The 1994 Fishwheel Project on the Nass River, BC

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THE 1994 FISHWHEEL PROJECT ON THE NASS RIVER, BC

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ABSTRACT

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Three fishwheels were operated on the lower Nass River from 7 June to 10 September 1994. The fishwheels operated for a total 5,835 h and captured 49,949 salmon. Catches included 26,472 sockeye, 12,436 pink, 7,670 coho, 2,913 chinook, 250 chum, and 208 steelhead. Of these, 10,916 sockeye, 4,811 coho, 1,917 chinook, and 60 steelhead were tagged. A total of 6,706 tagged fish were later recovered in fisheries and on tributaries of the Nass River. A total of 4,058 sockeye were selectively harvested from 2 of the fishwheels and from limited beach seining from 12 to 18 July. We used counts of marked and unmarked fish from the Meziadin fishway and inriver harvests to compute mark-recapture escapement estimate for sockeye salmon of 310,043. The fishwheels did not operate through the entire coho run and recovery efforts were confined to an early run stock (Meziadin River), thus, the escapement estimate of 161,237 coho upstream of the fishwheels represents a portion of the total coho escapement. The net chinook escapement (21,169) was estimated using carcass and tag recoveries from several sites in the watershed. The 3 fishwheels caught an estimated 7.6% of the sockeye run and 11.0% of the chinook run. The fishwheels caught an estimated 4.3% of the portion of the coho run that had similar run timing as the Meziadin River stock. We used daily tag release and recovery data to reconstruct the sockeye abundance in the lower river and assess the within-season variation in the portion of the run caught by the fishwheels. In contrast with previous years, the peaks in fishwheel efficiency on sockeye did not coincide with peak sockeye abundance or peaks in water levels.

RÉSUMÉ

Link, M. R. et K. K. English. 1997. The 1994 fishwheel project on the Nass River, BC. Can. Manuscr. Rep. Fish. Aquat. Sci. 2421: xi + 93 p.

Trois filets rotatifs ont été installés du 7 juin au 10 septembre 1994 dans le bassin inférieur de la rivière Nass. Les filets étaient en service pendant 5 835 h en tout et ont permis de capturer 49 949 saumons. Parmi les prises, il y avait 26 472 saumons rouges, 12 436 saumons roses, 7 670 saumons coho, 2 913 saumons quinnat, 250 saumons kéta et 208 saumons truites arc-en-ciel. Là dessus, 10 916 saumons rouges, 4 811 saumons coho, 1 917 saumons quinnat et 60 saumons truites arc-en-ciel ont été marqués. Plus tard, on a récupéré en tout 6 706 poissons marqués dans les pêcheries et les tributaires de la rivière Nass. Du 12 au 18 juillet, 4 058 saumons rouges ont été récoltés sélectivement dans 2 des filets rotatifs et par sennage de rivage. Nous avons utilisé les comptages de poissons marqués et non marqués de la passe Meziadin et des récoltes à l'intérieur de la rivière pour déterminer par marquage-recapture l'échappée de saumons rouges, soit 310 043. Les filets rotatifs n'étaient pas en service pendant toute la remontée des saumons coho, la récupération se limitant à un stock de remontée précoce (rivière Meziadin); l'évaluation de l'échappée, soit 161 237 saumons coho, en amont des filets, ne représente donc qu'une partie de l'échappée totale de ces saumons. L'échappée nette de saumons quinnat (21 169) a été déterminée grâce à des carcasses et à la récupération de marques provenant de plusieurs sites dans le bassin. Les 3 filets ont permis de capturer selon les estimations 4,3 % de la fraction de remontée de saumons coho, qui présentait la même chronologie de remontée que le stock de la rivière Meziadin. Nous avons utilisé les données quotidiennes de marquage et de récupération pour évaluer l'abondance des saumons rouges dans le bassin inférieur de la rivière et déterminer la variation intra-saisonnière dans la portion de la remontée prise par les filets rotatifs. Contrairement aux années précédentes, les pics des rendements des filets pour les saumons rouges ne coïncidaient pas avec les pics d'abondance en saumons rouges ni avec les pics de niveau d'eau.

INTRODUCTION

This report documents the results of the third consecutive year (1994) of the Nisga'a Fisheries fishwheel project on the Nass River, BC. The report documents fishwheel catches and effort, mark-recapture data and population estimates, and biological and age information collected during the 1994 season.

Fishwheels were reintroduced to the Nass River in 1992 (Department of Fisheries 1958, 1959, Link et al. 1996) as a means to capture chinook salmon (*O. tshawytscha*) and steelhead trout (*O. mykiss*) for radio telemetry studies (Koski et al. 1996a, Koski et al. 1996b). These early studies were designed to determine the escapement and distribution of the numerous chinook and steelhead stocks within the Nass watershed. Sockeye salmon (*O. nerka*), coho salmon (*O. kisutch*), and chum salmon (*O. keta*) were also tagged at the fishwheels. Link et al. (1996) demonstrated that the tagging program at the fishwheels could provide useful postseason escapement estimates for sockeye and coho. Link and English (1996) did further analysis of the tag recovery data which indicated that the fishwheel program should provide more accurate inseason estimates of sockeye escapement to the Nass River than the nearby gillnet test fishery at Monkley Dump (Southgate et al. 1990, Fig. 1).

The Monkley Dump gillnet test fishery was cancelled in 1994 and the Department of Fisheries and Oceans entrusted Nisga'a Fisheries to provide inseason sockeye escapement estimates to the Nass River using the fishwheel tagging program. The objectives of the 1994 Nass River fishwheel project were:

1. Use the fishwheels to capture, tag, and recapture sockeye salmon for use in the inseason estimation of the sockeye escapement;

2. use the fishwheels to conduct a harvest of sockeye in excess of the target escapement if the forecasted escapement exceeded the target escapement by early July or beyond;

3. generate postseason estimates of the escapement of chinook, sockeye, and coho salmon returning to the Nass River and document the migration timing of each species; and

4. collect and summarize biological information from fish captured in the fishwheels.

STUDY AREA

The Nass River drains 20,500 km^2 and is the third largest watershed that lies entirely within British Columbia. It has an average annual discharge of 28,700 cfs and a range of 860 to 192,000 cfs (Holland 1976). The river originates in the Skeena Mountains and flows south and southwest for approximately 400 km, entering the Pacific Ocean at Portland Inlet on the north coast of British Columbia (Fig. 1).

METHODS

FISHWHEEL OPERATION

Three fishwheels (Meehan 1961, Donaldson and Cramer 1971) similar to those described by Link and English (1996) were operated on the Nass River in 1994. Two of the fishwheels had been constructed in 1993 and operated again in 1994 near the village of Gitwinksihlkw (Fig. 1). A third fishwheel was constructed in 1994 and fished near Grease Harbour (Fig. 1). The procedures used in 1994 for selecting a fishwheel site and operating fishwheels were the same as those described in Link et al. (1996).

Daily maximum and minimum water temperatures (in °C) and levels (in m) at Gitwinksihlkw were recorded using an electronic data logger.

FISHWHEEL EFFORT AND CATCH

Daily fishing effort of the fishwheels was measured in 2 ways. First, total effort was measured as the total time each fishwheel was fishing from midnight to midnight each day. This effort value gave an indication of the amount of down time (non-operational time) associated with each date. Second, the effort used to calculate catch per unit effort (CPUE, fish per hour) was measured as the number of hours fishing that went into obtaining each day's catch. These two effort values were different on most days because the time of the last sampling session on each day varied; this effected how much effort went into a given day's catch. For example, if the last tagging session on day t finished at 2200 h, and on day $t+1$ the last tagging session ended at 2000 h (all fish were removed after each session and the fishwheel fished continuously through day t and $t+1$), only 22 h of fishing effort went into obtaining the catch on day $t+1$, whereas the total effort for day $t+1$ would be 24 hours.

The speed of the fishwheel (RPM) was recorded at the end of each tagging session to the nearest 0.1 revolutions in one minute period. If RPM was measured more than once in a day, the arithmetic mean of the measurements was used as the value for that day.

BEACH SEINE OPERATION

Beach seining was conducted at Grease Harbour to augment the harvest rate of fishwheel 3 at Grease Harbour and to obtain greater numbers of fish (tagged and untagged) to derive inseason mark-recapture population estimates. A 150 m net (6.25 cm stretched mesh) was deployed from a 7.5 m aluminium river boat. Sets were made adjacent to a beach. The crew was made up 5 to 7 individuals; 2 were stationed in the boat for the initial setting of the net and the entire crew would be involving in dragging the net ashore. The net was drawn up by hand and with the aid of a gas-powered portable winch.

TAGGING

The original study design for 1994 established a goal to tag all uninjured adult fish (with the exception of sockeye) where, any fish above a daily catch of 1,000 were to be released back to the river untagged. Due to several shipping delays in tag orders and higher catches than expected, the tagging goal of all uninjured fish was not achieved on some days.

Different tag types were used for different species. Numbered spaghetti tags (Floy Tag Model FT-4)[1] were applied to sockeye; numbered T-bar anchor tags[1] and operculum tags (Ketchum kurl-lock tags)[2] to chinook; unnumbered color coded spaghetti tags to coho and numbered T-bar anchor tags to steelhead. T-bar anchor tags were applied to sockeye in lieu of spaghetti tags late in the year. All tagged sockeye were given a secondary mark in the left operculum using a single-hole paper punch. The operculum punch was applied in an attempt to determine the degree of tag loss between the fishwheels and the Meziadin fishway. The different tag types used reflected different recovery goals and opportunities. Spaghetti-tagged sockeye and coho were to be visually identified at the Meziadin fishway counting chutes, where visibility was important and, in the case of coho, recovery was difficult. Chinook (operculum tags) were to be recovered as carcasses on the spawning grounds where high tag loss could be expected with spaghetti tags (Koski et al. 1996), and steelhead (T-bar anchor tags) were expected to carry their tags for a much longer period of time where minimal physical damage was preferred.

The spaghetti and anchor tags were applied through the dorsal musculature near the posterior end of the dorsal fin. The operculum tags were attached to the left opercular plate. The handling and tagging procedures used are described in Link et al. (1996).

HARVESTING

A portion of the sockeye catch was harvested in 1994. These fish were harvested under an Excess to Spawning Escapement Requirement (ESSR) license granted to the Nisga'a Tribal Council for the period 12 July to 19 July 1994. Sockeye captured in the fishwheels that were

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[1] Floy Tag and Manufacturing Co. Inc., 4616 Union Bay Place N.E., Seattle, WA 98105 USA

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

not required for tagging purposes and all sockeye captured in the beach seine were harvested. Fish to be harvested were dipnetted from the holding pens in the fishwheel pontoons (or hand picked from the seine net), bled by breaking the base of the gill arch, and transported in totes of flake ice. Harvested sockeye were shipped to Prince Rupert for processing and then sold through a broker to retail outlets on the West Coast of Canada and the United States.

TAG RECOVERY

Tagged fish were recovered throughout the Nass River watershed using a variety of techniques. The majority of tagged sockeye and coho salmon were counted and/or recovered at the Meziadin fishway (Haugan et al. 1989; Fig. 1). Tagged chinook salmon were recovered primarily from the spawning grounds. Additional recoveries of tagged salmon were obtained from the fishwheels, inriver net and sport fisheries, and the commercial fishery in the ocean.

A high proportion of the total annual Nass River sockeye salmon escapement is from the Meziadin Lake stock; as a result, the fishway provided a very large sample of fish to examine for tags applied in the lower Nass River. The field crew working at the fishway was instructed to count every tagged fish that passed through the fishway and capture and record the numbers from as many tagged fish as possible without excessively delaying the migration of fish. A portion of each day's tagged fish were removed from the holding area in the upper end of the fishway with a dipnet; the tag was then removed and the fish was released upstream of the fishway. In addition, 25 to 50 untagged sockeye were dipnetted out of the fishway and examined for the presence of an operculum hole (secondary mark).

POPULATION ESTIMATES

Inseason escapement estimates

Inseason population estimates for sockeye salmon were derived using two methods. The first method used a preseason estimate of the catchability of fishwheel 1 to extrapolate fishwheel 1 catches early in the sockeye run (June). The preseason estimate of the catchability coefficient (1/90 per fishwheel day) was based on an estimate from the 1992-93 operation of this fishwheel. The second method used tag recovery data from Grease Harbour (fishwheel and seine) once sufficient numbers of tagged and untagged fish were recovered to develop a reliable mark-recapture estimate. The mark-recapture estimate was considered to be the best escapement estimate and replaced the estimate based on the first method by mid-July.

Method 2 involved using the mark-recapture data to estimate the period-specific catchability of the Gitwinksihlkw fishwheels. This estimate of the catchability was used to extrapolate the daily sockeye catch at the Gitwinksihlkw fishwheels to derive a daily escapement estimate:

1) $$Escapement_i = Exp.Factor_i * Fwcatch_i$$

where $Fwcatch_i$ was the total sockeye catch in fishwheels 1 and 2 on day i, and *Exp. Factor* for day i was the inverse of the estimated average catchability over a 5-day period:

$$2) \qquad Exp.Factor_i = \frac{\sum_{l=i+1}^{i+5} GHbrCatch_l}{\sum_{l=i+1}^{i+5} Adj.GHbrRcaps_l}$$

where $GHbrCatch_l$ was the total number of fish examined for tags at Grease Harbour on day l, and the $Adj.GHbrRcaps_l$ was the estimated number of fish captured at Grease Harbour that had been previously captured in fishwheels 1 and 2 (i.e., "adjusted" recaptures). Actual tag recoveries alone could not be used because the proportion of the fishwheel catch that was tagged each day varied considerably over the season. Early tag recovery information indicated that tagged fish were taking up to 10 days to reach Grease Harbour. Therefore, to estimate $Adj.GHbrRcaps_l$, we used the ratio of the total sockeye catch in the Gitwinksihlkw fishwheels divided by the total sockeye tagged from the previous 10-day period:

$$3) \qquad Adj.GHbrcaps_l = ActualRcps_l * \sum_{m=l-10}^{l-1} \frac{Fwcatch_m}{Fwtagged_m}$$

where $Fwcatch_m$ was the number of sockeye caught in fishwheels 1 and 2 on day m, and $Fwtagged_m$ was the number of sockeye tagged on day m.

Because the estimate of the *Exp. Factor* for day i would use data obtained up until day $i+5$, a given escapement estimate was subject to change. This did not preclude an estimate using any available data to date, but the estimate would be revised as additional days' data were obtained (up to day 5). A differential tag loss/removal rate was not used in this inseason estimation procedure in 1994.

Postseason escapement estimates

Postseason population estimates were calculated for sockeye, coho, and chinook salmon using the tag information from the fishwheels, the Meziadin fishway, and spawning ground surveys. These data were pooled to include fish tagged and examined over the entire run. The postseason escapement estimates were made using the modified Petersen formula (Ricker 1975). For the sockeye and coho estimates, the fish examined at the Meziadin fishway were used as the recapture sample (C in the Petersen formula; Ricker 1975). For chinook, the catch from the Grease Harbour fishwheel and carcasses from spawning ground surveys were pooled and used as the recapture sample. Confidence limits for the mark-recapture estimates were determined using fiducial limits for the Poisson distribution (Ricker 1975). There were not

enough tags applied or fish examined to estimate the steelhead population from mark-recapture data.

Differential removal of tagged fish

Mark-recapture estimates are sensitive to differential mortality of tagged fish relative to untagged fish. Link and English (1996) identified the Nisga'a fishery as a source of differential removal of tagged fish from the fishwheels. To estimate the rate of selective removal of tagged fish by the Nisga'a gillnet fishery, a portion of the catch was examined by Nisga'a Fisheries personnel for the presence of tags.

The tag rate in the Nisga'a catch (*NTR*) in the vicinity of the fishwheels and upstream was compared with the tag rate in the escapement (*ETR*) to determine the differential harvest of tags (*DH*). First, we estimated the total tags removed by the Nisga'a fishery (*NTT*) as the total Nisga'a harvest in the vicinity of the fishwheels (*NH*) multiplied by the estimated tag rate in the catch (*NTR*).

4) $$NTT = NH * NTR$$

The expected number of tags in the Nisga'a fishery (*ET*) had there been no selectivity toward tagged fish was calculated as:

5) $$ET = NH * ETR$$

The differential harvest (*DH*, in numbers of fish) was estimated as:

6) $$DH = NTT - ET$$

And finally, the differential removal rate of tagged fish in percent (*%RR*) was derived as:

7) $$\%RR = \frac{DH}{NTT} * 100$$

This removal rate is an approximation because it uses the tag rate in the escapement as an estimate of the true tag rate before the selective harvest. Since a positive *%RR* would reduce the tag rate in the escapement, the effect of this simplification is to slightly underestimate *ET* and, therefore, underestimate both the differential harvest and the *%RR*.

RUN RECONSTRUCTION

To assess the suitability of the fishwheels as an inseason index of the sockeye escapement to the lower river, we reconstructed the sockeye run at the fishwheel site (Link and

English 1996), compared fishwheel catches with the reconstructed run, and examined the variation in the estimated portion of the run the fishwheels caught across time. The run reconstruction was made possible because daily catch and tag totals from the fishwheels were known, as were the daily counts of tagged and untagged sockeye at the Meziadin fishway.

AGE AND LENGTH SAMPLING

A portion of each day's catch (up to a maximum of 25 sockeye, 20 coho, and 20 chinook) was sampled for scales, length, and sex. The nose-fork length was measured (to the nearest cm) using a fabric measuring tape affixed to the inside of the tagging tray. Jacks were defined as chinook salmon less than 72 cm (2-ocean-year jacks), sockeye salmon less than 45 cm and coho salmon less than 40 cm. Two scales were taken from the preferred area for sockeye, and five scales were collected from coho, chinook, and steelhead. Scales were mounted on numbered, gummed scale cards. All scale samples were sent to the Department of Fisheries and Oceans Scale Lab in Vancouver. Fish ages are presented using Gilbert-Rich notation where the first digit represents total age and the second digit denotes the number of winters the fish resided in fresh water since egg deposition. The daily catch of adult fish of each species at Gitwinksihlkw was used to derive species-specific daily CPUE (catch per unit effort) and these were used to weight the age composition data for chinook and coho. The age data for sockeye salmon were weighted with the reconstructed abundance from tag recovery data. Sex was determined from visual inspection of the fish. However because the fish were ocean-bright, it was difficult to differentiate between males and females. Therefore the sex data is considered not reliable and is not summarized here.

RESULTS

FISHWHEEL OPERATION

The level of the Nass River at Gitwinksihlkw varied by 3.3 m between 12 June and 12 September (Table A-1). The water levels showed significant day-to-day variability throughout the season with a steady declining trend from its peak on 26 June (Fig. A-1). Water temperature ranged from 7.5 °C to 11.9 °C over the same period, peaking between mid-July and mid-August (Table A-1, Fig. A-1).

Fishwheel 1 was operated in the same location as in 1993; and fishwheel 2 was operated at a new site on the opposite shore from fishwheel 1 and downstream approximately 150 m. Fishwheel 3 fished in two locations, the first location was on the river's north bank approximately 2 km downstream of the outlet of Grease Harbour canyon. Due to low water velocity and poor catches at the initial site, fishwheel 3 was moved to a site on the same side of the river, about 100 m upstream of the outlet of Grease Harbour canyon. Some of the day-to-day changes in fishwheel operation are documented in the comments section of Table B-1; small changes in the position of fishwheel 1 and 3 relative to the bank were common.

FISHWHEEL EFFORT

The fishwheels were operated from 7 June to 10 September and fished for an estimated total of 5,873 h (Table A-2). The three fishwheels fished a total of 93% of the time they were in place compared with 72% in 1992 and 78% in 1993 (Fig. 2, Table A-1; Link et al. 1996, Link and English 1996). Fishwheel speed fluctuated from 1.3 to 3.1 RPM, and averaged between 1.5 and 2.0 RPM for most of the period (Fig. 2).

CATCHES AND CATCH PER UNIT EFFORT

A total of 49,949 salmon (47,297 adults, 2,652 jacks) were captured in the fishwheels in 1994 (Table 1). The sockeye catch was the largest (26,472), followed by pink (*O. gorbuscha*, 12,436), coho (7,670), chinook (2,913), chum (250), and steelhead (208). Fishwheel 2 captured the most fish (23,235) followed by fishwheel 1 (14,662) and fishwheel 3 (12,052).

The CPUE for chinook salmon in fishwheels 1 and 2 showed a bimodal pattern, with one peak in mid- to late June and the other in early July (Fig. 3). The run was interrupted by high water on 25 and 26 June (Table A-1, Fig. A-1). The peak catch of adult chinook in fishwheel 1 and 2 occurred on 1 July with a total catch of 206 fish and a CPUE of 7.4 fish per hour (Table B-1). The first chinook was caught in fishwheel 1 on 7 June, the day the fishwheel began fishing. The 50% point of the cumulative CPUE occurred on 24 June for fishwheel 2 and on 1 July for fishwheel 1. Catches in fishwheel 3 peaked on 11 July when 178 chinook were caught; this catch represented 28% of the total catch for fishwheel 3 (Table B-1).

The pattern of CPUE for sockeye salmon versus time was similar for each of the 3 fishwheels (Fig. 4). The sockeye CPUE peaked at the Gitwinksihlkw fishwheels in mid-July, followed by two smaller peaks; one in late July and one in mid-August. The peak catch of adult sockeye occurred in fishwheel 2 on 13 July with a daily catch of 513 and a CPUE of 22.8 fish per hour (Table B-2, Fig. 4). The 50% point in the cumulative CPUE occurred on 15 July for fishwheel 1, on 16 July for fishwheel 2, and 29 July for fishwheel 3. The first sockeye were caught on 10 June in fishwheels 1 and 2 (Table B-2).

The CPUE for coho salmon showed a sharp peak on 11 August when a total of 647 adult coho were caught in fishwheels 1 and 2 for a CPUE of 29.1 fish per hour (Table B-3, Fig. 5). Fishwheel 3 showed a different pattern, with no distinct peak (Fig. 5). The fishwheels did not operate through the entire coho run so the fishwheel catches are only indicative of the early-run and, presumably, upper-river stocks. The first adult coho was caught on 21 July in fishwheel 2. The 50% cumulative CPUE point occurred on 17 August for fishwheel 1, on 14 August for fishwheel 2, and on 20 August for fishwheel 3.

Steelhead catches were low relative to other species, and precise run timing was more difficult to determine from daily CPUE (Table B-4, Fig. 6). A peak catch of 10 steelhead in both fishwheel 2 and fishwheel 3 occurred 18 August; CPUE peaked on 18 August for

fishwheel 2 and on 25 August for fishwheel 3. Fishwheel 1 captured a total of 41 steelhead, most of which were captured in late August (Fig. 6). As with the coho run, the fishwheels did not operate through the entire steelhead run. The 50% cumulative CPUE point occurred on 24 August for fishwheel 1, on 14 August for fishwheel 2, and 20 August for fishwheel 3.

The CPUE for pink salmon peaked in mid-August for fishwheels 1 and 2 and late August for fishwheel 3 (Fig. 7). The largest catches occurred on 16 August for fishwheel 1 (405), on 15 August for fishwheel 2 (355), and on 24 August for fishwheel 3 (196; Table B-4). The first pink salmon was caught on 7 July in fishwheel 2. The 50% cumulative CPUE point occurred on 16 August for fishwheel 1, on 15 August for fishwheel 2, and 15 August for fishwheel 3.

The CPUE for chum salmon showed a run timing pattern very similar to that for pink salmon, with the exception that few chum appear to migrate above Grease Harbour (Fig. 8). The first chum salmon was caught in fishwheel 2 on 9 July. Most of the chum salmon were caught after 6 August (Table B-4).

Catches of non-salmon species (Table B-5) included 47 Pacific lamprey (*Lampetra tridentata*), 42 Dolly Varden (*Salvelinus malma*), 5 cutthroat trout (*O. clarki*), 11 whitefish (species not determined), 3 harbour seals (*Phoca vitulina*), 2 rainbow trout (non-anadromous, *O. mykiss*), and 1 beaver (*Castor canadensis*).

BEACH SEINE OPERATION

Beach seining was conducted between 29 June and 2 August; a total of 42 sets were made during this period. A total of 80 chinook and 607 sockeye were captured with the beach seine. The peak daily catch from the beach seining was 476 on 7 July, and the most sets conducted in a single day was 5 on 5 July (Table B-6). The average sockeye catch was 37 fish per set, and the average number of sets per day was 2.6.

TAGGING

A total of 10,916 sockeye, 4,811 coho, 1,917 chinook, and 60 steelhead were tagged at the fishwheels (see Table 1 for a breakdown by fishwheel). These totals represented 61%, 88%, 94%, and 49% of the total catch for each species from fishwheels 1 and 2, respectively. A combination of spaghetti, operculum, and anchor tags were used through the season; the types of tags applied by date and by species are summarized in Table B-7.

HARVESTING

A total of 4,058 sockeye were harvested under an ESSR license from 12 to 19 July. Approximately 63% were harvested from fishwheel 2, 37% were taken from fishwheel 3, and less than 1% were from captured using the beach seine.

TAG RECOVERY

A total of 6,712 tagged fish were recovered at various locations in the Nass watershed (Table 2). Most of the recoveries were at the Meziadin fishway (4,912), followed by the fishwheels (1,205), the Nisga'a fishery (498), Grease Harbour seine (69), other spawning grounds (24), and the sport (1) and commercial fisheries (1).

Recaptures of tagged fish in the fishwheels indicate that chinook salmon exhibit the greatest time between tagging and subsequent recapture. Chinook averaged of 17.9 d and ranged from 0 to 44 d ($n = 301$) between tagging and subsequent recapture in the fishwheels (Table C-1 and Fig. 9). The majority of these fish were at large for 10 to 25 d (Fig. 9). Travel times for tagged chinook recovered at the Meziadin fishway ranged from 45 to 88 d and averaged 66 d (Table C-2).

Recaptures of tagged sockeye at the fishwheels indicate that sockeye spend considerably less time at large than do tagged chinook (Table C-3, Fig. 10). Greater than 90% of sockeye recovered in fishwheels 1 and 2 were recovered within 9 d of tagging, and within 13 d for recoveries in fishwheel 3 (Table C-3). The mean and median times at large, respectively, for sockeye were 3.6 d and 1 d for fishwheel 1, 3.5 d and 3 d for fishwheel 2, and 8.6 d and 7 d for fishwheel 3 (Table C-3 and C-4). Recoveries of fish tagged in fishwheel 1 showed a very similar distribution of time-at-large to those fish tagged in fishwheel 2 (Fig. 10).

Two sockeye that were tagged at the fishwheels were recovered at the Babine River counting fence in the Skeena River watershed (Fig. 1). One of these fish (tag no. 26025) was tagged at fishwheel 1 on 30 July and recovered at the Babine fence on 21 August (22 d later). The other fish (tag no. 27046) was tagged at fishwheel 2 on 8 August and recovered at the Babine fence on 28 September (51 d). The minimum distance via water from Gitwinksihlkw to the Babine fence is approximately 590 km. Therefore, these two fish travelled an average of 28 and 12 km per day, respectively.

A total of 158,627 adult sockeye, 3,570 adult coho, and 347 adult chinook were counted at the Meziadin fishway (Tables D-1 and D-2) from 13 July to 29 September. The sockeye counts at the fishway showed a bimodal pattern, with peaks centred around 26 July and 29 August (Fig. 11). The extremely low sockeye counts in late July and early August were associated with very low water levels and peak water temperatures in the Nass (Fig. A-1) and Meziadin rivers. The daily proportion of the sockeye count that was tagged ranged from 0.8% (18 September) to 6.8% (31 July) and averaged 3.0%. The portion of sockeye with tags dropped from approximately 5% in July to between 1% and 3% beginning with the second mode of abundance in mid-August (Fig. 11).

The peak coho count at the Meziadin fishway was 417 fish on 11 September (Table D-2). The portion of coho with tags peaked with the daily coho counts (Fig. 11), while the high portion of fish with tags in late September is due to a very small sample. Chinook counts showed several small peaks spread from late July until late September (Table D-2).

