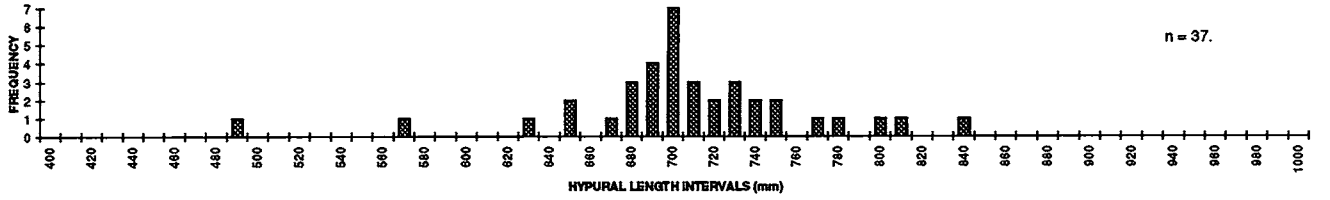
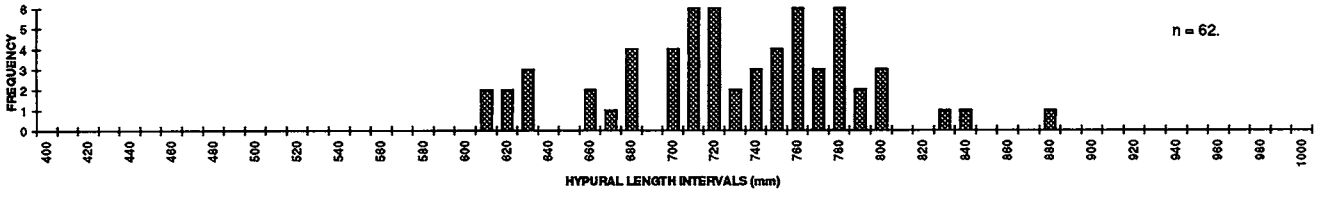


TABLE E.2 AGE 52 MALE LENGTH HISTOGRAMS.

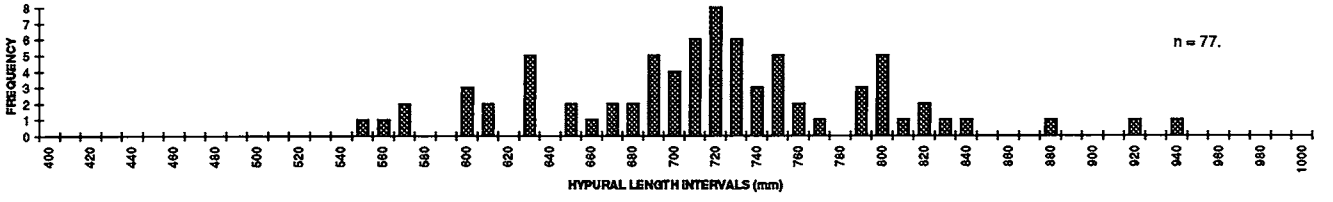
SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1995 SAMPLING PROGRAM.



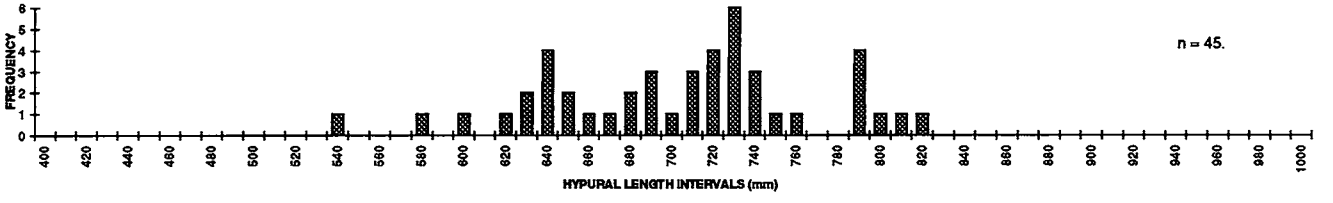
SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1994 SAMPLING PROGRAM.



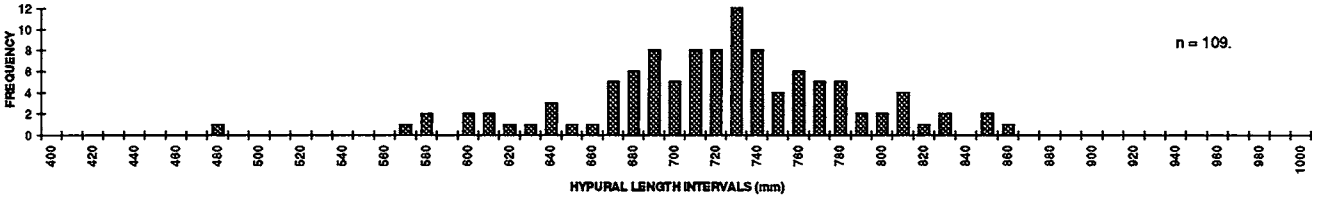
SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1993 SAMPLING PROGRAM.



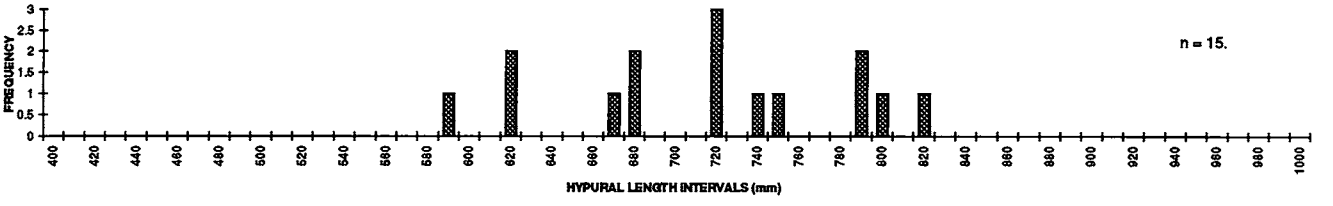
SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1992 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1991 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 MALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 TO 1995 SAMPLING PROGRAM.

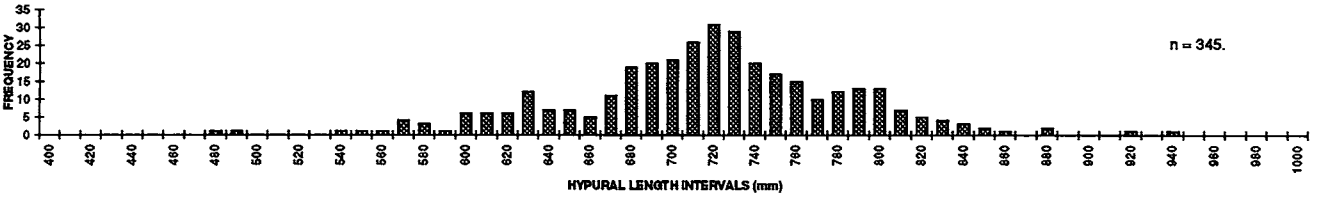
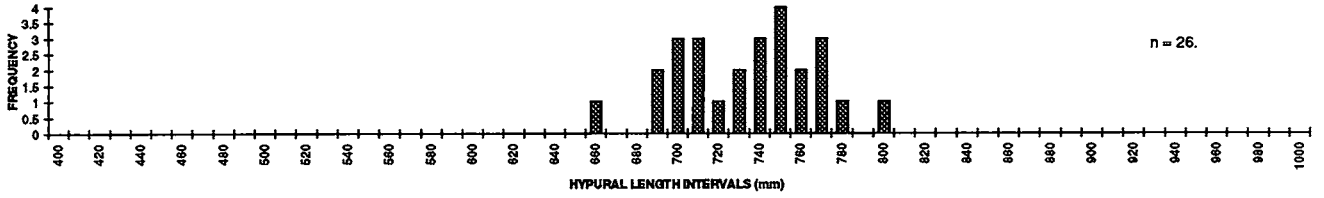
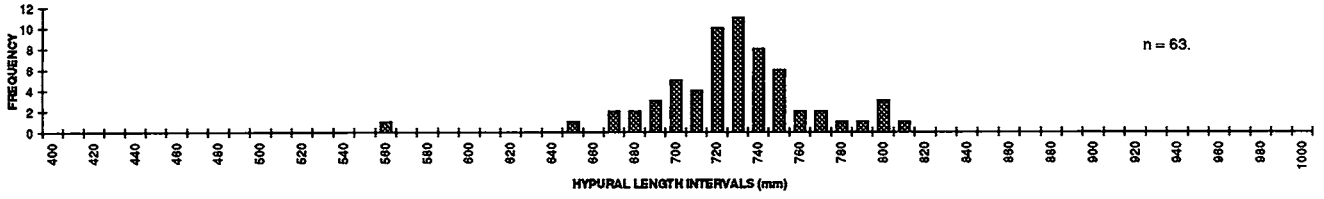


TABLE E. 3 AGE 52 FEMALE LENGTH HISTOGRAMS.

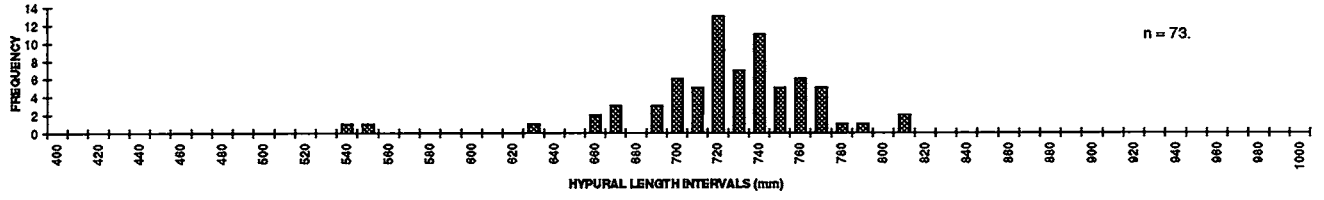
SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LEGNTH HISTOGRAM.
1995 SAMPLING PROGRAM.



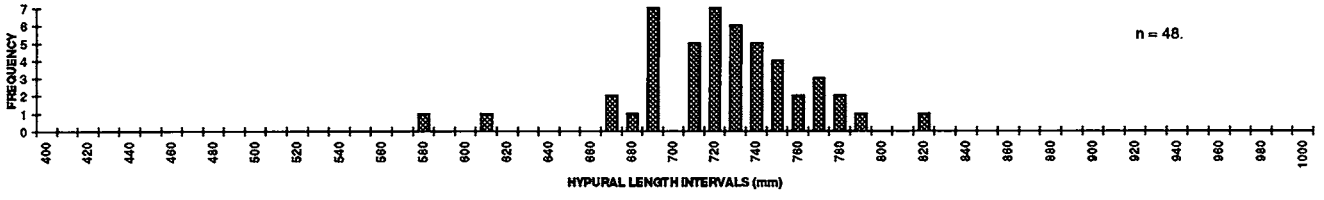
SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1994 SAMPLING PROGRAM.



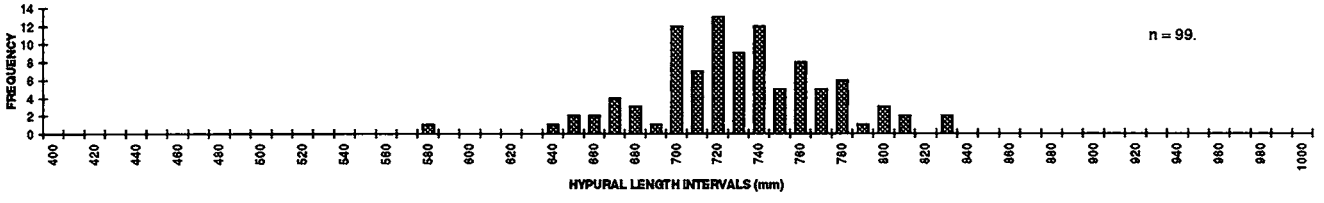
SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1993 SAMPLING PROGRAM.



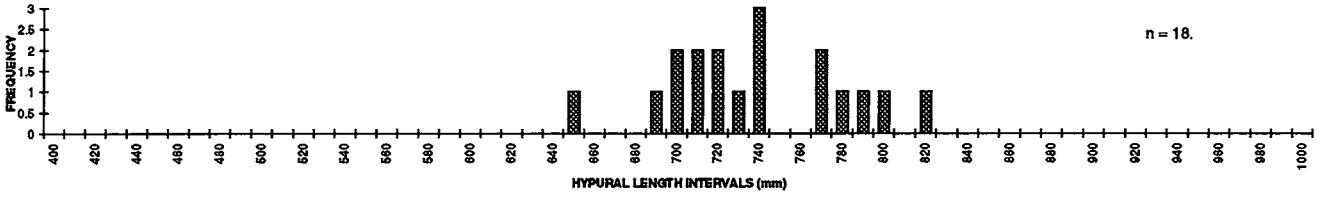
SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1992 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1991 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 52 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 TO 1995 SAMPLING PROGRAM.

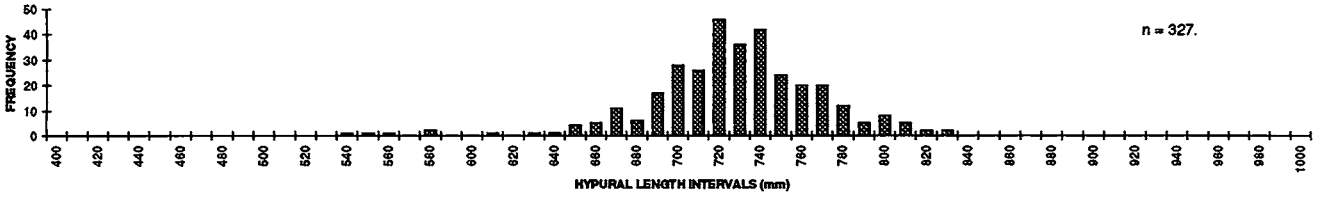
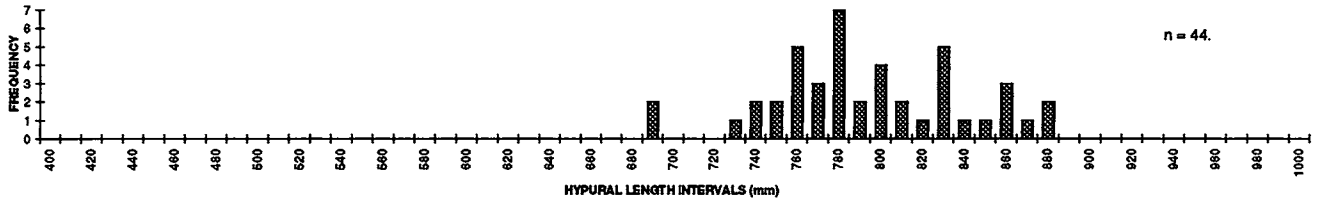
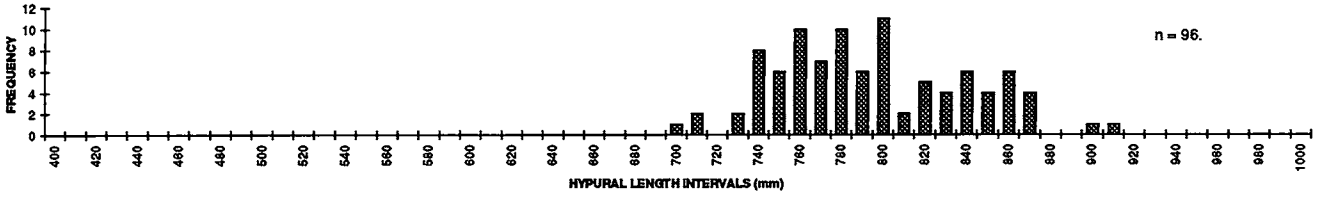


TABLE E. 4 AGE 62 FEMALE LENGTH HISTOGRAMS.

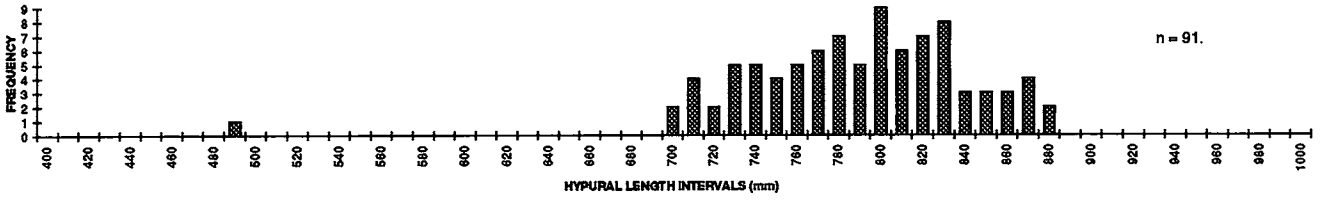
SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1995 SAMPLING PROGRAM.



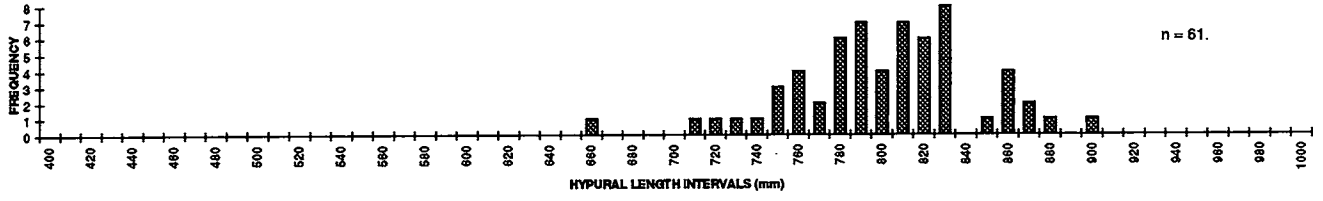
SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1994 SAMPLING PROGRAM.



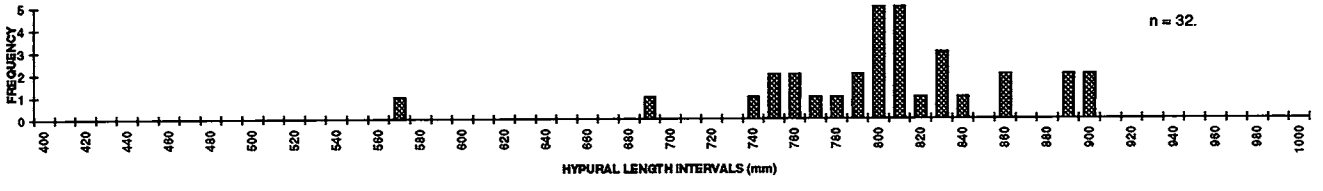
SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1993 SAMPLING PROGRAM.



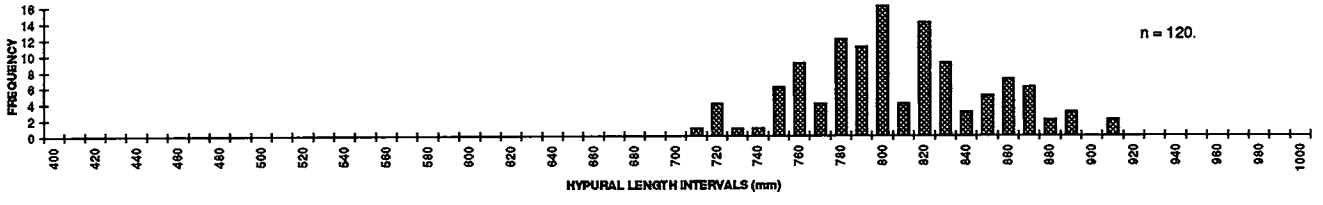
SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1992 SAMPLING PROGRAM.



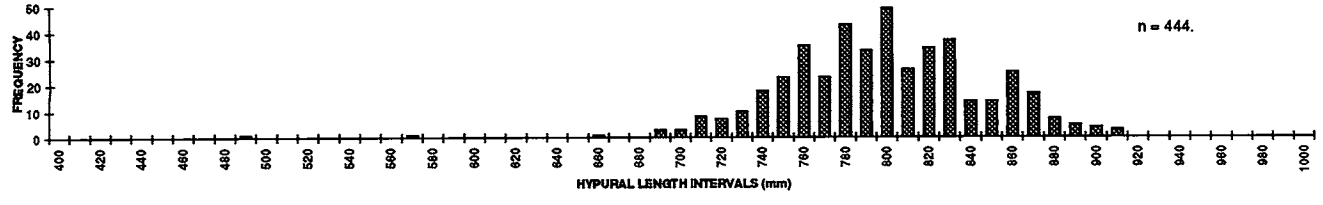
SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1991 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 SAMPLING PROGRAM.



SKEENA GILLNET TEST FISHERY: AGE 62 FEMALE CHINOOK HYPURAL LENGTH HISTOGRAM.
1990 TO 1995 SAMPLING PROGRAM.



APPENDIX F. RIVER GAP SLOUGH WEEKLY CHINOOK GILLNET CATCH AND C.P.U.E. DATA.

TABLE F.1 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1994 TO 1995.

TABLE F.2 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1992 TO 1993.

TABLE F.3 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1990 TO 1991.

TABLE F.4 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1988 TO 1989.

TABLE F.5 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1986 TO 1987.

TABLE F.6 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1984 TO 1985.

FIGURE F.1 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK WEEKLY C.P.U.E., 1990 TO 1995.

FIGURE F.2 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK WEEKLY C.P.U.E., 1984 TO 1989.

FIGURE F.3 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK WEEKLY CATCH, 1990 TO 1995.

FIGURE F.4 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK WEEKLY CATCH, 1984 TO 1989.

TABLE F.1 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1994 -1995.

NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN
A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1995	6-1	0.7	23	119	136	136	119	5.1	5.8
1995	6-2					4			
1995	6-3	0.7	23	210	255	255	210	9.0	10.9
1995	6-4	1.0	71	568	518	1,029	1,129	8.0	7.3
1995	7-1	2.0	197	538	660	2,574	2,098	2.7	3.4
1995	7-2	4.0	487	999	973	2,082	2,137	2.1	2.0
1995	7-3	4.0	712	872	1,703	3,537	1,811	1.2	2.4
1995	7-4	2.0	310	204	492	839	348	0.7	1.6
1995	7-5	1.5	315	337	244	284	392	1.1	0.8
1995	8-1	1.0	100	56	92	121	74	0.6	0.9
1995	8-2	1.0	121	70	59	59	70	0.6	0.5
1995	8-3	1.0	83	10	28	34	12	0.1	0.3
1995	8-4								
1995	9-1								
1995	9-2					6			
1995	9-3								
1995	9-4								
1994	6-1								
1994	6-2								
1994	6-3	0.5	26	520	541	541	520	20.0	20.8
1994	6-4	0.6	33	756	1,188	1,188	756	23.1	36.4
1994	7-1	1.0	52	416	577	720	519	8.0	11.1
1994	7-2	2.0	123	907	1,614	2,395	1,346	7.4	13.1
1994	7-3	4.0	417	1,813	1,957	3,194	2,959	4.3	4.7
1994	7-4	2.0	215	1,015	1,719	2,451	1,447	4.7	8.0
1994	7-5	3.0	364	714	652	1,689	1,851	2.0	1.8
1994	8-1	1.7	258	156	210	356	265	0.6	0.8
1994	8-2	1.0	120	120	87	172	236	1.0	0.7
1994	8-3	1.0	80	320	44	52	379	4.0	0.5
1994	8-4					2			
1994	9-1								
1994	9-2								
1994	9-3					3	5		
1994	9-4					18			

TABLE F.2 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1992 -1993.

NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN
A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1993	6-1								
1993	6-2								
1993	6-3								
1993	6-4								
1993	7-1	2.0	139	1,557	1,713	2,148	1,952	11.2	12.3
1993	7-2	3.4	373	1,626	2,727	5,182	3,090	4.4	7.3
1993	7-3	4.1	527	2,321	1,601	2,316	3,358	4.4	3.0
1993	7-4	3.0	615	1,759	1,729	2,669	2,715	2.9	2.8
1993	7-5	3.0	535	991	1,575	2,358	1,484	1.9	2.9
1993	8-1	1.6	226	490	503	930	906	2.2	2.2
1993	8-2	2.0	225	135	178	255	193	0.6	0.8
1993	8-3	1.0	94	34	41	77	64	0.4	0.4
1993	8-4	1.0	48	11	19	19	11	0.2	0.4
1993	9-1					38			
1993	9-2								
1993	9-3								
1993	9-4								
1992	6-1								
1992	6-2					68			
1992	6-3					12			
1992	6-4					59			
1992	7-1	3.0	92	1,071	1,396	3,668	2,814	11.6	15.2
1992	7-2	2.0	102	1,765	2,276	3,475	2,695	17.3	22.3
1992	7-3	3.0	399	2,264	2,173	3,203	3,337	5.7	5.4
1992	7-4	4.3	538	1,195	2,516	4,483	2,129	2.2	4.7
1992	7-5	3.3	422	626	1,093	1,776	1,017	1.5	2.6
1992	8-1	4.0	480	382	647	1,129	667	0.8	1.3
1992	8-2	2.0	274	79	122	216	140	0.3	0.4
1992	8-3	2.0	252	67	79	129	110	0.3	0.3
1992	8-4	1.0	42			3			
1992	9-1					12			
1992	9-2					8			
1992	9-3								
1992	9-4								

TABLE F.3 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1990 -1991.

NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN
A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1991	6-1								
1991	6-2								
1991	6-3								
1991	6-4								
1991	7-1	1.0	56	628	837	1,551	1,164	11.2	14.9
1991	7-2	3.0	332	1,298	2,316	5,040	2,825	3.9	7.0
1991	7-3	4.0	816	3,609	2,847	3,949	5,006	4.4	3.5
1991	7-4	4.0	893	1,187	1,419	2,622	2,193	1.3	1.6
1991	7-5	4.0	601	732	818	1,839	1,646	1.2	1.4
1991	8-1	2.0	275	279	396	456	321	1.0	1.4
1991	8-2	2.0	200	77	118	192	125	0.4	0.6
1991	8-3	3.0	187	15	6	60	163	0.1	0.0
1991	8-4	2.0	47			57	20		
1991	9-1								
1991	9-2								
1991	9-3								
1991	9-4								
1990	6-1								
1990	6-2								
1990	6-3								
1990	6-4	1.0	89	779	1,118	1,809	1,260	8.8	12.6
1990	7-1	1.0	146	1,364	1,950	2,767	1,935	9.3	13.4
1990	7-2	1.0	169	1,259	1,723	2,283	1,668	7.4	10.2
1990	7-3	2.3	654	1,680	1,540	2,305	2,515	2.6	2.4
1990	7-4	3.3	531	480	930	2,952	1,524	0.9	1.8
1990	7-5	2.0	533	118	412	1,266	363	0.2	0.8
1990	8-1	3.0	465	124	287	752	325	0.3	0.6
1990	8-2	4.0	490	69	121	310	177	0.1	0.2
1990	8-3	3.0	96	10	43	111	26	0.1	0.4
1990	8-4	5.0	59	2	8	37	9	0.0	0.1
1990	9-1	4.0	41	3	4	30	23	0.1	0.1
1990	9-2	1.0	13			14			
1990	9-3					9			
1990	9-4								

TABLE F.4 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1988 -1989.

NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1989	6-1								
1989	6-2								
1989	6-3								
1989	6-4	1.0	171	770	1,218	1,780	1,125	4.5	7.1
1989	7-1	1.0	215	1,355	1,542	3,172	2,788	6.3	7.2
1989	7-2	4.0	1022	3,299	3,191	4,629	4,786	3.2	3.1
1989	7-3	3.0	434	858	2,015	3,058	1,302	2.0	4.6
1989	7-4	3.0	128	281	409	547	376	2.2	3.2
1989	7-5	4.0	326	210	145	268	389	0.6	0.4
1989	8-1	2.5	289	96	155	261	162	0.3	0.5
1989	8-2	2.0	228	42	59	171	121	0.2	0.3
1989	8-3	4.0	96	14	40	71	25	0.1	0.4
1989	8-4	2.0	59	7	13	13	7	0.1	0.2
1989	9-1								
1989	9-2								
1989	9-3								
1989	9-4								
1988	6-1								
1988	6-2								
1988	6-3								
1988	6-4					8			
1988	7-1	1.0	120	1,728	1,582	2,611	2,852	14.4	13.2
1988	7-2	3.0	506	2,817	2,385	3,900	4,606	5.6	4.7
1988	7-3	4.0	945	4,267	4,510	5,829	5,515	4.5	4.8
1988	7-4	4.0	965	2,464	3,405	5,155	3,730	2.6	3.5
1988	7-5	2.0	462	629	1,309	1,719	826	1.4	2.8
1988	8-1	3.0	720	1,365	1,112	1,913	2,348	1.9	1.5
1988	8-2	2.0	626	203	237	324	278	0.3	0.4
1988	8-3	2.3	630	105	206	239	122	0.2	0.3
1988	8-4	1.0	200	20	28	46	33	0.1	0.1
1988	9-1								
1988	9-2								
1988	9-3								
1988	9-4								
1988	10-1					688			
1988	10-2								
1988	10-3								
1988	10-4								
1988	10-5					118			

TABLE F.5 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1986 -1987.

NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN
A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

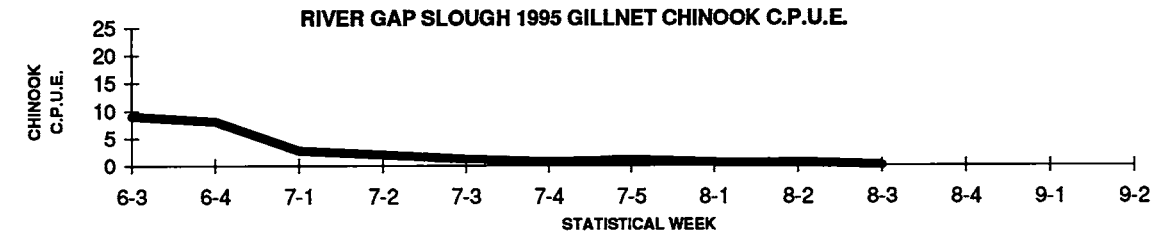
YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1987	6-1								
1987	6-2								
1987	6-3					72			
1987	6-4					136			
1987	7-1					131			
1987	7-2	1.0	91	546	1,224	1,804	805	6.0	13.4
1987	7-3	1.0	47	376	745	2,403	1,213	8.0	15.8
1987	7-4	2.0	344	329	768	1,800	771	1.0	2.2
1987	7-5	2.0	426	271	458	861	509	0.6	1.1
1987	8-1	4.0	795	186	433	890	382	0.2	0.5
1987	8-2	3.0	455	96	359	792	212	0.2	0.8
1987	8-3	3.0	404	40	79	146	74	0.1	0.2
1987	8-4	1.0	103	10	17	20	12	0.1	0.2
1987	9-1								
1987	9-2								
1987	9-3								
1987	9-4								
1986	6-1								
1986	6-2								
1986	6-3								
1986	6-4					6			
1986	7-1								
1986	7-2	1.0	66	792	1,248	1,550	984	12.0	18.9
1986	7-3	1.0	140	1,022	1,401	1,931	1,409	7.3	10.0
1986	7-4	3.0	520	1,144	1,750	3,098	2,025	2.2	3.4
1986	7-5	2.0	358	537	1,082	1,755	871	1.5	3.0
1986	8-1	1.0	182	91	91	151	151	0.5	0.5
1986	8-2	4.0	532	142	130	223	243	0.3	0.2
1986	8-3	4.0	409	170	198	249	214	0.4	0.5
1986	8-4	4.0	320	37	196	323	61	0.1	0.6
1986	9-1	1.0	37	4	8	14	7	0.1	0.2
1986	9-2								
1986	9-3								
1986	9-4								

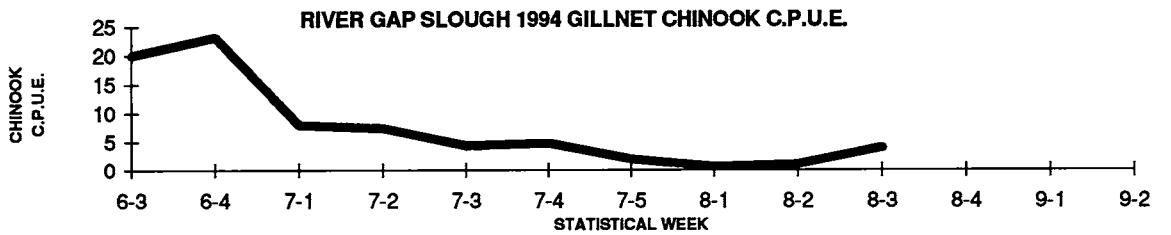
TABLE F.6 RIVER GAP SLOUGH WEEKLY CHINOOK GN CATCH AND C.P.U.E. DATA, 1984 -1985.

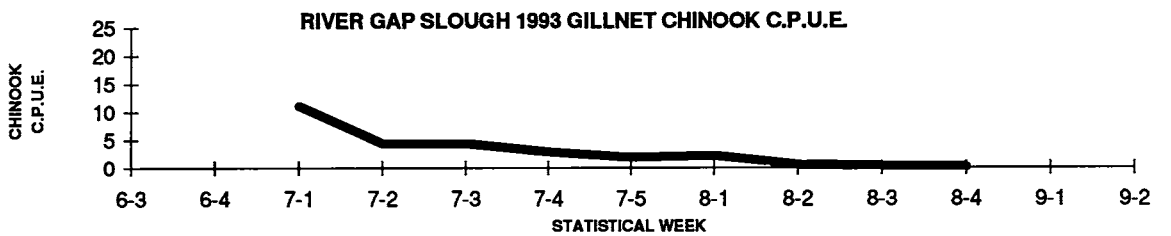
NOTE: EFFORT HAS BEEN CORRECTED FOR DAYS IN WHICH FISHING TIME WAS LESS THAN
A FULL FISHING DAY,
IE: DAILY EFFORT (VESS. DAYS) = BOATS OPERATING x (Hrs. FISHED/24 Hrs.).
1 VESSEL DAY = 1 VESSEL FISHING FOR 24 Hrs.

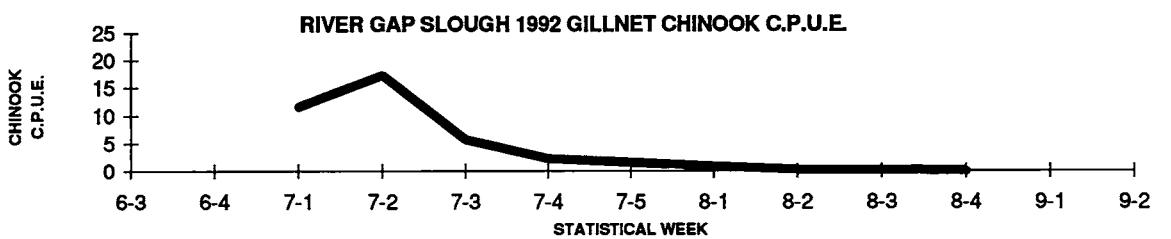
YEAR	WEEK	DAYS FISHED	GN EFFORT (VESS. DAYS)	RGS HAIL CATCH	RGS - PRORATED HAIL CATCH	AREA 4 SALESLIP CATCH	AREA 4 HAIL CATCH	RGS CPUE	RGS - PRORATED CPUE
1985	6-1								
1985	6-2								
1985	6-3								
1985	6-4								
1985	7-1	2.0	79	605	914	3,187	2,109	7.7	11.6
1985	7-2	3.0	258	2,280	3,125	5,959	4,348	8.8	12.1
1985	7-3	3.0	427	904	3,210	6,636	1,869	2.1	7.5
1985	7-4	4.0	887	1,679	2,152	3,196	2,494	1.9	2.4
1985	7-5	4.0	758	772	993	1,827	1,420	1.0	1.3
1985	8-1	3.0	516	232	368	616	388	0.4	0.7
1985	8-2	3.0	534	120	461	857	223	0.2	0.9
1985	8-3	4.0	407	106	205	294	152	0.3	0.5
1985	8-4								
1985	9-1								
1985	9-2								
1985	9-3								
1985	9-4								
1984	6-1								
1984	6-2								
1984	6-3								
1984	6-4								
1984	7-1					141			
1984	7-2	1.0	97	392	827	1,144	542	4.0	8.5
1984	7-3	4.0	691	1,689	2,026	4,378	3,650	2.4	2.9
1984	7-4	3.0	470	114	655	2,355	410	0.2	1.4
1984	7-5	3.0	472	312	579	1,019	549	0.7	1.2
1984	8-1	3.0	173	51	70	152	110	0.3	0.4
1984	8-2	3.0	348	62	161	315	121	0.2	0.5
1984	8-3					278			
1984	8-4					28			
1984	9-1								
1984	9-2								
1984	9-3								
1984	9-4								

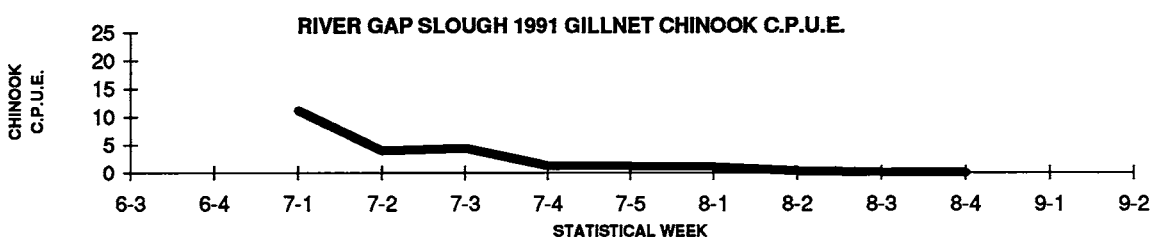
FIGURE F.1 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK C.P.U.E., 1990 TO 1995.











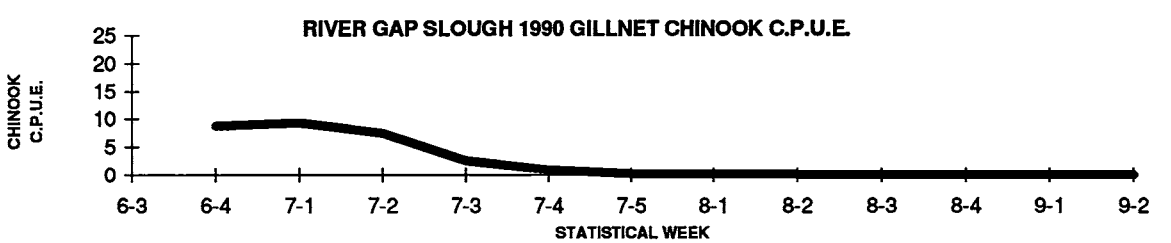


FIGURE F.2 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK C.P.U.E., 1984 TO 1989.

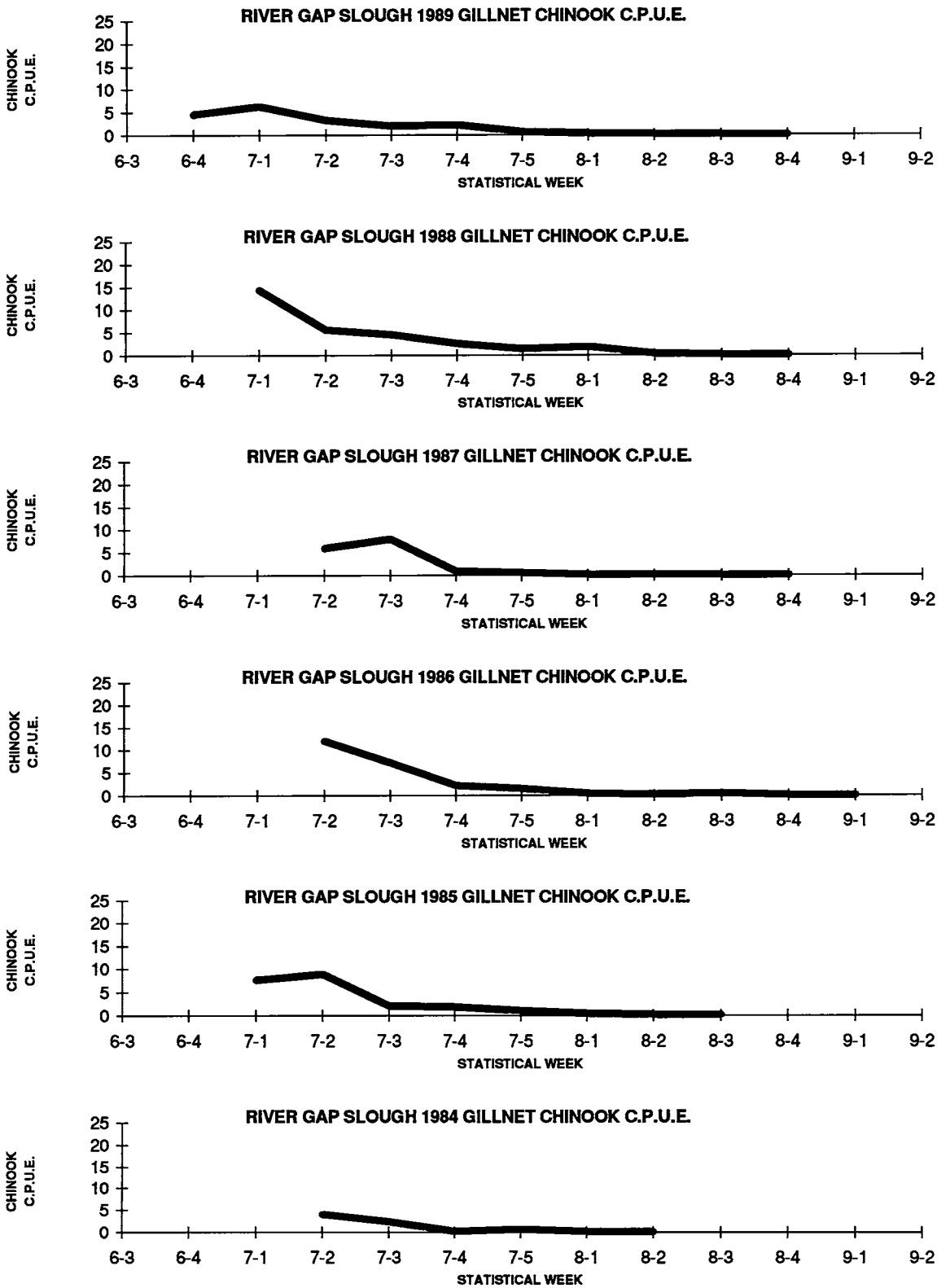
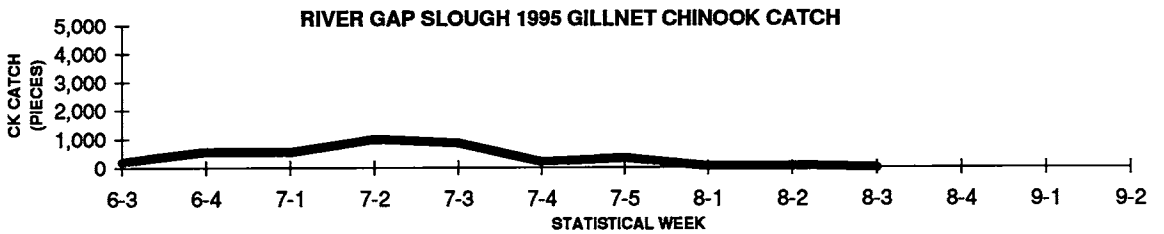
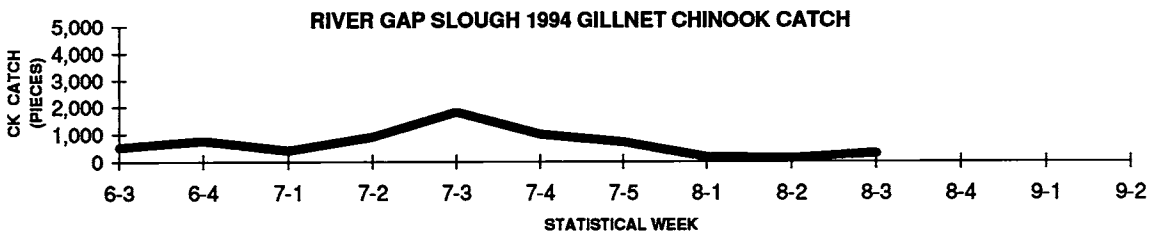
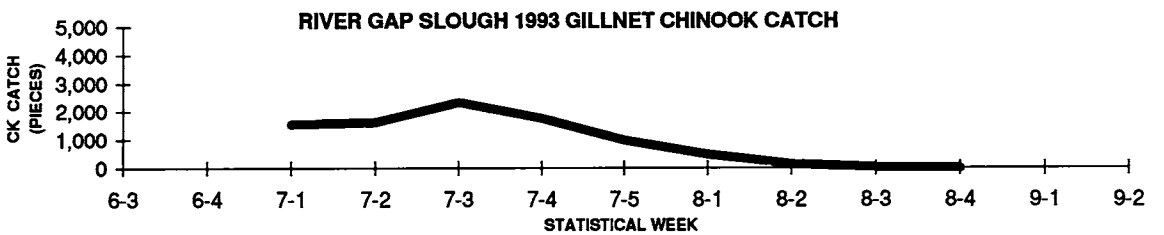
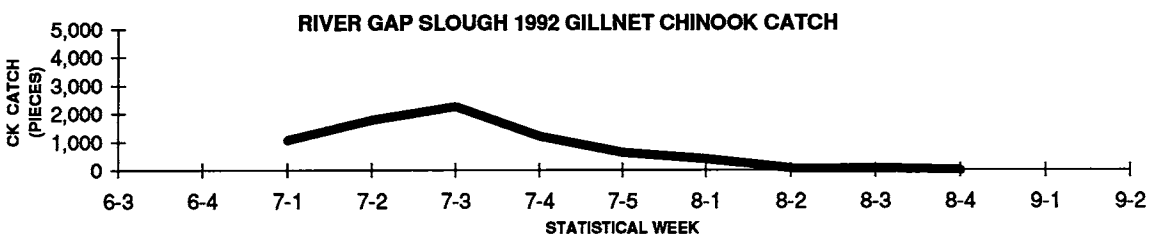