Of the 4,794 tagged sockeye observed at Meziadin, 1,168 (24%) were dipnetted out and their tag numbers were recorded (Table D-1). The remainder were simply counted as they passed through the viewing chute. Further description and analysis of the tagged sockeye recoveries at the Meziadin fishway is provided in the RUN RECONSTRUCTION section.

A total of 1,083 untagged sockeye were dipnetted from the Meziadin fishway and examined for the presence of an operculum punch (secondary mark); none were found and no tag loss was observed.

POPULATION ESTIMATES

Inseason estimates

From late June to early August, sockeye escapement estimates were generated daily and provided to the Department of Fisheries and Oceans in Prince Rupert at least 3 times per week (Table E-1).

Postseason estimates

For sockeye and coho, a range of postseason Petersen population estimates were calculated assuming that tagged fish may be selectively removed from the population at the rate of 0% to 50% (Table 3). The sockeye escapement estimates for above Gitwinksihlkw ranged from 180,594 (50% differential removal of tagged fish) to 361,156 (0% removal of tagged fish). Differential loss of tagged fish or tags could have occurred as a result of several factors: 1) immediate mortality of tagged fish; 2) selective removal of tagged fish by the river gillnet fishery; 3) tag loss; and 4) poor detection of tags at the recovery site. These factors are examined below in our discussion of the mark-recapture model assumptions.

The pooled Petersen estimate coho estimate ranged from 89,517 (50% removal of tagged fish) to 178,996 (0% removal) (Table 3). These estimates are based on 3,570 fish examined and 95 tags recovered from coho at the Meziadin fishway. These escapement estimates represent only those fish that migrated past the Gitwinksihlkw fishwheels at the same time as the Meziadin coho. Therefore, they represent minimum estimates of the escapement above Gitwinksihlkw because coho are caught in the Nass River from July to December (i.e., well beyond the period that Meziadin coho travel through the lower Nass and the period that the fishwheels operated). In addition, coho return to numerous streams downstream of Gitwinksihlkw.

The data required to derive the chinook escapement estimate required considerably more effort to collect than that for the coho estimate (Table 4). A total of 30 aerial or foot surveys were conducted on 8 spawning grounds. Aerial surveys were used to determine the distribution and timing of spawning fish but the aerial counts were not specifically used to derive the population estimates. A total of 1,127 chinook were examined and 67 tags were

observed (pooled carcass recovery, fishwheel 3, and seine data). With a total differential tag removal rate of 20%, the estimated chinook escapement above Gitwinksihlkw was 24,249 (Table 4).

The proportions of the chinook, sockeye, and coho run captured in the fishwheels based on the fishwheel catches and mark-recapture population estimates above Gitwinksihlkw were 11.0%, 7.6%, and 4.3%, respectively (Table 5). Fishwheel 2 captured the greatest proportion of the run for all species combined (3.3 %), followed by fishwheel 3 (1.8%) and fishwheel 1 (1.7%).

RUN RECONSTRUCTION

Analysis of the 1,169 spaghetti tags recovered from sockeye at the Meziadin fishway revealed a positively skewed distribution of travel times with a mode of 24 d and a mean of 25.7 d (Fig. 12, top, Table 6)). The tag recovery data indicate an average speed of approximately 5.9 km per day with a maximum speed of 15.0 km per day (10 d travel time). The mean travel times from the fishwheels to the Meziadin fishway by tagging period revealed a pattern of shorter travel times in early July and late August than other times (Fig. 12, Table 6). The longer travel times for fish tagged in late July and early August were probably a result of very low water levels in the Nass (Fig. A-1) and Meziadin rivers at this time.

The reconstructed sockeye abundance indicates that the efficiency of the fishwheels peaked in early July and then steadily declined (Fig. 13). When compared with the estimated escapement, the fishwheel catchability does not appear to be density dependent (Fig. 13). Because the reconstruction method estimated a total escapement of 348,000 sockeye (biased high), the percent captured shown in Fig. 13 is the minimum. For example, if the results were scaled to represent an escapement of 200,000 above the fishwheels (the DFO estimate, Les Jantz, DFO, Prince Rupert, pers. comm.), the y-axis on the left would peak at 22% instead of 14%. The efficiency of the fishwheels was not closely correlated with water levels in the Nass River (Fig. 14).

AGE AND LENGTH SAMPLING

Chinook salmon that returned to the Nass River in 1994 were predominantly 5-year-old fish (brood year 1989) that left freshwater during their second year of life (5_2) based on chinook sampled at the fishwheels and weighted by the CPUE in the Gitwinksihlkw fishwheels (54.8%; Table 7). The other dominant age classes were 4_2 (11.4%) and 6_2 (31.6%). Similar to the 1993, approximately 1% of the chinook sampled at the fishwheels in 1994 had no fresh water annulus on their scale (i.e., "sub-one" fish). The chinook age and length data are presented in Table F-1 and summarized in Table 8. Ages based on scale samples could not be determined for 22% of the scale samples taken for chinook. Age-six chinook showed the least growth per year for time spent in the ocean (Fig. 15).

Sockeye salmon that returned to the Nass River in 1994 were predominantly 5-year-old fish (brood year 1989, 73.4%; Table 7). Weighting by the weekly reconstructed abundance (Table F-3), the dominant age classes were 5_3 (37.9%) and 5_2 (35.5%). The sockeye age and length data are presented in Table F-2 and summarized in tables F-3, F-4, and 8. Ages based on scale samples could not be determined for 12% of the scale samples taken for sockeye (Table F-2). Similar to chinook salmon, age-six sockeye had the least growth per year for time spent in the ocean (Fig. 16). A comparison of sockeye with similar marine ages and different freshwater ages found that, sockeye that spend 2 years in fresh water (5_3 and 6_3) were larger than those that spend one year in fresh water (4_2 vs 5_3 and 5_2 vs 6_3; Fig. 15).

To verify the length cut-off for differentiating between sockeye jacks (one marine year) and adults (two or more marine years), 125 sockeye under 50 cm were aged. The results suggest the length cut-off of 45 cm to distinguish between jacks and adults is adequate (Fig. 16). A cut-off of 50 cm would exclude all jacks from the adult designation but would include some adults in the jack category.

The weekly age composition of sockeye followed a similar pattern as in previous years (Fig. 17). The proportion of the run composed of 4-year-old sockeye peaked in week 30 compared with week 29 in both 1992 and 1993 (Fig. 17). However, as the pooled aged data suggest (Table 7), the contribution of 4-year-old sockeye was small relative to 5-year-old sockeye (Fig. 17). As in previous years, the 5_2 fish returned earlier, on average, than the 5_3 fish (Fig. 17).

The age composition of coho salmon that returned in 1994 was split nearly 50:50 between age 3 (53.6%) and age 4 (46.0%) fish (Table 7). The coho age and length data are presented in Table F-5 and summarized in Table 8. Fourteen percent of the samples could not be aged (Table F-5). Age 4_3 coho were only slightly larger, on average, than age 3_2 coho (Table 8, Fig.15).

DISCUSSION AND RECOMMENDATIONS

OPERATIONAL EVALUATION

Fishwheels

The water conditions in 1994 were favourable for fishwheel operations; water levels were sufficient to maintain fishing uniformly over the 3-month season (Fig. A-1, Fig. 2). Downtime associated with equipment failures was less in 1994 than in 1993 or 1992 (Link et al. 1996, Link and English 1996). The average fishwheel efficiency for chinook, sockeye and coho (2.5% per fishwheel) was higher than in 1992 or 1993. The catch from the new site fished by fishwheel 2 exceeded our expectations, capturing an estimated 4.4% of the sockeye run based on the pooled Petersen escapement estimate above Gitwinksihlkw. If the DFO

estimate of 200,000 sockeye above Gitwinksihlkw (Les Jantz, pers. comm.) is correct, fishwheel 2 captured 6.3% of the sockeye run.

Beach Seine

Beach seining appears to be an ineffective means of capturing and harvesting sockeye compared with the fishwheels; less than 1% of the ESSR catch was taken using the beach seine. Part of the problem stems from the inability to quickly and efficiently set and haul the net without adding expensive hydraulic components to retrieve the net. Also, at off-peak sockeye abundance there does not appear to be sufficient density of sockeye in the holding areas that were seined. There may be a use for beach seining at very high sockeye densities as was observed in early July prior to the ESSR fishery. A peak catch of 476 sockeye was taken in only 2 sets. However, the high labour and boat cost associated with seining (>$1,000 per day for variable costs alone) makes it difficult to be cost effective unless the operation can capture over 200 sockeye per day (assuming a landed value of $1.00/lb). The 1994 seining operation averaged 29 sockeye per day over 16 days of fishing and 42 sets (Table B-6).

In contrast to the seine operation, fishwheel 3 captured 3,758 sockeye during the month of July for an average of 121 fish per day (5.5 lb average; $666 revenue per day). Variable operating costs associated with the fishwheel are in the range of $500 to $600 per day while the capital cost of the fishwheel is similar to the capital cost required to operate a beach seine operation (nets and large boat). Adding a second harvesting fishwheel at Grease Harbour in the future will add little to the variable operating costs associated with one fishwheel and can be expected to double the daily catch. Therefore, we recommend that a fourth fishwheel replace the seine operation in 1995.

POPULATION ESTIMATES

The inseason escapement estimation method for sockeye worked remarkably well for it's first year of implementation. Considering that the *a priori* estimate of the efficiency of fishwheel 1 was based on only 2 seasons' data, and that only one fishwheel was fished at Grease Harbour, relatively accurate estimates were obtained by mid-July. The switch from the preseason catchability-based expansion factor to a mark-recapture estimate in mid-July cast some initial scepticism on the validity of the technique (Les Jantz, pers. comm.). However, the inseason estimation procedure performed exactly as had been expected; less-precise estimates early in the season, and more-precise estimates as the mark-recapture information became available.

The inter-annual variability of the catchability of fishwheels still appears low compared with the historical variability in the catchability of the Monkley Dump test fishery (Link and English 1994). However, because the fishwheel catchability still varies significantly between years, and the source of the variability has not been identified or understood, we recommend that tagging and mark-recapture estimates remain a component of the inseason assessment on the Nass River.

The pooled Petersen population estimate for the total Nass River sockeye escapement (361,156 without any correction for tag loss or differential mortality of tagged fish) was considerably higher than that estimated from the stock composition data based on scale pattern analysis (200,000 before final Nisga'a and Gitanyow harvests using scale pattern analysis, 185,000 net escapement after harvests; Les Jantz, DFO, pers. comm.). The scale pattern data indicate that over 90% of the sockeye sampled at the fishwheels were of Meziadin Lake origin. In order for the mark-recapture estimate to coincide with the DFO estimate, we would have to assume that over 50% of the tagged fish either lost their tags and/or died, or a substantial portion of the tagged fish were not observed at the Meziadin fishway.

Biases in Petersen estimates can occur when the principal assumptions of the estimation procedure are violated (Ricker 1975). The relevant assumptions (and the effect on the estimates if they are not met) are :

1. The marked fish suffer the same natural mortality as the unmarked fish (overestimate if mortality higher for tagged fish);
2. the marked fish are subject to the same fishing mortality as the unmarked fish (overestimate if mortality higher for tagged fish);
3. the marked fish are equally vulnerable to the recapture technique as are the unmarked fish (overestimate if less vulnerable, underestimate if more vulnerable);
4. the marked fish do not lose their marks (overestimate if tags are lost);
5. the marks are applied randomly over the entire run; and/or marked fish become randomly mixed with the unmarked fish; and/or the recovery effort is proportional to the number of fish present in different reaches of the system (over- or underestimate); and
6. all marks are recognized and reported on recovery (overestimate if not reported).

We discuss the assumptions of the mark-recapture estimates below and identify possible sources of bias in the 1994 estimates.

1. The marked fish suffer the same natural mortality as the unmarked fish.

Higher differential mortality of marked fish has been suggested as one of the reasons why mark-recapture data tend to overestimate salmon escapements (Cousens et al. 1982). The reason is that increased stress during capture and handling can result in some immediate mortality of marked fish. Eames et al. (1981) provides a good review of this assumption for a variety of adult salmon tagging studies and concludes that mature salmon captured in freshwater environments are highly resistant to stress, and little (if any) tagging associated mortality will occur.

Direct information from our 1992 and 1993 radio-tagging program indicated that mortality and other tagging losses accounted for approximately 8% of the radio-tagged

chinook and some of these losses may have been due to tag regurgitation and non-functional tags. Given the less stressful nature of our spaghetti tagging operations for sockeye and coho, we would expect lower mortality rates than that estimated for the radio-tagged chinook (i.e., less than 5% not unreasonable). However, most of these chinook were tagged at relatively low densities of fish in the live tanks compared with the densities experienced by sockeye at peak catches in July. In addition, water temperatures tend to be lower during the chinook migration than during the peak of the sockeye run.

A preliminary analysis of the recovery rate of tagged sockeye at the Meziadin fishway indicated that there was no trend between fish density in each of the Gitwinksihlkw fishwheels and the subsequent recovery rate of the sockeye tagged. The average recovery rate of tags (number of tags recovered at Meziadin/number of tags observed) was 10.7%. We examined the recovery rate by week tagged across a range of session catches (all fish) and catch of sockeye in the fishwheels. If density-associated mortality was occurring, it has been masked by the high variability in the recovery rate between tagging sessions. Some of the highest and lowest recovery rates by session occurred at near-peak catches. For example, days with low recovery rates included one tagging session at fishwheel 1 on 3 July, where 176 sockeye were captured, 103 were tagged, and none of these fish were recovered at the Meziadin fishway. On another occasion at fishwheel 2 on 3 July, 138 sockeye were captured, 130 were tagged, and only 3 were recovered at the Meziadin fishway (2.3%). At fishwheel 1 on 8 July, 175 sockeye were captured, 160 were tagged, and none of these were recovered at the Meziadin fishway. These data contrast with an average recovery rate of 11.0% on from tagging sessions with total catches over 400 fish.

One additional source of selective mortality on the tagged fish is from seals that frequent the holding areas above and below the canyon. If we assume the tagged fish spend more time in these areas recovering from the stress of capturing and handling, they would be subjected to higher predation rate than the fish not tagged. An estimate of the predation rate of seals on sockeye and coho in the Nass River would be useful to quantify this potential bias.

2. *The marked fish are subject to the same fishing mortality as the unmarked fish.*

Several studies have documented instances of the selective removal of tagged fish in marine and freshwater fisheries (Gazey et al. 1983, English et al. 1984). The degree of selectivity is highly dependent on the nature of the fishery (e.g., large or small mesh gillnets) and the type of tag used. There is evidence for selective removal of spaghetti tags by gillnet fisheries. The recovery rate for the spaghetti tags applied to sockeye in the 1983 North Coast Salmon Tagging Study was five times higher in the terminal Area 4 gillnet fishery than at the Babine fence (English et al. 1984).

A total of 6,071 sockeye and 961 chinook were examined by catch monitoring personnel to determine the tag rate in the Nisga'a fishery (Table 9). Sockeye catches observed below Gwinaha did not contain tagged sockeye so we assumed that tagged sockeye vulnerable to the Nisga'a fishery were those captured in the region from Gwinaha to Grease Harbour (Fig. 1). Approximately 10,000 sockeye were harvested in this area (R.C. Bocking, LGL

Limited, pers. comm.). The tag rate in the sockeye catch was more than twice that observed at the Meziadin fishway (Table 10). Using these data, we estimated the differential removal of tagged sockeye caused by the Nisga'a fishery was 5.2% in 1994 (Table 10).

The tag rate of chinook salmon in the Nisga'a catch was also twice that observed in the escapement (Table 9 and 10). The area of vulnerability for chinook was more difficult to determine than it was for sockeye because there tagged chinook recovered as far down as Lakalzap and Fishery Bay (Fig. 1). However, approximately 2,000 chinook were harvested between Gwinaha and Grease Harbour. This would suggest a minimum differential tag removal of 9.8%. If the tagged chinook dropped back farther downstream as the tag recovery data in the Nisga'a fishery and the fishwheel recapture data suggest (Fig. 9), then the differential removal rate may have been as high as 14.6 % (Table 10).

3. *The marked fish are equally vulnerable to the recapture technique as are the unmarked fish.*

The recapture technique used in this study was the observation of fish in the counting chutes at the Meziadin fishway. There does not appear to be anything about the counting chutes that would bias the recapture sample. There is the potential that a portion of the marked fish moving through the fishway were not detected, and this is discussed under the sixth assumption below.

4. *The marked fish do not lose their marks.*

English et al. (1985) and Bocking et al. (1988) reported moderate to high rates of tag loss for spaghetti tags applied to adult pink and coho salmon. In both of these studies tag loss appeared to be related to specific taggers or the tag application method (e.g., tag knot). In studies where spaghetti tags were tied off with a single overhand hitch (used in 1994), there have been few incidence of tag loss (McGregor et al. 1991).

The secondary mark of a hole in the operculum made it possible to estimate the magnitude of the tag loss in 1994. As evidence that there was little or no immediate tag loss, there were no fish captured at the Gitwinksihlkw fishwheels that had an operculum punch and no spaghetti tag. There were 531 recaptures in the Gitwinksihlkw fishwheels and if there had been a 3% rate of tag loss, we would expect these recaptures to represent 547 fish (531/0.97) that had been previously been tagged. Therefore, at 3% tag loss, we would expect to have captured 16 fish that were missing tags but had an operculum punch.

Some further evidence that the rate of tag loss was not large (i.e., $>10\%$) is from the 1,083 untagged fish that were examined at the Meziadin fishway; there were no fish observed with an operculum hole in this sample. However, this sample size is too small to detect a tag loss rate of less than 10 % when only 3% of the population is marked (we would expect less than 4 fish in a sample of 1,083).

5. *The marks are applied randomly over the entire run; and/or marked fish become randomly mixed with the unmarked fish; and/or the recovery effort is proportional to the number of fish present in different reaches of the system.*

The release and recapture methods provided an opportunity to mark and recover fish continuously over the duration of the sockeye run. The run reconstruction indicated that the tags were applied randomly over the entire run at the fishwheels. Recovery efforts at the Meziadin fishway were proportional to the number of fish present (all fish using the fishway were counted).

This assumption was reasonably well satisfied for a portion of the Nass River coho stocks. The coho escapement estimate represents that portion of the total coho population that migrated through the lower river in July and August. Given the termination of the fishwheel operation in early September, it is not likely that tagging was proportional to the entire coho return in 1994. Similarly, it is not likely that the recovery effort for coho (Meziadin fishway) was proportional to the number of fish in different reaches of the system. Given the large number of coho streams in the lower Nass, the limited time period covered by the tagging, and the potential for substantial coho returns after the tagging and recovery periods, our coho escapement estimate probably represents a fraction of the total coho escapement to the Nass River system in 1994.

6. *All marks are recognized and reported on recovery.*

The density of fish in the counting chutes at the Meziadin fishway were low in 1994. There were only 2 days where the daily count at the fishway exceeded 10,000; in addition, 70% of the total fishway count was accounted for with individual days that had counts of less than 5,000. At these low densities, it is very unlikely that a substantial portion of the tagged fish could have been missed.

Summary of final escapement estimates

In light of the above discussion, mortality of tagged fish (either fishing induced or handling induced) appears to be the greatest source of bias in the mark-recapture estimates. A differential tag removal rate for chinook of 20% (12% due to the Nisga'a fishery and 8% mortality) was used to calculate a final escapement estimate of 21,287 in 1994 (Table 11). The total estimated return of chinook to the Nass River in 1994 (after ocean fishery harvests) was 28,219 (Table 11).

The data for sockeye and coho suggest a lower rate of differential tag removal and we therefore used a rate of 10 % for these species (5% differential removal and 5% mortality). Applying this rate, we determined the net sockeye escapement to be 300,043 (Table 11). A less- than-complete estimate of the Nass River coho escapement is 160,237 (Table 11). We

estimated the total return to the Nass River for sockeye (344,368) and coho (162,767) by adding inriver harvests to the mark-recapture population estimates (Table 11).

As in previous years, the mark-recapture estimates generated in 1994 may not be as reliable as the confidence limits imply. The precision of the escapement estimates are dependent on an estimate of the differential tag removal which have been examined with the available data. Scale pattern data suggest the sockeye escapement was 40% smaller than the estimate derived from the tag data (185,000 versus 310,000). The reliability of the 1994 and all future mark-recapture estimates will depend on the ability to determine the sources of biases and if possible, eliminate or quantify them each year so that the estimates can be corrected. We recommend that continued effort should be allocated in 1995 to identify and quantify the sources of bias in the mark-recapture estimates.

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TABLES

Table 1. Numbers of each species of salmon caught and tagged at 3 fishwheels on the Nass River in 1994.

	Fishwheel 1			Fishwheel 2			Fishwheel 3			All fishwheels combined			
	Catch		Adults	Catch		Adults	Catch		Adults	Catch			Adults
Species	Adults	Jacks	Tagged	Adults	Jacks	Tagged	Adults	Jacks	Tagged	Adults	Jacks	Total	Tagged
Chinook	727	98	638	1304	94	1186	636	54	93	2667	246	2913	1917
Sockeye	5327	627	3775	12613	712	7141	6806	387	0	24746	1726	26472	10916
Coho	2640	236	2217	2858	269	2594	1492	175	0	6990	680	7670	4811
Steelhead	41	0	6	82	0	29	85	0	25	208	0	208	60
Pink	4842	0	0	5202	0	0	2392	0	0	12436	0	12436	0
Chum	124	0	0	101	0	0	25	0	0	250	0	250	0
Total	13701	961	6636	22160	1075	10950	11436	616	118	47297	2652	49949	17704

Table 2. A summary of the number of tag recoveries for the tags applied at the Nass River fishwheels in 1994.

Species	Number of fish tagged	Tag recoveries									
		Meziadin fishway[a]	Spawning grounds	Nisga'a fisheries	Sport fisheries	Fishwheel recaptures	Grease H. seine	Area 3-12 fishery	Other[b]	Total	Percent recovered
Chinook	1917	23	18	127	1	301	6	1	0	477	25
Sockeye	10916	4794	0	362	0	777	63	0	2	5998	55
Coho	4811	95	6	9	0	124	0	0	0	234	5
Steelhead	60	0	0	0	0	3	0	0	0	3	5
Totals	17704	4912	24	498	1	1205	69	1	2	6712	38

[a] Includes all tagged fish observed but not necessarily recovered.

[b] Two tagged sockeye were recovered at the Babine fence on the Skeena River system.

Table 3. Population estimates derived from tagging of adult sockeye and coho salmon at the Nass River fishwheels and recovery of tags at the Meziadin fishway, 1994 (see text for a description of methods).

	Sockeye	Coho
Number tagged	10,916	4,811
Number fish examined for tags	158,627	3,570
Number of tagged fish recovered	4,794	95
Pooled Petersen Population estimates		
Assumed rate of differential tag removal		
0%	361,156	178,996
10%	325,043	161,100
20%	288,931	143,205
50%	180,594	89,517
Bounds for Petersen estimate - No differential tag loss		
Lower 95 % CL	351,078	146,713
Upper 95 % CL	371,523	218,299
Bounds for Petersen estimate - 10% differential tag removal		
Lower 95 % CL	315,973	132,045
Upper 95 % CL	334,374	196,474

Table 4. Summary of escapement survey data, and estimated escapement, for chinook upstream of Gitwinksihlkw, 1994. The escapement estimate was calculated using a derivation of the pooled Petersen estimate.

System	No. of surveys aerial	No. of surveys foot	Maximum live count	Maximum dead	Maximum total for a single survey	Carcasses examined	Tags recovered
Bell-Irving							
Snowbank/Teigen	3	1	109	13	125	0	0
Oweegee	3	1	76	24	100	36	0
Cranberry	1	3	199	24	199	16	0
Ishkeennickh	3	0	104	0	104	0	0
Kwinageese	3	1	440	15	455	22	2
Damdochax	3	2	1,234	145	1,308	287	16
Meziadin	1	3	270	0	270	0	0
Tseax		2	234	37	271	50	0
Totals			2,666		2,832	411	18

Derivation of population estimate

Grease Harbour fishwheel and seine catch:	716
Grease H. tag recoveries:	49
Carcasses observed:	411
Tagged carcasses:	18
Total fish examined (Grease H. and carcasses):	1,127
Total tags recovered:	67
Total tags applied:	1,826
[a]Corrected tag total:	1,461
Pooled Petersen escapement estimate past the Gitwinksihlkw fishwheels:	24,249
Lower 95% C.I.	19,155
Upper 95% C.I.	30,673

[a] Adjusted for tag loss, selective removal in food fisheries and differential mortality of tagged fish (20% of total released).

Table 5. The estimated percentages of adult chinook, sockeye, and coho salmon captured with 3 fishwheels on the Nass River, 1994. The percentages were derived using the Petersen escapement estimates and 95% confidence intervals computed using an assumption of 20% (chinook) and 10% (sockeye and coho) differential mortality of tagged fish (Tables 3 & 4).

	Fishwheel 1			Fishwheel 2			Fishwheel 3			All fishwheels combined		
		Range			Range			Range			Range	
Species	Percent	Lower	Upper	Percent	Lower	Upper	Percent	Lower	Upper	Percent	Lower	Upper
Chinook	3.0	3.8	2.4	5.4	6.8	4.3	2.6	3.3	2.1	11.0	13.9	8.7
Sockeye	1.6	1.7	1.6	3.9	4.0	3.8	2.1	2.2	2.0	7.6	7.8	7.4
Coho	1.6	1.3	2.0	1.8	1.5	2.2	0.9	0.8	1.1	4.3	3.6	5.3
Total for all spp.	1.7			3.3			1.8			6.7		

Table 6. Means, standard errors and 95% confidence intervals for sockeye travel times from the fishwheels to the Meziadin fishway for 3-day tag release and recovery periods, 1994.

Period ending date	Number of recoveries	Mean travel time (d)	Standard error	95 % Confidence Interval	
				Lower	Upper
Release periods					
16-Jun	2	60.0	15.0	30.0	90.0
19-Jun	3	39.7	0.7	38.3	41.0
22-Jun	9	37.3	4.0	29.4	45.2
25-Jun	12	34.3	0.9	32.5	36.0
28-Jun	30	28.1	1.4	25.3	30.9
1-Jul	83	28.2	0.6	27.1	29.3
4-Jul	53	26.5	1.0	24.4	28.6
7-Jul	94	24.1	0.6	22.9	25.3
10-Jul	64	23.5	0.9	21.6	25.3
13-Jul	25	25.0	1.8	21.3	28.6
16-Jul	20	27.3	2.4	22.6	32.0
19-Jul	14	30.2	2.0	26.2	34.2
22-Jul	29	28.7	1.7	25.3	32.1
25-Jul	79	30.6	0.9	28.8	32.4
28-Jul	107	27.9	0.7	26.5	29.2
31-Jul	86	28.7	0.6	27.5	30.0
3-Aug	62	26.4	0.7	25.1	27.8
6-Aug	89	26.7	0.6	25.6	27.9
9-Aug	64	23.2	0.6	22.0	24.4
12-Aug	180	21.3	0.4	20.5	22.1
15-Aug	1	21.0	0.0	21.0	21.0
18-Aug	18	19.0	1.0	17.1	21.0
21-Aug	9	19.6	0.7	18.2	20.9
24-Aug	35	15.4	0.5	14.3	16.5
Recovery periods					
19-Jul	1	17.0	0.0	17.0	17.0
22-Jul	6	25.2	1.6	22.0	28.3
25-Jul	71	23.9	0.5	22.9	24.8
28-Jul	143	23.6	0.4	22.8	24.4
31-Jul	57	24.7	0.7	23.2	26.1
3-Aug	54	25.6	0.7	24.1	27.1
6-Aug	16	29.2	1.8	25.7	32.7
9-Aug	7	27.4	3.5	20.4	34.4
12-Aug	12	27.0	2.5	22.1	31.9
15-Aug	28	27.8	1.7	24.4	31.2
18-Aug	66	26.7	0.9	24.9	28.5
21-Aug	59	25.7	0.7	24.3	27.1
24-Aug	41	25.9	1.3	23.3	28.4
27-Aug	152	23.8	0.6	22.6	25.0
30-Aug	148	26.1	0.8	24.6	27.6
2-Sep	98	25.1	0.6	24.0	26.2
5-Sep	86	26.1	0.9	24.3	27.8
8-Sep	56	28.5	1.2	26.0	30.9
11-Sep	42	28.9	1.3	26.3	31.5
14-Sep	20	36.2	2.4	31.4	41.0
17-Sep	4	38.3	2.3	33.7	42.8
20-Sep	0	0.0	0.0	0.0	0.0
23-Sep	1	56.0	0.0	56.0	56.0
All periods combined	1168	25.7	0.2	25.3	26.2

Table 7. Summary of age composition of adult chinook, sockeye, and coho salmon sampled at the Nass River fishwheels, 1994. Chinook and coho portions are weighted by the weekly Gitwinksihlkw fishwheel CPUE; sockeye are weighted by the weekly escapement estimates generated from the inseason mark-recapture data. A dash denotes no fish were sampled from that age class.