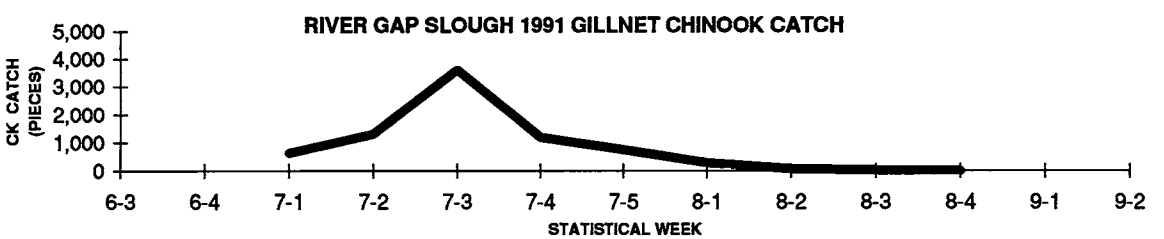
FIGURE F.3 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK CATCH, 1990 TO 1995.











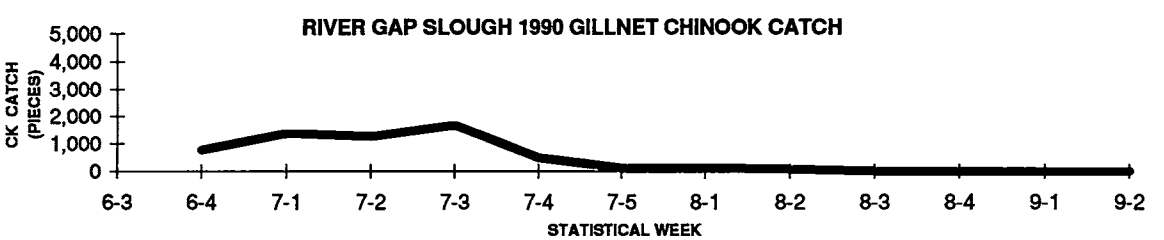
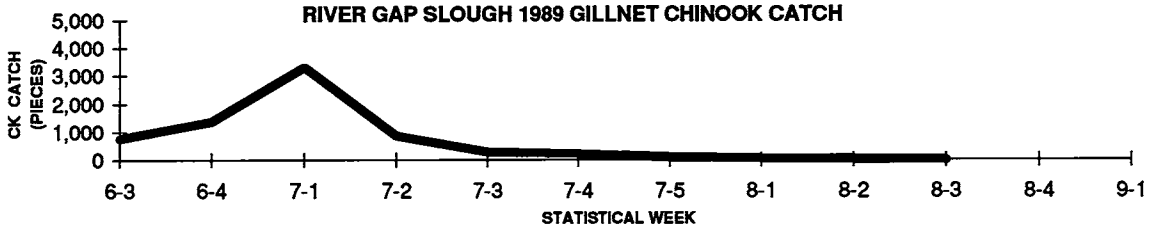
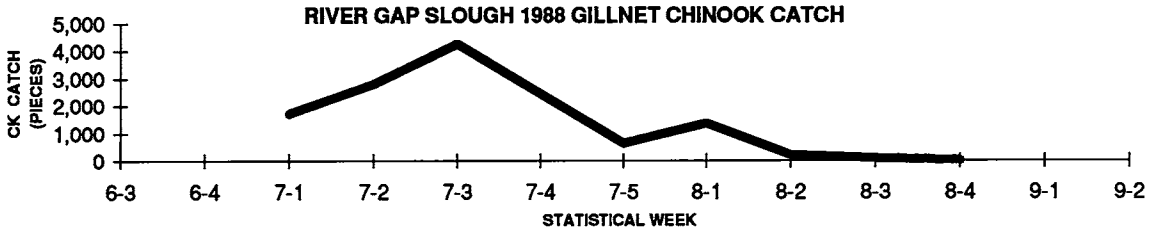
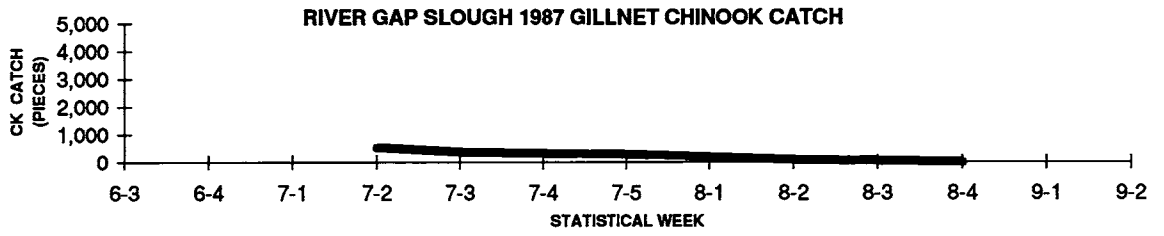
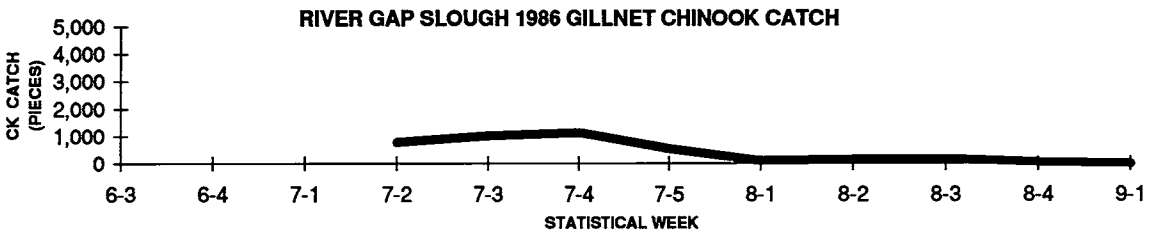


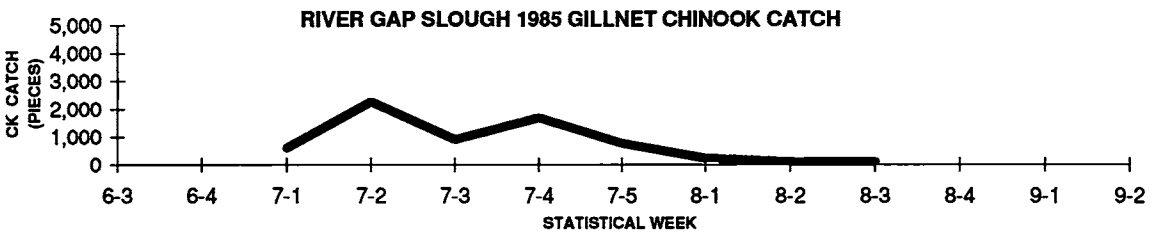
FIGURE F.4 CHARTS: RIVER GAP SLOUGH GILLNET CHINOOK CATCH, 1984 TO 1989.

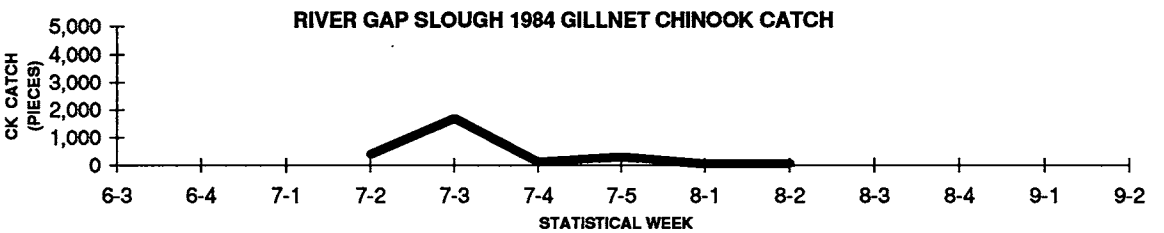












APPENDIX G. CODED WIRE TAG INFORMATION METHODOLOGY.

CODED WIRE TAG INFORMATION METHODOLOGY.

Kuhn et al. 1988 provide an introduction to the Mark Recovery Program (MRP) database and the available data fields. "Estimated" and "adjusted" CWT recovery data were used rather than "observed" data, which only represents actual pin recoveries.

Estimated Recovery.

An "estimated" recovery is the estimated number of tags of a particular code recovered within a stratum, which accounts for varied sampling rates by expansion of the adjusted number of recoveries by the ratio of catch to sample size. "Estimated" data is calculated by the following algorithm (Kuhn et al. 1988):

$$E = A\frac{C}{S}$$

where:

E = the estimated number of recoveries of a particular tag code within a recovery stratum.
A = the adjusted recoveries.
C = the catch for the stratum.
S = the sample size for the stratum.

Adjusted Recovery.

All fish with a CWT are externally marked, usually by an adipose fin clip at the time of tagging. Landed fish are sampled for the external mark and the heads from marked fish are taken. Subsequently the CWTs (or pins) are found and removed and the data inscribed on them are decoded. In a (usually) small proportion of cases, no data are recovered from a sampled head for the following reasons:

1. "No pin" The head contained no CWT because the CWT was lost after tagging but before sampling (tag loss).

   The external mark was natural and did not indicate the presence of a tag.

2. "Lost pin" A CWT was recovered but was accidentally lost before decoding.

   The pin was unreadable.

3. "No data" The fish had an external mark indicating the presence of a CWT but no effort was made to locate the pin.

The head was lost before the pin was extracted and decoded.
A CWT was recovered but one or more of the data fields on the tag was either incomplete or could not be read.

An "adjusted" recovery algorithm takes into account lost pin, no pin and no data recoveries.

Observed data can be "adjusted" using the following calculation (Kuhn et al, 1988):

$$A = O\left[1 + \frac{LP}{K} + \frac{ND(K+LP)}{K(K+LP+NP)}\right]$$

where:

A = "observed" recovery adjusted for non-tags.
O = "observed" recovery.
K = number of known tag codes recovered for a particular stratum.
LP = number of "lost pin" recoveries for a particular stratum.
ND = number of "no data" recoveries for a particular stratum.
NP = number of "no pin" recoveries for a particular stratum.

The minimum parameters (fields) which are required to define a commercial (troll and net) Time-Area stratum and retrieve information from the MRP-Reporter Program include recovery year, catch region, species and statistical week.

APPENDIX H. SKEENA CHINOOK ESTIMATED ADJUSTED CWT WEEKLY RECOVERIES FOR ALASKA COMMERCIAL GEAR, BC TROLL, BC NET, ALASKA TIDAL SPORT, BC TIDAL SPORT AND BC FRESHWATER SPORT SORTED BY BROOD YEAR.

TABLE H.1 CEDAR RIVER RECOVERIES, BROOD YEARS: 1981, 1982, 1984, 1988 TO 1991.

TABLE H.2 COPPER RIVER RECOVERIES, BROOD YEARS: 1980, 1981, 1983 AND 1984.

TABLE H.3 KITSUMKALUM RIVER RECOVERIES, BROOD YEARS: 1975 TO 1977, 1979 TO 81 AND 1983 TO 1992.

TABLE H.4 KISPIOX RIVER RECOVERIES, BROOD YEARS: 1980, 1984 AND 1987.

TABLE H.5 BULKLEY RIVER RECOVERIES, BROOD YEARS: 1985 TO 1992.

TABLE H.6 MORICE RIVER RECOVERIES, BROOD YEARS: 1978 AND 1979.

TABLE H.7 BABINE RIVER RECOVERIES, BROOD YEARS: 1975 TO 1977, 1979, 1984 TO 1992.

TABLE H.8 FULTON RIVER RECOVERIES, BROOD YEARS: 1975 AND 1978.

TABLE H.9 KITSUMKALUM CHINOOK CWT RECOVERIES BY STATISTICAL AREA FOR BROOD YEARS: 1975 TO 1977, 1979 TO 1981 AND 1983 TO 1992.

TABLE H.1 CEDAR RIVER CWT RECOVERIES.

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1981 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																										
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT																										
BC FRESHWATER SPORT					3																					100.0

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1982 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																										
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT																										
BC FRESHWATER SPORT		4				4																				100.0

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1984 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR	3																									18.8
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																						4				25.0
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT																										
BC FRESHWATER SPORT					9																					56.3

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1988 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																										
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT		5																								50.0
BC FRESHWATER SPORT						5																				50.0

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1989 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																										
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT																										
BC FRESHWATER SPORT										4																100.0

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1990 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																										
BC TROLL																										
BC NET																										
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																			6							100.0
BC TIDAL SPORT																										
BC FRESHWATER SPORT																										

CEDAR RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1991 BROOD YEAR.

	STATISTICAL WEEK																								% OF TOTAL
RECOVERY AREA/GEAR TYPE	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR													2													40.0
BC TROLL																										
BC NET									3																	60.0
	MONTH																									
	APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																										
WASHINTON TIDAL SPORT																										
BC TIDAL SPORT																										
BC FRESHWATER SPORT																										

TABLE H.2 COPPER RIVER CWT RECOVERIES.

COPPER RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1980 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR							5											100.0
BC TROLL																		
BC NET																		

COPPER RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1981 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																		
BC TROLL																		
BC NET																		
	MONTH																	
	JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																		
BC TIDAL SPORT																		
BC FRESHWATER SPORT							3											100.0

COPPER RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1983 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																		
BC TROLL																		
BC NET								5										100.0

COPPER RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1984 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR	2		5		6	5	6											14.7
BC TROLL					8													4.9
BC NET	1			6	29	19	22											47.2
	MONTH																	
	JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT		4				4												4.9
BC TIDAL SPORT		6				5												6.7
BC FRESHWATER SPORT		6				25					4							21.5

TABLE H.3 KITSUMKALUM RIVER CWT RECOVERIES.

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1975 BROOD YEAR.

	STATISTICAL WEEK																																									% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																																											
BC TROLL															5																													100.0
BC NET																																											

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1976 BROOD YEAR.

	STATISTICAL WEEK																																									% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR															6	3	5		7			2																					53.5
BC TROLL																		3																										7.0
BC NET																					3	7	7																					39.5

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1977 BROOD YEAR.

	STATISTICAL WEEK																																									% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																2	5			2	15	7																					33.3
BC TROLL														5							13								7														26.9
BC NET																						4	8		8																		21.5
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC		
ALASKA TIDAL SPORT																4																											4.3
BC TIDAL SPORT																					9				4																		14.0
BC FRESHWATER SPORT																																										

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1979 BROOD YEAR.

	STATISTICAL WEEK																																									% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR						2											11		4		8	4	4	4	3																		71.4
BC TROLL																																											
BC NET																							8																					14.3
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC		
ALASKA TIDAL SPORT												8																															14.3
BC TIDAL SPORT																																											
BC FRESHWATER SPORT																																											

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1980 BROOD YEAR.

	STATISTICAL WEEK																																									% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																			17	12	11		5																					30.0
BC TROLL																				8	13	14	5																					26.7
BC NET																				7	15	15	13	7																					38.0
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC		
ALASKA TIDAL SPORT												4																															2.7
BC TIDAL SPORT																																											
BC FRESHWATER SPORT																						4																						2.7

TABLE H.3 CONT. KITSUMKALUM RIVER CWT RECOVERIES.

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1981 BROOD YEAR.

	STATISTICAL WEEK																																							% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																	3		4	8	30	6																						41.8
BC TROLL																				8	14	20																						34.4
BC NET																					3	9	13																						20.5
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC	
ALASKA TIDAL SPORT																																											
BC TIDAL SPORT																					4																							3.3
BC FRESHWATER SPORT																																											

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1983 BROOD YEAR.

	STATISTICAL WEEK																																							% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																				11		3																						2	41.0
BC TROLL																																											
BC NET																					3	3	5	3		3																		43.6
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC	
ALASKA TIDAL SPORT																1																												2.6
BC TIDAL SPORT																					5																							12.8
BC FRESHWATER SPORT																																											

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1984 BROOD YEAR.

	STATISTICAL WEEK																																							% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR	1									2						4			4	28	20	5														2	3							26.3
BC TROLL																				9	13	4	4		3			3															13.7
BC NET																			4	10	10	26	29		9																			33.6
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC	
ALASKA TIDAL SPORT												6				4				12																							8.4
BC TIDAL SPORT																6				11																							6.5
BC FRESHWATER SPORT																				20					10																			11.5

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1985 BROOD YEAR.

	STATISTICAL WEEK																																							% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR										2						5			5	31	5	14						1					2										30.0
BC TROLL																			5	23	10		4																					19.4
BC NET																			2	5	10	6	5	9	2	2																	18.9
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC	
ALASKA TIDAL SPORT												1				5																											2.8
BC TIDAL SPORT																16				10																							12.0
BC FRESHWATER SPORT																				19					14				4															17.1

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1986 BROOD YEAR.

	STATISTICAL WEEK																																							% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																5				5	5																							42.9
BC TROLL																																											
BC NET																				3	4	3	2	3																				42.9
	MONTH																																										
	FEBRUARY			MARCH				APRIL				MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DEC	
ALASKA TIDAL SPORT																																											
BC TIDAL SPORT																																											
BC FRESHWATER SPORT																					5																							14.3

TABLE H.3 CONT. KITSUMKALUM RIVER CWT RECOVERIES.

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1987 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR	3	3		3		3	6	3	16	9								2	2	7	24																						27.4
BC TROLL																				13	56	3	11																				26.0
BC NET																		2		16	9	11	23	11	6																		26.4

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT				14	8							7.4
BC TIDAL SPORT				8	7	13						9.5
BC FRESHWATER SPORT						4						1.4

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1988 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR									3	3									2	3	15			2																			25.5
BC TROLL																					3	3	9	7																			20.0
BC NET																				6	13	13	8	2																			38.2

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT					3	4						6.4
BC TIDAL SPORT				5		6						10.0
BC FRESHWATER SPORT												

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1989 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																				6																					3			15.5
BC TROLL																					4		4																				13.8
BC NET																				4	5	10	7	5																			53.4

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT					4							6.9
BC TIDAL SPORT					2							3.4
BC FRESHWATER SPORT						4						6.9

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1990 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																	2			9	7																						38.0
BC TROLL																				4	4																						18.0
BC NET																						6	6	3																			30.0

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT					5							10.0
BC TIDAL SPORT					4							8.0
BC FRESHWATER SPORT												

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1991 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																				4	4																						17.8
BC TROLL																					7																						15.6
BC NET																			2	15	5	8				2																	66.7

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT												
BC TIDAL SPORT					2							22.2
BC FRESHWATER SPORT												

KITSUMKALUM RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1992 BROOD YEAR.

	STATISTICAL WEEK																																						% OF TOTAL
RECOVERY AREA/GEAR TYPE	22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																																										
BC TROLL																																										
BC NET																					2	2	3																				77.8

	MONTH										
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DEC	
ALASKA TIDAL SPORT												
BC TIDAL SPORT					2							22.2
BC FRESHWATER SPORT												

TABLE H.4 KISPIOX RIVER CWT RECOVERIES.