	Estimated percent of total run											
	Brood year / Age class											
	1991		1990			1989			1988			1987
Species	3_1	3_2	4_1	4_2	4_3	5_2	5_3	5_4	6_2	6_3	6_4	7_2
Chinook	0.2	-	0.7	11.4	-	54.8	0.6	-	31.6	-	-	0.7
Sockeye	1.0	0.0	0.3	14.9	0.4	35.5	37.9	-	0.1	9.8	0.1	-
Coho	-	53.6	-	-	46.0	-	-	0.4	-	-	-	-

Table 8. Summary of length and age data from sockeye, chinook, and coho salmon sampled at the Nass River fishwheels, 1994 (unweighted data).

Species	Age class	Number of fish aged	Mean length (cm)	Standard deviation (cm)
Sockeye	31	26	52.4	5.4
	32	84	38.3	2.3
	41	8	56.3	2.8
	42	212	57.7	4.6
	43	34	43.8	3.2
	52	579	62.7	4.1
	53	540	60.4	4.4
	62	2	59.5	0.7
	63	149	64.8	4.4
	64	1	62.0	-
Chinook	31	1	65.0	-
	41	3	81.3	8.1
	42	42	68.6	6.0
	52	236	87.0	6.1
	53	2	69.0	1.4
	62	130	94.5	6.2
	72	2	96.5	7.8
Coho	32	291	66.1	5.8
	43	270	66.7	5.9
	54	2	56.0	4.2

Table 9. Catch and tag recoveries from a sample of the 1994 Nisga'a fishery harvests. Includes only catch that was visually examined for tags by Nisga'a Fisheries staff. The overlap in categories reflects fishing multiple areas on a single trip.

Location	Type of fishing	Sockeye			Chinook		
		Catch (C)	Recov. (R)	C/R	Catch (C)	Recov. (R)	C/R
Immediately below fishwheels							
The "Bay" (channel next to Gitwinksihlkw)	set net	1470	76	19.3	48	10	4.8
Gwinaha (200-500 m. below canyon)	drift/set	334	15	22.3	101	21	4.8
Gitwinksihlkw area (including the Bay and Gwinaha)	set/drift	381	27	14.1	173	13	13.3
Subtotal		2185	118	18.5	322	44	7.3
Upriver of fishwheels to Grease Harbour	drift/set	3741	247	15.1	447	44	10.2
Total (near and above fishwheels)		**5926**	**365**	**16.2**	**769**	**88**	**8.7**
Well downstream (10 km below Gwinaha, Fishery Bay, Lakalzap, Ginlulak)	set	145	0		192	31	6.2
Total for all areas for chinook only					961	119	8.1

Table 10. The derivation of the rate of selective removal of tagged sockeye and chinook salmon from the tagged populations, 1994.

	Total tags (TT) applied at the fishwheels	[a] Estimated Nisga'a harvest of fish in area of vulnerability (NH)	Tag ratio (untagged:tagged)		Estimate of the total tags removed in the Nisga'a Fishery (NTT) (NTT = NH*NTR)	Maximum "expected" tags (ET) in Nisga'a harvest if no selectivity (ET = NH*ETR)	Differential harvest (DH) of tags in the Nisga'a fishery (DH = NTT - ET)	Percent of the total tags applied that were selectively removed by the Nisga'a fishery (%RR = DH/NTT)
			Escapement (ETR^{-1})	Nisga'a fishery (NTR^{-1})				
Sockeye	10,916	18,000	33.1 : 1	16.2 : 1	1,111	544	567	5.2%
Chinook								
Maximum	1,917	3,000	16.8 : 1	8.1 : 1	370	91	279	14.6%
Best	1,917	2,500	16.8 : 1	8.1 : 1	309	76	233	12.1%
Minimum	1,917	2,000	16.8 : 1	8.1 : 1	247	60	187	9.8%

[a] Based on information on the time at large before recapture in the Gitwinsihlkw fishwheels and the location of recoveries; for sockeye, we estimated that the area of vulnerability was Gitwinksihlkw to Grease Harbour. For chinook, the area of vulnerability is difficult to determine due to the wide range of locations for fishery recaptures; we therefore provide maximum (3,000), best estimate (2,500), and minimum (2,000) catch scenarios.

Table 11. Summary of the estimates of catch, escapement, and total return to the Nass River for chinook, sockeye, and coho salmon, 1994.

Species	Escapement above Gitwinksihlkw	Nisga'a harvest[a]		Gitanyow harvest[b]	Sport fishery harvest[c]	Net spawning escapement	Total return to the Nass River
		Above Git.	Below Git.				
Chinook	24,249	2,118	4,095	69	893	21,169	28,344
Sockeye	325,043	10,000	19,325	5,000	-	310,043	344,368
Coho	161,100	863	1,667	0	NA	160,237	162,767

[a] Nass et al. (1995) and R. C. Bocking, pers. comm.

[b] Les Jantz, Department of Fisheries and Oceans, Prince Rupert, pers. comm.

[c] Bocking (1995), no sport fishery catch estimates were made for coho.

FIGURES

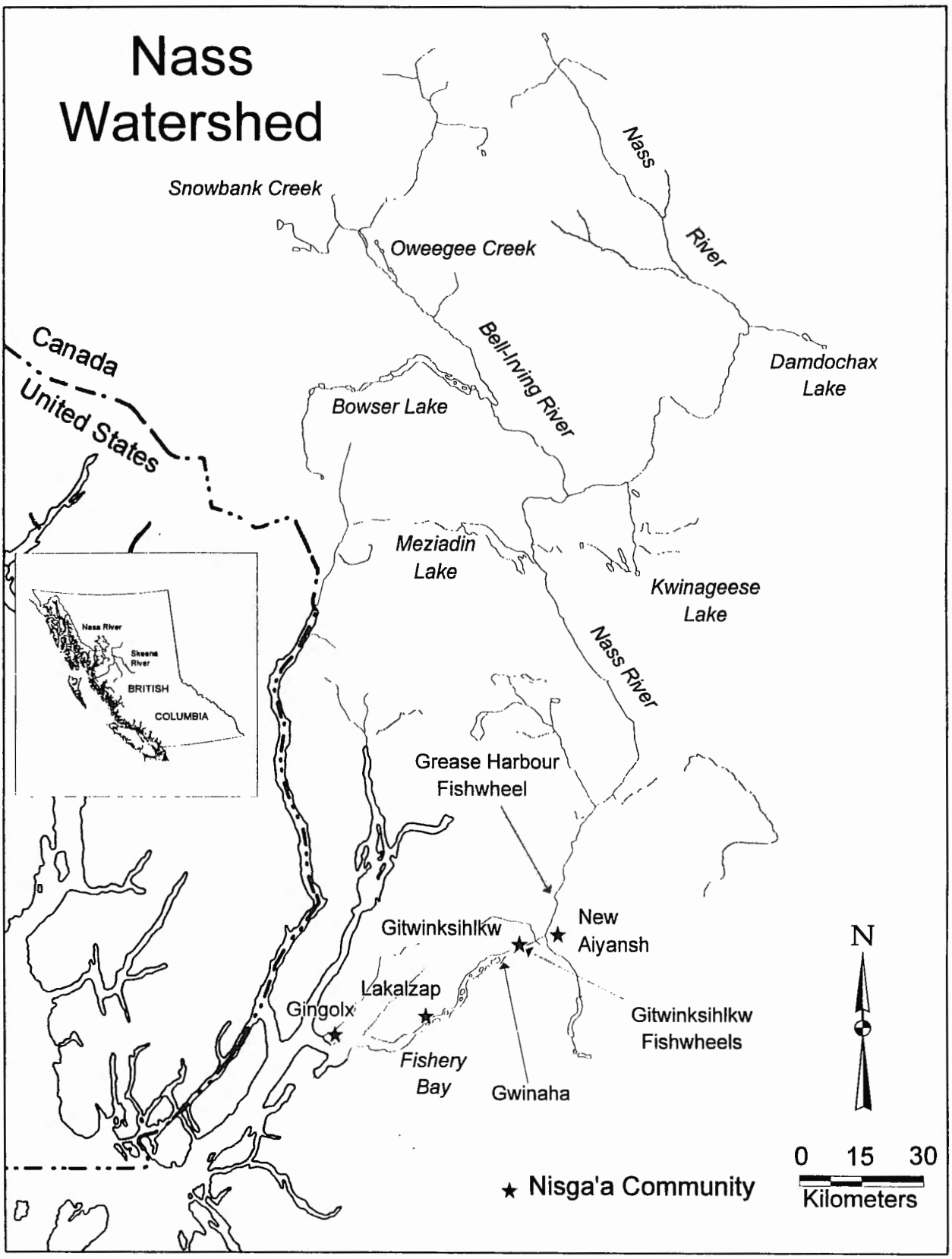


Figure 1. The Nass Watershed showing locations of the fishwheels.

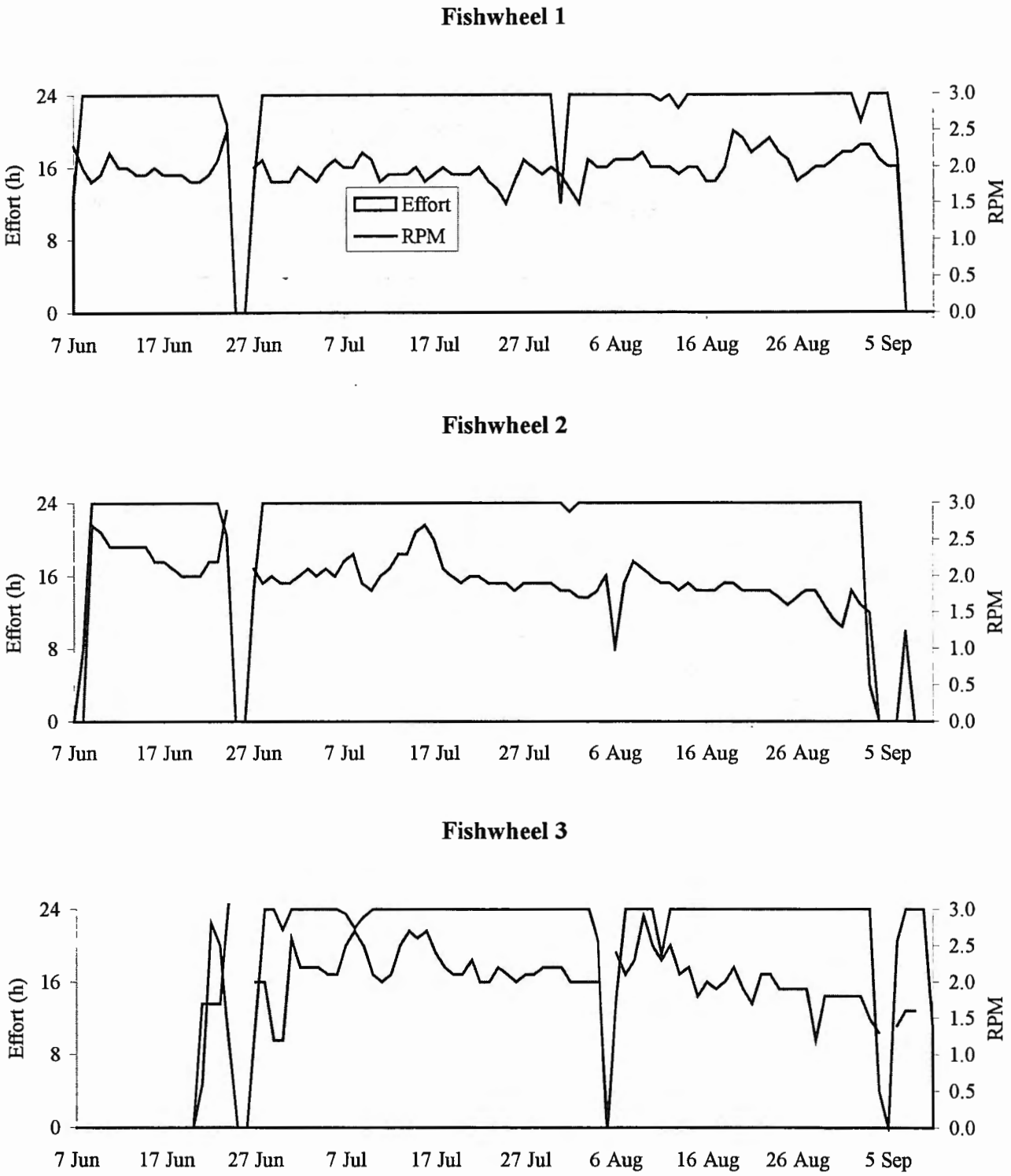


Figure 2. Effort (hours) and speed (RPM) for 3 fishwheels operated on the Nass River, 1994.

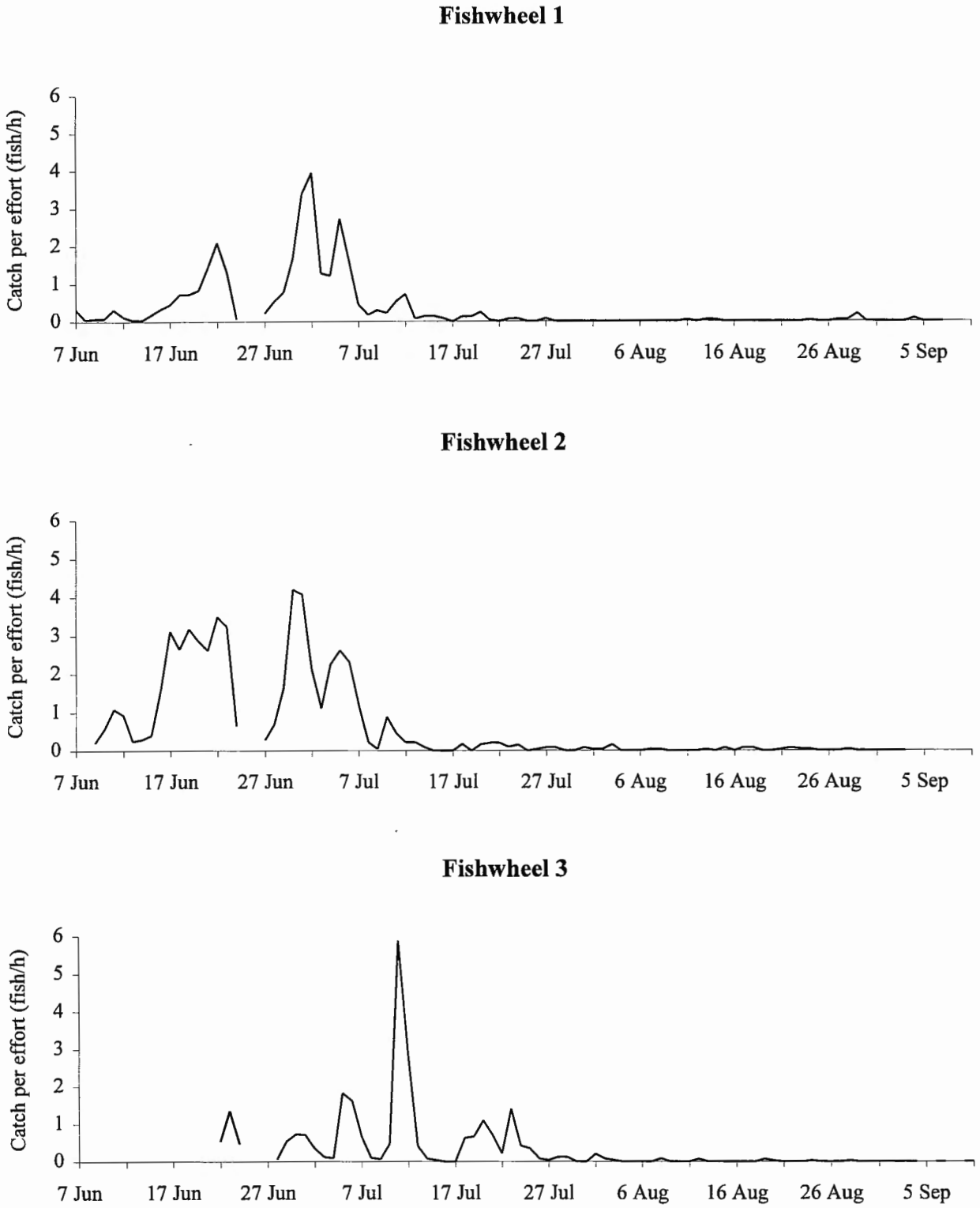


Figure 3. Fishwheel CPUE (catch/wheel hour) for adult chinook salmon captured with 3 fishwheels on the Nass River, 1994.

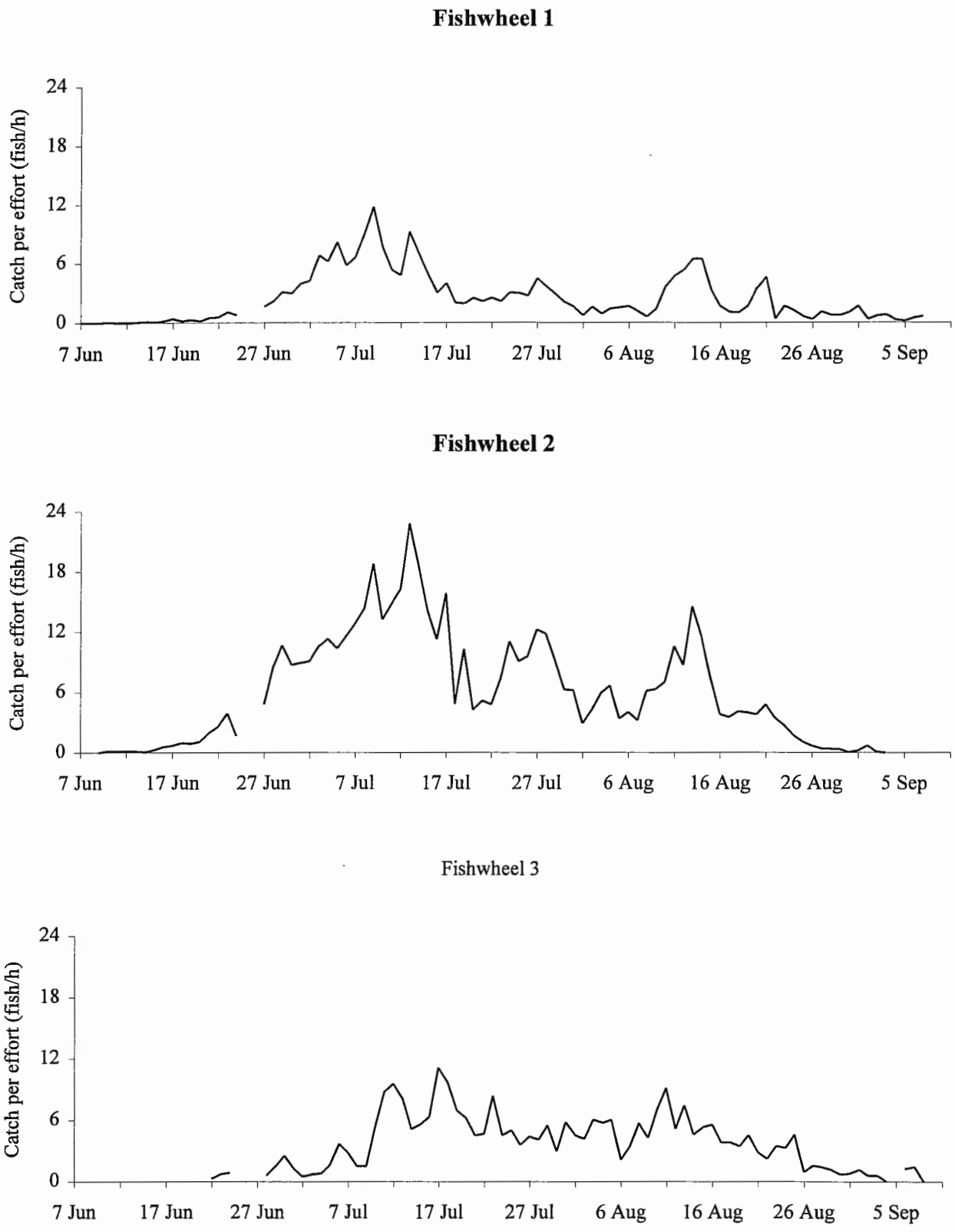


Figure 4. Fishwheel CPUE (catch/wheel hour) for adult sockeye salmon captured with 3 fishwheels on the Nass River, 1994.

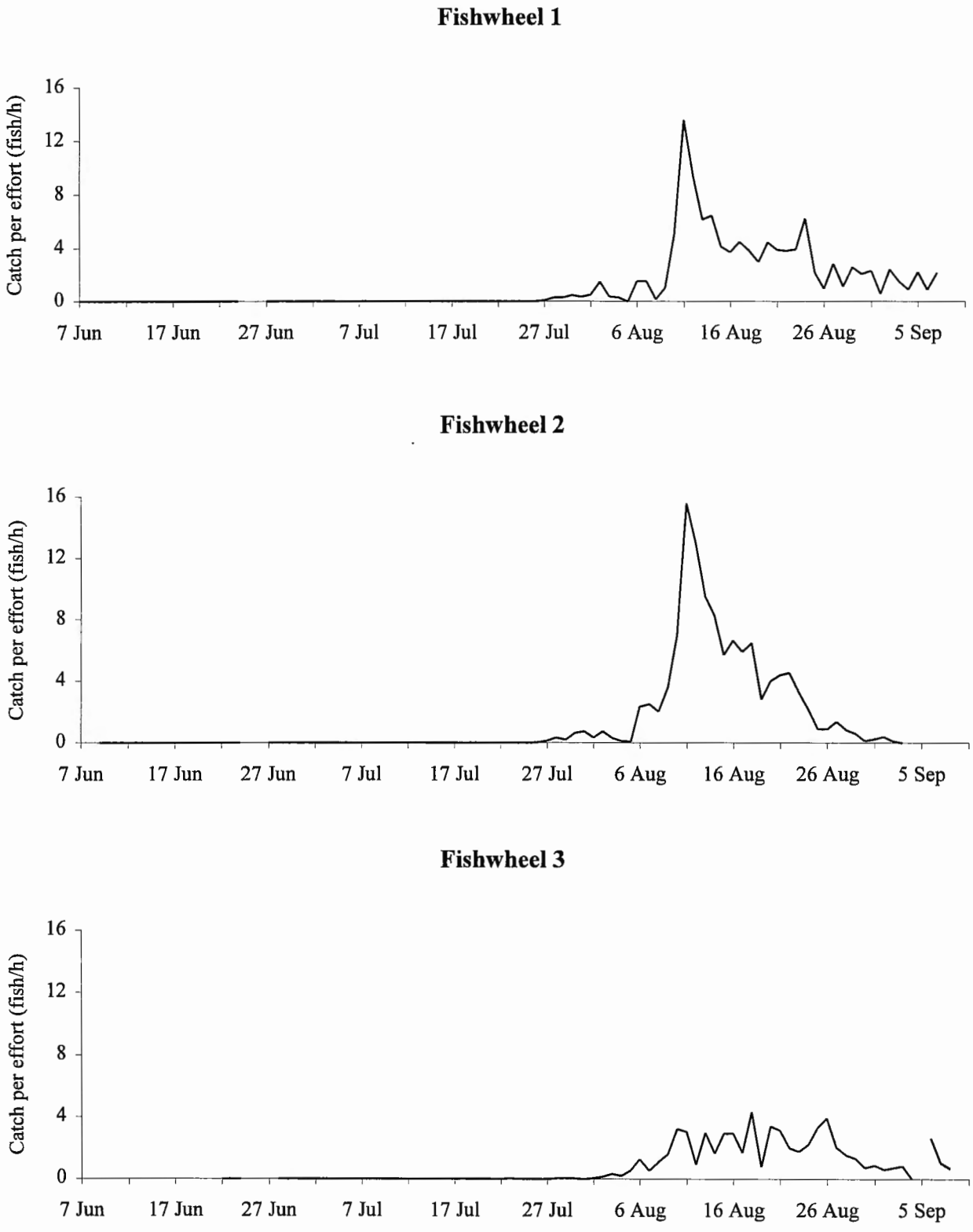


Figure 5. Fishwheel CPUE (catch/wheel hour) for adult coho salmon captured with 3 fishwheels on the Nass River, 1994.

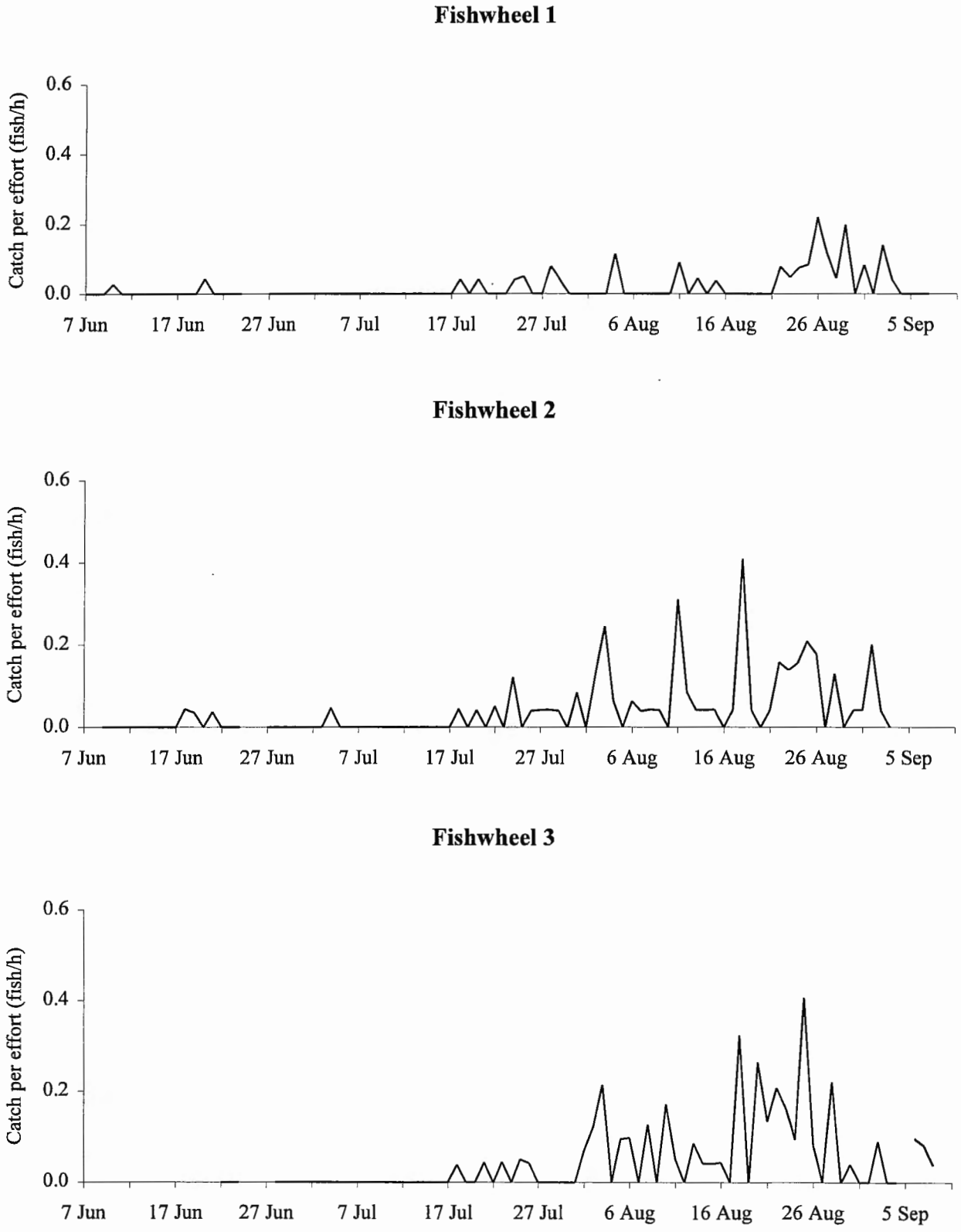


Figure 6. Fishwheel CPUE (catch/wheel hour) for steelhead captured with 3 fishwheels on the Nass River, 1994.

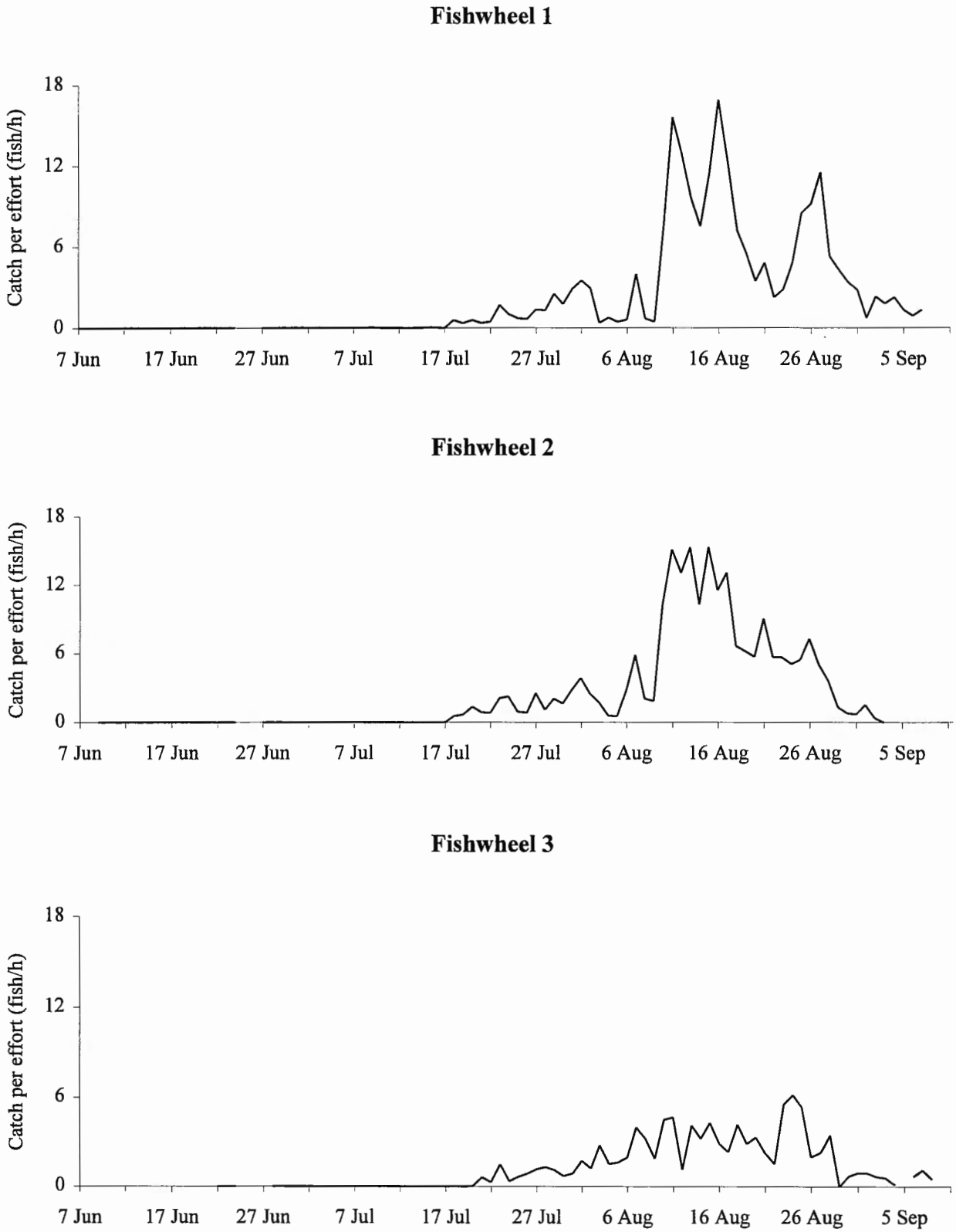


Figure 7. Fishwheel CPUE (catch/wheel hour) for adult pink salmon captured with 3 fishwheels on the Nass River, 1994.

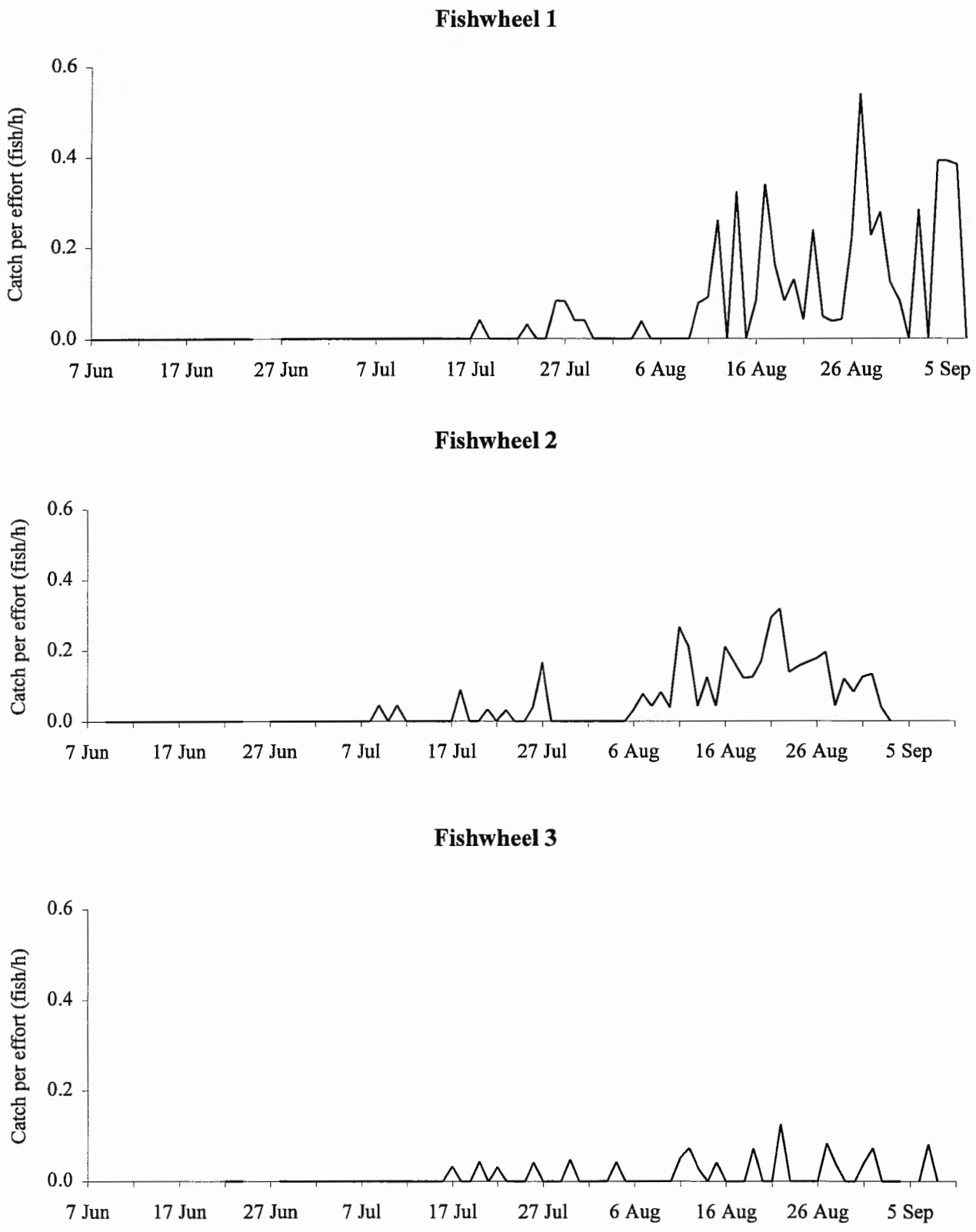


Figure 8. Fishwheel CPUE (catch/wheel hour) for adult chum salmon captured with 3 fishwheels on the Nass River, 1994.

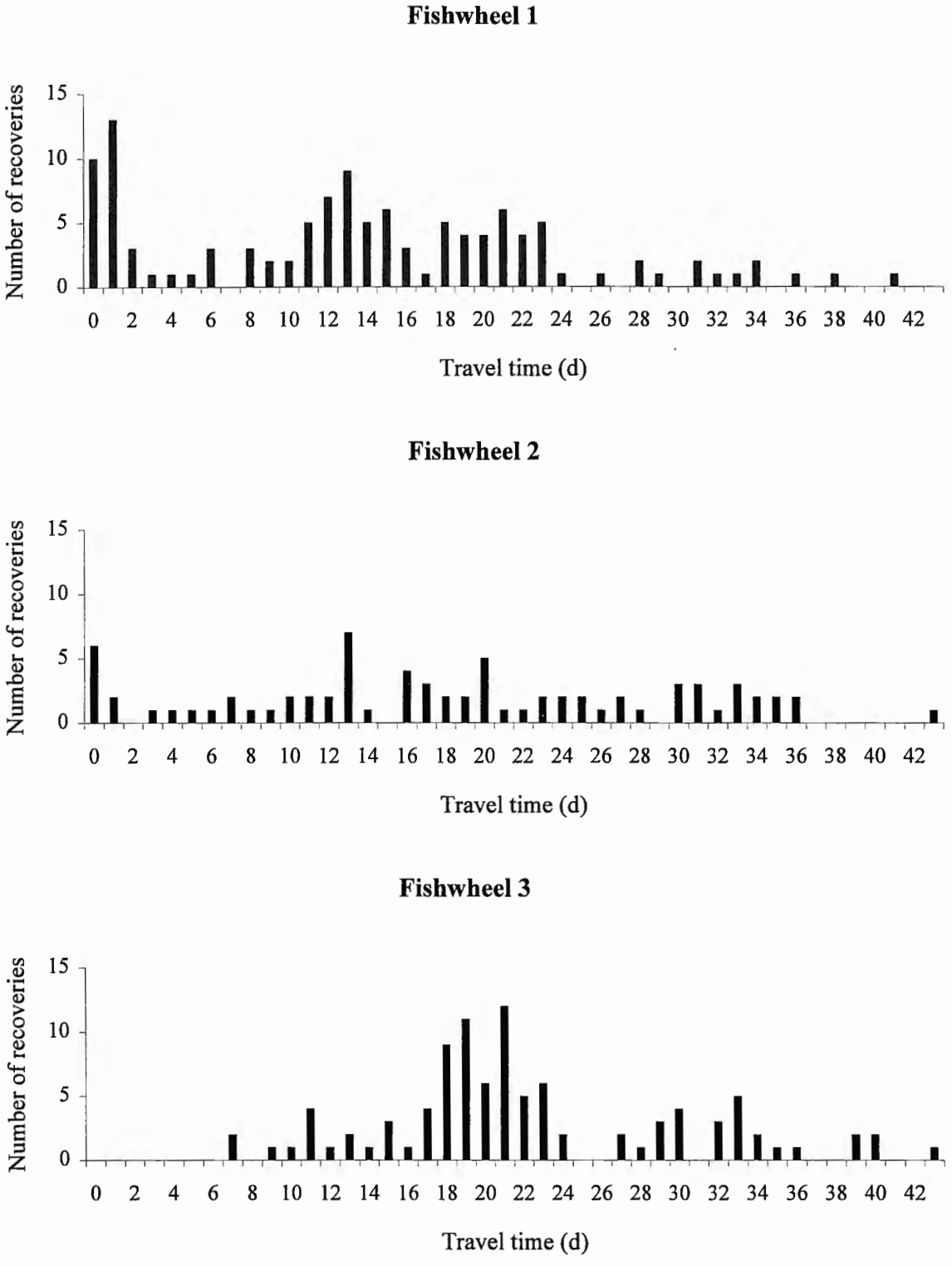


Figure 9. Time between release and recapture for chinook salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the 3 fishwheels, 1994.

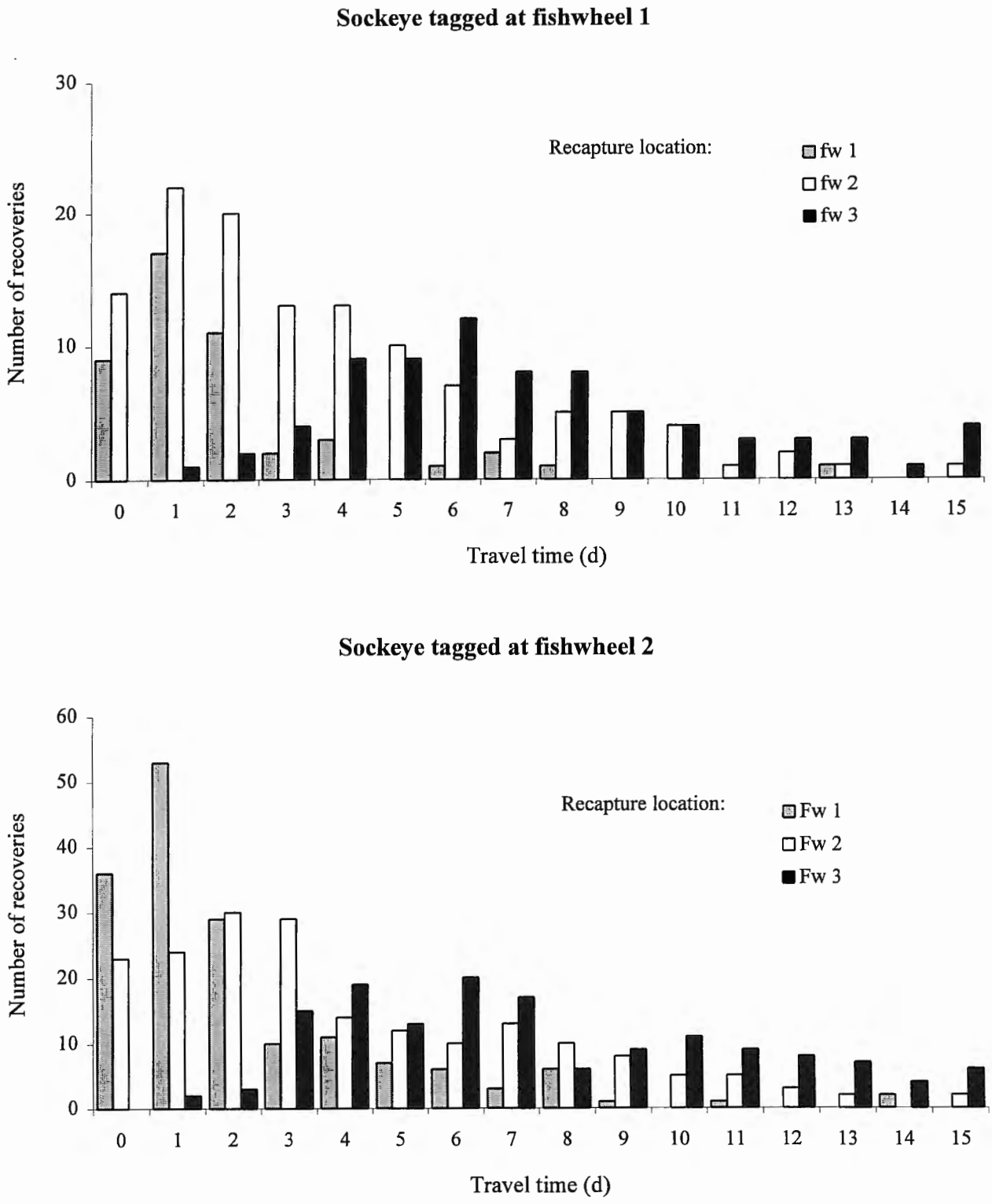


Figure 10. Time between release and recapture for sockeye salmon tagged at fishwheels 1 and 2 and subsequently recaptured in each of the 3 fishwheels, 1994. See Table C-3 for 28 additional recoveries beyond 15 days.

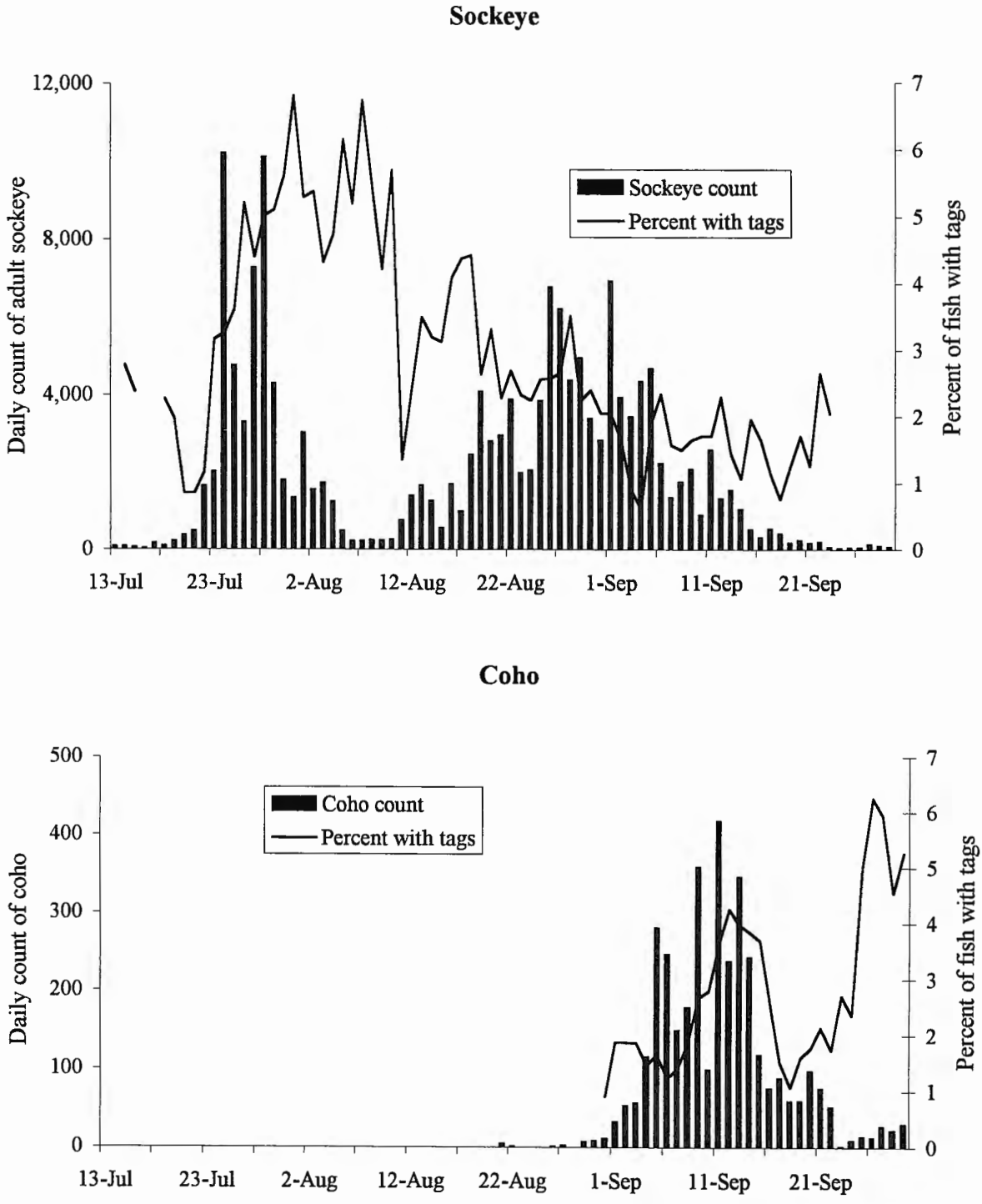


Figure 11. Daily counts and percent of fish with tags for sockeye and coho salmon passing through the Meziadin fishway in 1994. A running 5-day average was used for the percent of coho with tags.

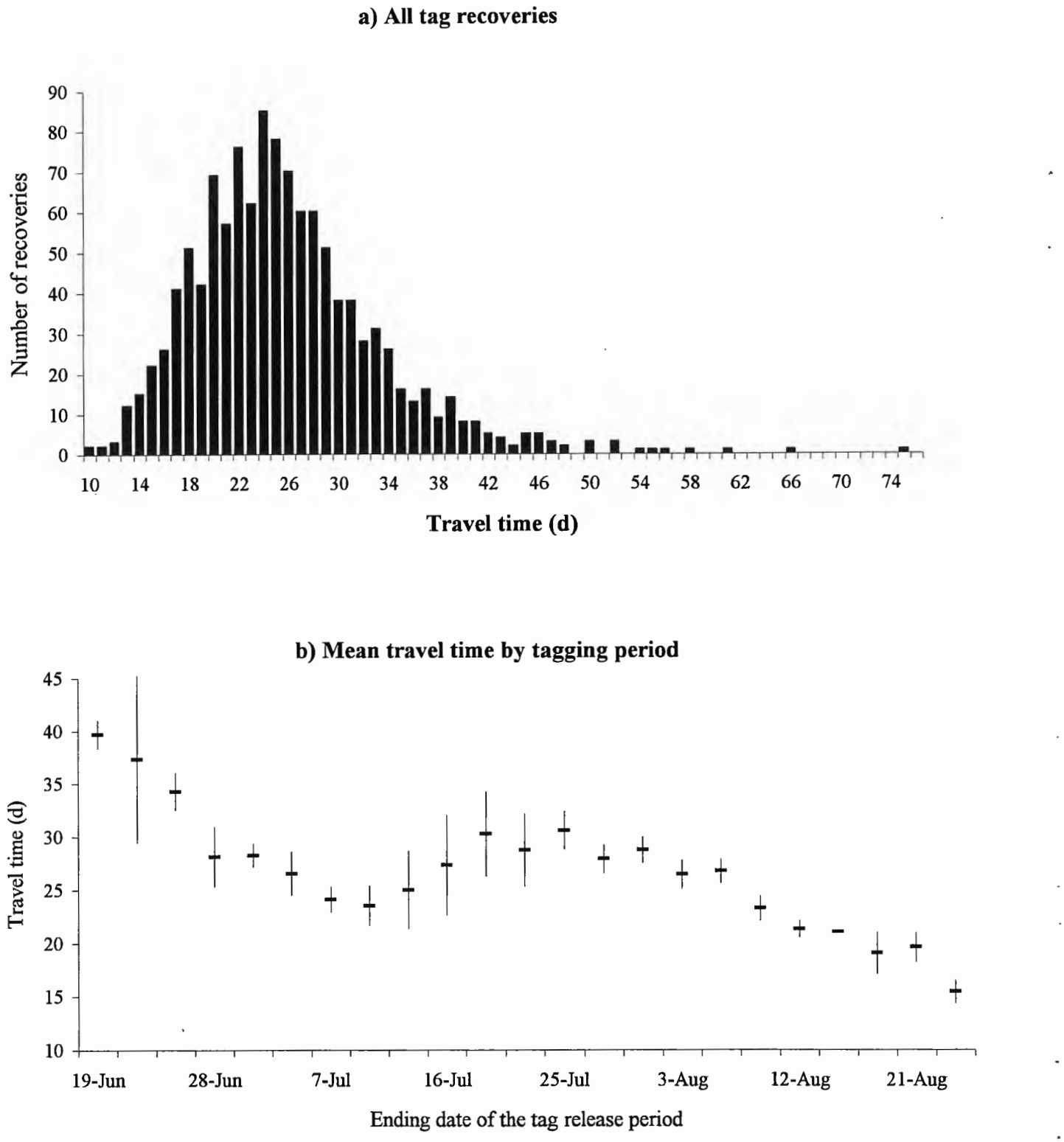


Figure 12. a) The distribution of travel times (d) to the Meziadin fishway for sockeye salmon that were tagged at the Nass River fishwheels and recovered at the Meziadin fishway, 1994. b) mean travel time (with 95% confidence intervals) for 3-day tag release periods with greater than two recoveries, 1994.

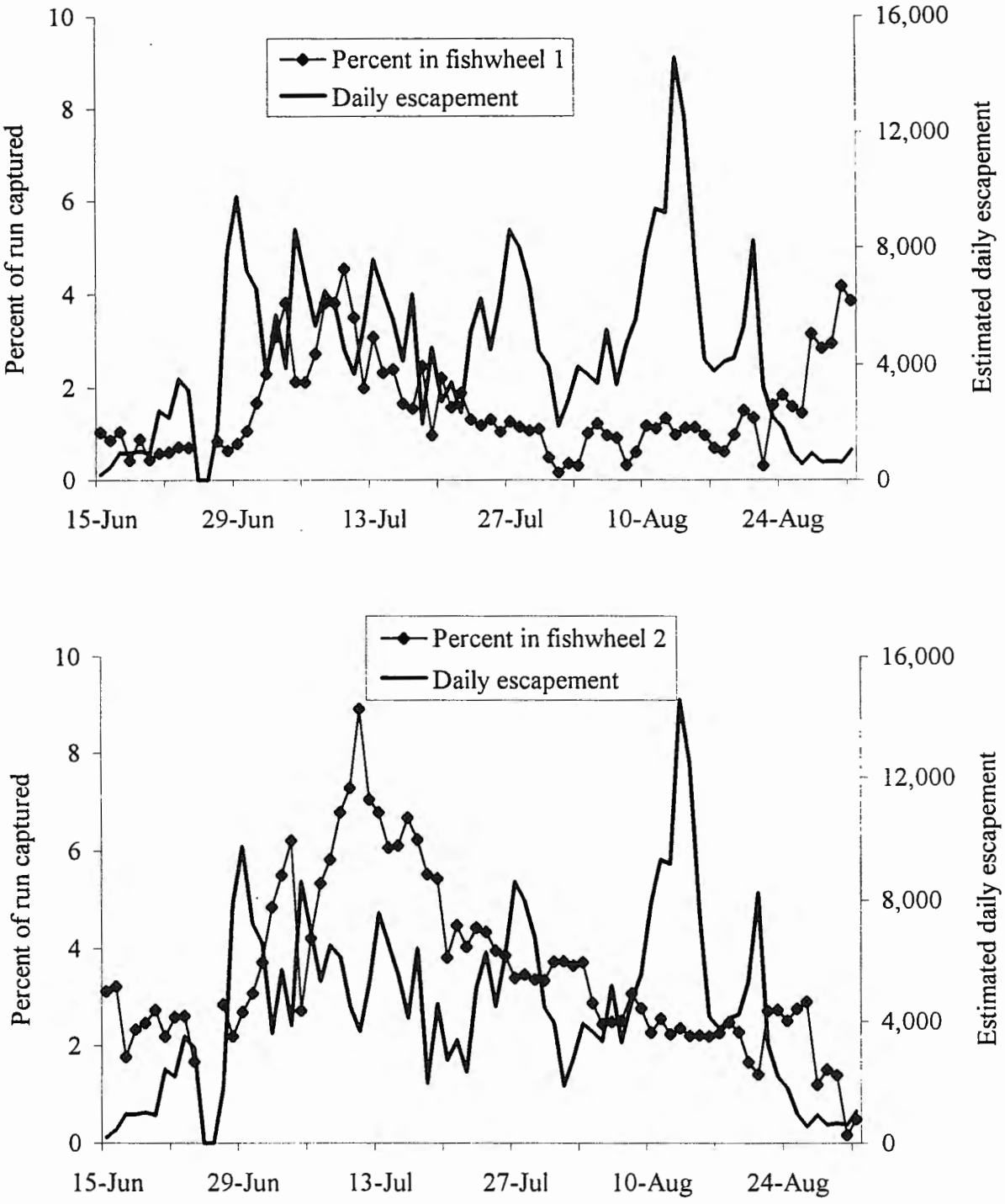


Figure 13. Percent of the sockeye run captured by fishwheels 1 and 2 versus estimated daily escapement.