KISPIOX RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1980 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR						3	3			3								25.7
BC TROLL		4			8							14						74.3
BC NET																		

KISPIOX RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1984 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR			2															0.4
BC TROLL																		
BC NET	2		446		19	6	4	5										98.8
	MONTH																	
	JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																		
BC TIDAL SPORT							4											0.8
BC FRESHWATER SPORT																		

KISPIOX RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1987 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																		
BC TROLL																		
BC NET							3											100

TABLE H.5 BULKLEY RIVER CWT RECOVERIES.

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1985 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET														
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT	5													100.0
BC FRESHWATER SPORT														

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1986 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					1									2.2
BC TROLL							4							8.9
BC NET														
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT	5		3											17.8
BC FRESHWATER SPORT			4					23		5				71.1

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1987 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL							4							4.7
BC NET					12									14.1
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT					4									4.7
BC FRESHWATER SPORT					4			56		5				76.5

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1988 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET					3									6.7
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT								3						6.7
BC FRESHWATER SPORT								39						86.7

TABLE H.5 CONT. BULKLEY RIVER CWT RECOVERIES.

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1989 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET							4							36.4
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT														
BC FRESHWATER SPORT								7						63.6

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1990 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET	3			2			2	2						7.8
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT					4									3.4
BC TIDAL SPORT					7			4						9.5
BC FRESHWATER SPORT					15			77						79.3

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1991 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET	3			5	4	2								29.2
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT					2									4.2
BC FRESHWATER SPORT					7			25						66.7

BULKLEY RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1992 BROOD YEAR.

	STATISTICAL WEEK													% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR														
BC TROLL														
BC NET														
	MONTH													
	APRIL		MAY		JUNE			JULY		AUGUST				
ALASKA TIDAL SPORT														
BC TIDAL SPORT														
BC FRESHWATER SPORT								11						100.0

TABLE H.6 MORICE RIVER CWT RECOVERIES.

MORICE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1978 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR				2		7				9								52.9
BC TROLL			3							6								26.5
BC NET											4							11.8
	MONTH																	
	MAY				JUNE				JULY					AUGUST				
ALASKA TIDAL SPORT																		
BC TIDAL SPORT											3							8.8
BC FRESHWATER SPORT																		

MORICE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1979 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR								8										42.1
BC TROLL		2	3															26.3
BC NET																		
	MONTH																	
	MAY				JUNE				JULY					AUGUST				
ALASKA TIDAL SPORT																		
BC TIDAL SPORT											3							15.8
BC FRESHWATER SPORT											3							15.8

TABLE H.7 BABINE RIVER CWT RECOVERIES.

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1975 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					3																		100.0
BC TROLL																							
BC NET																							

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1976 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR				3	2	15	6			5													33.3
BC TROLL		3			4	6																	14.0
BC NET							8	6	8				19										44.1
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT	4						4																8.6
BC FRESHWATER SPORT																							

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1977 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					2	4	2	2	2														26.7
BC TROLL									4	18													48.9
BC NET							4		6	1													24.4

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1979 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR	2	2				12	13	20	25	7	4												37.3
BC TROLL					18	9	22								6								24.1
BC NET								53	12	1	17	3											37.7
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT					2																		0.9
BC FRESHWATER SPORT																							

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1984 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					3	5	3	14															44.6
BC TROLL					5	4	3		4			3											33.9
BC NET							3			3	4	2											21.4

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1985 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					11	12	12	9															28.2
BC TROLL					5	9	13	7	14	10													37.2
BC NET						4	9	9	14	5	6	2											31.4
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT																							
BC FRESHWATER SPORT					5																		3.2

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1986 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR			3	2	82	78	47	37										2			1	1	28.1
BC TROLL					28	52	73	40	48	41	3	13		3									33.4
BC NET					3	10	45	77	94	49	22	4	1										33.9
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT	1				7																		0.9
BC TIDAL SPORT	4		7		9																		2.2
BC FRESHWATER SPORT					9															5			1.6

TABLE H.7 CONT. BABINE RIVER CWT RECOVERIES.

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1987 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR			7		11	25				3			3										15.8
BC TROLL					3	23	20	43	21	23	6	6	3										47.7
BC NET						8	10	25	21	32	7	1	1										33.9
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT					3																		1.0
BC FRESHWATER SPORT							5																1.6

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1988 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR						15																	3.8
BC TROLL					5	48	24	37	49	32	3		5										50.8
BC NET					3		7	52	58	41	6	2											42.3
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT					9																		2.3
BC FRESHWATER SPORT					4																		1.0

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1989 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR						6		4	4			4		3									15.1
BC TROLL					4			4	18	17	11	12	5										51.1
BC NET							3	6	9	7	12	3											28.8
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT					3		4																5.0
BC FRESHWATER SPORT																							

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1990 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					4	11			8														22.5
BC TROLL					4	4	39		6		3												54.9
BC NET							8	3	6	2													18.6
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT					4																		3.9
BC TIDAL SPORT																							
BC FRESHWATER SPORT																							

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1991 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR						4			2														7.4
BC TROLL						4		5	17			3	4										40.7
BC NET						2	7	14	7	1	4												43.2
	MONTH																						
	MAY		JUNE		JULY		AUGUST			SEPTEMBER				OCTOBER			NOVEMBER			DECEMBER			
ALASKA TIDAL SPORT																							
BC TIDAL SPORT					4																		4.9
BC FRESHWATER SPORT							3																3.7

BABINE RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1992 BROOD YEAR.

	STATISTICAL WEEK																					% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																							
BC TROLL																							
BC NET						2	6		1			1											100.0

TABLE H.8 FULTON RIVER CWT RECOVERIES.

FULTON RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1975 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR																		
BC TROLL										2								100.0
BC NET																		

FULTON RIVER CHINOOK, ESTIMATED ADJUSTED CWT RECOVERIES, 1978 BROOD YEAR.

	STATISTICAL WEEK																% OF TOTAL
RECOVERY AREA/GEAR TYPE	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	(ALL AREAS)
ALASKA/ALL COMMERCIAL GEAR					8	14	7	22	2	4								34.5
BC TROLL		3			4	15	11		6		6							27.3
BC NET							4	14	22	6	14							36.4
	MONTH																	
	JUNE				JULY					AUGUST				SEPTEMBER				
ALASKA TIDAL SPORT																		
BC TIDAL SPORT							3											1.8
BC FRESHWATER SPORT																		

TABLE H.9 KITSUMKALUM CHINOOK CWT RECOVERIES BY STATISTICAL AREA FOR BROOD YEARS: 1975 TO 1977, 1979 TO 1981 AND 1983 TO 1992.

BROOD YEAR	REGION/ GEAR	STAT AREA	AGE CLASS	STATISTICAL WEEK 22	23	24	31	32	33	34	41	42	43	44	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	121	122
1975	NTR	3	5															5																												
1976	ANWTR	A113	6																			2																								
1976	ANWTR	A181	4															3																												
1976	ANWTR	ANW	4																	3																										
1976	ANWTR	ANW	5															3	3																												
1976	ANWTR	ANW	6																	2		5			2																				
1976	NN	4	3																						7																				
1976	NN	4	5																					3		3																			
1976	NN	4	6																							4																			
1976	NTR	02W	5																		3																								
1977	A104S	A104	6																					3																					
1977	ANWTR	A113	5																			2																								
1977	ANWTR	A113	6																	3				4	4																				
1977	ANWTR	A116	5																2																											
1977	ANWTR	A154	6																					4																					
1977	ASETR	A102	6																					3																					
1977	ASWTR	ASW	6																	2					3																				
1977	NN	3	3																								7																	
1977	NN	3	5																								1																	
1977	NN	4	4																						4																				
1977	NN	4	6																							8																			
1977	NTR	1	5																					4																					
1977	NTR	3	6																					9								7												
1977	SWTR	23	5														5																												
1979	A104S	A104	4																								3																	
1979	ANETR	A109	5					2																																				
1979	ANWTR	A113	5																	4		4			4	4	4																	
1979	ANWTR	A113	6																	3																									
1979	ANWTR	A116	4																					4																					
1979	ANWTR	ANW	6																	3																									
1979	ASWTR	A103	6																					4																					
1979	NN	4	3																							4																		
1979	NN	4	6																							4																		
1980	ANWTR	A113	4																			12	4																					
1980	ANWTR	A113	5																				11			5																		
1980	ANWTR	ANW	6																			5																						
1980	ASWTR	A104	5																				8																					
1980	CN	6	6																								2																	
1980	NN	3	3																							8																		
1980	NN	3	5																				3																					
1980	NN	4	3																								5																	
1980	NN	4	4																					10		5																		
1980	NN	4	5																				3	5	10																			
1980	NN	4	6																						5																			
1980	NTR	1	4																						6																			
1980	NTR	1	5																					7																				
1980	NTR	3	4																				4	6																				
1980	NTR	3	6																				4		3																			
1980	NTR	68	6																							5																		
1980	NTR	02E	5																						5																			
1981	ANWTR	A113	4																					11																				
1981	ANWTR	A113	5																					10																				
1981	ANWTR	A113	6																						3																			
1981	ANWTR	A154	4																					5																				
1981	ANWTR	A157	5																				5																					
1981	ANWTR	ANW	4																	3																									
1981	ANWTR	ANW	6																				3		3																			
1981	ASWTR	A104	6																			4		4																				
1981	NN	1	5																							4																		
1981	NN	3	5																						5																			
1981	NN	3	6																						4																			
1981	NN	4	3																							5																		
1981	NN	4	5																							4																		
1981	NN	4	6																					3																				
1981	NTR	1	4																				4																					
1981	NTR	1	5																					3	3																			
1981	NTR	1	6																						5																			
1981	NTR	3	5																				4	6	3																			
1981	NTR	3	6																					5	5																			
1981	NTR	02W	6																						5																			
1983	ANWTR	A113	4																																									2
1983	ANWTR	A113	5																				5																					
1983	ANWTR	A114	6																				3																					
1983	ASWTR	A103	6																				3																					
1983	ASWTR	A104	5																						3																			
1983	NN	3	2																									3															
1983	NN	3	6																						3																			
1983	NN	4	5																				3		5	3																	

TABLE H.9 CONT. KITSUMKALUM CHINOOK CWT RECOVERIES BY STATISTICAL AREA FOR BROOD YEARS: 1975 TO 1977, 1979 TO 1981 AND 1983 TO 1992.

| BROOD YEAR | REGION/ GEAR | STAT AREA | AGE CLASS | STATISTICAL WEEK | | |

TABLE H.9 CONT. KITSUMKALUM CHINOOK CWT RECOVERIES BY STATISTICAL AREA FOR BROOD YEARS: 1975 TO 1977, 1979 TO 1981 AND 1983 TO 1992.

| BROOD | REGION/ | STAT | AGE | STATISTICAL WEEK | | |

TABLE H.9 CONT. KITSUMKALUM CHINOOK CWT RECOVERIES BY STATISTICAL AREA FOR BROOD YEARS: 1975 TO 1977, 1979 TO 1981 AND 1983 TO 1992.

BROOD YEAR	REGION/ GEAR	STAT AREA	AGE CLASS	MONTH				
				MAY	JUNE	JULY	AUGUST	SEPTEMBER
1977	ANESP	A110	4		4			
1977	GSPTN	14	2				4	
1977	NSPT	4	6			9		
1979	ANWSP	A113	6	4				
1979	ASESP	A101	3	4				
1980	ASESP	A101	3	4				
1980	FWSP	0FW	6			4		
1981	NSPT	4	6			4		
1983	ANWSP	A113	5		1			
1983	NSPT	4	5			5		
1984	ANWSP	A113	5	6				
1984	ASESP	A101	5			12		
1984	ASWSP	A104	5		4			
1984	FWSP	0FW	3				4	
1984	FWSP	0FW	4			5		
1984	FWSP	0FW	5			6	6	
1984	FWSP	0FW	6			9		
1984	NSPT	1	5		6	6		
1984	NSPT	4	5			6		
1985	ANWSP	A113	5		1			
1985	ANWSP	A113	6	1	4			
1985	FWSP	0FW	5			9	9	4
1985	FWSP	0FW	6			10	5	
1985	NSPT	1	5			5		
1985	NSPT	1	6		12			
1985	NSPT	3	6		4			
1985	NSPT	4	6			5		
1986	FWSP	0FW	5			5		
1987	ANWSP	A113	5	10	4			
1987	ASWSP	A103	5	4	4			
1987	FWSP	0FW	5			4		
1987	NSPT	1	5	8	7			
1987	NSPT	4	5			13		
1988	ASESP	A102	5		3			
1988	ASWSP	A103	5			4		
1988	NSPT	1	5	5		3		
1988	NSPT	4	6			3		
1989	ANWSP	A113	6		4			
1989	FWSP	0FW	6			4		
1989	NSPT	02W	5		2			
1990	ASWSP	A104	5		5			
1990	NSPT	1	4		2			
1990	NSPT	1	5		2			
1992	NSPT	3	3		2			

APPENDIX I. ESTIMATED ADJUSTED CHINOOK CWT RECOVERIES FOR ALL BROOD YEARS COMBINED.

TABLE I.1 FULTON RIVER STOCK.

TABLE I.2 BABINE RIVER STOCK.

TABLE I.3 BULKLEY RIVER STOCK.

TABLE I.4 KITSUMKALUM RIVER STOCK.

TABLE I.1 ESTIMATED ADJUSTED CWT RECOVERIES
FULTON CHINOOK STOCK - ALL BROOD YEARS
(1975, 1978)

CATCH	STAT		AGE		STATISTICAL WEEK																			
REGION	AREA	GEAR	CLASS	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104
ALASKA	TOTAL	NET	3																					
ALASKA	TOTAL	NET	4																					
ALASKA	TOTAL	NET	5					2																
ALASKA	TOTAL	NET	6																					
ALASKA	TOTAL	TROLL	3																					
ALASKA	TOTAL	TROLL	4					2			5	2												
ALASKA	TOTAL	TROLL	5						14	7	13		4											
ALASKA	TOTAL	TROLL	6					4			4													
BC	TOTAL	NET	3							4	3			3										
BC	TOTAL	NET	4								11	17	3	5										
BC	TOTAL	NET	5									5	3	6										
BC	TOTAL	NET	6																					
BC	TOTAL	TROLL	3										2											
BC	TOTAL	TROLL	4		3			4	9					6										
BC	TOTAL	TROLL	5							5														
BC	TOTAL	TROLL	6						6	6		6												

CATCH	STAT		AGE	MONTH					
REGION	AREA	GEAR	CLASS	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
BC	TOTAL	MARINE SPORT	3						
BC	TOTAL	MARINE SPORT	4						
BC	TOTAL	MARINE SPORT	5			3			
BC	TOTAL	MARINE SPORT	6						

TABLE I.2 ESTIMATED ADJUSTED CWT RECOVERIES
BABINE CHINOOK STOCK - ALL BROOD YEARS
(1975, 1976, 1977, 1979, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992)

CATCH		AGE	STATISTICAL WEEK																				
REGION	GEAR	CLASS	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105
ALASKA	NET	3								3														
ALASKA	NET	4									2			4										
ALASKA	NET	5										3												
ALASKA	NET	6										5												
ALASKA	TROLL	3																						
ALASKA	TROLL	4	2		7	5	31	63	59	43	10	7	4										1	1
ALASKA	TROLL	5		2	3		73	89	21	22	25				3	3				2				
ALASKA	TROLL	6					14	35	3	18	4													
BC	NET	3						4	16	4	17	6	6	1	19									
BC	NET	4					6	2	28	62	59	43	28	8										
BC	NET	5						12	43	121	113	67	23	6	1									
BC	NET	6						8	23	58	45	26	21	3	1									
BC	NET	7									2													
BC	TROLL	3																						
BC	TROLL	4		3			13	23	38	24	36	34	6	3	9		6							
BC	TROLL	5					49	72	109	60	103	74	17	30	8	3								
BC	TROLL	6					14	64	47	52	42	33	3											
BC	TROLL	7												4										

CATCH	STAT		AGE	MONTH							
REGION	AREA	GEAR	CLASS	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
ALASKA	TOTAL	MARINE SPORT	3								
ALASKA	TOTAL	MARINE SPORT	4								
ALASKA	TOTAL	MARINE SPORT	5	1		4					
ALASKA	TOTAL	MARINE SPORT	6			7					
BC	TOTAL	MARINE SPORT	3			2	4				
BC	TOTAL	MARINE SPORT	4	4		4					
BC	TOTAL	MARINE SPORT	5		4	14	4				
BC	TOTAL	MARINE SPORT	6	4	3	10					
BC	TOTAL	FRESHWATER SPORT	3								
BC	TOTAL	FRESHWATER SPORT	4			4	3				5
BC	TOTAL	FRESHWATER SPORT	5			10					
BC	TOTAL	FRESHWATER SPORT	6			4	5				

TABLE I.3 ESTIMATED ADJUSTED CWT RECOVERIES
BULKLEY CHINOOK STOCK - ALL BROOD YEARS
(1986, 1987, 1988, 1989, 1990, 1991)

CATCH	STAT		AGE	STATISTICAL WEEK																			
REGION	AREA	GEAR	CLASS	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104
ALASKA	TOTAL	NET	3					1																
ALASKA	TOTAL	NET	4																					
ALASKA	TOTAL	NET	5																					
ALASKA	TOTAL	NET	6																					
ALASKA	TOTAL	TROLL	3																					
ALASKA	TOTAL	TROLL	4																					
ALASKA	TOTAL	TROLL	5																					
ALASKA	TOTAL	TROLL	6																					
BC	TOTAL	NET	3						2															
BC	TOTAL	NET	4	3			5	16			2													
BC	TOTAL	NET	5	3			2	3		6														
BC	TOTAL	NET	6																					
BC	TOTAL	TROLL	3																					
BC	TOTAL	TROLL	4							8														
BC	TOTAL	TROLL	5																					
BC	TOTAL	TROLL	6																					

CATCH	STAT		AGE	MONTH						
REGION	AREA	GEAR	CLASS	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
ALASKA	TOTAL	MARINE SPORT	3							
ALASKA	TOTAL	MARINE SPORT	4			4				
ALASKA	TOTAL	MARINE SPORT	5							
ALASKA	TOTAL	MARINE SPORT	6							
BC	TOTAL	MARINE SPORT	3							
BC	TOTAL	MARINE SPORT	4			4				
BC	TOTAL	MARINE SPORT	5	10	3	5	7			
BC	TOTAL	MARINE SPORT	6			4				
BC	TOTAL	FRESHWATER SPORT	3				45	5		
BC	TOTAL	FRESHWATER SPORT	4			7	57			
BC	TOTAL	FRESHWATER SPORT	5			15	126	5		
BC	TOTAL	FRESHWATER SPORT	6		4	4	10			

TABLE I.4 ESTIMATED ADJUSTED CWT RECOVERIES
KITSUMKALUM CHINOOK STOCK - ALL BROOD YEARS
(1975, 1976, 1977, 1979, 1980, 1981, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992)

| CATCH | STAT | | AGE | STATISTICAL WEEK | | |

APPENDIX J. ESTIMATED MEAN BROOD YEAR SURVIVAL OF SKEENA CHINOOK STOCK BY NUMBER TAGGED.

DESCRIPTION OF TYPE 1, TYPE 2 AND TYPE 3 STOCK GROUPS.

TABLE J.1 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KITSUMKALUM RIVER (SPR FRY) CHINOOK STOCK (TERRACE CDP) BY NUMBER TAGGED.

TABLE J.2 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KITSUMKALUM (SMOLT AND FRY) CHINOOK STOCK (TERRACE CDP AND KALUM RELEASES) AND BABINE RIVER LOWER (YEARLINGS) CHINOOK STOCK (FORT BABINE CDP) BY NUMBER TAGGED.

TABLE J.3 ESTIMATED MEAN BROOD YEAR SURVIVAL OF BABINE RIVER (YEARLINGS) CHINOOK STOCK (FORT BABINE CDP) AND CEDAR+CLEAR CREEK (SPR FRY) CHINOOK STOCK (KALUM) BY NUMBER TAGGED.

TABLE J.4 ESTIMATED MEAN BROOD YEAR SURVIVAL OF CEDAR RIVER/SKEENA (FALL FRY AND YEARLINGS) CHINOOK STOCK (TERRACE CDP) BY NUMBER TAGGED.

TABLE J.5 ESTIMATED MEAN BROOD YEAR SURVIVAL OF ERLANDSEN CREEK (FALL FRY AND YEARLINGS) AND COPPER RIVER (YEARLINGS) CHINOOK STOCK (TERRACE CDP) BY NUMBER TAGGED.

TABLE J.6 ESTIMATED MEAN BROOD YEAR SURVIVAL OF COPPER RIVER (FALL FRY AND SPR FRY) CHINOOK STOCK (TERRACE CDP) AND KISPIOX RIVER (SMOLTS) CHINOOK STOCK (KISPIOX RIVER CDP) BY NUMBER TAGGED.

TABLE J.7 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KISPIOX RIVER (FALL FRY) AND KISPIOX RIVER TRIBUTARIES (SPR FRY) CHINOOK STOCK (KISPIOX RIVER CDP) BY NUMBER TAGGED.

TABLE J.8 ESTIMATED MEAN BROOD YEAR SURVIVAL OF BULKLEY RIVER UPPER (YEARLINGS) CHINOOK STOCK (TOBOGGAN CREEK CDP) AND FULTON RIVER (SPR FRY) CHINOOK STOCK (FULTON RIVER) BY NUMBER TAGGED.

DESCRIPTION OF TYPE 1, TYPE 2 AND TYPE 3 STOCK GROUPS.