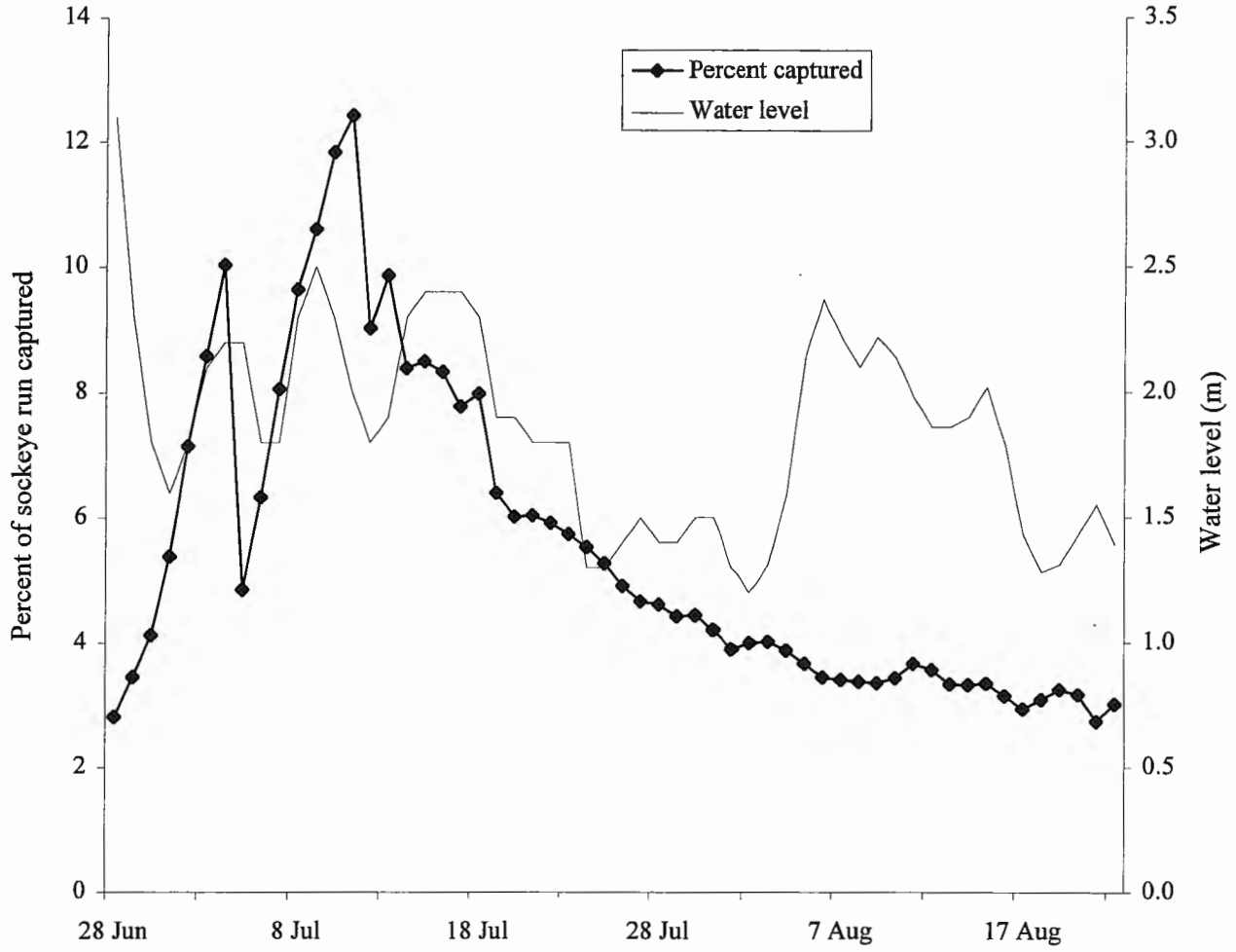
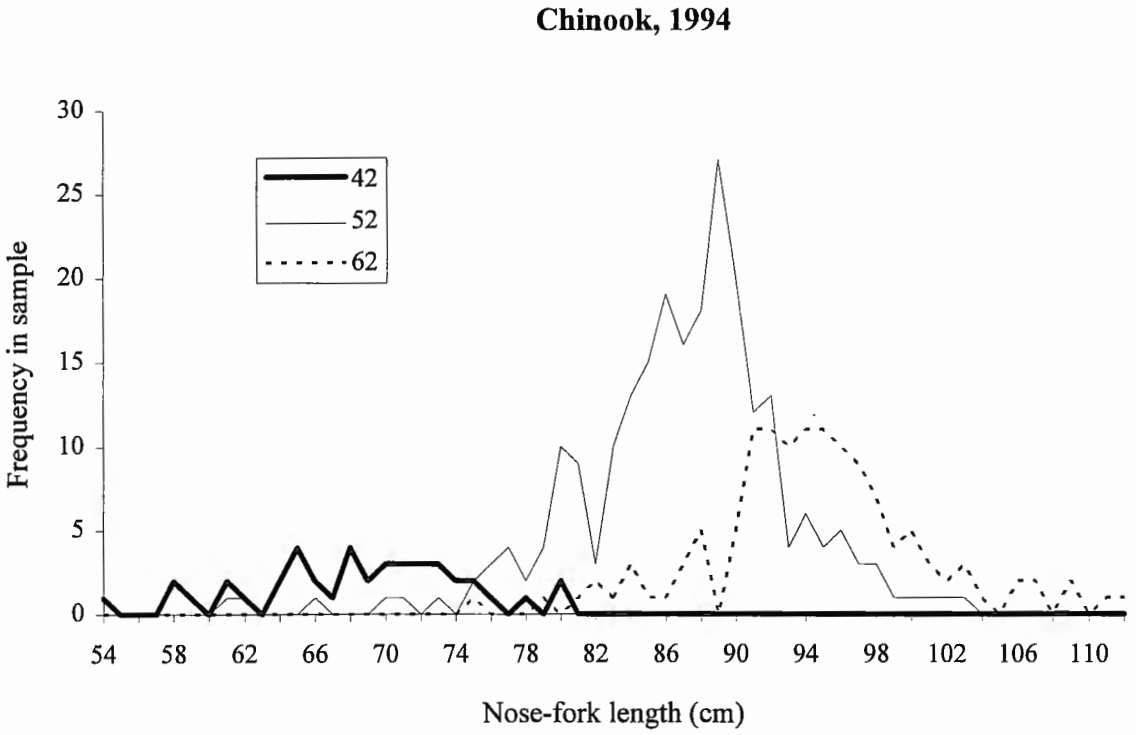


Figure 14. Percent of the sockeye run captured by fishwheels 1 and 2 and the water level of the Nass River at Gitwinksihlkw, by date, 1994.



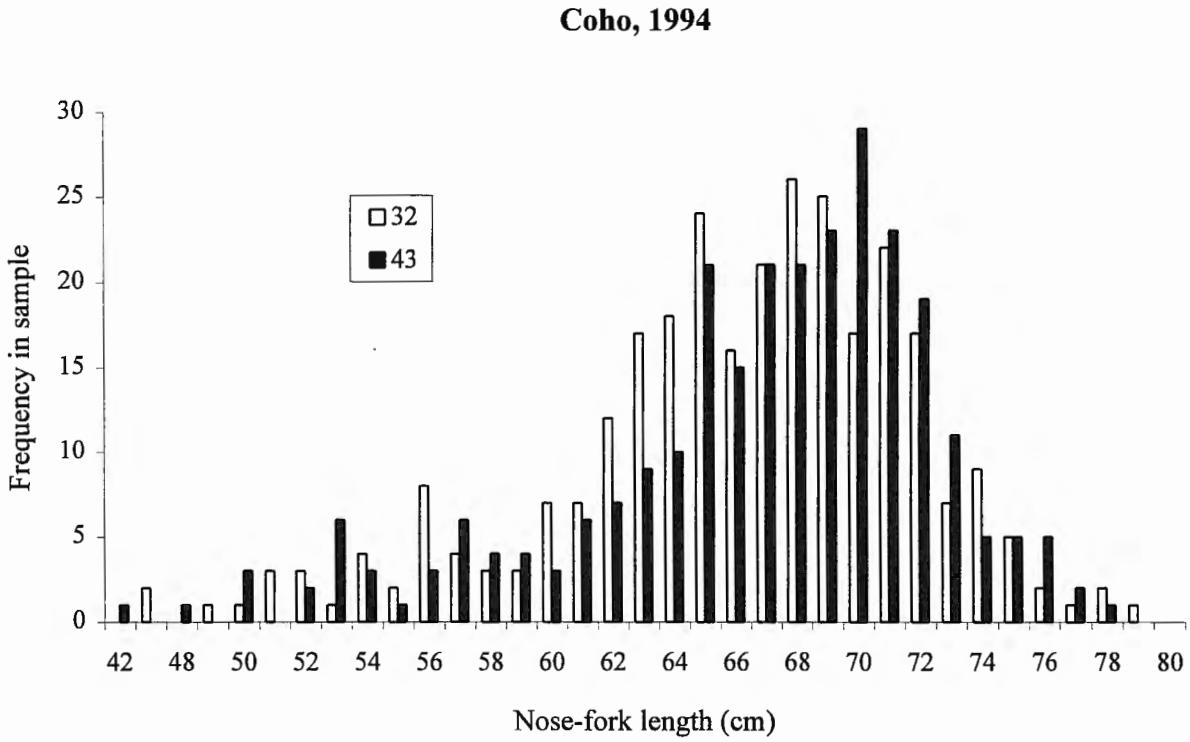


Figure 15. Age-length frequencies for chinook and coho salmon, by age, sampled at the Nass River fishwheels, 1994. Only the most common age classes are shown for clarity (see Table F-1 and F-5 for more detailed composition).

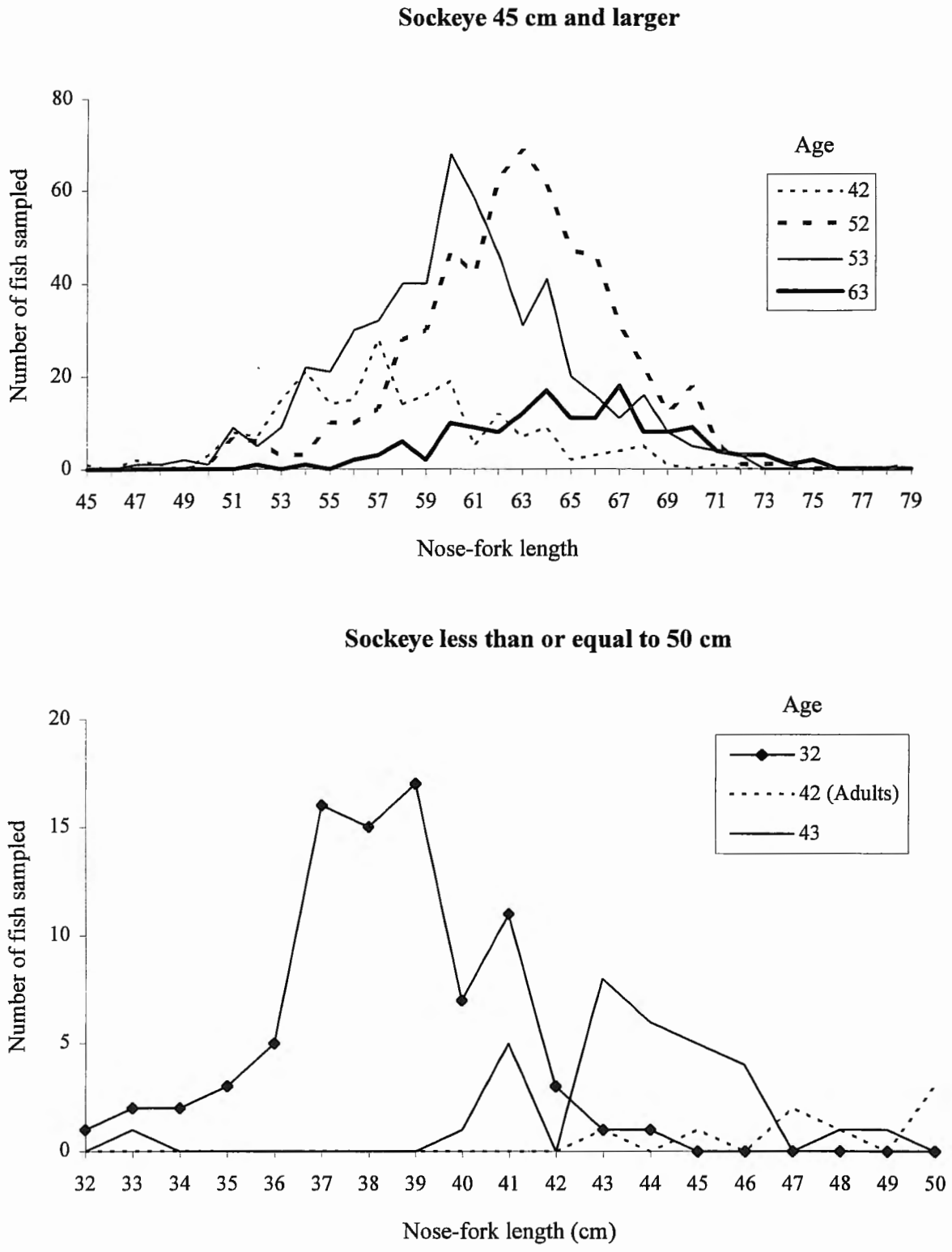


Figure 16. Age-length distributions for sockeye salmon sampled at the Nass River fishwheels, 1994.

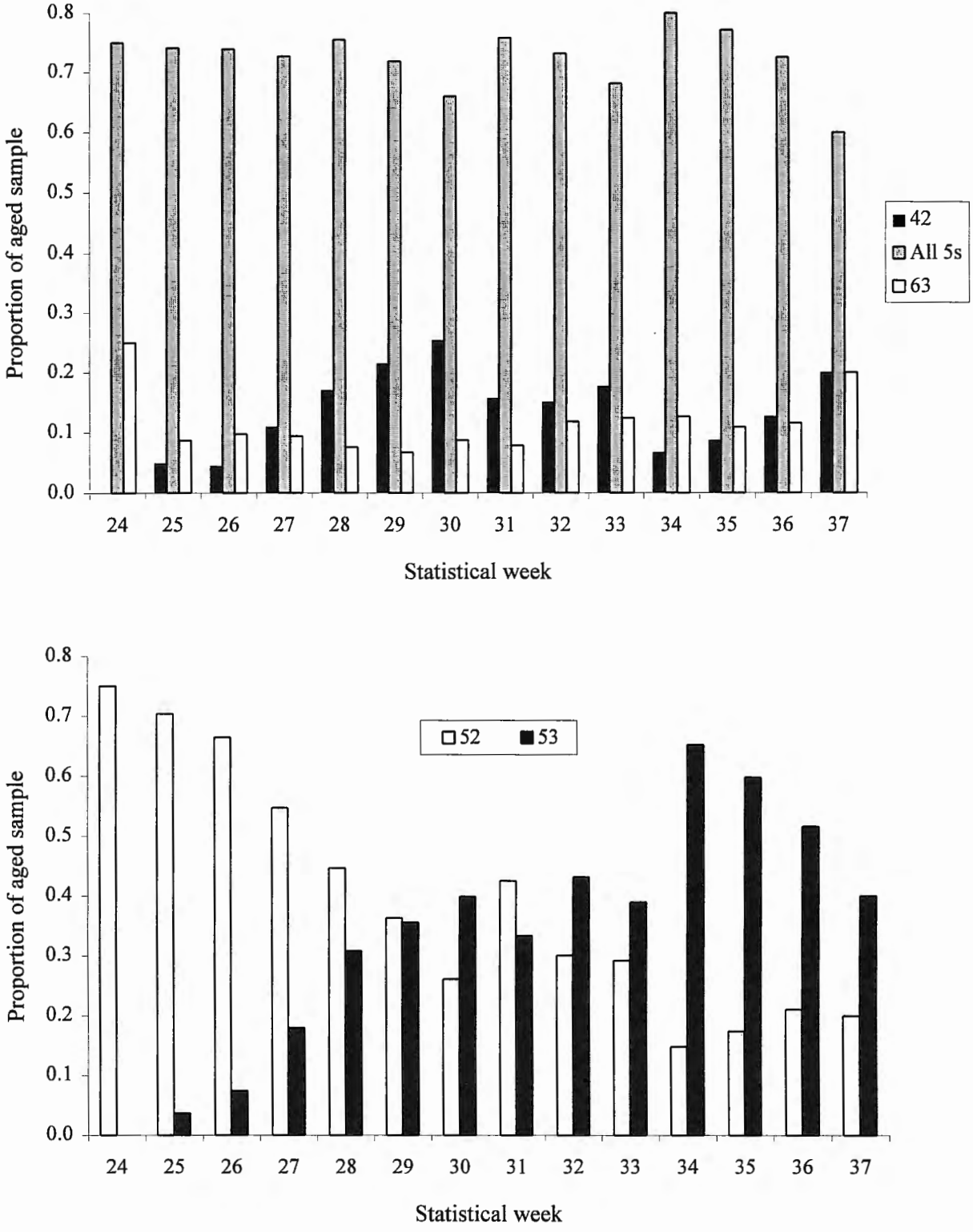


Figure 17. Weekly age composition of sucessfully aged sockeye salmon sampled from fishwheel in the Nass River, 1994 (top: the aged-five fish were pooled for clarity).

APPENDICES

Table A-1. Minimum and maximum water level and temperature data collected in the Nass River near Gitwinksihlkw, 12 June to 12 September, 1994.

	Depth		Temperature (°C)			Depth		Temperature (°C)	
Date	Max.	Min.	Max.	Min.	Date	Max.	Min.	Max.	Min.
12-Jun	2.3	0.0	-	8.2	29-Jul	1.4	1.3	11.5	11.1
13-Jun	2.9	2.2	8.2	7.5	30-Jul	1.5	1.3	11.1	10.4
14-Jun	-	2.5	7.8	-	31-Jul	1.5	1.3	10.7	10.0
15-Jun	2.7	2.5	8.0	7.5	1-Aug	1.3	0.9	11.1	10.2
16-Jun	2.7	2.4	8.6	7.7	2-Aug	1.2	1.2	10.9	10.7
17-Jun	2.4	2.1	9.0	8.0	3-Aug	1.3	1.2	11.5	11.1
18-Jun	2.2	2.0	9.2	8.4	4-Aug	1.6	1.4	11.3	11.1
19-Jun	2.2	2.0	8.8	8.4	5-Aug	2.1	1.8	11.7	10.9
20-Jun	2.1	1.9	8.8	8.2	6-Aug	2.4	2.3	11.5	10.7
21-Jun	2.0	1.8	8.8	8.2	7-Aug	2.2	2.1	10.2	9.6
22-Jun	1.9	1.7	9.2	8.0	8-Aug	2.1	1.9	10.2	9.6
23-Jun	2.2	1.8	10.0	8.8	9-Aug	2.2	2.1	10.4	10.2
24-Jun	2.8	2.2	10.2	9.2	10-Aug	2.1	2.0	10.7	10.4
25-Jun	3.3	2.7	10.2	9.6	11-Aug	2.0	1.9	10.9	10.7
26-Jun	3.4	3.1	10.2	9.4	12-Aug	1.9	1.8	11.1	10.7
27-Jun	3.4	3.0	9.8	9.0	13-Aug	1.9	1.8	10.9	10.7
28-Jun	3.1	2.2	9.0	8.4	14-Aug	1.9	1.8	11.3	10.9
29-Jun	2.3	1.7	8.4	8.2	15-Aug	2.0	1.9	10.9	10.7
30-Jun	1.8	1.6	8.6	8.0	16-Aug	1.8	1.6	10.9	10.2
1-Jul	1.6	1.5	9.0	8.4	17-Aug	1.4	1.3	10.7	10.2
2-Jul	1.8	1.6	9.0	8.6	18-Aug	1.3	1.2	10.7	10.2
3-Jul	2.1	1.7	9.2	8.6	19-Aug	1.3	1.2	10.7	10.2
4-Jul	2.2	2.0	9.0	8.4	20-Aug	1.4	1.3	10.9	10.4
5-Jul	2.2	1.8	8.8	8.2	21-Aug	1.6	1.4	10.4	10.4
6-Jul	1.8	1.6	9.4	8.6	22-Aug	1.4	1.3	10.0	9.6
7-Jul	1.8	1.6	9.4	9.0	23-Aug	1.6	1.4	9.4	9.0
8-Jul	2.3	1.7	9.2	8.8	24-Aug	1.6	1.3	8.8	8.4
9-Jul	2.5	2.2	8.8	8.4	25-Aug	1.2	1.0	9.0	8.6
10-Jul	2.3	1.9	8.8	8.4	26-Aug	0.9	0.8	9.4	8.8
11-Jul	2.0	1.6	9.2	8.4	27-Aug	0.7	0.6	9.8	9.2
12-Jul	1.8	1.5	10.0	8.8	28-Aug	0.6	0.5	10.2	9.4
13-Jul	1.9	1.5	11.3	9.8	29-Aug	0.7	0.5	10.4	9.6
14-Jul	2.3	1.8	11.5	10.7	30-Aug	0.6	0.5	10.0	9.4
15-Jul	2.4	2.1	11.1	10.4	31-Aug	0.5	0.4	10.0	9.6
16-Jul	2.4	2.3	11.3	10.7	1-Sep	0.6	0.5	10.4	9.8
17-Jul	2.4	2.2	11.3	10.9	2-Sep	0.6	0.4	10.4	9.6
18-Jul	2.3	1.8	10.9	10.0	3-Sep	0.4	0.3	10.0	9.2
19-Jul	1.9	1.8	10.2	9.6	4-Sep	0.3	0.2	10.0	9.0
20-Jul	1.9	1.7	10.2	9.6	5-Sep	0.1	0.1	9.2	8.8
21-Jul	1.8	1.6	10.7	9.6	6-Sep	0.5	0.1	8.8	8.4
22-Jul	1.8	1.7	10.9	10.0	7-Sep	0.9	0.7	8.6	8.2
23-Jul	1.8	1.3	10.9	10.2	8-Sep	0.8	0.7	9.0	8.6
24-Jul	1.3	1.1	11.5	10.7	9-Sep	0.6	0.5	9.4	9.0
25-Jul	1.3	1.1	11.9	11.1	10-Sep	0.5	0.4	9.6	8.8
26-Jul	1.4	1.2	11.7	11.3	11-Sep	0.4	0.4	9.4	9.0
27-Jul	1.5	1.3	11.3	10.9	12-Sep	0.3	0.2	9.4	8.8
28-Jul	1.4	1.3	11.5	10.7					

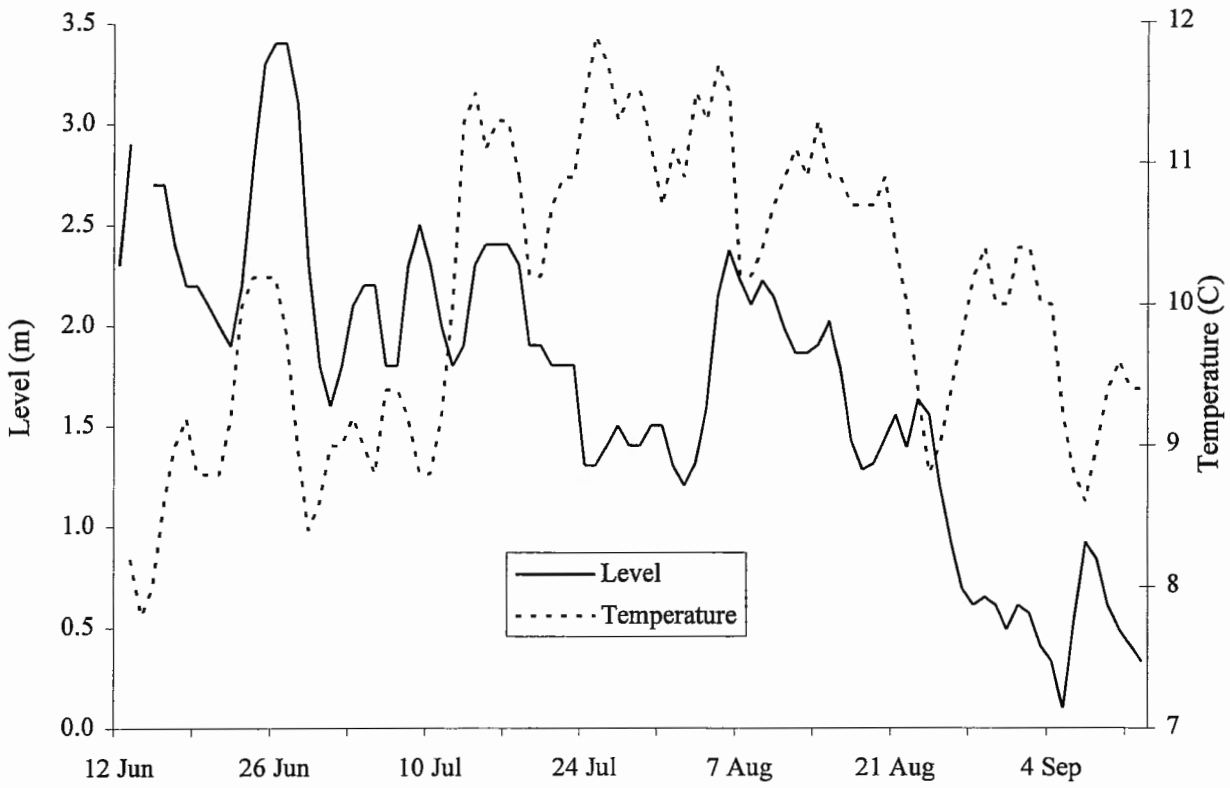


Figure A-1. Daily maximum water temperature and level data collected in the Nass River near Gitwinksihlkw, 1994.

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculate CPUE and fishwheel speed (RPM) for 3 fishwheels used on the Nass River in 1994.

	Fishwheel 1				Fishwheel 2				Fishwheel 3					
Date	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total hours	Comments
7-Jun	13.0	54	6.1	2.3									13.0	
8-Jun	24.0	100	15.7	2.0	8.0	33	0.0						32.0	
9-Jun	24.0	100	23.9	1.8	24.0	100	23.8	2.7					48.0	
10-Jun	24.0	100	35.3	1.9	24.0	100	28.2	2.6					48.0	
11-Jun	24.0	100	24.7	2.2	24.0	100	24.8	2.4					48.0	
12-Jun	24.0	100	22.1	2.0	24.0	100	22.3	2.4					48.0	
13-Jun	24.0	100	20.3	2.0	24.0	100	19.8	2.4					48.0	
14-Jun	24.0	100	23.8	1.9	24.0	100	23.7	2.4					48.0	
15-Jun	24.0	100	26.3	1.9	24.0	100	21.8	2.4					48.0	
16-Jun	24.0	100	23.8	2.0	24.0	100	25.3	2.2					48.0	
17-Jun	24.0	100	24.1	1.9	24.0	100	23.8	2.2					48.0	
18-Jun	24.0	100	22.3	1.9	24.0	100	22.3	2.1					48.0	
19-Jun	24.0	100	27.6	1.9	24.0	100	28.0	2.0					48.0	
20-Jun	24.0	100	22.8	1.8	24.0	100	22.7	2.0					48.0	
21-Jun	24.0	100	26.6	1.8	24.0	100	26.8	2.0	4.8	20	0.0	1.7	52.8	Fw3 set up 2 km below
22-Jun	24.0	100	22.5	1.9	24.0	100	21.5	2.2	22.5	94	22.0	1.7	70.5	Grease Hbr., right bank.
23-Jun	24.0	100	22.8	2.1	24.0	100	23.2	2.2	20.0	83	20.0	1.7	64.8	
24-Jun	20.8	86	27.4	2.5	20.5	85	30.8	2.9	9.5	40	14.7	3.1	30.0	
25-Jun	0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	
26-Jun	0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	
27-Jun	14.3	59	9.1	2.0	14.6	61	10.6	2.1	12.0	50	0.0	2.0	40.8	Fw3 moved to just inside
28-Jun	24.0	100	22.7	2.1	24.0	100	20.2	1.9	24.0	100	28.3	2.0	72.0	canyon at Grease Hbr.,
29-Jun	24.0	100	24.3	1.8	24.0	100	24.5	2.0	24.0	100	25.7	1.2	72.0	river's right bank.
30-Jun	24.0	100	25.7	1.8	24.0	100	25.5	1.9	21.8	91	17.7	1.2	69.8	
1-Jul	24.0	100	27.8	1.8	24.0	100	27.5	1.9	24.0	100	29.3	2.6	72.0	
2-Jul	24.0	100	19.5	2.0	24.0	100	19.3	2.0	24.0	100	14.0	2.2	72.0	
3-Jul	24.0	100	25.8	1.9	24.0	100	29.7	2.1	24.0	100	23.6	2.2	72.0	
4-Jul	24.0	100	23.8	1.8	24.0	100	21.3	2.0	24.0	100	30.9	2.2	72.0	
5-Jul	24.0	100	22.3	2.0	24.0	100	22.6	2.1	24.0	100	24.0	2.1	72.0	
6-Jul	24.0	100	25.4	2.1	24.0	100	25.5	2.0	24.0	100	30.2	2.1	72.0	
7-Jul	24.0	100	21.8	2.0	24.0	100	22.2	2.2	23.5	98	21.8	2.5	71.5	
8-Jul	24.0	100	27.4	2.0	24.0	100	26.5	2.3	21.9	91	18.4	2.7	69.9	
9-Jul	24.0	100	19.8	2.2	24.0	100	22.1	1.9	23.2	97	15.1	2.5	71.2	
10-Jul	24.0	100	26.5	2.1	24.0	100	24.8	1.8	24.0	100	27.3	2.1	72.0	
11-Jul	24.0	100	24.0	1.8	24.0	100	22.2	2.0	24.0	100	30.3	2.0	72.0	
12-Jul	24.0	100	21.8	1.9	24.0	100	23.0	2.1	24.0	100	23.7	2.1	72.0	

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculate CPUE and fishwheel speed (RPM) for 3 fishwheels used on the Nass River in 1994.