Chinook/Coho

1. Individual SURVIVAL RATES for release groups. Stocks were grouped as Type 1, 2, or 3 depending on the level of data available:

   - Type 1 stocks are marked (CWT) and have both catch and escapement information. Escapement data includes both total estimates of spawners and mark rate data. Where possible, native and ESSR catches were also assessed. Some of these sites were designated as "indicator" sites for their production region. In some instances, the indicator sites were adjusted to account for unique fishery patterns before they were used as indicator sites. Specific methods are in Carol and Sue's working binders. Enhanced escapements were checked by calculating exploitation rates and checking these for plausibility . If they seemed unlikely, stocks were reworked as Type 2 sites.

   - Type 2 stocks are marked (CWT) but have poorer quality escapement information. An estimate of total recoveries (and survival) was made by dividing the marked catch of the Type 2 site by the exploitation rate for the indicator site for that production area. This method provided an estimate of enhanced contribution to the escapement for the stock. This number was then compared to the escapement indicated by the BC16's (SEDS database) for that recovery year. This provided us with a rough estimate of how well the exploitation rate indicator "suited" the stock in question. Where the calculated enhanced escapement seemed unreasonable we tried to find a better indicator site to use. Sometimes however, the calculated enhanced escapement was left to exceed the SEDS escapement as the SEDS escapement was known to be inaccurate or too low based on discussions with hatchery managers (see binder section, enhanced contribution)

   - Type 3 stocks are unmarked. They use the indicator site for that production area for survival rate; indicator site use for other biostandard parameters is described in the following sections.

TABLE J.1 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KITSUMKALUM CHINOOK STOCK (TERRACE CDP FRY RELEASE) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement from PCAD Database)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: KITSUMKALUM R STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST VAN ISLAND COMM	WEST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT HATCH	ESCAPEMENT NAT'L	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1984																			
		2	0	0	4	4	0	0	0	0	7	0	0	0	0	0	0	7	0.0
Tagged:	207863	3	0	0	14	0	0	0	0	2	16	4	0	0	0	12	12	32	0.0
Total:	210309	4	0	0	21	0	0	0	0	23	44	5	0	0	0	20	20	69	0.0
		5	0	0	114	23	0	0	0	113	250	24	0	0	0	366	366	640	0.3
		6	0	0	22	6	0	0	0	26	54	8	0	0	1	181	182	244	0.1
		Tot	0	0	174	33	0	0	0	164	371	39	0	0	1	579	580	991	0.5
Brood Year 1985																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	174255	3	0	0	11	0	0	0	0	2	13	0	0	0	0	4	4	17	0.0
Total:	181939	4	0	0	14	0	0	0	0	11	24	0	0	0	0	31	31	55	0.0
		5	0	0	40	4	0	0	0	39	84	18	0	0	1	151	152	254	0.1
		6	0	0	17	18	0	0	0	19	54	13	0	0	0	34	34	101	0.1
		Tot	0	0	83	22	0	0	0	71	176	31	0	0	1	219	220	427	0.2
Brood Year 1986																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	130196	3	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0.0
Total:	138588	4	0	0	2	0	0	0	0	5	7	0	0	0	0	4	4	11	0.0
		5	0	0	11	0	0	0	0	10	21	4	0	0	0	18	18	43	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	17	0.0
		Tot	0	0	15	0	0	0	0	15	30	4	0	0	0	40	40	74	0.1
Brood Year 1988																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	184771	3	0	0	8	0	0	0	0	0	8	0	0	0	1	0	1	9	0.0
Total:	199487	4	0	0	10	0	0	0	0	4	15	0	0	0	0	0	0	15	0.0
		5	0	0	27	8	0	0	0	23	57	0	0	0	0	67	67	124	0.1
		6	0	0	17	3	0	0	0	7	27	0	0	0	0	0	0	27	0.0
		Tot	0	0	62	11	0	0	0	34	106	0	0	0	1	67	69	175	0.1
Brood Year 1989																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	200655	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	222529	4	0	0	12	0	0	0	0	3	15	0	0	0	0	0	0	15	0.0
		5	0	0	7	2	0	0	0	0	9	0	0	0	0	0	0	9	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	18	2	0	0	0	3	24	0	0	0	0	0	0	24	0.0
Brood Year 1990																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	208512	3	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	3	0.0
Total:	252869	4	0	0	5	2	0	0	0	7	14	0	0	0	0	0	0	14	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	9	2	0	0	0	7	18	0	0	0	0	0	0	18	0.0
Brood Year 1991																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	208943	3	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0.0
Total:	225000	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	0.0

TABLE J.2 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KITSUMKALUM (SMOLT AND FRY) CHINOOK STOCK (TERRACE CDP AND KALUM RELEASES) AND BABINE RIVER LOWER (YEARLINGS) CHINOOK STOCK (FORT BABINE CDP) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement from PCAD Database)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: KITSUMKALUM R STAGE: SMOLTS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT HATCH	ESCAPEMENT NAT'L	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1983																			
		2	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	3	0.0
Tagged:	30716	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	30716	4	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	0.0
		5	0	0	12	5	0	0	0	9	25	0	0	0	0	54	54	79	0.3
		6	0	0	3	0	0	0	0	6	9	0	0	0	0	26	26	36	0.1
		Tot	0	0	18	5	0	0	0	18	40	0	0	0	0	80	80	120	0.4
Brood Year 1987																			
		2	0	0	8	0	0	0	0	0	8	0	0	0	0	0	0	8	0.0
Tagged:	160273	3	0	0	25	0	0	0	0	5	30	0	0	0	0	9	9	39	0.0
Total:	199770	4	0	0	43	0	0	0	0	32	75	0	0	0	0	37	37	113	0.1
		5	3	0	101	35	0	0	0	115	254	8	0	0	3	373	377	638	0.4
		6	0	0	25	3	0	0	0	10	38	0	0	0	0	59	59	98	0.1
		Tot	3	0	203	38	0	0	0	162	405	8	0	0	4	478	482	896	0.6

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement from PCAD Database)

1994 catch preliminary; no 1994 escapement

KALUM CHINOOK RUN: SUMMER STOCK: KITSUMKALUM R STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT HATCH	ESCAPEMENT NAT'L	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1980																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	44273	3	0	0	13	0	0	0	0	4	17	0	0	0	0	0	0	17	0.0
Total:	63115	4	0	0	31	0	0	0	2	17	50	0	0	0	0	0	0	50	0.1
		5	0	0	32	0	0	0	0	24	56	0	0	0	0	39	39	95	0.2
		6	0	0	18	0	0	0	0	5	24	4	0	0	0	39	39	67	0.2
		Tot	0	0	94	0	0	0	2	49	146	4	0	0	0	78	78	229	0.5
Brood Year 1981																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	52693	3	0	0	5	0	0	0	2	0	8	0	0	0	0	0	0	8	0.0
Total:	100650	4	0	0	4	0	0	0	2	19	25	0	0	0	0	9	9	34	0.1
		5	0	0	30	0	0	0	0	15	46	0	0	0	0	85	85	131	0.2
		6	0	0	25	4	0	0	0	16	45	0	0	0	0	91	91	136	0.3
		Tot	0	0	65	4	0	0	5	51	124	0	0	0	0	185	185	309	0.6

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

FORT BABINE CDP CHINOOK RUN: SUMMER STOCK: BABINE R, LOWER STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1989																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	25307	3	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	3	0.0
Total:	25307	4	0	0	42	0	0	0	0	5	47	0	0	0	0	229	229	276	1.1
		5	0	0	54	7	0	0	0	5	66	0	0	0	0	0	0	66	0.3
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	98	7	0	0	0	11	116	0	0	0	0	229	229	345	1.4
Brood Year 1990																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	31572	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	38912	4	0	0	12	0	0	0	0	0	12	0	0	0	0	0	0	12	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	12	0	0	0	0	0	12	0	0	0	0	0	0	12	0.0
Brood Year 1991																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	52594	3	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	4	0.0
Total:	81931	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	4	0.0

TABLE J.3 ESTIMATED MEAN BROOD YEAR SURVIVAL OF BABINE RIVER (YEARLINGS) CHINOOK STOCK (FORT BABINE CDP) AND CEDAR+CLEAR CREEK (SPR FRY) CHINOOK STOCK (KALUM) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

FORT BABINE CDP CHINOOK RUN: SUMMER STOCK: BABINE RIVER STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1984																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	21992	3	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	0.0
Total:	21992	4	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	0.0
		5	0	0	27	0	0	0	0	9	36	0	0	0	109	109	145	0.7
		6	0	0	5	0	0	0	0	17	22	0	0	0	48	48	69	0.3
		Tot	0	0	32	0	0	0	0	26	57	0	0	0	173	173	231	1.0
Brood Year 1985																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	31388	3	0	0	9	0	0	0	0	0	9	0	0	0	16	16	25	0.1
Total:	41653	4	0	0	0	0	0	0	0	3	3	0	0	0	39	39	42	0.1
		5	0	0	61	0	0	0	3	36	100	4	0	0	197	197	301	1.0
		6	0	0	35	0	0	0	0	6	41	0	0	0	63	63	105	0.3
		Tot	0	0	105	0	0	0	3	45	154	4	0	0	315	315	473	1.5
Brood Year 1986																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	78744	3	0	0	5	0	0	0	0	0	5	0	0	0	113	113	118	0.1
Total:	78744	4	0	0	76	0	0	0	0	129	204	4	0	0	372	372	580	0.7
		5	0	0	252	8	0	0	0	105	365	4	0	0	1977	1977	2346	3.0
		6	0	0	213	11	0	0	0	17	240	4	0	0	1062	1062	1306	1.7
		Tot	0	0	545	18	0	0	0	251	814	13	0	0	3523	3523	4350	5.5
Brood Year 1987																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	0.0
Tagged:	24132	3	0	0	0	0	0	0	0	0	0	0	0	0	22	22	22	0.1
Total:	24132	4	0	0	26	0	0	0	0	21	47	0	0	0	58	58	104	0.4
		5	4	0	126	0	0	0	0	8	138	0	0	0	419	419	558	2.3
		6	0	0	88	3	0	0	0	20	110	5	0	0	70	70	185	0.8
		Tot	4	0	240	3	0	0	0	48	296	5	0	0	577	577	877	3.6
Brood Year 1988																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	72640	3	0	0	9	0	0	0	0	0	9	0	0	0	77	77	86	0.1
Total:	72640	4	0	0	94	0	0	0	0	2	96	4	0	0	86	86	186	0.3
		5	0	0	188	6	0	0	0	7	202	0	0	0	696	696	898	1.2
		6	0	0	67	3	0	0	0	5	75	0	0	0	0	0	75	0.1
		Tot	0	0	358	9	0	0	0	14	381	4	0	0	860	860	1245	1.7

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

KALUM CHINOOK RUN: SUMMER STOCK: CEDAR+CLEAR CREEK STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1981																		
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	35141	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	56800	4	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4	0.0
		5	0	0	0	0	0	0	0	4	4	0	0	0	4	4	9	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0.0
		Tot	0	0	0	0	0	0	0	4	4	3	0	0	9	9	17	0.0
Brood Year 1982																		
		2	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0.0
Tagged:	57161	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	77255	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0.0
		5	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	0	0	0	0	2	0	2	9	0	0	0	0	11	0.0

TABLE J.4 ESTIMATED MEAN BROOD YEAR SURVIVAL OF CEDAR RIVER/SKEENA (FALL FRY AND YEARLINGS) CHINOOK STOCK (TERRACE CDP) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: CEDAR RIVER/SKEENA STAGE: FALL FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1984																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	29735	3	0	0	0	0	0	0	0	4	4	0	0	0	0	4	0.0
Total:	33255	4	0	0	0	0	0	0	0	0	0	9	0	1	1	9	0.0
		5	0	0	0	0	0	0	0	3	3	0	0	8	8	11	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0.0
		Tot	0	0	0	0	0	0	0	7	7	9	0	12	12	28	0.1
Brood Year 1985																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	54542	3	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0.0
Total:	56289	4	0	0	0	0	0	0	0	5	5	0	0	0	0	5	0.0
		5	0	0	0	0	0	0	0	4	4	15	0	0	0	19	0.0
		6	0	0	0	0	0	0	0	0	0	17	0	0	0	17	0.0
		Tot	0	0	0	0	0	0	0	9	9	36	0	0	0	45	0.1
Brood Year 1986																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	32451	3	0	0	2	0	0	0	0	0	2	6	0	1	1	9	0.0
Total:	33011	4	0	0	0	0	0	0	0	9	9	4	0	3	3	16	0.0
		5	0	0	0	2	0	0	0	0	2	24	0	15	15	42	0.1
		6	0	0	0	0	0	0	0	6	6	21	0	8	8	35	0.1
		Tot	0	0	2	2	0	0	0	14	18	56	0	27	27	101	0.3
Brood Year 1987																	
		2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	71447	3	0	0	3	0	0	0	0	0	3	0	0	3	3	6	0.0
Total:	96362	4	0	0	0	0	0	0	0	0	0	0	0	9	9	9	0.0
		5	0	0	5	0	0	0	0	29	34	3	0	62	62	100	0.1
		6	0	0	0	4	0	0	0	3	7	0	0	10	10	17	0.0
		Tot	0	0	7	4	0	0	0	32	44	3	0	86	86	133	0.2
Brood Year 1988																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	39739	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Total:	39739	4	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
		5	0	0	0	0	0	0	0	0	0	5	0	5	5	9	0.0
		6	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0.0
		Tot	0	0	0	5	0	0	0	0	5	5	0	6	6	15	0.0
Brood Year 1989																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	56802	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	56992	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0.0
Brood Year 1990																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	49876	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	50000	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	0	0	n	n	n	n	^	-	-	-	-		

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: CEDAR RIVER/SKEENA STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1988																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	57867	3	0	0	4	0	0	0	0	0	4	0	0	3	3	7	0.0
Total:	58449	4	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0.0
		5	0	0	3	5	0	0	0	3	10	5	0	27	27	42	0.1
		6	0	0	0	0	0	0	0	3	3	0	0	0	0	3	0.0
		Tot	0	0	7	5	0	0	0	5	17	5	0	34	34	55	0.1
Brood Year 1990																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	47093	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	50000	4	0	6	0	0	0	0	0	0	6	0	0	0	0	6	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	6	0	0	0	0	0	0	6	0	0	0	0	6	0.0
Brood Year 1991																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	50695	3	0	0	0	0	0	0	0	2	2	0	0	0	0	2	0.0
Total:	55947	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	0	0	0	0	0	2	2	0	0	0	0	2	0.0

TABLE J.5 ESTIMATED MEAN BROOD YEAR SURVIVAL OF ERLANDSEN CREEK (FALL FRY AND YEARLINGS) AND COPPER RIVER (YEARLINGS) CHINOOK STOCK (TERRACE CDP) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: ERLANDSEN CREEK STAGE: FALL FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1986																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	21065	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Total:	25425	4	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2	3	0.0
		5	0	0	0	0	0	0	0	3	3	0	0	0	0	9	9	12	0.1
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	0.0
		Tot	0	0	0	0	0	0	0	4	4	0	0	0	0	17	17	21	0.1

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: ERLANDSEN CREEK STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1985																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	16324	3	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	3	0.0
Total:	19798	4	0	0	0	0	0	0	0	0	0	6	0	0	0	1	1	6	0.0
		5	0	0	0	0	0	0	0	2	2	0	0	0	0	3	3	4	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
		Tot	0	0	3	0	0	0	0	2	5	6	0	0	0	4	4	15	0.1
Brood Year 1987																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	20449	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Total:	28037	4	0	0	0	0	0	0	0	2	2	0	0	0	0	2	2	5	0.0
		5	0	0	3	3	0	0	0	0	6	0	0	0	0	16	16	23	0.1
		6	0	0	0	0	0	0	0	3	3	0	0	0	0	3	3	6	0.0
		Tot	0	0	3	3	0	0	0	5	12	0	0	0	0	23	23	34	0.2
Brood Year 1989																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	28913	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	29205	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: COPPER RIVER STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1984																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	17031	3	0	0	20	0	0	0	0	4	24	0	0	0	0	9	9	33	0.2
Total:	17268	4	0	0	33	0	0	0	0	11	44	18	0	0	0	13	13	74	0.4
		5	0	0	7	6	0	0	0	3	17	0	0	0	0	157	157	173	1.0
		6	0	0	5	0	0	0	0	0	5	4	0	0	0	69	69	77	0.5
		Tot	0	0	65	6	0	0	0	18	89	21	0	0	0	248	248	359	2.1

TABLE J.6 ESTIMATED MEAN BROOD YEAR SURVIVAL OF COPPER RIVER (FALL FRY AND SPR FRY) CHINOOK STOCK (TERRACE CDP) AND KISPIOX RIVER (SMOLTS) CHINOOK STOCK (KISPIOX RIVER CDP) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: COPPER RIVER STAGE: FALL FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND		NORTH CENTRAL		INSIDE		WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT				TOTAL	% SURV
			COMM	SPT	COMM	SPT	COMM	SPT						SURP		SPAWN	TOTAL		
Brood Year 1983																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	9976	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	10173	4	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	5	0.1
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	14	0.1
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	0.1
		Tot	0	0	5	0	0	0	0	0	5	0	0	0	0	20	20	26	0.3
Brood Year 1984																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	16227	3	0	0	3	0	0	0	0	0	3	0	0	0	0	4	4	6	0.0
Total:	16309	4	0	0	9	5	0	0	0	3	16	0	0	0	0	5	5	21	0.1
		5	0	0	3	0	0	0	0	10	13	12	0	0	0	62	62	87	0.5
		6	0	0	5	0	0	0	0	0	5	0	0	0	0	27	27	32	0.2
		Tot	0	0	19	5	0	0	0	13	36	12	0	0	0	98	98	146	0.9

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

TERRACE CDP CHINOOK RUN: SUMMER STOCK: COPPER RIVER STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND		NORTH CENTRAL		INSIDE		WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT				TOTAL	% SURV
			COMM	SPT	COMM	SPT	COMM	SPT						SURP		SPAWN	TOTAL		
Brood Year 1980																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	18701	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Total:	18998	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
		5	0	0	0	0	0	0	3	5	9	0	0	0	0	6	6	15	0.1
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	0.0
		Tot	0	0	0	0	0	0	3	5	9	0	0	0	0	13	13	22	0.1

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

KISPIOX RIVER CDP CHINOOK RUN: SUMMER STOCK: KISPIOX RIVER STAGE: SMOLTS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND		NORTH CENTRAL		INSIDE		WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT				TOTAL	% SURV
			COMM	SPT	COMM	SPT	COMM	SPT						SURP		SPAWN	TOTAL		
Brood Year 1984																			
		2	0	0	0	4	0	0	0	0	4	0	0	0	0	1	1	5	0.0
Tagged:	39897	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6	0.0
Total:	40017	4	0	0	3	0	0	0	0	0	3	0	0	0	0	8	8	11	0.0
		5	0	0	45	0	0	0	0	0	45	0	0	0	0	99	99	143	0.4
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43	43	0.1
		Tot	0	0	48	4	0	0	0	0	52	0	0	0	0	156	156	208	0.5

TABLE J.7 ESTIMATED MEAN BROOD YEAR SURVIVAL OF KISPIOX RIVER (FALL FRY) AND KISPIOX RIVER TRIBUTARIES (SPR FRY) CHINOOK STOCK (KISPIOX RIVER CDP) BY NUMBER TAGGED.

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

KISPIOX RIVER CDP CHINOOK RUN: SUMMER STOCK: KISPIOX RIVER STAGE: FALL FRY

RELEASE INFORMATION		RECOV AGE	WEST VAN ISLAND COMM	WEST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1981																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	30978	3	0	0	0	0	0	0	5	0	5	0	0	0	0	1	1	5	0.0
Total:	33398	4	0	0	0	3	0	0	0	0	3	0	0	0	0	1	1	4	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	0.0
		Tot	0	0	0	3	0	0	5	0	8	0	0	0	0	16	16	24	0.1
Brood Year 1984																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	50243	3	0	0	12	0	0	0	0	0	12	0	0	0	0	3	3	15	0.0
Total:	52885	4	0	0	9	0	0	0	0	0	9	0	0	0	0	5	5	13	0.0
		5	0	0	4	0	0	0	0	2	6	0	0	0	0	55	55	61	0.1
		6	0	0	3	0	0	0	0	0	3	0	0	0	0	24	24	27	0.1
		Tot	0	0	27	0	0	0	0	2	29	0	0	0	0	87	87	116	0.2
Brood Year 1987																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	21447	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	22947	4	0	0	3	0	0	0	0	0	3	0	0	0	0	1	1	3	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
		Tot	0	0	3	0	0	0	0	0	3	0	0	0	0	5	5	8	0.0

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from KALUM TROLL)

1994 catch preliminary; no 1994 escapement

KISPIOX RIVER CDP CHINOOK RUN: SUMMER STOCK: KISPIOX R TRIBS STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST VAN ISLAND COMM	WEST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ORG	ALASKA	TOTAL MARINE CATCH	FRESH SPORT	TERM	ESCAPEMENT SURP	ESCAPEMENT	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1980																			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	62366	3	0	0	13	0	0	0	0	8	21	0	0	0	0	5	5	26	0.0
Total:	67602	4	4	0	0	0	0	0	0	0	4	0	0	0	0	6	6	10	0.0
		5	0	0	4	0	0	0	0	0	4	0	0	0	0	22	22	26	0.0
		6	0	0	4	0	0	0	0	0	4	0	0	0	0	18	18	22	0.0
		Tot	4	0	21	0	0	0	0	8	33	0	0	0	0	51	51	84	0.1

TABLE J.8 ESTIMATED MEAN BROOD YEAR SURVIVAL OF BULKLEY RIVER UPPER (YEARLINGS) CHINOOK STOCK (TOBOGGAN CREEK CDP) AND FULTON RIVER (SPR FRY) CHINOOK STOCK (FULTON RIVER) BY NUMBER TAGGED .