	Fishwheel 1				Fishwheel 2				Fishwheel 3					
Date	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total hours	Comments
13-Jul	24.0	100	25.2	1.9	24.0	100	22.5	2.3	24.0	100	21.3	2.5	72.0	
14-Jul	24.0	100	21.7	1.9	24.0	100	21.5	2.3	24.0	100	25.7	2.7	72.0	
15-Jul	24.0	100	26.6	2.0	24.0	100	24.0	2.6	24.0	100	24.1	2.6	72.0	
16-Jul	24.0	100	22.5	1.8	24.0	100	24.5	2.7	24.0	100	19.6	2.7	72.0	
17-Jul	24.0	100	24.8	1.9	24.0	100	25.2	2.5	24.0	100	30.0	2.4	72.0	
18-Jul	24.0	100	23.9	2.0	24.0	100	22.3	2.1	24.0	100	25.3	2.2	72.0	
19-Jul	24.0	100	23.0	1.9	24.0	100	24.2	2.0	24.0	100	23.6	2.1	72.0	
20-Jul	24.0	100	24.0	1.9	24.0	100	24.3	1.9	24.0	100	22.7	2.1	72.0	
21-Jul	24.0	100	24.8	1.9	24.0	100	29.2	2.0	24.0	100	22.5	2.3	72.0	
22-Jul	24.0	100	17.4	2.0	24.0	100	19.5	2.0	24.0	100	31.1	2.0	72.0	
23-Jul	24.0	100	31.2	1.8	24.0	100	31.0	1.9	24.0	100	22.0	2.0	72.0	
24-Jul	24.0	100	24.3	1.7	24.0	100	24.7	1.9	24.0	100	25.3	2.2	72.0	
25-Jul	24.0	100	19.8	1.5	24.0	100	19.6	1.9	24.0	100	19.4	2.1	72.0	
26-Jul	24.0	100	24.0	1.8	24.0	100	25.0	1.8	24.0	100	23.8	2.0	72.0	
27-Jul	24.0	100	24.3	2.1	24.0	100	23.9	1.9	24.0	100	23.9	2.1	72.0	
28-Jul	24.0	100	25.1	2.0	24.0	100	23.5	1.9	24.0	100	23.5	2.1	72.0	
29-Jul	24.0	100	25.0	1.9	24.0	100	25.0	1.9	24.0	100	24.4	2.2	72.0	
30-Jul	24.0	100	23.8	2.0	24.0	100	23.7	1.9	24.0	100	21.0	2.2	72.0	
31-Jul	12.0	50	11.8	1.9	24.0	100	23.8	1.8	24.0	100	30.5	2.2	60.0	
1-Aug	4.0	17	4.0	1.7	23.0	96	23.8	1.8	24.0	100	14.3	2.0	51.0	Water low; fw1 stopped;
2-Aug	6.0	25	6.2	1.5	24.0	100	23.9	1.7	24.0	100	24.3	2.0	54.0	fw2 turning periodically;
3-Aug	24.0	100	13.1	2.1	24.0	100	24.4	1.7	24.0	100	23.3	2.0	72.0	Fw1 restarted on 2 Aug.
4-Aug	24.0	100	25.8	2.0	24.0	100	15.7	1.8	20.5	85	23.4	2.0	68.5	
5-Aug	24.0	100	26.5	2.0	24.0	100	24.2	2.0	0.0	0	10.4		48.0	
6-Aug	24.0	100	30.0	2.1	24.0	100	31.5	1.0	14.0	58	10.2	2.4	62.0	
7-Aug	24.0	100	25.5	2.1	24.0	100	25.7	1.9	24.0	100	24.0	2.1	72.0	
8-Aug	24.0	100	23.7	2.1	24.0	100	23.2	2.2	24.0	100	23.5	2.3	72.0	River rising, muddy water.
9-Aug	24.0	100	23.8	2.2	24.0	100	24.2	2.1	24.0	100	24.3	2.9	72.0	Fw1 moved downstream 1
10-Aug	24.0	100	25.5	2.0	24.0	100	25.5	2.0	24.0	100	23.2	2.5	72.0	
11-Aug	23.3	97	21.9	2.0	24.0	100	22.5	1.9	19.0	79	19.3	2.3	66.3	Log jammed in fw3.
12-Aug	24.0	100	23.1	2.0	24.0	100	23.5	1.9	24.0	100	13.8	2.5	72.0	
13-Aug	22.5	94	22.1	1.9	24.0	100	23.7	1.8	24.0	100	34.8	2.1	70.5	
14-Aug	24.0	100	21.7	2.0	24.0	100	24.0	1.9	24.0	100	23.5	2.2	72.0	
15-Aug	24.0	100	26.2	2.0	24.0	100	23.2	1.8	24.0	100	24.2	1.8	72.0	
16-Aug	24.0	100	23.9	1.8	24.0	100	23.8	1.8	24.0	100	22.7	2.0	72.0	
17-Aug	24.0	100	23.6	1.8	24.0	100	24.0	1.8	24.0	100	17.5	1.9	72.0	Moved fw1 downstream 2

Table A-2. Summary of daily fishwheel effort (hours), effort used to calculate CPUE and fishwheel speed (RPM) for 3 fishwheels used on the Nass River in 1994.

	Fishwheel 1				Fishwheel 2				Fishwheel 3					
Date	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total (h) [a]	Percent of time running	Effort for CPUE [a]	RPM	Total hours	Comments
18-Aug	24.0	100	24.3	2.0	24.0	100	24.5	1.9	24.0	100	30.8	2.0	72.0	
19-Aug	24.0	100	24.1	2.5	24.0	100	24.0	1.9	24.0	100	13.8	2.2	72.0	
20-Aug	24.0	100	23.1	2.4	24.0	100	23.2	1.8	24.0	100	34.0	1.9	72.0	Moved fw1 upstream 1 m.
21-Aug	24.0	100	23.7	2.2	24.0	100	23.9	1.8	24.0	100	14.9	1.7	72.0	
22-Aug	24.0	100	25.2	2.3	24.0	100	25.2	1.8	24.0	100	24.0	2.1	72.0	
23-Aug	24.0	100	20.7	2.4	24.0	100	21.6	1.8	24.0	100	24.3	2.1	72.0	
24-Aug	24.0	100	26.2	2.2	24.0	100	25.8	1.7	24.0	100	31.8	1.9	72.0	
25-Aug	24.0	100	23.3	2.1	24.0	100	23.9	1.6	24.0	100	14.8	1.9	72.0	
26-Aug	24.0	100	22.7	1.8	24.0	100	22.5	1.7	24.0	100	24.4	1.9	72.0	
27-Aug	24.0	100	25.9	1.9	24.0	100	25.5	1.8	24.0	100	23.8	1.9	72.0	
28-Aug	24.0	100	22.1	2.0	24.0	100	22.9	1.8	24.0	100	27.1	1.7	72.0	
29-Aug	24.0	100	25.2	2.0	24.0	100	24.9	1.6	24.0	100	20.3	1.8	72.0	
30-Aug	24.0	100	24.1	2.1	24.0	100	24.0	1.4	24.0	100	24.6	1.8	72.0	
31-Aug	24.0	100	23.8	2.2	24.0	100	23.9	1.3	24.0	100	24.8	1.8	72.0	
1-Sep	24.0	100	22.9	2.2	24.0	100	14.9	1.8	24.0	100	27.5	1.8	72.0	
2-Sep	21.0	88	21.2	2.3	24.0	100	24.6	1.6	24.0	100	22.0	1.8	69.0	Fw1 hit by log.
3-Sep	24.0	100	24.5	2.3	4.0	17	19.0	1.5	24.0	100	22.3	1.5	52.0	Fw2 stopped turning.
4-Sep	24.0	100	23.0	2.1	0.0	0	0.0		4.0	17	18.5	1.3	28.0	Fw3 not turning, too shallo
5-Sep	24.0	100	23.0	2.0	0.0	0	0.0		0.0	0	0.0		24.0	
6-Sep	17.8	74	23.5	2.0	0.0	0	0.0		20.5	85	10.3	1.4	38.3	Fw1 shut down. Water
7-Sep	0.0	0	7.4		10.0	42	10.0		24.0	100	24.5	1.6	34.0	beginning to rise, Fw3
8-Sep									24.0	100	26.3	1.6	24.0	began fishing.
9-Sep									24.0	100	0.0		24.0	
10-Sep									11.0	46	42.5		11.0	Fw3 shut down.
Total [b]	**2075**	**94**	**2075**		**2024**	**96**	**2024**		**1760**	**89**	**1760**		**5835**	

[a] The total effort is the time the wheel was fishing from midnight to midnight whereas the effort used to calculate the CPUE is the number of hours the wheel fished to obtain that date's catch. These two values a are different because the time of the last sampling session on each day varied and this affected the following day's effort and catch. Effort was halved for periods when only one live box was functioning.

[b] The total percent of time running based on fishwheel 1 fishing from 7 June to 6 September (92 d); fishwheel 2 from 8 June to 3 September (88 d); and fishwheel 3 from 21 June to 10 September (82 d).

Table B-1. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for chinook salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
7-Jun	2	2	2	0	0	0.33												
8-Jun	1	3	1	0	0	0.06												
9-Jun	2	5	2	0	0	0.08	5	5	5	0	0	0.21						
10-Jun	3	8	3	0	0	0.08	16	21	15	0	0	0.57						
11-Jun	8	16	7	0	0	0.32	27	48	24	0	0	1.09						
12-Jun	3	19	3	0	0	0.14	21	69	20	0	0	0.94						
13-Jun	1	20	1	0	0	0.05	5	74	5	0	0	0.25						
14-Jun	1	21	1	0	0	0.04	7	81	7	0	0	0.30						
15-Jun	5	26	5	0	0	0.19	9	90	9	0	0	0.41						
16-Jun	8	34	7	0	0	0.34	40	130	38	0	0	1.58						
17-Jun	11	45	11	0	0	0.46	74	204	73	0	0	3.12						
18-Jun	16	61	15	0	0	0.72	59	263	58	1	1	2.64						
19-Jun	20	81	18	0	0	0.73	89	352	86	1	2	3.18						
20-Jun	19	100	17	1	1	0.84	65	417	62	1	3	2.87						
21-Jun	38	138	36	1	2	1.43	70	487	69	0	3	2.61						
22-Jun	47	185	43	0	2	2.09	75	562	74	3	6	3.49	13	13	11	0	0	0.55
23-Jun	30	215	28	2	4	1.31	75	637	73	1	7	3.24	27	40	25	0	0	1.35
24-Jun	2	217	2	1	5	0.07	20	657	18	1	8	0.65	7	47	7	0	0	0.48
25-Jun	0	217	0	0	5		0	657	0	0	8			47			0	
26-Jun	0	217	0	0	5		0	657	0	0	8			47			0	
27-Jun	2	219	2	0	5	0.22	3	660	2	1	9	0.28		47			0	
28-Jun	12	231	9	0	5	0.53	14	674	12	0	9	0.69	2	49	2	0	0	0.07
29-Jun	19	250	19	2	7	0.78	40	714	39	2	11	1.63	10	59	10	2	2	0.55
30-Jun	43	293	42	4	11	1.68	107	821	103	3	14	4.20	13	72	13	0	2	0.74
1-Jul	94	387	89	4	15	3.39	112	933	102	2	16	4.07	20	92	20	1	3	0.72
2-Jul	77	464	68	6	21	3.95	41	974	39	4	20	2.13	5	97	5	0	3	0.36
3-Jul	33	497	27	5	26	1.28	33	1007	29	4	24	1.11	3	100	0	0	3	0.13
4-Jul	29	526	23	5	31	1.22	48	1055	42	3	27	2.25	3	103	0	1	4	0.10
5-Jul	61	587	61	4	35	2.73	59	1114	54	6	33	2.61	44	147	0	0	4	1.83
6-Jul	41	628	37	5	40	1.61	59	1173	57	7	40	2.31	49	196	0	0	4	1.62
7-Jul	10	638	8	5	45	0.46	27	1200	24	7	47	1.22	15	211	0	2	6	0.69
8-Jul	5	643	2	3	48	0.18	6	1206	3	4	51	0.23	2	213	0	0	6	0.11
9-Jul	6	649	4	2	50	0.30	1	1207	0	6	57	0.05	1	214	0	2	8	0.07
10-Jul	6	655	4	3	53	0.23	22	1229	20	3	60	0.89	13	227	0	3	11	0.48
11-Jul	13	668	12	8	61	0.54	10	1239	9	2	62	0.45	178	405	0	0	11	5.87
12-Jul	16	684	8	6	67	0.73	5	1244	0	0	62	0.22	68	473	0	0	11	2.87

Table B-1. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for chinook salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
13-Jul	2	686	1	3	70	0.08	5	1249	0	0	62	0.22	9	482	0	0	11	0.42
14-Jul	3	689	3	2	72	0.14	2	1251	0	1	63	0.09	2	484	0	0	11	0.08
15-Jul	4	693	3	3	75	0.15	0	1251	0	0	63	0.00	1	485	0	0	11	0.04
16-Jul	2	695	1	1	76	0.09	0	1251	0	0	63	0.00	0	485	0	0	11	0.00
17-Jul	0	695	0	0	76	0.00	0	1251	0	0	63	0.00	0	485	0	0	11	0.00
18-Jul	3	698	3	1	77	0.13	4	1255	0	0	63	0.18	16	501	0	0	11	0.63
19-Jul	3	701	3	2	79	0.13	0	1255	0	0	63	0.00	16	517	0	0	11	0.68
20-Jul	6	707	4	1	80	0.25	4	1259	1	5	68	0.16	25	542	0	0	11	1.10
21-Jul	1	708	1	4	84	0.04	6	1265	5	3	71	0.21	16	558	0	0	11	0.71
22-Jul	0	708	0	2	86	0.00	4	1269	3	0	71	0.21	7	565	0	4	15	0.23
23-Jul	2	710	1	3	89	0.06	3	1272	2	2	73	0.10	31	596	0	7	22	1.41
24-Jul	2	712	1	1	90	0.08	4	1276	1	0	73	0.16	11	607	0	1	23	0.44
25-Jul	0	712	0	0	90	0.00	0	1276	0	2	75	0.00	7	614	0	6	29	0.36
26-Jul	0	712	0	1	91	0.00	1	1277	0	3	78	0.04	2	616	0	1	30	0.08
27-Jul	2	714	0	0	91	0.08	2	1279	0	3	81	0.08	1	617	0	1	31	0.04
28-Jul	0	714	0	1	92	0.00	2	1281	0	0	81	0.09	3	620	0	1	32	0.13
29-Jul	0	714	0	0	92	0.00	0	1281	0	0	81	0.00	3	623	0	1	33	0.12
30-Jul	0	714	0	0	92	0.00	0	1281	0	0	81	0.00	0	623	0	0	33	0.00
31-Jul	0	714	0	0	92	0.00	2	1283	0	0	81	0.08	0	623	0	4	37	0.00
1-Aug	0	714	0	0	92	0.00	1	1284	0	2	83	0.04	3	626	0	2	39	0.21
2-Aug	0	714	0	0	92	0.00	1	1285	0	1	84	0.04	2	628	0	2	41	0.08
3-Aug	0	714	0	0	92	0.00	4	1289	3	0	84	0.16	1	629	0	1	42	0.04
4-Aug	0	714	0	0	92	0.00	0	1289	0	0	84	0.00	0	629	0	7	49	0.00
5-Aug	0	714	0	0	92	0.00	0	1289	0	0	84	0.00	0	629	0	5	54	0.00
6-Aug	0	714	0	1	93	0.00	0	1289	0	0	84	0.00	0	629	0	0	54	0.00
7-Aug	0	714	0	0	93	0.00	1	1290	0	0	84	0.04	0	629	0	0	54	0.00
8-Aug	0	714	0	0	93	0.00	1	1291	0	2	86	0.04	2	631	0	0	54	0.09
9-Aug	0	714	0	0	93	0.00	0	1291	0	0	86	0.00	0	631	0	0	54	0.00
10-Aug	0	714	0	0	93	0.00	0	1291	0	0	86	0.00	0	631	0	0	54	0.00
11-Aug	1	715	0	0	93	0.05	0	1291	0	0	86	0.00	0	631	0	0	54	0.00
12-Aug	0	715	0	0	93	0.00	0	1291	0	0	86	0.00	1	632	0	0	54	0.07
13-Aug	1	716	0	0	93	0.05	1	1292	0	0	86	0.04	0	632	0	0	54	0.00
14-Aug	1	717	0	0	93	0.05	0	1292	0	1	87	0.00	0	632	0	0	54	0.00
15-Aug	0	717	0	0	93	0.00	2	1294	0	0	87	0.09	0	632	0	0	54	0.00
16-Aug	0	717	0	0	93	0.00	0	1294	0	0	87	0.00	0	632	0	0	54	0.00
17-Aug	0	717	0	1	94	0.00	2	1296	0	0	87	0.08	0	632	0	0	54	0.00

Table B-1. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for chinook salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
18-Aug	0	717	0	2	96	0.00	2	1298	0	1	88	0.08	0	632	0	0	54	0.00
19-Aug	0	717	0	0	96	0.00	0	1298	0	0	88	0.00	1	633	0	0	54	0.07
20-Aug	0	717	0	1	97	0.00	0	1298	0	4	92	0.00	1	634	0	0	54	0.03
21-Aug	0	717	0	1	98	0.00	1	1299	0	1	93	0.04	0	634	0	0	54	0.00
22-Aug	0	717	0	0	98	0.00	2	1301	0	0	93	0.08	0	634	0	0	54	0.00
23-Aug	0	717	0	0	98	0.00	1	1302	0	1	94	0.05	0	634	0	0	54	0.00
24-Aug	1	718	0	0	98	0.04	1	1303	0	0	94	0.04	1	635	0	0	54	0.03
25-Aug	0	718	0	0	98	0.00	0	1303	0	0	94	0.00	0	635	0	0	54	0.00
26-Aug	0	718	0	0	98	0.00	0	1303	0	0	94	0.00	0	635	0	0	54	0.00
27-Aug	1	719	0	0	98	0.04	0	1303	0	0	94	0.00	0	635	0	0	54	0.00
28-Aug	1	720	0	0	98	0.05	1	1304	0	0	94	0.04	1	636	0	0	54	0.04
29-Aug	5	725	0	0	98	0.20	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
30-Aug	0	725	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
31-Aug	0	725	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
1-Sep	0	725	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
2-Sep	0	725	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
3-Sep	0	725	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
4-Sep	2	727	0	0	98	0.09	0	1304	0	0	94		0	636	0	0	54	0.00
5-Sep	0	727	0	0	98	0.00	0	1304	0	0	94		0	636	0	0	54	
6-Sep	0	727	0	0	98	0.00	0	1304	0	0	94		0	636	0	0	54	0.00
7-Sep	0	727	0	0	98	0.00	0	1304	0	0	94	0.00	0	636	0	0	54	0.00
8-Sep													0	636	0	0	54	
9-Sep													0	636	0	0	54	0.00
10-Sep													0	636	0	0	54	0.00
Totals			638			30.89			1186			53.98			93			25.70

Table B-2. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for sockeye salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
7-Jun	0	0	0	0	0	0.00												
8-Jun	0	0	0	0	0	0.00												
9-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00						
10-Jun	3	3	3	0	0	0.08	5	5	4	0	0	0.18						
11-Jun	0	3	0	0	0	0.00	3	8	3	0	0	0.12						
12-Jun	0	3	0	0	0	0.00	4	12	4	0	0	0.18						
13-Jun	1	4	0	0	0	0.05	3	15	2	0	0	0.15						
14-Jun	3	7	3	0	0	0.13	1	16	1	0	0	0.04						
15-Jun	2	9	2	0	0	0.08	6	22	5	0	0	0.28						
16-Jun	4	13	4	0	0	0.17	15	37	15	0	0	0.59						
17-Jun	10	23	8	0	0	0.41	17	54	17	0	0	0.72						
18-Jun	4	27	4	0	0	0.18	22	76	21	0	0	0.99						
19-Jun	9	36	9	0	0	0.33	25	101	24	0	0	0.89						
20-Jun	4	40	3	0	0	0.18	25	126	23	0	0	1.10						
21-Jun	14	54	13	0	0	0.53	53	179	51	0	0	1.98						
22-Jun	13	67	13	0	0	0.58	56	235	51	0	0	2.60	7	7	0	0	0	0.32
23-Jun	25	92	24	0	0	1.10	91	326	85	0	0	3.93	15	22	0	0	0	0.75
24-Jun	22	114	22	0	0	0.80	52	378	51	1	1	1.69	13	35	0	0	0	0.88
25-Jun	0	114	0	0	0		0	378	0	0	1		0	35	0	0	0	
26-Jun	0	114	0	0	0		0	378	0	0	1		0	35	0	0	0	
27-Jun	15	129	13	0	0	1.65	51	429	49	0	1	4.82	0	35	0	0	0	
28-Jun	50	179	47	0	0	2.21	172	601	162	1	2	8.51	18	53	0	0	0	0.64
29-Jun	76	255	71	1	1	3.12	261	862	253	1	3	10.65	39	92	0	0	0	1.52
30-Jun	76	331	73	1	2	2.96	222	1084	212	3	6	8.71	45	137	0	0	0	2.55
1-Jul	110	441	105	1	3	3.96	245	1329	233	1	7	8.91	38	175	0	0	0	1.30
2-Jul	83	524	79	0	3	4.26	175	1504	169	4	11	9.09	7	182	0	0	0	0.50
3-Jul	176	700	165	1	4	6.83	313	1817	233	1	12	10.55	17	199	0	0	0	0.72
4-Jul	148	848	139	3	7	6.23	241	2058	231	6	18	11.30	25	224	0	0	0	0.81
5-Jul	183	1031	165	1	8	8.20	234	2292	219	5	23	10.36	40	264	0	0	0	1.67
6-Jul	148	1179	143	1	9	5.82	294	2586	281	6	29	11.53	112	376	0	0	0	3.71
7-Jul	145	1324	137	1	10	6.64	284	2870	263	4	33	12.81	62	438	0	0	0	2.84
8-Jul	248	1572	227	6	16	9.04	379	3249	362	3	36	14.30	28	466	0	0	0	1.52
9-Jul	233	1805	97	1	17	11.80	415	3664	100	4	40	18.78	23	489	0	0	0	1.53
10-Jul	204	2009	185	1	18	7.70	327	3991	0	6	46	13.21	149	638	0	0	0	5.47
11-Jul	129	2138	120	11	29	5.38	328	4319	0	3	49	14.77	267	905	0	0	0	8.80
12-Jul	105	2243	97	6	35	4.81	373	4692	0	0	49	16.22	227	1132	0	0	0	9.59
13-Jul	233	2476	68	2	37	9.25	513	5205	0	0	49	22.80	175	1307	0	0	0	8.20

Table B-2. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for sockeye salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
14-Jul	152	2628	75	5	42	7.01	397	5602	75	3	52	18.47	132	1439	0	0	0	5.14
15-Jul	132	2760	123	8	50	4.97	338	5940	0	0	52	14.08	135	1574	0	0	0	5.61
16-Jul	68	2828	59	12	62	3.02	275	6215	0	0	52	11.22	124	1698	0	0	0	6.33
17-Jul	99	2927	92	7	69	3.99	398	6613	0	0	52	15.79	334	2032	0	0	0	11.13
18-Jul	48	2975	41	24	93	2.01	108	6721	0	14	66	4.84	245	2277	0	0	0	9.70
19-Jul	44	3019	42	13	106	1.91	248	6969	0	4	70	10.25	165	2442	0	0	0	7.00
20-Jul	60	3079	55	19	125	2.50	104	7073	37	30	100	4.27	142	2584	0	0	0	6.26
21-Jul	53	3132	48	9	134	2.14	151	7224	136	25	125	5.17	102	2686	0	15	15	4.53
22-Jul	44	3176	41	4	138	2.53	94	7318	83	16	141	4.82	146	2832	0	13	28	4.70
23-Jul	67	3243	58	16	154	2.15	227	7545	208	23	164	7.32	185	3017	0	29	57	8.41
24-Jul	74	3317	58	17	171	3.05	272	7817	191	11	175	11.03	115	3132	0	7	64	4.55
25-Jul	59	3376	48	12	183	2.99	178	7995	161	9	184	9.09	98	3230	0	13	77	5.05
26-Jul	65	3441	55	11	194	2.71	239	8234	211	6	190	9.56	86	3316	0	10	87	3.61
27-Jul	109	3550	103	21	215	4.48	292	8526	254	26	216	12.21	106	3422	0	6	93	4.43
28-Jul	92	3642	75	14	229	3.67	277	8803	253	14	230	11.79	97	3519	0	2	95	4.13
29-Jul	72	3714	57	15	244	2.88	227	9030	209	19	249	9.08	135	3654	0	5	100	5.53
30-Jul	49	3763	42	6	250	2.06	149	9179	139	10	259	6.29	63	3717	0	3	103	3.00
31-Jul	19	3782	14	2	252	1.61	147	9326	139	13	272	6.19	178	3895	0	13	116	5.84
1-Aug	3	3785	0	6	258	0.75	70	9396	56	16	288	2.94	65	3960	0	5	121	4.55
2-Aug	10	3795	9	5	263	1.63	102	9498	95	21	309	4.26	102	4062	0	12	133	4.19
3-Aug	12	3807	11	4	267	0.92	146	9644	135	14	323	5.98	141	4203	0	13	146	6.06
4-Aug	37	3844	35	15	282	1.43	105	9749	100	13	336	6.70	135	4338	0	9	155	5.76
5-Aug	41	3885	41	8	290	1.55	82	9831	82	8	344	3.39	63	4401	0	5	160	6.05
6-Aug	50	3935	40	11	301	1.67	128	9959	114	14	358	4.06	22	4423	0	0	160	2.16
7-Aug	30	3965	22	20	321	1.18	83	10042	68	11	369	3.23	82	4505	0	4	164	3.42
8-Aug	15	3980	13	5	326	0.63	143	10185	119	21	390	6.16	135	4640	0	7	171	5.74
9-Aug	33	4013	27	16	342	1.39	153	10338	132	34	424	6.33	104	4744	0	17	188	4.29
10-Aug	93	4106	85	89	431	3.65	179	10517	160	118	542	7.02	163	4907	0	19	207	7.03
11-Aug	104	4210	87	52	483	4.74	238	10755	210	45	587	10.58	177	5084	0	24	231	9.16
12-Aug	123	4333	40	30	513	5.32	205	10960	130	30	617	8.72	71	5155	0	1	232	5.16
13-Aug	143	4476	0	18	531	6.48	343	11303	0	38	655	14.49	259	5414	0	15	247	7.45
14-Aug	141	4617	0	22	553	6.51	275	11578	0	13	668	11.46	108	5522	0	9	256	4.60
15-Aug	87	4704	17	8	561	3.32	168	11746	47	7	675	7.25	129	5651	0	12	268	5.34
16-Aug	40	4744	28	12	573	1.67	91	11837	85	4	679	3.83	126	5777	0	12	280	5.56
17-Aug	26	4770	17	9	582	1.10	85	11922	71	6	685	3.54	67	5844	0	6	286	3.83
18-Aug	25	4795	13	8	590	1.03	101	12023	87	3	688	4.12	119	5963	0	16	302	3.86
19-Aug	41	4836	31	2	592	1.70	96	12119	77	6	694	4.00	48	6011	0	9	311	3.47