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement from PCAD Database)

1994 catch preliminary; no 1994 escapement

TOBOGGAN CR CDP CHINOOK RUN: SUMMER STOCK: BULKLEY R UPPER STAGE: YEARLINGS

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL CMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ALASKA ORG	TOTAL MARINE CATCH	FRESH SPORT	TERM SURP	ESCAPEMENT MATCH	ESCAPEMENT NAT'L	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1985																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	21571	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	21721	4	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0.0
		5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0.0
		Tot	0	0	0	4	0	0	0	4	0	0	0	0	0	4	0.0
Brood Year 1986																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	31455	3	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0
Total:	31773	4	0	0	4	0	0	0	0	4	0	0	3	61	64	76	0.2
		5	0	0	0	7	0	0	0	7	22	300	0	10	240	250	578	1.8
		6	0	0	0	0	0	0	0	0	8	56	0	1	39	41	105	0.3
		Tot	0	0	4	7	0	0	0	1	12	29	363	0	15	341	355	760	2.4
Brood Year 1987																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	31700	3	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0.0
Total:	31700	4	0	0	13	0	0	0	0	13	9	43	0	1	34	36	100	0.3
		5	0	0	3	0	0	0	0	3	40	282	0	7	197	205	530	1.7
		6	0	0	0	0	0	4	0	4	7	58	0	3	34	38	107	0.3
		Tot	0	0	16	0	0	4	0	20	60	382	0	12	266	278	740	2.3
Brood Year 1988																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	79708	3	0	0	0	0	0	0	0	0	22	17	0	1	14	14	53	0.1
Total:	102172	4	0	0	3	0	0	0	0	3	8	16	0	0	11	12	39	0.0
		5	0	0	0	3	0	0	0	3	3	538	0	30	322	351	896	1.1
		6	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0.0
		Tot	0	0	3	3	0	0	0	6	36	571	0	31	347	377	991	1.2
Brood Year 1989																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	48052	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total:	48787	4	0	0	0	0	0	0	0	0	0	29	0	2	17	19	48	0.1
		5	0	0	4	0	0	0	0	4	7	0	0	0	0	0	10	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	4	0	0	0	0	4	7	29	0	2	17	19	58	0.1
Brood Year 1990																	
		2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0.0
Tagged:	51857	3	0	0	0	0	0	0	0	0	20	0	0	0	0	0	28	0.1
Total:	51857	4	0	0	2	2	0	0	0	4	9	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	2	2	0	0	0	4	9	23	0	0	0	0	31	0.1
Brood Year 1991																	
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	51840	3	0	0	2	0	0	0	0	2	7	0	0	0	0	0	9	0.0
Total:	51840	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
		Tot	0	0	2	0	0	0	0	2	7	0	0	0	0	0	9	0.0

ESTIMATED MEAN BROOD YEAR SURVIVAL WEIGHTED BY NUMBER TAGGED
(Escapement Calc'd by Expl Rate)
(from YALUK TROLL)

1994 catch preliminary; no 1994 escapement

FULTON RIVER CHINOOK RUN: FALL STOCK: FULTON RIVER STAGE: SPR FRY

RELEASE INFORMATION		RECOV AGE	WEST COAST VAN ISLAND COMM	WEST COAST VAN ISLAND SPT	NORTH CENTRAL COMM	NORTH CENTRAL SPT	INSIDE COMM	INSIDE SPT	WASH ALASKA ORG	TOTAL MARINE CATCH	FRESH SPORT	TERM SURP	ESCAPEMENT SPAWN	ESCAPEMENT TOTAL	TOTAL	% SURV
Brood Year 1975																
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Tagged:	43959	3	0	0	2	0	0	0	0	2	0	0	1	1	2	0.0
Total:	49365	4	0	0	0	0	0	0	0	5	0	0	1	1	5	0.0
		5	0	0	0	0	0	0	0	0	0	0	8	8	8	0.0
		6	0	0	0	0	0	0	0	0	0	0	5	5	5	0.0
		Tot	0	0	2	0	0	0	0	5	0	0	15	15	21	0.0
Brood Year 1976																
		2	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	111039	3	0	0	0	0	11	4	0	16	0	0	8	8	24	0.0
Total:	127544	4	0	0	8	0	0	4	0	11	24	0	12	12	35	0.0
		5	0	0	25	0	0	0	0	13	38	0	117	117	155	0.1
		6	0	0	0	0	0	0	0	8	8	0	70	70	78	0.1
		Tot	0	0	33	0	11	9	0	32	85	0	208	208	293	0.3
Brood Year 1977																
		2	0	0	0	0	0	0	0	0	0	0	1	1	1	0.0
Tagged:	66492	3	0	0	0	0	0	0	0	0	0	0	5	5	5	0.0
Total:	68587	4	0	0	31	0	0	0	0	31	0	0	6	6	38	0.1
		5	0	0	1	0	0	0	0	11	0	0	64	64	74	0.1
		6	0	0	0	0	0	0	0	4	0	0	38	38	42	0.1
		Tot	0	0	33	0	0	0	0	14	46	0	113	113	159	0.2
Brood Year 1978																
		2	0	0	0	0	0	0	0	0	0	0	2	2	2	0.0
Tagged:	72741	3	0	0	9	0	0	0	0	0	9	0	16	16	25	0.0
Total:	77070	4	3	0	51	0	0	0	6	10	71	0	23	23	94	0.1
		5	0	0	19	3	0	0	0	40	62	0	229	229	291	0.4
		6	0	0	17	0	0	0	0	8	25	0	137	137	162	0.2
		Tot	3	0	96	3	0	0	6	58	167	0	408	408	575	0.8
Brood Year 1979																
		2	0	0	0	0	0	0	0	0	0	0	3	3	3	0.0
Tagged:	50283	3	0	0	14	0	0	2	0	3	19	0	22	22	41	0.1
Total:	51283	4	0	0	66	0	0	0	0	48	115	0	31	31	146	0.3
		5	0	0	53	0	0	0	0	33	86	0	310	310	396	0.8
		6	0	0	6	0	0	0	0	0	6	0	185	185	191	0.4
		Tot	0	0	140	0	0	2	0	84	226	0	551	551	777	1.5

APPENDIX K. ANNUAL COMMERCIAL SALESLIP CHINOOK CATCH DATA FOR THE YEARS 1952 TO 1995.

TABLE K.1 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

TABLE K.2 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

TABLE K.3 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

TABLE K.4 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 3.

TABLE K.5 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 3.

TABLE K.6 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 3.

TABLE K.7 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 4.

TABLE K.8 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 4.

TABLE K.9 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 4.

TABLE K.10 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 5.

TABLE K.11 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 5.

TABLE K.12 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 5.

TABLE K.1 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	132,592		132,592	9,985	76,750	86,735	219,327
53	138,923		138,923	8,002	53,562	61,564	200,487
54	88,974		88,974	9,062	74,269	83,331	172,305
55	73,404		73,404	11,505	74,921	86,426	159,830
56	75,250		75,250	6,048	59,269	65,317	140,567
57	77,832		77,832	2,843	50,503	53,346	131,178
58	106,629		106,629	8,687	97,756	106,443	213,072
59	116,452		116,452	7,733	84,680	92,413	208,865
60	92,792		92,792	13,192	77,668	90,860	183,652
61	95,375		95,375	9,232	53,635	62,867	158,242
62	74,839		74,839	21,729	66,201	87,930	162,769
63	115,664		115,664	14,490	71,781	86,271	201,935
64	190,309		190,309	19,212	78,399	97,611	287,920
65	170,412		170,412	42,402	89,777	132,179	302,591
66	209,386		209,386	19,227	83,462	102,689	312,075
67	201,954		201,954	29,182	109,081	138,263	340,217
68	222,834		222,834	30,869	79,629	110,498	333,332
69	230,062		230,062	20,585	53,256	73,841	303,903
70	224,390		224,390	40,466	63,007	103,473	327,863
71	253,288	10,678	263,966	39,840	46,524	86,364	350,330
72	312,185	13,040	325,225	55,334	68,919	124,253	449,478
73	236,967	8,826	245,793	58,676	60,478	119,154	364,947
74	282,348	9,997	292,345	57,729	56,167	113,896	406,241
75	287,661	15,144	302,805	59,147	56,832	115,979	418,784
76	261,708	22,667	284,375	35,704	41,816	77,520	361,895
77	190,728	14,843	205,571	61,601	50,492	112,093	317,664
78	181,602	24,201	205,803	75,873	40,813	116,686	322,489
79	183,823	34,391	218,214	105,449	35,366	140,815	359,029
80	172,767	49,874	222,641	66,163	23,639	89,802	312,443
81	148,867	43,842	192,709	59,233	31,736	90,969	283,678
82	174,287	45,683	219,970	93,607	39,073	132,680	352,650
83	165,819	48,018	213,837	47,615	12,149	59,764	273,601
84	159,593	59,212	218,805	42,109	18,863	60,972	279,777
85	150,309	52,422	202,731	60,879	37,070	97,949	300,680
86	134,674	46,199	180,873	70,230	27,766	97,996	278,869
87	136,185	70,650	206,835	43,365	19,312	62,677	269,512
88	93,489	70,580	164,069	32,346	29,868	62,214	226,283
89	130,232	87,241	217,473	32,764	23,660	56,424	273,897
90	100,212	69,750	169,962	42,511	26,750	69,261	239,223
91	133,929	82,595	216,524	45,719	29,814	75,533	292,057
92	100,918	67,079	167,997	28,841	35,729	64,570	232,567
93	97,296	77,458	174,754	26,725	29,460	56,185	230,939
94	97,821	75,073	172,894	15,880	26,067	41,947	214,841
95	30,334	28,636	58,970	14,540	22,704	37,244	96,214

TABLE K.2 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	132,592		132,592	9,985	76,750	86,735	219,327
53	138,923		138,923	8,002	53,562	61,564	200,487
54	88,974		88,974	9,062	74,269	83,331	172,305
55	73,404		73,404	11,505	74,921	86,426	159,830
56	75,250		75,250	6,048	59,269	65,317	140,567
57	77,832		77,832	2,843	50,503	53,346	131,178
58	106,629		106,629	8,687	97,756	106,443	213,072
59	116,452		116,452	7,733	84,680	92,413	208,865
60	92,792		92,792	13,192	77,668	90,860	183,652
61	95,375		95,375	9,232	53,635	62,867	158,242
62	74,839		74,839	21,729	66,201	87,930	162,769
63	115,664		115,664	5,841	47,572	53,413	169,077
64	190,309		190,309	11,413	61,725	73,138	263,447
65	170,412		170,412	20,066	66,113	86,179	256,591
66	209,386		209,386	9,205	61,217	70,422	279,808
67	201,954		201,954	11,664	92,423	104,087	306,041
68	222,834		222,834	17,062	64,847	81,909	304,743
69	230,062		230,062	8,993	45,242	54,235	284,297
70	224,390		224,390	13,691	47,737	61,428	285,818
71	253,288	10,678	263,966	8,473	33,393	41,866	305,832
72	312,185	13,040	325,225	22,613	51,098	73,711	398,936
73	236,967	8,826	245,793	11,872	45,245	57,117	302,910
74	282,348	9,997	292,345	20,932	45,140	66,072	358,417
75	287,661	15,144	302,805	20,299	45,781	66,080	368,885
76	261,708	22,667	284,375	15,895	32,879	48,774	333,149
77	190,728	14,843	205,571	38,926	37,679	76,605	282,176
78	181,602	24,201	205,803	34,262	29,370	63,632	269,435
79	183,823	34,391	218,214	63,847	27,238	91,085	309,299
80	172,767	49,874	222,641	35,802	18,808	54,610	277,251
81	148,867	43,842	192,709	40,342	20,294	60,636	253,345
82	174,287	45,683	219,970	50,096	27,220	77,316	297,286
83	165,819	48,018	213,837	21,140	8,519	29,659	243,496
84	159,593	59,212	218,805	23,740	12,195	35,935	254,740
85	150,309	52,422	202,731	27,038	25,118	52,156	254,887
86	134,674	46,199	180,873	26,296	20,702	46,998	227,871
87	136,185	70,650	206,835	17,191	12,069	29,260	236,095
88	93,489	70,580	164,069	19,133	25,249	44,382	208,451
89	130,232	87,241	217,473	26,111	19,268	45,379	262,852
90	100,212	69,750	169,962	25,676	21,783	47,459	217,421
91	133,929	82,595	216,524	31,599	25,610	57,209	273,733
92	100,918	67,079	167,997	20,727	33,716	54,443	222,440
93	97,296	77,458	174,754	18,147	26,735	44,882	219,636
94	97,821	75,073	172,894	12,909	23,958	36,867	209,761
95	30,334	28,636	58,970	5,948	20,295	26,243	85,213

TABLE K.3 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREAS 1 TO 10 AND 30 COMBINED.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63				8,649	24,209	32,858
64				7,799	16,674	24,473
65				22,336	23,664	46,000
66				10,022	22,245	32,267
67				17,518	16,658	34,176
68				13,807	14,782	28,589
69				11,592	8,014	19,606
70				26,775	15,270	42,045
71				31,367	13,131	44,498
72				32,721	17,821	50,542
73				46,804	15,233	62,037
74				36,797	11,027	47,824
75				38,848	11,051	49,899
76				19,809	8,937	28,746
77				22,675	12,813	35,488
78				41,611	11,443	53,054
79				41,602	8,128	49,730
80				30,361	4,831	35,192
81				18,891	11,442	30,333
82				43,511	11,853	55,364
83				26,475	3,630	30,105
84				18,369	6,668	25,037
85				33,841	11,952	45,793
86				43,934	7,064	50,998
87				26,174	7,243	33,417
88				13,213	4,619	17,832
89				6,653	4,392	11,045
90				16,835	4,967	21,802
91				14,120	4,204	18,324
92				8,114	2,013	10,127
93				8,578	2,725	11,303
94				2,971	2,109	5,080
95				8,592	2,409	11,001

TABLE K.4 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 3.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	10,126		10,126	976	17,232	18,208	28,334
53	7,920		7,920	1,028	14,088	15,116	23,036
54	6,867		6,867	1,195	13,900	15,095	21,962
55	6,342		6,342	2,435	19,675	22,110	28,452
56	7,174		7,174	1,551	18,321	19,872	27,046
57	8,949		8,949	747	20,772	21,519	30,468
58	12,758		12,758	1,497	33,476	34,973	47,731
59	15,305		15,305	2,238	29,894	32,132	47,437
60	11,398		11,398	3,045	20,663	23,708	35,106
61	7,737		7,737	2,550	15,883	18,433	26,170
62	5,671		5,671	2,083	15,452	17,535	23,206
63	6,146		6,146	291	6,456	6,747	12,893
64	10,756		10,756	1,266	11,868	13,134	23,890
65	7,224		7,224	8,336	12,356	20,692	27,916
66	10,250		10,250	1,042	12,081	13,123	23,373
67	12,021		12,021	11,587	22,038	33,625	45,646
68	13,587		13,587	5,228	14,521	19,749	33,336
69	10,604		10,604	4,414	14,744	19,158	29,762
70	10,944		10,944	1,332	12,157	13,489	24,433
71	12,864		12,864	6,932	10,886	17,818	30,682
72	13,688		13,688	5,722	13,387	19,109	32,797
73	11,433		11,433	4,688	12,191	16,879	28,312
74	10,377		10,377	6,663	9,553	16,216	26,593
75	9,439		9,439	7,516	9,622	17,138	26,577
76	5,041		5,041	1,965	9,046	11,011	16,052
77	3,714		3,714	11,645	8,117	19,762	23,476
78	4,227		4,227	24,267	6,566	30,833	35,060
79	7,001		7,001	11,551	3,516	15,067	22,068
80	6,389	187	6,576	9,218	2,159	11,377	17,953
81	6,271	234	6,505	7,398	4,385	11,783	18,288
82	7,345	1,459	8,804	28,515	11,144	39,659	48,463
83	12,781	245	13,026	14,598	1,655	16,253	29,279
84	6,695	713	7,408	15,070	5,805	20,875	28,283
85	4,457	674	5,131	15,672	1,652	17,324	22,455
86	10,914	217	11,131	17,822	2,210	20,032	31,163
87	3,847	818	4,665	18,153	1,370	19,523	24,188
88	1,729	484	2,213	8,035	806	8,841	11,054
89	3,229	993	4,222	17,300	3,210	20,510	24,732
90	7,052	522	7,574	9,386	2,437	11,823	19,397
91	4,874	535	5,409	27,187	3,625	30,812	36,221
92	2,896	706	3,602	10,624	3,925	14,549	18,151
93	3,727	1,383	5,110	16,524	4,141	20,665	25,775
94	4,028	1,771	5,799	5,253	3,060	8,313	14,112
95	1,885	610	2,495	9,550	4,094	13,644	16,139

TABLE K.5 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 3.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	10,126		10,126	976	17,232	18,208	28,334
53	7,920		7,920	1,028	14,088	15,116	23,036
54	6,867		6,867	1,195	13,900	15,095	21,962
55	6,342		6,342	2,435	19,675	22,110	28,452
56	7,174		7,174	1,551	18,321	19,872	27,046
57	8,949		8,949	747	20,772	21,519	30,468
58	12,758		12,758	1,497	33,476	34,973	47,731
59	15,305		15,305	2,238	29,894	32,132	47,437
60	11,398		11,398	3,045	20,663	23,708	35,106
61	7,737		7,737	2,550	15,883	18,433	26,170
62	5,671		5,671	2,083	15,452	17,535	23,206
63	6,146		6,146	180	5,694	5,874	12,020
64	10,756		10,756	737	10,733	11,470	22,226
65	7,224		7,224	1,789	8,905	10,694	17,918
66	10,250		10,250	519	9,037	9,556	19,806
67	12,021		12,021	4,100	18,911	23,011	35,032
68	13,587		13,587	2,469	12,719	15,188	28,775
69	10,604		10,604	1,942	12,958	14,900	25,504
70	10,944		10,944	650	9,967	10,617	21,561
71	12,864		12,864	1,340	9,087	10,427	23,291
72	13,688		13,688	3,571	10,723	14,294	27,982
73	11,433		11,433	2,852	9,440	12,292	23,725
74	10,377		10,377	3,777	7,445	11,222	21,599
75	9,439		9,439	3,246	7,636	10,882	20,321
76	5,041		5,041	882	7,356	8,238	13,279
77	3,714		3,714	6,764	5,877	12,641	16,355
78	4,227		4,227	7,284	3,664	10,948	15,175
79	7,001		7,001	4,811	2,025	6,836	13,837
80	6,389	187	6,576	3,879	1,415	5,294	11,870
81	6,271	234	6,505	4,840	2,744	7,584	14,089
82	7,345	1,459	8,804	11,207	8,120	19,327	28,131
83	12,781	245	13,026	7,917	1,082	8,999	22,025
84	6,695	713	7,408	6,113	3,305	9,418	16,826
85	4,457	674	5,131	5,812	1,054	6,866	11,997
86	10,914	217	11,131	6,208	1,414	7,622	18,753
87	3,847	818	4,665	5,669	688	6,357	11,022
88	1,729	484	2,213	4,253	616	4,869	7,082
89	3,229	993	4,222	11,359	2,444	13,803	18,025
90	7,052	522	7,574	5,188	1,652	6,840	14,414
91	4,874	535	5,409	17,042	2,582	19,624	25,033
92	2,896	706	3,602	6,439	3,410	9,849	13,451
93	3,727	1,383	5,110	10,007	3,266	13,273	18,383
94	4,028	1,771	5,799	3,475	2,420	5,895	11,694
95	1,885	610	2,495	3,356	3,392	6,748	9,243

TABLE K.6 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 3.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63				111	762	873
64				529	1,135	1,664
65				6,547	3,451	9,998
66				523	3,044	3,567
67				7,487	3,127	10,614
68				2,759	1,802	4,561
69				2,472	1,786	4,258
70				682	2,190	2,872
71				5,592	1,799	7,391
72				2,151	2,664	4,815
73				1,836	2,751	4,587
74				2,886	2,108	4,994
75				4,270	1,986	6,256
76				1,083	1,690	2,773
77				4,881	2,240	7,121
78				16,983	2,902	19,885
79				6,740	1,491	8,231
80				5,339	744	6,083
81				2,558	1,641	4,199
82				17,308	3,024	20,332
83				6,681	573	7,254
84				8,957	2,500	11,457
85				9,860	598	10,458
86				11,614	796	12,410
87				12,484	682	13,166
88				3,782	190	3,972
89				5,941	766	6,707
90				4,198	785	4,983
91				10,145	1,043	11,188
92				4,185	515	4,700
93				6,517	875	7,392
94				1,778	640	2,418
95				6,194	702	6,896