Table B-2. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for sockeye salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
20-Aug	80	4916	11	3	595	3.46	88	12207	43	2	696	3.80	154	6165	0	23	334	4.53
21-Aug	110	5026	0	1	596	4.65	115	12322	0	2	698	4.81	43	6208	0	2	336	2.88
22-Aug	10	5036	0	2	598	0.40	88	12410	25	3	701	3.49	54	6262	0	6	342	2.25
23-Aug	35	5071	3	2	600	1.69	59	12469	50	1	702	2.73	85	6347	0	2	344	3.51
24-Aug	33	5104	0	1	601	1.26	45	12514	0	2	704	1.75	105	6452	0	10	354	3.30
25-Aug	15	5119	0	1	602	0.64	26	12540	0	1	705	1.09	68	6520	0	13	367	4.61
26-Aug	8	5127	2	0	602	0.35	16	12556	5	0	705	0.71	23	6543	0	4	371	0.94
27-Aug	29	5156	19	0	602	1.12	11	12567	5	1	706	0.43	38	6581	0	3	374	1.59
28-Aug	17	5173	12	3	605	0.77	9	12576	4	1	707	0.39	39	6620	0	1	375	1.44
29-Aug	19	5192	12	0	605	0.75	9	12585	4	0	707	0.36	24	6644	0	1	376	1.19
30-Aug	25	5217	20	0	605	1.04	1	12586	0	0	707	0.04	18	6662	0	2	378	0.73
31-Aug	40	5257	33	4	609	1.68	5	12591	5	0	707	0.21	20	6682	0	2	380	0.81
1-Sep	8	5265	4	0	609	0.35	11	12602	10	1	708	0.74	33	6715	0	0	380	1.20
2-Sep	15	5280	0	0	609	0.71	3	12605	2	2	710	0.12	13	6728	0	0	380	0.59
3-Sep	20	5300	9	13	622	0.82	0	12605	0	0	710	0.00	14	6742	0	0	380	0.63
4-Sep	7	5307	4	3	625	0.30	0	12605	0	0	710		0	6742	0	0	380	0.00
5-Sep	4	5311	2	0	625	0.17	0	12605	0	0	710		0	6742	0	0	380	
6-Sep	11	5322	3	2	627	0.47	8	12613	0	0	710		13	6755	0	1	381	1.27
7-Sep	5	5327	0	0	627	0.68	0	12613	0	2	712	0.00	36	6791	0	2	383	1.47
8-Sep													0	6791	0	0	383	0.00
9-Sep													0	6791	0	0	383	
10-Sep													15	6806	0	4	387	0.35
			3775			228.1			7141			533.0			0			289.2

Table B-3. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for coho salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
7-Jun	0	0	0	0	0	0.00												
8-Jun	0	0	0	0	0	0.00												
9-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
10-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
11-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
12-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
13-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
14-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
15-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
16-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
17-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
18-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
19-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
20-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
21-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0						
22-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
23-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
24-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
25-Jun	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
26-Jun	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
27-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	
28-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
29-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
30-Jun	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
1-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
2-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
3-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
4-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
5-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
6-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
7-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
8-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
9-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
10-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00

Table B-3. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for coho salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
11-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
12-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
13-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
14-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
15-Jul	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
16-Jul	0	0	0	1	1	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
17-Jul	0	0	0	0	1	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
18-Jul	0	0	0	0	1	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
19-Jul	0	0	0	0	1	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
20-Jul	0	0	0	0	1	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0.00
21-Jul	0	0	0	0	1	0.00	1	1	0	0	0	0.00	0	0	0	0	0	0.00
22-Jul	0	0	0	0	1	0.00	1	2	0	0	0	0.00	0	0	0	0	0	0.00
23-Jul	0	0	0	0	1	0.00	0	2	0	0	0	0.00	1	1	0	0	0	0.05
24-Jul	0	0	0	1	2	0.00	0	2	0	0	0	0.00	0	1	0	0	0	0.00
25-Jul	0	0	0	0	2	0.00	0	2	0	0	0	0.00	0	1	0	0	0	0.00
26-Jul	0	0	0	0	2	0.00	1	3	0	0	0	0.04	0	1	0	0	0	0.00
27-Jul	2	2	0	0	2	0.08	3	6	0	2	2	0.13	0	1	0	0	0	0.00
28-Jul	7	9	0	6	8	0.28	8	14	0	4	6	0.34	1	2	0	0	0	0.04
29-Jul	7	16	0	0	8	0.28	5	19	0	4	10	0.20	1	3	0	0	0	0.04
30-Jul	11	27	0	5	13	0.46	15	34	0	3	13	0.63	1	4	0	0	0	0.05
31-Jul	4	31	2	2	15	0.34	18	52	5	2	15	0.76	0	4	0	0	0	0.00
1-Aug	2	33	0	5	20	0.50	8	60	6	6	21	0.34	1	5	0	0	0	0.07
2-Aug	9	42	8	1	21	1.46	18	78	16	6	27	0.75	4	9	0	0	0	0.16
3-Aug	5	47	5	1	22	0.38	8	86	8	1	28	0.33	8	17	0	0	0	0.34
4-Aug	8	55	8	5	27	0.31	2	88	2	1	29	0.13	5	22	0	0	0	0.21
5-Aug	0	55	0	3	30	0.00	2	90	2	3	32	0.08	6	28	0	0	0	0.58
6-Aug	46	101	11	13	43	1.53	74	164	40	33	65	2.35	13	41	0	0	0	1.28
7-Aug	39	140	30	12	55	1.53	65	229	59	6	71	2.53	13	54	0	0	0	0.54
8-Aug	4	144	3	4	59	0.17	47	276	43	10	81	2.03	26	80	0	0	0	1.11
9-Aug	24	168	21	7	66	1.01	87	363	77	31	112	3.60	39	119	0	14	14	1.61
10-Aug	128	296	114	25	91	5.02	178	541	169	26	138	6.98	75	194	0	25	39	3.24
11-Aug	297	593	287	21	112	13.55	350	891	341	12	150	15.56	59	253	0	15	54	3.05
12-Aug	216	809	172	23	135	9.35	306	1197	294	13	163	13.02	13	266	0	2	56	0.95
13-Aug	136	945	91	15	150	6.16	226	1423	215	10	173	9.55	104	370	0	19	75	2.99

Table B-3. Daily catches, number of fish tagged, and CPUE (adult catch/wheel hour) for coho salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Date	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE	Adults	Cum.	Tagged	Jacks	Cum.	Adult CPUE
14-Aug	140	1085	133	10	160	6.46	199	1622	194	10	183	8.29	39	409	0	18	93	1.66
15-Aug	108	1193	102	10	170	4.13	132	1754	126	13	196	5.70	71	480	0	13	106	2.94
16-Aug	89	1282	80	9	179	3.72	158	1912	152	9	205	6.65	67	547	0	20	126	2.96
17-Aug	106	1388	98	10	189	4.50	142	2054	132	7	212	5.92	30	577	0	2	128	1.71
18-Aug	93	1481	83	7	196	3.82	159	2213	155	5	217	6.49	134	711	0	13	141	4.35
19-Aug	72	1553	69	4	200	2.99	68	2281	60	6	223	2.83	11	722	0	4	145	0.80
20-Aug	103	1656	93	8	208	4.46	93	2374	85	8	231	4.01	116	838	0	16	161	3.41
21-Aug	92	1748	87	10	218	3.89	105	2479	96	11	242	4.39	47	885	0	2	163	3.15
22-Aug	96	1844	91	2	220	3.81	115	2594	103	5	247	4.56	48	933	0	4	167	2.00
23-Aug	81	1925	74	2	222	3.92	71	2665	63	6	253	3.29	43	976	0	0	167	1.77
24-Aug	163	2088	141	0	222	6.23	56	2721	48	2	255	2.17	71	1047	0	2	169	2.23
25-Aug	51	2139	42	4	226	2.19	22	2743	19	4	259	0.92	49	1096	0	2	171	3.32
26-Aug	22	2161	19	0	226	0.97	20	2763	13	0	259	0.89	96	1192	0	0	171	3.93
27-Aug	74	2235	60	2	228	2.85	35	2798	30	0	259	1.37	49	1241	0	0	171	2.06
28-Aug	25	2260	22	2	230	1.13	19	2817	13	5	264	0.83	42	1283	0	0	171	1.55
29-Aug	65	2325	53	1	231	2.58	15	2832	12	0	264	0.60	27	1310	0	0	171	1.33
30-Aug	50	2375	46	2	233	2.08	3	2835	2	0	264	0.13	18	1328	0	0	171	0.73
31-Aug	55	2430	50	0	233	2.32	6	2841	5	0	264	0.25	22	1350	0	0	171	0.89
1-Sep	13	2443	11	0	233	0.57	6	2847	6	1	265	0.40	17	1367	0	0	171	0.62
2-Sep	51	2494	0	0	233	2.41	3	2850	3	0	265	0.12	16	1383	0	0	171	0.73
3-Sep	37	2531	14	0	233	1.51	0	2850	0	0	265	0.00	19	1402	0	3	174	0.85
4-Sep	21	2552	17	0	233	0.91	0	2850	0	0	265		0	1402	0	0	174	0.00
5-Sep	51	2603	48	1	234	2.22	0	2850	0	0	265		0	1402	0	0	174	
6-Sep	21	2624	17	2	236	0.89	5	2855	0	2	267		27	1429	0	0	174	2.63
7-Sep	16	2640	15	0	236	2.16	3	2858	0	2	269	0.30	26	1455	0	0	174	1.06
8-Sep													18	1473	0	0	174	0.69
9-Sep													0	1473	0	0	174	
10-Sep													19	1492	0	1	175	0.45
			2217			115.1			2594			119.5			0			64.1

Table B-4. Daily catches, number of fish tagged and CPUE (catch/wheel hour) for steelhead, pink salmon, and chum salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1							Fishwheel 2							Fishwheel 3						
	Steelhead			Pink		Chum		Steelhead			Pink		Chum		Steelhead			Pink		Chum	
Date	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE
7-Jun	0	0	0.00	0	0	0	0.00														
8-Jun	0	0	0.00	0	0	0	0.00														
9-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
10-Jun	1	1	0.03	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
11-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
12-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
13-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
14-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
15-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
16-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
17-Jun	0	0	0.00	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
18-Jun	0	0	0.00	0	0	0	0.00	1	1	0.04	0	0	0	0.00							
19-Jun	0	0	0.00	0	0	0	0.00	1	1	0.04	0	0	0	0.00							
20-Jun	1	1	0.04	0	0	0	0.00	0	0	0.00	0	0	0	0.00							
21-Jun	0	0	0.00	0	0	0	0.00	1	0	0.04	0	0	0	0.00							
22-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
23-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
24-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
25-Jun	0	0		0		0		0	0		0		0		0	0		0		0	
26-Jun	0	0		0		0		0	0		0		0		0	0		0		0	
27-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0		0		0	
28-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
29-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
30-Jun	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
1-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
2-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
3-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
4-Jul	0	0	0.00	0	0.00	0	0.00	1	0	0.05	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
5-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
6-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
7-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	1	0.05	0	0.00	0	0	0.00	0	0.00	0	0.00
8-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
9-Jul	0	0	0.00	1	0.05	0	0.00	0	0	0.00	0	0.00	1	0.05	0	0	0.00	0	0.00	0	0.00

Table B-4. Daily catches, number of fish tagged and CPUE (catch/wheel hour) for steelhead, pink salmon, and chum salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1							Fishwheel 2							Fishwheel 3							
	Steelhead			Pink		Chum		Steelhead			Pink		Chum		Steelhead			Pink		Chum		
Date	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE
10-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
11-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	1	0.05	0	0	0.00	0	0.00	0	0.00
12-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
13-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
14-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
15-Jul	0	0	0.00	1	0.04	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
16-Jul	0	0	0.00	1	0.04	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
17-Jul	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	1	0.03
18-Jul	1	0	0.04	14	0.59	1	0.04	1	0	0.04	12	0.54	2	0.09	1	0	0.04	1	0.04	0	0.00
19-Jul	0	0	0.00	8	0.35	0	0.00	0	0	0.00	16	0.66	0	0.00	0	0	0.00	0	0.00	0	0.00
20-Jul	1	1	0.04	14	0.58	0	0.00	1	1	0.04	33	1.36	0	0.00	0	0	0.00	1	0.04	1	0.04
21-Jul	0	0	0.00	9	0.36	0	0.00	0	0	0.00	26	0.89	1	0.03	1	0	0.04	14	0.62	0	0.00
22-Jul	0	0	0.00	8	0.46	0	0.00	1	1	0.05	16	0.82	0	0.00	0	0	0.00	9	0.29	1	0.03
23-Jul	0	0	0.00	53	1.70	1	0.03	0	0	0.00	65	2.10	1	0.03	1	0	0.05	33	1.50	0	0.00
24-Jul	1	0	0.04	25	1.03	0	0.00	3	2	0.12	56	2.27	0	0.00	0	0	0.00	9	0.36	0	0.00
25-Jul	1	0	0.05	14	0.71	0	0.00	0	0	0.00	18	0.92	0	0.00	1	0	0.05	13	0.67	0	0.00
26-Jul	0	0	0.00	16	0.67	2	0.08	1	0	0.04	21	0.84	1	0.04	1	0	0.04	21	0.88	1	0.04
27-Jul	0	0	0.00	33	1.36	2	0.08	1	0	0.04	61	2.55	4	0.17	0	0	0.00	28	1.17	0	0.00
28-Jul	2	0	0.08	33	1.31	1	0.04	1	1	0.04	26	1.11	0	0.00	0	0	0.00	31	1.32	0	0.00
29-Jul	1	1	0.04	63	2.52	1	0.04	1	1	0.04	52	2.08	0	0.00	0	0	0.00	27	1.11	0	0.00
30-Jul	0	0	0.00	42	1.77	0	0.00	0	0	0.00	39	1.65	0	0.00	0	0	0.00	15	0.71	1	0.05
31-Jul	0	0	0.00	34	2.88	0	0.00	2	0	0.08	67	2.82	0	0.00	0	0	0.00	27	0.89	0	0.00
1-Aug	0	0	0.00	14	3.50	0	0.00	0	0	0.00	92	3.87	0	0.00	1	0	0.07	25	1.75	0	0.00
2-Aug	0	0	0.00	18	2.93	0	0.00	3	0	0.13	60	2.51	0	0.00	3	3	0.12	30	1.23	0	0.00
3-Aug	0	0	0.00	5	0.38	0	0.00	6	6	0.25	42	1.72	0	0.00	5	5	0.22	65	2.80	0	0.00
4-Aug	3	2	0.12	20	0.77	1	0.04	1	1	0.06	9	0.57	0	0.00	0	0	0.00	36	1.54	1	0.04
5-Aug	0	0	0.00	12	0.45	0	0.00	0	0	0.00	13	0.54	0	0.00	1	1	0.10	17	1.63	0	0.00
6-Aug	0	0	0.00	19	0.63	0	0.00	2	1	0.06	88	2.79	1	0.03	1	1	0.10	20	1.97	0	0.00
7-Aug	0	0	0.00	102	4.00	0	0.00	1	0	0.04	151	5.88	2	0.08	0	0	0.00	96	4.00	0	0.00
8-Aug	0	0	0.00	17	0.72	0	0.00	1	0	0.04	48	2.07	1	0.04	3	3	0.13	76	3.23	0	0.00
9-Aug	0	0	0.00	11	0.46	0	0.00	1	0	0.04	45	1.86	2	0.08	0	0	0.00	46	1.90	0	0.00
10-Aug	0	0	0.00	192	7.53	2	0.08	0	0	0.00	262	10.27	1	0.04	4	3	0.17	104	4.49	0	0.00
11-Aug	2	1	0.09	342	15.60	2	0.09	7	6	0.31	340	15.11	6	0.27	1	0	0.05	90	4.66	1	0.05
12-Aug	0	0	0.00	298	12.90	6	0.26	2	0	0.09	307	13.06	5	0.21	0	0	0.00	16	1.16	1	0.07

Table B-4. Daily catches, number of fish tagged and CPUE (catch/wheel hour) for steelhead, pink salmon, and chum salmon captured in the Nass River fishwheels, 1994.

	Fishwheel 1							Fishwheel 2							Fishwheel 3						
	Steelhead			Pink		Chum		Steelhead			Pink		Chum		Steelhead			Pink		Chum	
Date	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE	Catch	Tagged	Adult CPUE	Catch	CPUE	Catch	CPUE
13-Aug	1	1	0.05	212	9.60	0	0.00	1	0	0.04	362	15.29	1	0.04	3	0	0.09	143	4.12	1	0.03
14-Aug	0	0	0.00	163	7.52	7	0.32	1	0	0.04	247	10.29	3	0.13	1	0	0.04	76	3.23	0	0.00
15-Aug	1	0	0.04	302	11.54	0	0.00	1	1	0.04	355	15.32	1	0.04	1	0	0.04	104	4.30	1	0.04
16-Aug	0	0	0.00	405	16.93	2	0.08	0	0	0.00	274	11.54	5	0.21	1	0	0.04	66	2.91	0	0.00
17-Aug	0	0	0.00	292	12.38	8	0.34	1	0	0.04	314	13.08	4	0.17	0	0	0.00	41	2.34	0	0.00
18-Aug	0	0	0.00	175	7.19	4	0.16	10	8	0.41	163	6.65	3	0.12	10	0	0.32	129	4.18	0	0.00
19-Aug	0	0	0.00	133	5.52	2	0.08	1	0	0.04	149	6.21	3	0.13	0	0	0.00	40	2.89	1	0.07
20-Aug	0	0	0.00	80	3.46	3	0.13	0	0	0.00	132	5.70	4	0.17	9	0	0.26	113	3.32	0	0.00
21-Aug	0	0	0.00	114	4.82	1	0.04	1	0	0.04	216	9.03	7	0.29	2	0	0.13	34	2.28	0	0.00
22-Aug	2	0	0.08	57	2.26	6	0.24	4	0	0.16	143	5.67	8	0.32	5	0	0.21	37	1.54	3	0.13
23-Aug	1	0	0.05	59	2.85	1	0.05	3	0	0.14	122	5.65	3	0.14	4	0	0.16	134	5.53	0	0.00
24-Aug	2	0	0.08	127	4.85	1	0.04	4	0	0.16	131	5.09	4	0.16	3	3	0.09	196	6.16	0	0.00
25-Aug	2	0	0.09	199	8.53	1	0.04	5	0	0.21	131	5.48	4	0.17	6	3	0.41	79	5.36	0	0.00
26-Aug	5	0	0.22	209	9.22	5	0.22	4	0	0.18	164	7.29	4	0.18	2	1	0.08	49	2.01	0	0.00
27-Aug	3	0	0.12	299	11.54	14	0.54	0	0	0.00	128	5.02	5	0.20	0	0	0.00	55	2.31	2	0.08
28-Aug	1	0	0.05	117	5.30	5	0.23	3	0	0.13	82	3.58	1	0.04	6	0	0.22	94	3.47	1	0.04
29-Aug	5	0	0.20	108	4.29	7	0.28	0	0	0.00	33	1.32	3	0.12	0	0	0.00	0	0.00	0	0.00
30-Aug	0	0	0.00	81	3.36	3	0.12	1	0	0.04	19	0.79	2	0.08	1	0	0.04	17	0.69	0	0.00
31-Aug	2	0	0.08	67	2.82	2	0.08	1	0	0.04	17	0.71	3	0.13	0	0	0.00	23	0.93	1	0.04
1-Sep	0	0	0.00	17	0.74	0	0.00	3	0	0.20	23	1.54	2	0.13	0	0	0.00	25	0.91	2	0.07
2-Sep	3	0	0.14	49	2.31	6	0.28	1	0	0.04	10	0.41	1	0.04	2	2	0.09	15	0.68	0	0.00
3-Sep	1	0	0.04	44	1.80	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0	0.00	13	0.58	0	0.00
4-Sep	0	0	0.00	52	2.26	9	0.39	0	0		0		0		0	0	0.00	2	0.11	0	0.00
5-Sep	0	0	0.00	31	1.35	9	0.39	0	0		0		0		0	0		0		0	
6-Sep	0	0	0.00	21	0.89	9	0.38	0	0		5		0		1	0	0.10	7	0.68	0	0.00
7-Sep	0	0	0.00	10	1.35	0	0.00	0	0	0.00	16	1.60	1	0.10	2	0	0.08	27	1.10	2	0.08
8-Sep															1	0	0.04	13	0.50	0	0.00
9-Sep															0	0		0		0	
10-Sep															1	0	0.02	10	0.24	3	0.07
Totals	41	6	1.72	4842	211	124	5.24	82	29	3.53	5202	218	101	4.31	85	25	3.67	2392	102	25	1.02

Table B-5. Catches of fish species other than salmon and steelhead, and mammals from the Nass River fishwheels, 1994.

	Dolly Varden			Cuthroat			Rainbow			Whitefish			Pacific Lamprey			Harbour seal			Beaver		
Date	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3
7-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9-Jun	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
11-Jun	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-Jun	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Jun	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
18-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Jun	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Jun	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Jun	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
22-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
23-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0	0
24-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0
25-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
29-Jun	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-Jul	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
2-Jul	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Jul	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B-5. Catches of fish species other than salmon and steelhead, and mammals from the Nass River fishwheels, 1994.

	Dolly Varden			Cuthroat			Rainbow			Whitefish			Pacific Lamprey			Harbour seal			Beaver		
Date	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3
13-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
15-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Jul	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
19-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Jul	1	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
24-Jul	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
25-Jul	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Jul	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Jul	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
28-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Jul	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Aug	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
3-Aug	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Aug	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
5-Aug	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-Aug	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Aug	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
11-Aug	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
12-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
13-Aug	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
15-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
16-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Aug	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

Table B-5. Catches of fish species other than salmon and steelhead, and mammals from the Nass River fishwheels, 1994.

	Dolly Varden			Cuthroat			Rainbow			Whitefish			Pacific Lamprey			Harbour seal			Beaver		
Date	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3	FW1	FW2	FW3
18-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
19-Aug	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
20-Aug	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
21-Aug	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
22-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
23-Aug	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24-Aug	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
25-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Aug	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
28-Aug	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
29-Aug	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-Sep	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Sep	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
5-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	16	20	6	1	4	0	0	1	1	3	4	4	1	10	36	0	3	0	0	1	0

Table B-6. Summary of seine sets, catch, and CPUE (adults/set) for salmon and steelhead captured on the Nass River, by date, 1994.

	No. of sets		Chinook				Sockeye			Coho			Steelhead		Pink		Chum	
Date	Grease Hbr	2nd Canyon [a]	Adults	Tagged	Jacks	Adult CPUE	Adults	Jacks	Adult CPUE	Adults	Tagged	Adult CPUE	Catch	Adult CPUE	Catch	CPUE	Catch	CPUE
29-Jun	3		3	0	0	1.0	33	0	11	0	0	0.0	0	0.0	0	0.0	0	0.0
30-Jun	2		3	0	0	1.5	67	0	34	0	0	0.0	0	0.0	0	0.0	0	0.0
4-Jul	3		4	0	0	1.3	61	0	20	0	0	0.0	0	0.0	0	0.0	0	0.0
5-Jul	5		38	0	0	7.6	370	0	74	0	0	0.0	0	0.0	0	0.0	0	0.0
7-Jul	2		13	0	0	6.5	476	0	238	0	0	0.0	0	0.0	0	0.0	0	0.0
11-Jul	2		12	0	0	6.0	229	0	115	0	0	0.0	0	0.0	0	0.0	0	0.0
12-Jul	1		0	0	0	0.0	18	0	18	0	0	0.0	0	0.0	0	0.0	0	0.0
18-Jul	1		0	0	0	0.0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
20-Jul	2		1	0	0	0.5	5	0	3	0	0	0.0	0	0.0	0	0.0	0	0.0
21-Jul	1	1	0	0	0	0.0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0
25-Jul	1		5	0	0	5.0	16	0	16	0	0	0.0	0	0.0	0	0.0	0	0.0
26-Jul	4		0	0	0	0.0	31	0	8	0	0	0.0	0	0.0	7	1.8	0	0.0
27-Jul	4		0	0	0	0.0	20	2	5	0	0	0.0	0	0.0	7	1.8	0	0.0
28-Jul	3	3	0	0	0	0.0	58	0	19	0	0	0.0	0	0.0	8	2.7	0	0.0
29-Jul	5		1	0	2	0.2	110	3	22	0	0	0.0	0	0.0	12	2.4	1	0.2
2-Aug	3		0	0	0	0.0	76	1	25	0	0	0.0	0	0.0	8	2.7	1	0.3
	42	4	80	0	2	29.6	1570	6	607	0	0	0	0	0	42	11.2	2	0.5

[a] A total of 30 fish (sockeye) were caught at the second canyon (28 July, 6 km upstream of Grease Harbour).

Table B-7. Tag types, number series, and colors used in 1994 for chinook, sockeye, and coho salmon.

Species	period	Tag period - dates Starting	Ending	Tag Type	Color	Starting tag no.	Ending tag no.	Number of fish tagged fw 1	fw2	fw3	total
Chinook	1	7-Jun	20-Jun	spag.	blue	20541	21000	84	370		454
				operc.	alum.	1001	1457				
	2	20-Jun	20-Jun	operc.	alum.	1458	1498	9	32		41
	3	21-Jun	3-Aug	anchor	blue	28001	29299	547	784		1331
				operc.	alum.	1499	2932				
	4	22-Jun	2-Jul	spag.		29051	29154			93	
				operc.		501	592				
subset	(2)	5-Jul	6-Jul	operc. only		2567	2600				
							Totals	**640**	**1186**	**93**	**1826**
Sockeye		10-Jun	27-Jun	spag.	red	22337	22865	121	406	-	527
		28-Jun	9-Jul	spag.	yellow	14124	18200	1351	2718	-	4069
		9-Jul	13-Jul	spag.	white	21434	22000	567	0	-	567
		14-Jul	12-Aug	spag.	yellow	23001	28000	1496	3497	-	4993
		15-Aug	20-Aug	anchor	grey	2501	3000			-	0
		20-Aug	20-Aug	anchor	grey	4001	4027	117	410	-	527
		22-Aug	23-Aug	spag.	yellow	3123	3200	3	75	-	78
		26-Aug	6-Sep	spag.	grey	blanks		120	35	-	155
							Totals	**3775**	**7141**	-	**10916**
Coho		31-Jul	6-Aug	spag.	red	22886	23000	34	79	-	113
		7-Aug	12-Aug	spag.	orange	blank		627	983	-	1610
		13-Aug	19-Aug	spag.	blue	blank		656	1034	-	1690
		20-Aug	26-Aug	spag.	white	blank		547	427	-	974
		27-Aug	7-Sep	spag.	pink	blank		353	71	-	424
							Totals	**2217**	**2594**	-	**4811**

Table C-1. Travel time information for recoveries of tagged chinook salmon, by tag location and recovery location, 1994 (Fw=fishwheel, SN=Grease H. seine, Mez= Meziadin fishway).