TABLE K.7 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 4.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	29,116		29,116		37,888	37,888	67,004
53	21,187		21,187		24,194	24,194	45,381
54	15,944		15,944	55	40,063	40,118	56,062
55	12,646		12,646	19	30,577	30,596	43,242
56	10,144		10,144		22,407	22,407	32,551
57	11,800		11,800	48	16,181	16,229	28,029
58	16,052		16,052		29,534	29,534	45,586
59	16,451		16,451	5	25,405	25,410	41,861
60	15,541		15,541	28	30,333	30,361	45,902
61	10,461		10,461		14,798	14,798	25,259
62	11,446		11,446		14,204	14,204	25,650
63	15,302		15,302	9	10,125	10,134	25,436
64	30,573		30,573	47	19,004	19,051	49,624
65	24,225		24,225	22	12,885	12,907	37,132
66	23,455		23,455		24,217	24,217	47,672
67	19,507		19,507	5	36,428	36,433	55,940
68	32,023		32,023	61	23,782	23,843	55,866
69	28,770		28,770	36	11,385	11,421	40,191
70	22,645		22,645	66	7,716	7,782	30,427
71	28,393		28,393	1,321	9,844	11,165	39,558
72	41,799	233	42,032	355	9,872	10,227	52,259
73	27,137		27,137	1,308	14,140	15,448	42,585
74	19,240		19,240	2,425	11,404	13,829	33,069
75	25,927		25,927	2,631	7,409	10,040	35,967
76	23,069		23,069	520	4,771	5,291	28,360
77	9,569	229	9,798	1,508	10,648	12,156	21,954
78	4,477		4,477	1,791	7,551	9,342	13,819
79	6,624		6,624	2,329	11,681	14,010	20,634
80	3,393	41	3,434	403	7,375	7,778	11,212
81	3,877	53	3,930	5,123	18,131	23,254	27,184
82	6,721	1,915	8,636	11,869	14,307	26,176	34,812
83	9,980	1,254	11,234		3,653	3,653	14,887
84	6,956	3,042	9,998	5,491	9,810	15,301	25,299
85	3,771	357	4,128	9,215	22,572	31,787	35,915
86	4,529	1,312	5,841	1,455	9,300	10,755	16,596
87	2,768	112	2,880	2,148	9,055	11,203	14,083
88	2,172	118	2,290	1,345	22,550	23,895	26,185
89	910		910	552	13,970	14,522	15,432
90	2,794	476	3,270	988	14,645	15,633	18,903
91	2,870	1,863	4,733	487	15,766	16,253	20,986
92	2,763	3,114	5,877	3,168	18,241	21,409	27,286
93	1,764	562	2,326	3,666	15,992	19,658	21,984
94	460	130	590	3	12,780	12,783	13,373
95	330	42	372	1,848	11,419	13,267	13,639

TABLE K.8 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 4.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	29,116		29,116		37,888	37,888	67,004
53	21,187		21,187		24,194	24,194	45,381
54	15,944		15,944	55	40,063	40,118	56,062
55	12,646		12,646	19	30,577	30,596	43,242
56	10,144		10,144		22,407	22,407	32,551
57	11,800		11,800	48	16,181	16,229	28,029
58	16,052		16,052		29,534	29,534	45,586
59	16,451		16,451	5	25,405	25,410	41,861
60	15,541		15,541	28	30,333	30,361	45,902
61	10,461		10,461		14,798	14,798	25,259
62	11,446		11,446		14,204	14,204	25,650
63	15,302		15,302	3	8,279	8,282	23,584
64	30,573		30,573	43	13,458	13,501	44,074
65	24,225		24,225	11	8,562	8,573	32,798
66	23,455		23,455		14,205	14,205	37,660
67	19,507		19,507	2	29,488	29,490	48,997
68	32,023		32,023	46	18,882	18,928	50,951
69	28,770		28,770	14	9,388	9,402	38,172
70	22,645		22,645	62	6,226	6,288	28,933
71	28,393		28,393	304	7,060	7,364	35,757
72	41,799	233	42,032	226	7,301	7,527	49,559
73	27,137		27,137	622	11,037	11,659	38,796
74	19,240		19,240	1,121	9,013	10,134	29,374
75	25,927		25,927	1,044	5,860	6,904	32,831
76	23,069		23,069	150	3,659	3,809	26,878
77	9,569	229	9,798	1,139	6,374	7,513	17,311
78	4,477		4,477	739	4,564	5,303	9,780
79	6,624		6,624	1,345	8,118	9,463	16,087
80	3,393	41	3,434	162	5,343	5,505	8,939
81	3,877	53	3,930	3,975	9,878	13,853	17,783
82	6,721	1,915	8,636	5,259	7,638	12,897	21,533
83	9,980	1,254	11,234		2,395	2,395	13,629
84	6,956	3,042	9,998	3,208	6,514	9,722	19,720
85	3,771	357	4,128	5,003	14,403	19,406	23,534
86	4,529	1,312	5,841	606	7,050	7,656	13,497
87	2,768	112	2,880	1,106	5,326	6,432	9,312
88	2,172	118	2,290	809	19,222	20,031	22,321
89	910		910	451	11,081	11,532	12,442
90	2,794	476	3,270	632	11,724	12,356	15,626
91	2,870	1,863	4,733	284	13,336	13,620	18,353
92	2,763	3,114	5,877	2,654	17,307	19,961	25,838
93	1,764	562	2,326	2,828	14,455	17,283	19,609
94	460	130	590	1	11,438	11,439	12,029
95	330	42	372	761	9,946	10,707	11,079

TABLE K.9 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 4.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63				6	1,846	1,852
64				4	5,546	5,550
65				11	4,323	4,334
66					10,012	10,012
67				3	6,940	6,943
68				15	4,900	4,915
69				22	1,997	2,019
70				4	1,490	1,494
71				1,017	2,784	3,801
72				129	2,571	2,700
73				686	3,103	3,789
74				1,304	2,391	3,695
75				1,587	1,549	3,136
76				370	1,112	1,482
77				369	4,274	4,643
78				1,052	2,987	4,039
79				984	3,563	4,547
80				241	2,032	2,273
81				1,148	8,253	9,401
82				6,610	6,669	13,279
83					1,258	1,258
84				2,283	3,296	5,579
85				4,212	8,169	12,381
86				849	2,250	3,099
87				1,042	3,729	4,771
88				536	3,328	3,864
89				101	2,889	2,990
90				356	2,921	3,277
91				203	2,430	2,633
92				514	934	1,448
93				838	1,537	2,375
94				2	1,342	1,344
95				1,087	1,473	2,560

TABLE K.10 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA FOR AREA 5.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SIENE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	30,826		30,826	1,194	179	1,373	32,199
53	27,567		27,567	163	729	892	28,459
54	13,316		13,316	568	552	1,120	14,436
55	10,036		10,036	955	1,294	2,249	12,285
56	9,555		9,555	736	574	1,310	10,865
57	9,396		9,396	206	361	567	9,963
58	9,423		9,423	561	1,081	1,642	11,065
59	13,371		13,371	499	1,301	1,800	15,171
60	12,199		12,199	1,374	1,039	2,413	14,612
61	11,260		11,260	1,060	1,494	2,554	13,814
62	10,337		10,337	3,306	8,441	11,747	22,084
63	22,684		22,684	1,409	14,420	15,829	38,513
64	32,599		32,599	2,314	6,064	8,378	40,977
65	33,633		33,633	3,113	8,859	11,972	45,605
66	34,609		34,609	3,526	6,489	10,015	44,624
67	39,434		39,434	1,431	1,668	3,099	42,533
68	52,052		52,052	3,669	4,135	7,804	59,856
69	43,689		43,689	525	1,169	1,694	45,383
70	32,597		32,597	2,746	4,592	7,338	39,935
71	38,615	1,251	39,866	3,122	1,380	4,502	44,368
72	62,556	464	63,020	611	1,702	2,313	65,333
73	47,985	338	48,323	1,272	2,771	4,043	52,366
74	44,430	330	44,760	333	530	863	45,623
75	34,556	1,578	36,134	1,616	318	1,934	38,068
76	17,707	1,645	19,352	123	614	737	20,089
77	11,041	311	11,352	520	592	1,112	12,464
78	3,068	1,626	4,694	1,584	949	2,533	7,227
79	9,757	92	9,849	540	503	1,043	10,892
80	8,648	1,354	10,002	736	439	1,175	11,177
81	3,131	633	3,764	423	312	735	4,499
82	4,614	235	4,849	1,965	440	2,405	7,254
83	5,675	1,925	7,600	289	263	552	8,152
84	2,076	128	2,204	1,142	177	1,319	3,523
85	1,167	1,282	2,449	5,418	130	5,548	7,997
86	3,199	1,833	5,032	2,443	103	2,546	7,578
87	3,366	174	3,540	976	174	1,150	4,690
88	5,014	1,573	6,587	1,389	66	1,455	8,042
89	3,420	1,006	4,426	627	351	978	5,404
90	3,576	1,296	4,872	2,374	291	2,665	7,537
91	2,800	414	3,214	1,690	223	1,913	5,127
92	5,499	2,780	8,279	784	214	998	9,277
93	1,531	1,231	2,762	566	185	751	3,513
94	775	282	1,057	351	186	537	1,594
95	440	701	1,141	454	269	723	1,864

TABLE K.11 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA FOR AREA 5.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET	TOTAL NET + TROLL
52	30,826		30,826	1,194	179	1,373	32,199
53	27,567		27,567	163	729	892	28,459
54	13,316		13,316	568	552	1,120	14,436
55	10,036		10,036	955	1,294	2,249	12,285
56	9,555		9,555	736	574	1,310	10,865
57	9,396		9,396	206	361	567	9,963
58	9,423		9,423	561	1,081	1,642	11,065
59	13,371		13,371	499	1,301	1,800	15,171
60	12,199		12,199	1,374	1,039	2,413	14,612
61	11,260		11,260	1,060	1,494	2,554	13,814
62	10,337		10,337	3,306	8,441	11,747	22,084
63	22,684		22,684	445	7,374	7,819	30,503
64	32,599		32,599	1,279	3,937	5,216	37,815
65	33,633		33,633	1,110	5,248	6,358	39,991
66	34,609		34,609	1,927	4,190	6,117	40,726
67	39,434		39,434	777	1,172	1,949	41,383
68	52,052		52,052	1,830	2,281	4,111	56,163
69	43,689		43,689	148	760	908	44,597
70	32,597		32,597	1,442	3,360	4,802	37,399
71	38,615	1,251	39,866	394	970	1,364	41,230
72	62,556	464	63,020	341	1,245	1,586	64,606
73	47,985	338	48,323	246	1,523	1,769	50,092
74	44,430	330	44,760	180	433	613	45,373
75	34,556	1,578	36,134	888	225	1,113	37,247
76	17,707	1,645	19,352	76	492	568	19,920
77	11,041	311	11,352	368	466	834	12,186
78	3,068	1,626	4,694	454	583	1,037	5,731
79	9,757	92	9,849	267	355	622	10,471
80	8,648	1,354	10,002	299	304	603	10,605
81	3,131	633	3,764	264	194	458	4,222
82	4,614	235	4,849	1,282	298	1,580	6,429
83	5,675	1,925	7,600	102	151	253	7,853
84	2,076	128	2,204	517	147	664	2,868
85	1,167	1,282	2,449	527	92	619	3,068
86	3,199	1,833	5,032	662	85	747	5,779
87	3,366	174	3,540	403	68	471	4,011
88	5,014	1,573	6,587	796	48	844	7,431
89	3,420	1,006	4,426	338	312	650	5,076
90	3,576	1,296	4,872	1,098	223	1,321	6,193
91	2,800	414	3,214	949	197	1,146	4,360
92	5,499	2,780	8,279	479	198	677	8,956
93	1,531	1,231	2,762	293	153	446	3,208
94	775	282	1,057	289	164	453	1,510
95	440	701	1,141	215	243	458	1,599

TABLE K.12 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA FOR AREA 5.

YEAR	TROLL	FR. TROLL	TOT. TROLL	SEINE	GILLNET	TOTAL NET
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63				964	7,046	8,010
64				1,035	2,127	3,162
65				2,003	3,611	5,614
66				1,599	2,299	3,898
67				654	496	1,150
68				1,839	1,854	3,693
69				377	409	786
70				1,304	1,232	2,536
71				2,728	410	3,138
72				270	457	727
73				1,026	1,248	2,274
74				153	97	250
75				728	93	821
76				47	122	169
77				152	126	278
78				1,130	366	1,496
79				273	148	421
80				437	135	572
81				159	118	277
82				683	142	825
83				187	112	299
84				625	30	655
85				4,891	38	4,929
86				1,781	18	1,799
87				573	106	679
88				593	18	611
89				289	39	328
90				1,276	68	1,344
91				741	26	767
92				305	16	321
93				273	32	305
94				62	22	84
95				239	26	265

APPENDIX L. SALESLIP CATCH AND FIELD EFFORT DATA FOR AREA 3 SEINE AND AREA 4 GILLNET COMMERCIAL FISHERIES.

TABLE L.1 AREA 3 SIENE EFFORT (BOAT DAYS) BY WEEK, 1951 TO 1995.

TABLE L.2 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

TABLE L.3 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

TABLE L.4 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

TABLE L.5 AREA 4 GILLNET EFFORT (BOAT DAYS) BY WEEK, 1951 TO 1995.

TABLE L.6 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

TABLE L.7 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

TABLE L.8 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

TABLE L.1 AREA 3 SEINE BOAT DAYS PER WEEK, 1951 TO 1995.

YEAR	4-5	5-1	5-2	5-3	5-4	6-1	6-2	6-3	6-4	7-1	7-2	7-3	7-4	7-5	8-1	8-2	8-3	8-4	9-1	9-2	9-3	9-4	9-5	10-1	TOTAL
1951												10	20	70	45	27	25	6	2						205
1952												21	20	17	15	17									90
1953												21	20	17	15	17	15	17	16						138
1954										2	32	43	129	116	138		99	67			6	1			633
1955									3	7	19	21	38	162	123	74	46	6	1						500
1956								4	5	25	52	65	149	236	262	212	120		125	16					1,271
1957										3	2	97	110	200	229	117		1	38	3	4				804
1958									18	77	122	145	153	170	138	73	2	4	1	3					906
1959									22	45	97	141	135			80	45	14	33	28					640
1960										79	125	158	62	11	18	1	7	2	3	1	2				469
1961								45	126	116	133	125	98	70	46	10	32	7	18	2					828
1962								10	31	49	79	23	8	11	16	4	1	2	11						245
1963									26	28	14				3	2	6		1	4					84
1964										25	8	1	48	90	115	11	10	22	4	2					336
1965										49	40	69	147	118	86	33	10	33	33	4	2				624
1966									11	14		8	18	51	33	84	52	2	2	5					280
1967									31	30	109	279	372	380	123		13	5	1	1					1,344
1968								71	47	129	133	108	54	115	101	74	21	39	5	3					900
1969									30	15	47	89	177	49	57	31	60	27	32	2					616
1970									22	14	18	20	80	22	64	141	20	6	1	6					414
1971										4	11	30	147			98	53	25	10						378
1972									5	54	46	88	105	59	51	30	2	9	1	5					455
1973								28	66	93	12	77	38	36	53	19		12							434
1974								17	50	72	120	201	179	183			19	4	3						848
1975									80	104	52		122	54	16	37	1			23					489
1976									3	5	6	10	47	57	44			5			5				182
1977								15	21	106	123	225	241	358	298	115	13		22	9					1,546
1978							71	84	104	127	257	66	191	227	197	121	37	11	8	3					1,504
1979								52			83	346	142	98			18		4						743
1980											248	271	122	105	65	43	11	32	15						912
1981								15	40		311	342	251	167	46	17									1,189
1982								36	38	74	294	422	193	200	86	116	58	61	40	41					1,659
1983												67	993	477	307	161	143	9							2,157
1984												493	315	255	238	126	59	32	62						1,580
1985												216	265	303	188	117	10								1,099
1986												135	292	294	202	195	84	14	5						1,221
1987												102	521	580	356	160	55	6							1,780
1988												299	233	105	102	65	84								888
1989												425	73	190	234	129	8								1,059
1990												80	141	93	163	65	14								556
1991												585	1,228	671	293	120	39	22							2,958
1992												333	45	175	218	82	128								981
1993												193	407	689	213	88	11	26	29						1,656
1994												118	126	265	96	82	11								698
1995											478	229	861	459	289	133	88								2,537
AVG 51-60								0	5	24	45	72	84	100	98	62	36	12	22	5	1	0			566
AVG 61-70								13	32	47	58	72	100	91	64	39	23	14	11	3	0				567
AVG 71-80							7	20	33	57	96	131	133	118	72	46	15	10	6	4	1				749
AVG 81-90								5	8	7	61	258	328	266	192	115	52	12	11	4					1,319
AVG 91-95											96	292	533	452	222	101	55	12	7						1,766

Note:-From 1951 to 1969 information regarding the number of days fishing per week and number of vessels fishing were derived from Annual Narratives prepared by local fisheries officers. The effort levels in these narratives are actually the number of deliveries taken from B.C. salesslip publications.

-From 1970 to 1995 on the grounds "hailed" catch information was used as the source of the days fishing and effort information.

TABLE L.2 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Seine																						889				87														
53	Seine																	33					844				151														
54	Seine																						1,113				82														
55	Seine																	5					2,120				310														
56	Seine																	46					1,168				314				23										
57	Seine																						657				90														
58	Seine																	111					1,257				129														
59	Seine																	182					1,937				96				23										
60	Seine																						2,989				56														
61	Seine																	873					1,533				144														
62	Seine																	453					1,549				81														
63	Seine																	133	79	50				11	5	10		1	2													
64	Seine																		406	21	29	364	266	152	15	5	2	6													
65	Seine																		2,049	1,168	1,907	1,033	939	697	193	79	149	71	46	5											
66	Seine																	80	197		84	157	220	84	116	75		21	8												
67	Seine																	962	604	1,737	2,918	2,706	2,005	522		106	27														
68	Seine																7	1,765	761	759	1,269	240	123	211	32	38	4	16	1	2										
69	Seine																	525	220	455	814	1,451	229	96	114	381	40	78	11												
70	Seine																	474	157	119	109	75	29	95	123	103	10	25	12	1											
71	Seine																		111	282	859	4,143			318	471	238	484	26												
72	Seine																		662	1,771	659	1,333	790	187	81	145	2	48	31	13											
73	Seine																447	1,398	1,203	227	689	373	222	151	23		15													
74	Seine																304	491	929	2,123	1,803	476	374			81	17	65												
75	Seine																	862	2,300	2,321		1,345	492	67	42			28	59											
76	Seine																	157	359	514	30	230	416	196			1			62										
77	Seine														3		466	662	1,350	1,473	2,403	1,927	1,930	977	365	21		44	24											
78	Seine															1,753	2,121	2,350	3,717	3,898	1,092	3,711	3,362	1,474	586	185	6	12												
79	Seine																504	7		618	6,238	2,090	1,947			126		21												
80	Seine																			2,009	3,043	1,874	1,039	726	469	14	25	19												
81	Seine																263	433		1,953	2,449	1,155	850	108	187														
82	Seine																825	500	510	8,047	3,407	3,350	5,867	1,212	3,156	248	695	455	243											
83	Seine																			5	936	6,289	2,965	1,703	1,461	1,213	26													
84	Seine																				4,086	5,199	1,915	2,318	843	420	170	119												
85	Seine																				4,531	3,959	4,280	1,619	1,187	96														
86	Seine																				5,122	4,507	3,348	2,108	1,910	717	75	37												
87	Seine																				1,896	6,294	4,723	2,514	1,096	1,629	1													
88	Seine																				2,147	2,355	1,441	1,074	679	339														
89	Seine																				7,344	2,323	1,131	4,391	1,877	234														
90	Seine																				1,881	2,593	2,423	1,953	478	58														
91	Seine																				6,387	7,860	7,042	4,395	841	353	309													
92	Seine																			2	3,045	750	2,186	1,971	1,160	1,510														
93	Seine																				18	4,249	8,678	1,872	1,140	95	257	215												
94	Seine																				76	1,941	1,637	672	638	289														
95	Seine																			988	2,785	2,812	1,274	878	648	165														

TABLE L.3 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Seine																						889				87														
53	Seine																	33					844				151														
54	Seine																						1,113				82														
55	Seine																	5					2,120				310														
56	Seine																	46					1,168				314				23										
57	Seine																						657				90														
58	Seine																	111					1,257				129														
59	Seine																	182					1,937				96				23										
60	Seine																						2,989				56														
61	Seine																	873					1,533				144														
62	Seine																	453					1,549				81														
63	Seine																	100	42	27					5	5		1													
64	Seine																		304	15	6	222	123	62	3		1	1													
65	Seine																		608	299	287	257	196	93	17	8	14	10													
66	Seine																	54	98		41	70	119	42	73	19		2	1												
67	Seine																	529	321	603	887	850	719	161		23	7														
68	Seine																5	734	301	351	613	146	86	168	29	20	3	12	1												
69	Seine																	395	173	245	482	388	82	51	18	60	18	24	6												
70	Seine																	246	72	51	62	57	19	55	60	11	7	5	4	1											
71	Seine																		59	205	221	595			93	86	41	37	3												
72	Seine																		334	1,096	416	947	494	127	57	47	1	21	19	12											
73	Seine																351	914	661	195	420	159	79	68	3		2													
74	Seine																127	309	608	1,101	974	315	306			20	1	16												
75	Seine																	410	1,089	915		515	244	34	22			9	8											
76	Seine																	100	199	241	13	117	128	70						14										
77	Seine														3		318	359	808	745	1,386	1,031	1,220	600	254	15		16	9											
78	Seine															411	496	457	1,214	1,541	389	1,186	799	478	258	69	2	4												
79	Seine																295	7		213	2,833	823	608			26		6												
80	Seine																			992	1,541	542	539	136	99	2	20	8												
81	Seine																117	175		1,483	1,634	729	501	42	159															
82	Seine																564	229	212	2,878	1,372	1,211	2,204	791	1,328	64	174	89	91											
83	Seine																			5	536	4,028	1,749	576	701	320	2													
84	Seine																				1,864	2,071	889	623	380	197	45	44												
85	Seine																				1,477	1,847	1,317	677	454	40														
86	Seine																				1,262	1,709	1,466	782	768	190	27	4												
87	Seine																				611	2,121	1,364	1,029	328	216														
88	Seine																				1,425	1,150	752	499	292	135														
89	Seine																				4,352	2,088	871	2,645	1,343	60														
90	Seine																				689	1,200	1,579	1,376	296	48														
91	Seine																				3,663	4,598	4,520	3,331	639	189	102													
92	Seine																				1,744	531	1,477	1,266	627	794														
93	Seine																				17	2,633	5,389	1,274	553	27	63	51												
94	Seine																				69	1,257	1,099	399	429	222														
95	Seine																			364	1,033	936	558	308	95	62														

TABLE L.4 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA BY STATISTICAL WEEK FOR AREA 3.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Seine																	33	37	23				11		5			2												
53	Seine																		102	6	23	142	143	90	12	5	1	5													
54	Seine																		1,441	869	1,620	776	743	604	176	71	135	61	46	5											
55	Seine																	26	99		43	87	101	42	43	56		19	7											
56	Seine																	433	283	1,134	2,031	1,856	1,286	361		83	20													
57	Seine																2	1,031	460	408	656	94	37	43	3	18	1	4		2										
58	Seine																	130	47	210	332	1,063	147	45	96	321	22	54	5											
59	Seine																	228	85	68	47	18	10	40	63	92	3	20	8											
60	Seine																		52	77	638	3,548			225	385	197	447	23											
61	Seine																		328	675	243	386	296	60	24	98	1	27	12	1										
62	Seine																96	424	542	32	269	214	143	83	20		13													
63	Seine																177	182	321	1,022	829	161	68			61	16	49											
64	Seine																	452	1,211	1,406		830	248	33	20			19	51										
65	Seine																	57	160	273	17	113	288	126			1			48									
66	Seine																148	303	542	728	1,017	896	710	377	111	6		28	15										
67	Seine															1,342	1,625	1,893	2,503	2,357	723	2,525	2,563	996	328	116	4	8											
68	Seine																209			405	3,405	1,267	1,339			100		15											
69	Seine																			1,017	1,502	1,332	500	590	370	12	5	11											
70	Seine																146	258		470	815	426	349	66	28														
71	Seine																261	271	298	5,169	2,035	2,139	3,663	421	1,828	184	521	366	152										
72	Seine																				400	2,261	1,216	1,127	760	893	24												
73	Seine																				2,222	3,128	1,026	1,695	463	223	125	75											
74	Seine																				3,054	2,112	2,963	942	733	56													
75	Seine																				3,860	2,798	1,882	1,324	1,142	527	48	33											
76	Seine																				1,285	4,173	3,359	1,485	768	1,413	1												
77	Seine																				722	1,205	689	575	387	204													
78	Seine																				2,992	235	260	1,746	534	174													
79	Seine																				1,192	1,393	844	577	182	10													
80	Seine																				2,724	3,262	2,522	1,064	202	164	207												
81	Seine																			2	1,301	219	709	705	533	716													
82	Seine																				1	1,616	3,289	598	587	68	194	164											
83	Seine																				7	684	538	273	209	67													
84	Seine																			624	1,752	1,876	716	570	553	103													
85	Seine																																							

TABLE L.5 AREA 4 GILLNET BOAT DAYS PER WEEK, 1951 TO 1995.

YEAR	4-5	5-1	5-2	5-3	5-4	6-1	6-2	6-3	6-4	7-1	7-2	7-3	7-4	7-5	8-1	8-2	8-3	8-4	9-1	9-2	9-3	9-4	10-1	10-2	TOTAL
1951	12	14	15	18	40	65	102	593	593	563	640	575	600	550	500		225	200	167	150	120				5,742
1952	18	20	30	50	36	56	72	74	511	668	599	775	765	776	793	681		75	30	10	10	8		3	6,060
1953	20	25	30	30	40	70	75	60	605	656	664	623	631		620	539	292	200	107	60	50				5,397
1954	6	2	38	83	136	190	233	320		2,766	2,795	3,467	3,003	3,836	2,729	58	3,050	1,610	1,415	744	525	166			27,172
1955	12	4	1		16	20	56	169	1,191	1,244	1,487	1,628	1,396		1,213	2,305	2,028	1,444	607	598	397	215	47		16,078
1956	3	2	1	12	61	105	199	253	308	304	336	233	217	1,455	1,912	1,412	998	1,103	511	271	183				9,879
1957	1	2	23	6	35	83	153	289		16	25	1,293	1,485	3,161	2,862	2,102	1,091	522	278	201	128				13,756
1958	9	2	17	40	32	70	190	216	258	311	1,140	1,500	1,681	2,487	2,010	1,508	557	449	295	229	100	38			13,139
1959	9	5	23	30	67	167	210	305	302	277	851	996	1,009			2,768	1,485	1,312	727	416					10,959
1960	3	6	16	19	53	92	243	345	364	437	480	1,101	1,174	1,405	1,743	1,073	703		546	324	262				10,389
1961	37	13	30	50	194	224	338	472	714	1,058	1,599	2,201	3,145	2,578	1,711	1,452	874	451	181	146					17,468
1962	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1963	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1964	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1965	N/A	N/A	N/A	N/A	N/A	57	118	200	164	603	855	1,017	774	1,180		1,075		596	617	299	76				7,631
1966	N/A	N/A	N/A	N/A	N/A	74	103	120	113	634	847	1,954	1,505	2,924	1,644	1,950	1,365	1,273	378	326	358	208	94		15,870
1967	11	12	12	45	96	111	156	245	933	1,737	2,070	4,063	4,045	2,966	1,550		864		181	83	45				19,225
1968		3	27	38	63	106	138	101	683	1,119	1,107	2,444	2,696	1,685	1,055	737	780	546	386	208	191	113			14,226
1969		5	14	19	34	79	144	236	648	676	893	1,210	2,355	725	1,306	864		742	311	186					10,447
1970			1	18	45	89	129	208	515	802	673	654	1,589		1,452	1,325	638	576	232	209	98				9,253
1971		8	17	45	34	51	76	34	182	71	86	387	1,100	1,741	1,415	2,684	1,009	1,138	694	261	144	55			11,232
1972	6	8	8	6	17	11	11	22	497	1,038	710	687	2,056	1,362	2,251	1,657	501	276	160	153					11,437
1973							1	4	393	454	263	3,346	2,290	1,609	1,149	562		130	82	56	34				10,373
1974				1	3			5	12	736	1,236	2,220	2,601	3,224	1,348		159		179						11,724
1975								2	5	516	1,114		2,290	442	667	718	137	115	53						6,059
1976			3		3	11	29	1	4	16	683	394	805	2,329	1,050	491			258	179	100				6,356
1977	1								9	11	514	1,537	2,172	2,300	2,079	1,229	626	484							10,962
1978							2	2	5	1,104	1,898	735	1,220		387	525	234	104	130	150					6,496
1979							2	5	22	33	886	2,203	3,278	2,055	2,155	526									11,165
1980											1,669	1,931	796	1,260					70						5,726
1981											2,112	3,724	3,129	1,785	1,002	837	581								13,170
1982											1,652	1,901	1,954	2,165	666	376			85						8,799
1983												443	1,220	591	495	1,086	704	160							4,699
1984											290	2,232	1,700	1,352	891	1,006	159	55							7,685
1985										702	1,991	2,061	2,494	2,032	1,224	1,205	801								12,510
1986											269	388	1,636	1,048	413	938	768	557	85						6,102
1987											275	424	1,046	942	1,557	749	630	125							5,748
1988										650	1,854	2,822	3,014	1,024	2,218	1,027	923	305							13,837
1989									350	643	2,827	1,420	383	668	634	395	160	91							7,571
1990									392	452	456	1,374	2,266	1,463	1,046	723	173	103	106	29					8,583
1991										351	1,596	3,036	2,653	1,837	468	452	421	117							10,931
1992										819	1,734	1,835	2,556	1,607	1,506	609	474	108							11,248
1993										846	1,876	2,950	1,975	1,467	847	437	175	91							10,664
1994								26	37	393	950	2,424	1,339	1,736	545	242	155				62	76			7,985
1995						23		23	488	1,984	3,060	3,175	1,571	898	250	270	191			129					12,062
AVG 51-60	9	8	19	29	52	92	153	262	413	724	902	1,219	1,196	1,367	1,438	1,383	1,043	692	468	300	178	43	5	0	11,857
AVG 61-70	5	3	8	17	43	74	113	158	377	663	804	1,354	1,611	1,206	872	740	452	418	229	146	77	32	9		13,446
AVG 71-80	1	2	3	5	6	7	12	8	113	398	906	1,344	1,861	1,632	1,250	839	267	225	163	80	28	6			9,153
AVG 81-90									74	245	1,173	1,679	1,884	1,307	1,015	834	490	140	28	3					8,870
AVG 91-95						5		10	105	879	1,843	2,684	2,019	1,509	723	402	283	79		26	16	19			10,578

Note: -from 1968 to 1995 hail catch information was used to determine the number of vessels fishing each week. Where this data was not available effort information was derived from the B.C. saleslip publications which records the number of deliveries. As such the saleslip information somewhat overestimates the actual fleet size as multiple deliveries are common.

-from 1968 to 1995 the number of days fishing were derived from both the hail catch data base and Area Histories produced annually by local fishery officers.

-prior to 1968 the annual Area Histories were the source of both the days fishing and effort information .

TABLE L.6 ANNUAL COMMERCIAL SALESLIP CHINOOK (ADULT + JACK) CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Gillnet									240				3,095				12,762					20,088				1,703														
53	Gillnet									371				2,838				5,380					14,183				1,365				57										
54	Gillnet									30				1,301				4,475					32,375				1,734				148										
55	Gillnet									62				183				4,155					24,196				1,673				308										
56	Gillnet									6				461				8,041					12,890				901				108										
57	Gillnet													306				5,136					9,939				722				78										
58	Gillnet									23				402				9,638					16,920				1,800				751										
59	Gillnet									12				408				8,085					15,994				832				74										
60	Gillnet													266				6,346					22,593				1,047				81										
61	Gillnet									65				1,200				4,763					8,432				332				6										
62	Gillnet									12				243				4,920					8,379				588				62										
63	Gillnet									28	13	15	286	228	489	994	1,125	1,247	2,512	1,340	1	153	111	771	123	125	285	181	48	50											
64	Gillnet				2					92	8	48	70	200	102	404	1,109	1,580	1,566	1,788	1,961	4,369	3,490	1,499	286	123	97	72	50	7											81
65	Gillnet									27	17	30	93	85	102	431	968	763	1,615	2,475	3,008	1,204	1,149		453		168	84	174	35											4
66	Gillnet									43	4	35	56	152	291	307	662	1,000	2,147	3,507	6,622	3,825	3,365	1,011	462	169	201	204	46	46	1	31									30
67	Gillnet										43	8	202	580	376	1,700	1,898	3,576	7,268	4,897	9,362	4,142	1,288	565		239	15	86	9	3											171
68	Gillnet									31	11	80	73	598	601	980	1,322	2,289	5,570	2,583	5,541	2,202	1,089	252	142	36	35	61	144	25	20											97
69	Gillnet				17						20	29	51	76	155	503	994	1,041	1,217	2,011	2,123	2,013	483	241	158		136	79	38												
70	Gillnet									2		1	28	76	196	429	582	525	1,077	848	542	2,176	53	597	146	64	195	89	21	69											
71	Gillnet					2	31		8	6	35	52	84	56	174	143	566	510	280	426	1,018	2,102	2,006	920	717	243	150	177	87	33	17										1
72	Gillnet									21	9	44	20	63	83	72	34	311	772	2,193	1,369	1,053	1,633	512	664	456	85	62	77	339											
73	Gillnet															19	33	907	1,214	1,101	5,934	2,486	1,447	509	409	1	33	15	21	11											
74	Gillnet												2	6			37	64	888	2,712	1,802	2,965	2,225	589	12	38		5	59												
75	Gillnet						18		24	4	7						47	23	1,290	1,825	114	2,888	419	342	178	66	138	26													
76	Gillnet		5									18			25	50	3	11	32	705	521	601	1,562	836	200	12	2	29	109	33	2	4				9					2
77	Gillnet								4	1	4				7		3	52	160	1,096	1,684	1,354	1,530	4,236	306	101	105	4	1												
78	Gillnet											1	1			3	18	48	1,540	2,532	1,656	1,230	5	150	140	66	60	34	67												
79	Gillnet															12	69	108	100	2,040	2,983	3,344	1,103	1,582	339			1												
80	Gillnet																		9	2,870	2,566	660	1,226	18				26												
81	Gillnet																23	9		5,214	7,772	3,508	789	395	163	255	1													2
82	Gillnet																9	17	65	3,720	2,917	3,680	2,797	585	430	6		81												
83	Gillnet																14	63	41	129	783	1,212	507	283	399	108	114													
84	Gillnet																		141	1,144	4,378	2,355	1,019	152	315	278	28													
85	Gillnet																		3,187	5,959	6,636	3,196	1,827	616	857	294													
86	Gillnet																	6		1,550	1,931	3,098	1,755	151	223	249	323	14												
87	Gillnet																72	136	131	1,804	2,403	1,800	861	890	792	146	20												
88	Gillnet																	8	2,611	3,900	5,829	5,155	1,719	1,913	324	239	46				688				118				
89	Gillnet																	1,780	3,172	4,629	3,058	547	268	261	171	71	13												
90	Gillnet																	1,809	2,767	2,283	2,305	2,952	1,266	752	310	111	37	30	14	9									
91	Gillnet																		1,551	5,040	3,949	2,622	1,839	456	192	60	57												
92	Gillnet															68	12	59	3,668	3,475	3,203	4,483	1,776	1,129	216	129	3	12	8										
93	Gillnet																		2,148	5,182	2,316	2,669	2,358	930	255	77	19	38											
94	Gillnet																541	1,187	720	2,395	3,194	2,451	1,689	356	172	52	2			3	18								
95	Gillnet														140	24	308	1,121	2,642	2,116	3,649	867	316	133	61	36			6										

TABLE L.7 ANNUAL COMMERCIAL SALESLIP CHINOOK ADULT CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Gillnet									240				3,095				12,762					20,088				1,703														
53	Gillnet									371				2,838				5,380					14,183				1,365				57										
54	Gillnet									30				1,301				4,475					32,375				1,734				148										
55	Gillnet									62				183				4,155					24,196				1,673				308										
56	Gillnet									6				461				8,041					12,890				901				108										
57	Gillnet													306				5,136					9,939				722				78										
58	Gillnet									23				402				9,638					16,920				1,800				751										
59	Gillnet									12				408				8,085					15,994				832				74										
60	Gillnet													266				6,346					22,593				1,047				81										
61	Gillnet									65				1,200				4,763					8,432				332				6										
62	Gillnet									12				243				4,920					8,379				588				62										
63	Gillnet									28	13	15	286	228	489	993	1,124	1,039	1,847	933	1	117	94	484	100	89	179	140	41	39											
64	Gillnet				2					63	8	48	70	200	102	404	1,109	1,580	1,236	1,163	1,144	2,672	2,179	973	203	75	67	47	28	4											81
65	Gillnet									27	17	30	93	83	102	431	965	762	1,151	1,635	1,688	545	518		255		81	44	110	21											4
66	Gillnet									40	4	35	52	152	290	305	659	997	1,675	2,405	3,075	1,700	1,556	523	293	109	92	113	32	37	1	30									30
67	Gillnet										43	8	198	577	376	1,695	1,873	3,079	6,017	3,694	6,976	3,249	957	365		148	8	55	6	1										163
68	Gillnet									31	11	80	72	598	601	980	1,321	1,969	4,768	1,973	4,094	1,288	585	148	87	17	19	36	97	19	19										69
69	Gillnet				17						20	29	51	76	155	502	985	867	1,066	1,614	1,686	1,492	359	185	117		84	57	26											
70	Gillnet									2		1	28	76	196	427	582	446	994	731	257	1,523	45	509	108	50	129	53	15	54										
71	Gillnet					2	31		8	6	35	51	82	55	146	143	566	510	264	418	687	1,255	1,261	611	443	139	114	136	54	29	13									1
72	Gillnet									21	9	44	20	61	83	72	33	310	621	1,744	1,065	697	1,054	301	433	326	46	50	58	253										
73	Gillnet															19	32	760	1,030	948	4,554	1,891	1,144	353	244	1	24	8	18	11										
74	Gillnet												2	6			37	61	727	2,250	1,467	2,431	1,486	457	5	30		2	52											
75	Gillnet						18		4	4	7						34	19	1,009	1,453	109	2,242	357	285	142	59	101	17												
76	Gillnet		5									17			25	35	3	11	31	557	439	505	1,116	626	142	12		21	69	28	2	4				9				2
77	Gillnet								4	1	4				7		3	46	131	796	1,249	866	1,057	1,843	209	77	76	4	1											
78	Gillnet											1	1			3	14	42	968	1,356	1,127	711	5	107	102	32	29	26	40											
79	Gillnet															12	66	91	92	1,441	2,085	2,313	745	1,073	199			1												
80	Gillnet																		8	2,146	1,745	457	952	16				19												
81	Gillnet																23	9		2,991	3,860	1,989	503	275	96	131	1													
82	Gillnet																9	15	52	2,208	1,132	2,283	1,399	241	238	5		56												
83	Gillnet																12	59	36	106	623	744	299	129	249	74	64												
84	Gillnet																		89	847	2,934	1,489	712	103	221	99	20												
85	Gillnet																		2,267	3,346	4,355	2,109	1,258	488	347	233													
86	Gillnet																	6		1,239	1,490	2,169	1,496	110	163	198	171	8												
87	Gillnet																67	127	124	1,346	1,302	823	493	537	403	86	18												
88	Gillnet																	8	2,277	3,353	5,022	4,132	1,438	1,717	282	225	34				616				118				
89	Gillnet																	1,548	2,620	3,320	2,376	513	264	212	155	60	13												
90	Gillnet																	1,596	2,337	1,850	1,565	2,227	1,050	675	263	88	34	21	10	8										
91	Gillnet																		1,372	4,203	3,361	2,162	1,592	393	173	44	36													
92	Gillnet															68	12	53	3,529	3,331	2,990	4,215	1,682	1,086	206	117		10	8											
93	Gillnet																		1,957	4,556	2,058	2,425	2,194	891	242	75	19	38												
94	Gillnet																535	1,173	614	2,162	2,890	1,971	1,529	334	167	51	2			3	7									
95	Gillnet														140	23	307	968	2,119	1,796	3,332	764	298	131	50	12			6											

TABLE L.8 ANNUAL COMMERCIAL SALESLIP CHINOOK JACK CATCH DATA BY STATISTICAL WEEK FOR AREA 4.

YEAR	GEAR	31	32	33	34	41	42	43	44	45	51	52	53	54	61	62	63	64	71	72	73	74	75	81	82	83	84	91	92	93	94	101	102	103	104	105	111	112	113	114	120
52	Gillnet																																								
53	Gillnet																																								
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60	Gillnet																																								
61	Gillnet																																								
62	Gillnet																																								
63	Gillnet															1	1	208	665	407		36	17	287	23	36	106	41	7	11											
64	Gillnet									29									330	625	817	1,697	1,311	526	83	48	30	25	22	3											
65	Gillnet													2			3	1	464	840	1,320	659	631		198		87	40	64	14											
66	Gillnet									3			4		1	2	3	3	472	1,102	3,547	2,125	1,809	488	169	60	109	91	14	9		1									
67	Gillnet												4	3		5	25	497	1,251	1,203	2,386	893	331	200		91	7	31	3	2											8
68	Gillnet												1				1	320	802	610	1,447	914	504	104	55	19	16	25	47	6	1										28
69	Gillnet															1	9	174	151	397	437	521	124	56	41		52	22	12												
70	Gillnet															2		79	83	117	285	653	8	88	38	14	66	36	6	15											
71	Gillnet											1	2	1	28				16	8	331	847	745	309	274	104	36	41	33	4	4										
72	Gillnet													2			1	1	151	449	304	356	579	211	231	130	39	12	19	86											
73	Gillnet																1	147	184	153	1,380	595	303	156	165		9	7	3												
74	Gillnet																	3	161	462	335	534	739	132	7	8		3	7												
75	Gillnet								20								13	4	281	372	5	646	62	57	36	7	37	9												
76	Gillnet											1				15			1	148	82	96	446	210	58		2	8	40	5											
77	Gillnet																	6	29	300	435	488	473	2,393	97	24	29													
78	Gillnet																4	6	572	1,176	529	519		43	38	34	31	8	27											
79	Gillnet																3	17	8	599	898	1,031	358	509	140														
80	Gillnet																		1	724	821	203	274	2				7												
81	Gillnet																			2,223	3,912	1,519	286	120	67	124														2
82	Gillnet																	2	13	1,512	1,785	1,397	1,398	344	192	1		25												
83	Gillnet																2	4	5	23	160	468	208	154	150	34	50													
84	Gillnet																		52	297	1,444	866	307	49	94	179	8													
85	Gillnet																		920	2,613	2,281	1,087	569	128	510	61														
86	Gillnet																			311	441	929	259	41	60	51	152	6												
87	Gillnet																5	9	7	458	1,101	977	368	353	389	60	2													
88	Gillnet																		334	547	807	1,023	281	196	42	14	12					72								
89	Gillnet																	232	552	1,309	682	34	4	49	16	11														
90	Gillnet																	213	430	433	740	725	216	77	47	23	3	9	4	1											
91	Gillnet																		179	837	588	460	247	63	19	16	21													
92	Gillnet																	6	139	144	213	268	94	43	10	12	3	2												
93	Gillnet																		191	626	258	244	164	39	13	2														
94	Gillnet																6	14	106	233	304	480	160	22	5	1					11								
95	Gillnet															1	1	153	523	320	317	103	18	2	11	24													