	Location tagged																	
	Fishwheel 1						Fishwheel 2						Fishwheel 3					
Travel	Location recovered																	Grand
time (d)	Fw1	Fw2	Fw3	SN	Mez	Total	Fw1	Fw2	Fw3	SN	Mez	Total	Fw1	Fw2	Fw3	Mez	Total	Total
0	1	1	0	0	0	2	9	5	0	0	0	14	0	0	2	0	2	18
1	3	1	0	0	0	4	10	1	0	0	0	11	0	0	0	0	0	15
2	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	3
3	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	2
4	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	2
6	0	0	0	0	0	0	3	1	0	0	0	4	0	0	1	0	1	5
7	0	1	0	0	0	1	0	1	2	0	0	3	0	0	1	0	1	5
8	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0	4
9	1	0	0	0	0	1	1	1	1	0	0	3	0	0	0	0	0	4
10	0	2	1	0	0	3	2	0	0	1	0	3	0	0	0	0	0	6
11	2	1	0	0	0	3	3	1	4	0	0	8	0	0	0	0	0	11
12	2	0	0	0	0	2	5	2	1	0	0	8	0	0	0	0	0	10
13	1	1	1	0	0	3	8	6	1	0	0	15	0	0	0	0	0	18
14	1	1	0	0	0	2	4	0	1	0	0	5	0	0	1	0	1	8
15	1	0	1	0	0	2	5	0	2	0	0	7	0	0	0	0	0	9
16	3	2	0	0	0	5	0	2	1	0	0	3	0	0	1	0	1	9
17	1	1	2	1	0	5	0	2	2	0	0	4	0	0	0	0	0	9
18	1	2	4	0	0	7	4	0	5	0	0	9	0	0	0	0	0	16
19	2	0	6	0	0	8	2	2	5	0	0	9	0	0	0	0	0	17
20	1	1	4	0	0	6	3	4	2	0	0	9	0	0	0	0	0	15
21	5	0	6	2	0	13	1	1	6	0	0	8	0	0	0	0	0	21
22	2	0	4	0	0	6	2	1	1	0	0	4	0	0	0	0	0	10
23	2	0	2	0	0	4	3	2	4	0	0	9	1	0	0	0	1	14
24	0	2	1	0	0	3	1	0	1	1	0	3	0	0	0	0	0	6
25	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	2
26	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	2
27	0	0	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	4
28	0	1	1	0	0	2	2	0	0	0	0	2	0	0	0	0	0	4
29	0	0	2	0	0	2	1	0	1	0	0	2	0	0	0	0	0	4
30	0	2	2	0	0	4	0	1	2	0	0	3	0	0	0	0	0	7
31	0	3	0	0	0	3	2	0	0	0	0	2	0	1	1	0	2	7
32	0	1	1	0	0	2	1	0	2	0	0	3	0	0	0	0	0	5
33	1	3	4	0	0	8	0	0	1	0	0	1	0	0	0	0	0	9
34	2	2	0	0	0	4	0	0	2	0	0	2	0	0	1	0	1	7
35	0	1	0	1	0	2	0	1	1	0	0	2	0	0	0	0	0	4
36	0	1	1	0	0	2	1	1	0	0	0	2	0	0	0	0	0	4
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
39	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	2
40	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	2
41	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	2
44	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
47	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
51	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
55	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
63	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
80	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
88	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Totals	34	34	46	4	2	120	83	41	53	2	5	184	1	1	8	1	11	314

Table C-2. Summary statistics regarding recaptures of tagged chinook salmon recovered at the fishwheels, seine site and Meziadin fishway, 1994.

Recapture location	Location tagged														
	Fishwheel 1					Fishwheel 2					Fishwheel 3				
	N	Min.	Max.	Mean	SD	N	Min.	Max.	Mean	SD	N	Min.	Max.	Mean	SD
Fishwheel 1	34	0	38	17.0	9.4	83	0	41	12.4	9.8	1	23	23	23.0	
Fishwheel 2	34	0	43	22.0	11.6	41	0	36	15.3	9.6	1	31	31	31.0	
Fishwheel 3	46	10	44	23.7	7.4	53	7	43	21.5	8.5	8	0	34	13.5	13.1
Grease H. Seine	4	17	35	23.5	7.9	2	10	24	17.0	9.9	0				
Meziadin fishway	2	47	51	49.0	2.8	5	45	88	66.2	18.0	1	72	72	72.0	
Total no. of recoveries	120					184					11				

Table C-3. Travel time information for recoveries of tagged sockeye salmon by tag location and recovery location, 1994 (Fw=fishwheel, SN=Grease H. seine, MEZ= Meziadin fishway).

	Location tagged												
	Fishwheel 1						Fishwheel 2						
Travel	Location recovered												Grand
time (d)	Fw1	Fw2	Fw3	SN	MEZ	Total	Fw1	Fw2	Fw3	SN	MEZ	Total	Total
0	9	14	0	0	0	23	36	23	0	0	0	59	82
1	17	22	1	0	0	40	53	24	2	0	0	79	119
2	11	20	2	0	0	33	29	30	3	1	0	63	96
3	2	13	4	1	0	20	10	29	15	1	0	55	75
4	3	13	9	4	0	29	11	14	19	7	0	51	80
5	0	10	9	4	0	23	7	12	13	2	0	34	57
6	1	7	12	5	0	25	6	10	20	4	0	40	65
7	2	3	8	3	0	16	3	13	17	9	0	42	58
8	1	5	8	2	0	16	6	10	6	5	0	27	43
9	0	5	5	1	0	11	1	8	9	5	0	23	34
10	0	4	4	0	0	8	0	5	11	0	2	18	26
11	0	1	3	0	0	4	1	5	9	2	2	19	23
12	0	2	3	0	2	7	0	3	8	1	1	13	20
13	1	1	3	1	1	7	0	2	7	2	11	22	29
14	0	0	1	0	2	3	2	0	4	1	13	20	23
15	0	1	4	1	5	11	0	2	6	0	17	25	36
16	0	0	0	0	9	9	0	1	2	1	17	21	30
17	0	0	1	0	11	12	0	0	0	0	30	30	42
18	0	0	0	0	19	19	0	1	3	0	32	36	55
19	1	0	1	0	10	12	0	0	2	0	30	32	44
20	0	0	0	0	22	22	0	1	1	0	43	45	67
21	0	0	0	0	19	19	0	1	1	0	37	39	58
22	0	0	0	0	27	27	0	0	1	0	46	47	74
23	0	0	0	0	13	13	0	0	3	0	49	52	65
24	1	0	0	0	18	19	0	0	2	0	66	68	87
25	1	0	1	0	18	20	0	0	1	0	59	60	80
26	0	0	0	0	17	17	0	0	0	0	50	50	67
27	0	0	0	0	15	15	0	0	0	0	45	45	60
28	0	0	0	0	16	16	0	0	0	0	44	44	60
29	0	0	0	0	14	14	0	0	0	0	37	37	51
30	0	0	0	0	8	8	0	0	0	0	29	29	37
31	0	0	0	0	12	12	0	0	1	0	24	25	37
32	0	0	0	0	6	6	0	0	1	0	16	17	23
33	0	0	0	0	9	9	0	0	0	0	22	22	31
34	0	0	0	0	11	11	0	0	0	0	14	14	25
35	0	0	0	0	3	3	0	0	0	0	11	11	14
36	0	0	0	0	5	5	0	1	0	0	7	8	13
37	0	0	0	0	3	3	0	0	0	0	8	8	11
38	0	0	0	0	2	2	0	0	0	0	6	6	8
39	0	0	0	0	2	2	0	0	0	0	10	10	12
40	0	0	0	0	3	3	0	0	0	0	4	4	7
41	0	0	0	0	3	3	0	0	0	0	5	5	8
42	0	0	0	0	2	2	0	0	0	0	3	3	5
43	0	0	0	0	1	1	0	0	0	0	3	3	4
44	0	0	0	0	2	2	0	0	0	0	0	0	2
45	0	0	0	0	1	1	0	0	0	0	2	2	3

Table C-3. Travel time information for recoveries of tagged sockeye salmon by tag location and recovery location, 1994 (Fw=fishwheel, SN=Grease H. seine, MEZ= Meziadin fishway).

	Location tagged												
	Fishwheel 1						Fishwheel 2						
Travel	Location recovered												Grand
time (d)	Fw1	Fw2	Fw3	SN	MEZ	Total	Fw1	Fw2	Fw3	SN	MEZ	Total	Total
46	0	0	0	0	0	0	0	0	0	0	5	5	5
47	0	0	0	0	0	0	0	0	0	0	1	1	1
48	0	0	0	0	0	0	0	0	0	0	2	2	2
50	0	0	0	0	1	1	0	0	0	0	0	0	1
52	0	0	0	0	1	1	0	0	0	0	0	0	1
54	0	0	0	0	0	0	0	0	0	0	1	1	1
55	0	0	0	0	0	0	0	0	0	0	1	1	1
58	0	0	0	0	0	0	0	0	0	0	1	1	1
61	0	0	0	0	0	0	0	0	0	0	1	1	1
66	0	0	0	0	1	1	0	0	0	0	0	0	1
75	0	0	0	0	0	0	0	0	0	0	1	1	1
Totals	50	121	79	22	314	586	165	195	167	41	808	1376	1962

Table C-4. Summary statistics regarding recaptures of tagged sockeye salmon recovered at the fishwheels, seine site and Meziadin fishway, 1994.

Recapture location	Location tagged														
	Fishwheel 1					Fishwheel 2					Both fishwheels combined				
	N	Min.	Max.	Mean	SD	N	Min.	Max.	Mean	SD	N	Min.	Max.	Mean	SD
Fishwheel 1	50	0	25	3.3	5.5	165	0	14	2.3	2.6	215	0	25	2.5	3.5
Fishwheel 2	121	0	15	3.8	3.3	195	0	36	4.6	4.6	316	0	36	4.3	4.2
Fishwheel 3	79	1	25	7.8	4.2	167	1	32	9.0	5.8	246	1	32	8.6	5.4
Grease H. Seining	22	3	15	6.5	2.9	41	2	16	7.4	3.1	63	2	16	7.1	3.1
Total no. of recoveries	272					568					840				

Table D-1. Daily counts of adult sockeye salmon, and ratios of total adult to tagged adult sockeye at the Meziadin fishway, 1994.

	Adults counted		Total number of tags counted								Ratio of total adults: tagged adults	
			Spaghetti tags									
Date	Daily	Cum.	Red	Yellow	White	Grey	Anchor tags	Total	Cum.	Recovered tags	Daily	Cum.
13-Jul	70	70	0	0	0	0	0	0	0	0		
14-Jul	72	142	0	2	0	0	0	2	2	0		
15-Jul	42	184	0	1	0	0	0	1	3	0		
16-Jul	18	202	0	0	0	0	0	0	3	0		
17-Jul	151	353	0	0	0	0	0	0	3	0		
18-Jul	88	441	0	2	0	0	0	2	5	0		
19-Jul	201	642	0	4	0	0	0	4	9	1		
20-Jul	355	997	2	1	0	0	0	3	12	2	118	83
21-Jul	472	1469	1	3	0	0	0	4	16	2	118	92
22-Jul	1628	3097	0	19	0	0	0	19	35	2	86	88
23-Jul	1994	5091	3	60	0	0	0	63	98	24	32	52
24-Jul	10194	15285	29	303	1	0	0	333	431	36	31	35
25-Jul	4738	20023	21	150	0	0	0	171	602	11	28	33
26-Jul	3284	23307	25	144	2	0	0	171	773	25	19	30
27-Jul	7258	30565	15	278	26	0	0	319	1092	56	23	28
28-Jul	10100	40665	13	440	53	0	0	506	1598	62	20	25
29-Jul	4271	44936	3	185	30	0	0	218	1816	39	20	25
30-Jul	1781	46717	3	82	15	0	0	100	1916	8	18	24
31-Jul	1322	48039	4	69	17	0	0	90	2006	10	15	24
01-Aug	3008	51047	5	123	31	0	0	159	2165	23	19	24
02-Aug	1526	52573	2	66	14	0	0	82	2247	12	19	23
03-Aug	1716	54289	0	61	13	0	0	74	2321	19	23	23
04-Aug	1229	55518	1	43	14	0	0	58	2379	8	21	23
05-Aug	472	55990	2	21	6	0	0	29	2408	5	16	23
06-Aug	212	56202	0	9	2	0	0	11	2419	3	19	23
07-Aug	208	56410	0	11	3	0	0	14	2433	4	15	23
08-Aug	241	56651	0	13	0	0	0	13	2446	2	19	23
09-Aug	214	56865	0	9	0	0	0	9	2455	1	24	23
10-Aug	246	57111	0	9	5	0	0	14	2469	1	18	23
11-Aug	742	57853	0	6	4	0	0	10	2479	2	74	23
12-Aug	1374	59227	0	31	2	0	0	33	2512	9	42	24
13-Aug	1661	60888	0	55	3	0	0	58	2570	9	29	24
14-Aug	1253	62141	0	33	7	0	0	40	2610	14	31	24
15-Aug	545	62686	0	16	1	0	0	17	2627	5	32	24
16-Aug	1688	64374	1	67	1	0	0	69	2696	9	24	24
17-Aug	984	65358	0	43	0	0	0	43	2739	25	23	24
18-Aug	2446	67804	0	99	9	0	0	108	2847	32	23	24
19-Aug	4064	71868	0	105	2	0	0	107	2954	26	38	24
20-Aug	2784	74652	0	89	3	0	0	92	3046	21	30	25
21-Aug	2942	77594	0	65	2	0	0	67	3113	12	44	25
22-Aug	3866	81460	0	102	2	0	0	104	3217	24	37	25
23-Aug	1979	83439	0	46	0	0	0	46	3263	8	43	26
24-Aug	2046	85485	0	46	0	0	0	46	3309	9	44	26

Table D-1. Daily counts of adult sockeye salmon, and ratios of total adult to tagged adult sockeye at the Meziadin fishway, 1994.

	Adults counted		Total number of tags counted								Ratio of total adults: tagged adults	
			Spaghetti tags									
Date	Daily	Cum.	Red	Yellow	White	Grey	Anchor tags	Total	Cum.	Recovered tags	Daily	Cum.
25-Aug	3830	89315	0	98	0	0	0	98	3407	35	39	26
26-Aug	6764	96079	0	174	0	0	0	174	3581	56	39	27
27-Aug	6191	102270	0	165	0	0	0	165	3746	61	38	27
28-Aug	4365	106635	1	152	0	0	0	153	3899	71	29	27
29-Aug	4941	111576	0	111	0	0	0	111	4010	42	45	28
30-Aug	3383	114959	0	77	1	0	3	81	4091	35	42	28
31-Aug	2812	117771	0	49	1	0	8	58	4149	23	48	28
01-Sep	6904	124675	0	121	0	0	20	141	4290	41	49	29
02-Sep	3924	128599	0	55	0	0	10	65	4355	34	60	30
03-Sep	3414	132013	0	25	0	0	6	31	4386	9	110	30
04-Sep	4334	136347	0	24	0	0	2	26	4412	26	167	31
05-Sep	4661	141008	0	67	0	0	22	89	4501	51	52	31
06-Sep	2219	143227	0	44	0	0	8	52	4553	29	43	31
07-Sep	1332	144559	0	16	0	0	5	21	4574	10	63	32
08-Sep	1737	146296	0	21	0	0	5	26	4600	17	67	32
09-Sep	2073	148369	0	20	0	6	8	34	4634	16	61	32
10-Sep	879	149248	0	10	0	0	5	15	4649	8	59	32
11-Sep	2566	151814	0	25	0	14	5	44	4693	18	58	32
12-Sep	1309	153123	0	15	0	11	4	30	4723	12	44	32
13-Sep	1530	154653	0	15	0	5	2	22	4745	8	70	33
14-Sep	1032	155685	0	2	0	8	1	11	4756	0	94	33
15-Sep	511	156196	0	5	0	5	0	10	4766	1	51	33
16-Sep	302	156498	0	5	0	0	0	5	4771	3	60	33
17-Sep	529	157027	0	2	0	3	1	6	4777	0	88	33
18-Sep	395	157422	0	2	0	0	1	3	4780	0	132	33
19-Sep	160	157582	0	2	0	0	0	2	4782	0	-	33
20-Sep	235	157817	0	2	0	2	0	4	4786	0	59	33
21-Sep	159	157976	0	1	0	1	0	2	4788	1	80	33
22-Sep	189	158165	0	4	0	0	1	5	4793	0	38	33
23-Sep	49	158214	0	1	0	0	0	1	4794	0	49	33
24-Sep	27	158241	0	0	0	0	0	0	4794	0	-	33
25-Sep	40	158281	0	0	0	0	0	0	4794	0	-	33
26-Sep	40	158321	0	0	0	0	0	0	4794	0	-	33
27-Sep	141	158462	0	0	0	0	0	0	4794	0	-	33
28-Sep	90	158552	0	0	0	0	0	0	4794	0	-	33
29-Sep	75	158627	0	0	0	0	0	0	4794	0	-	33
Totals	158627		131	4221	270	55	117	4794		1168		

Table D-2. Daily counts of coho and chinook salmon, and the ratios of the total adult to tagged adult coho salmon at the Meziadin fishway, 1994.

	Coho						Chinook			
	Adults		Tagged		Ratio of total adults:tagged adults		Adults		Tagged	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
13-Jul	0	0	0	0	0	0	3	3	0	0
14-Jul	0	0	0	0	0	0	0	3	0	0
15-Jul	0	0	0	0	0	0	0	3	0	0
16-Jul	0	0	0	0	0	0	0	3	0	0
17-Jul	0	0	0	0	0	0	0	3	0	0
18-Jul	0	0	0	0	0	0	0	3	0	0
19-Jul	0	0	0	0	0	0	1	4	0	0
20-Jul	0	0	0	0	0	0	1	5	0	0
21-Jul	0	0	0	0	0	0	1	6	0	0
22-Jul	0	0	0	0	0	0	5	11	0	0
23-Jul	0	0	0	0	0	0	0	11	0	0
24-Jul	0	0	0	0	0	0	12	23	0	0
25-Jul	0	0	0	0	0	0	17	40	0	0
26-Jul	0	0	0	0	0	0	2	42	0	0
27-Jul	0	0	0	0	0	0	8	50	0	0
28-Jul	0	0	0	0	0	0	0	50	0	0
29-Jul	0	0	0	0	0	0	0	50	0	0
30-Jul	0	0	0	0	0	0	0	50	0	0
31-Jul	0	0	0	0	0	0	3	53	0	0
1-Aug	0	0	0	0	0	0	17	70	0	0
2-Aug	0	0	0	0	0	0	1	71	0	0
3-Aug	0	0	0	0	0	0	12	83	0	0
4-Aug	0	0	0	0	0	0	19	102	0	0
5-Aug	0	0	0	0	0	0	4	106	0	0
6-Aug	0	0	0	0	0	0	4	110	1	1
7-Aug	0	0	0	0	0	0	8	118	0	1
8-Aug	0	0	0	0	0	0	7	125	0	1
9-Aug	0	0	0	0	0	0	2	127	0	1
10-Aug	0	0	0	0	0	0	0	127	0	1
11-Aug	0	0	0	0	0	0	13	140	1	2
12-Aug	0	0	0	0	0	0	5	145	0	2
13-Aug	0	0	0	0	0	0	11	156	2	4
14-Aug	0	0	0	0	0	0	5	161	1	5
15-Aug	0	0	0	0	0	0	0	161	0	5
16-Aug	0	0	0	0	0	0	9	170	0	5
17-Aug	0	0	0	0	0	0	4	174	0	5
18-Aug	0	0	0	0	0	0	6	180	0	5
19-Aug	0	0	0	0	0	0	8	188	0	5
20-Aug	0	0	0	0	0	0	12	200	1	6
21-Aug	4	4	0	0	-	-	10	210	0	6
22-Aug	1	5	0	0	-	-	11	221	2	8
23-Aug	0	5	0	0	0	-	6	227	1	9
24-Aug	0	5	0	0	0	-	8	235	2	11
25-Aug	0	5	0	0	0	-	4	239	1	12
26-Aug	1	6	0	0	-	-	2	241	1	13
27-Aug	2	8	0	0	-	-	3	244	0	13
28-Aug	0	8	0	0	0	-	5	249	0	13
29-Aug	7	15	0	0	-	-	9	258	1	14
30-Aug	8	23	0	0	-	-	2	260	0	14
31-Aug	11	34	0	0	-	-	0	260	0	14
1-Sep	32	66	1	1	32	66	8	268	0	14

Table D-2. Daily counts of coho and chinook salmon, and the ratios of the total adult to tagged adult coho salmon at the Meziadin fishway, 1994.

	Coho						Chinook			
	Adults		Tagged		Ratio of total adults:tagged adults		Adults		Tagged	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
2-Sep	53	119	0	1	-	119	1	269	0	14
3-Sep	56	175	2	3	28	58	1	270	0	14
4-Sep	115	290	2	5	58	58	5	275	1	15
5-Sep	280	570	5	10	56	57	2	277	1	16
6-Sep	246	816	2	12	123	68	1	278	1	17
7-Sep	149	965	3	15	50	64	1	279	0	17
8-Sep	178	1143	0	15	-	76	1	280	0	17
9-Sep	358	1501	7	22	51	68	9	289	1	18
10-Sep	99	1600	7	29	14	55	0	289	0	18
11-Sep	417	2017	15	44	28	46	0	289	0	18
12-Sep	237	2254	7	51	34	44	6	295	1	19
13-Sep	345	2599	17	68	20	38	8	303	0	19
14-Sep	242	2841	11	79	22	36	9	312	2	21
15-Sep	117	2958	4	83	29	36	3	315	2	23
16-Sep	75	3033	0	83	-	37	3	318	0	23
17-Sep	88	3121	0	83	-	38	2	320	0	23
18-Sep	58	3179	0	83	-	38	7	327	0	23
19-Sep	58	3237	2	85	29	38	5	332	0	23
20-Sep	97	3334	2	87	49	38	0	332	0	23
21-Sep	75	3409	2	89	38	38	3	335	0	23
22-Sep	51	3460	0	89	-	39	4	339	0	23
23-Sep	1	3461	0	89	-	39	0	339	0	23
24-Sep	8	3469	0	89	-	39	1	340	0	23
25-Sep	13	3482	2	91	7	38	1	341	0	23
26-Sep	12	3494	0	91	-	38	1	342	0	23
27-Sep	26	3520	1	92	26	38	3	345	0	23
28-Sep	21	3541	2	94	11	38	0	345	0	23
29-Sep	29	3570	1	95	-	38	2	347	0	23

Table E-1. Data used to calculate the inseason sockeye salmon escapement estimates in 1994. These data were preliminary and prepared inseason; refer to other tables in the report for final catch and tag totals.

	Fishwheel Catch				Fishwheel Tags					Grease Harbour				Escapement estimates	
Date	Daily FW1	Daily FW2	Daily Total	Cumm. Catch	Daily FW1	Daily FW2	Daily Total	Cumm. Tagged	Prop. Tag	Daily Catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark-Recap.	Fishwheel 1 exp. factor (90)
6-Jun	0	0	0	0			0	0							
7-Jun	0	0	0	0	0		0	0		0	0				
8-Jun	0	0	0	0	0		0	0		0	0				
9-Jun	0	0	0	0	0	0	0	0		0	0				
10-Jun	3	5	8	8	3	4	7	7	88%	0	0				270
11-Jun	0	3	3	11	0	3	3	10	100%	0	0				270
12-Jun	0	4	4	15	0	4	4	14	100%	0	0				270
13-Jun	1	2	3	18	0	1	1	15	33%	0	0				360
14-Jun	3	1	4	22	3	1	4	19	100%	0	0				630
15-Jun	2	3	5	27	2	2	4	23	80%	0	0				810
16-Jun	4	18	22	49	4	18	22	45	100%	0	0				1170
17-Jun	10	17	27	76	8	17	25	70	93%	0	0				2070
18-Jun	4	22	26	102	4	21	25	95	96%	0	0				2430
19-Jun	9	25	34	136	9	24	33	128	97%	0	0				3240
20-Jun	3	25	28	164	3	23	26	154	93%	0	0				3510
21-Jun	14	54	68	232	13	52	65	219	96%	0	0	0			4770
22-Jun	13	56	69	301	13	51	64	283	93%	7	0	0			5940
23-Jun	25	91	116	417	24	85	109	392	94%	15	0	0			8190
24-Jun	23	55	78	495	22	51	76	468	97%	13	0	0			10260
25-Jun	0	0	0	495	0	0	0	468		0	0	0			10260
26-Jun	0	0	0	495	0	0	0	468		0	0	0			10260
27-Jun	15	51	66	561	13	49	62	530	94%	0	0	0			11610
28-Jun	50	173	223	784	47	162	209	739	94%	18	0	0			16110
29-Jun	77	279	356	1140	71	253	341	1080	96%	72	1	1		33060	23040
30-Jun	78	225	303	1443	74	212	285	1365	94%	112	4	4	28	40540	30060
1-Jul	111	247	358	1801	105	234	340	1705	95%	38	1	1	29	46299	40050
2-Jul	83	179	262	2063	78	169	249	1954	95%	7	0	0	25	49459	47520
3-Jul	178	314	492	2555	165	233	399	2353	81%	17	0	0	25	54950	63540
4-Jul	151	247	398	2953	139	231	370	2723	93%	86	2	2	25	58886	77130
5-Jul	184	242	426	3379	165	219	385	3108	90%	410	15	16	25	62967	93690
6-Jul	150	300	450	3829	144	281	425	3533	94%	112	3	3	16	67651	107190
7-Jul	146	288	434	4263	137	263	400	3933	92%	538	23	25	12	71572	120330
8-Jul	254	380	634	4897	227	362	587	4520	93%	28	0	0	11	76344	143190

Table E-1. Data used to calculate the inseason sockeye salmon escapement estimates in 1994. These data were preliminary and prepared inseason; refer to other tables in the report for final catch and tag totals.

	Fishwheel Catch				Fishwheel Tags					Grease Harbour				Escapement estimates	
Date	Daily FW1	Daily FW2	Daily Total	Cumm. Catch	Daily FW1	Daily FW2	Daily Total	Cumm. Tagged	Prop. Tag	Daily Catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark-Recap.	Fishwheel 1 exp. factor (90)
9-Jul	234	419	653	5550	97	100	197	4717	30%	23	0	0	10	80280	164250
10-Jul	205	329	534	6084	185	0	185	4902	35%	149	5	6	10	83392	182700
11-Jul	140	331	471	6555	120	0	120	5022	25%	496	34	46	10	85711	195300
12-Jul	111	373	484	7039	97	0	97	5119	20%	245	18	26	9	87887	205290
13-Jul	235	513	748	7787	67	0	67	5186	9%	175	12	19	8	91240	226440
14-Jul	157	206	363	8150	75	75	150	5336	41%	132	12	24	6	93224	240570
15-Jul	140	338	478	8628	123	0	123	5459	26%	135	4	9	6	95697	253170
16-Jul	81	275	356	8984	59	0	59	5518	17%	124	0	0	5	97864	260460
17-Jul	100	398	498	9482	92	0	92	5610	18%	223	12	36	4	101735	269460
18-Jul	72	122	194	9676	41	0	41	5651	21%	245	11	46	4	103976	275940
19-Jul	57	252	309	9985	43	0	42	5693	14%	165	13	57	5	108957	281070
20-Jul	96	117	213	10198	65	27	92	5785	43%	142	3	15	5	113331	289710
21-Jul	53	151	204	10402	48	136	184	5969	90%	102	5	24	6	117155	294480
22-Jul	44	94	138	10540	41	83	124	6093	90%	146	9	36	8	119944	298440
23-Jul	67	254	321	10861	58	208	266	6359	83%	185	11	33	12	125433	304470
24-Jul	74	272	346	11207	58	191	249	6608	72%	115	7	19	16	130788	311130
25-Jul	59	178	237	11444	48	161	209	6817	88%	98	6	13	21	134776	316440
26-Jul	65	239	304	11748	55	211	266	7083	88%	117	4	8	19	140709	322290
27-Jul	109	292	401	12149	103	254	357	7440	89%	124	6	9	20	148916	332100
28-Jul	93	277	370	12519	76	253	329	7769	89%	126	1	1	17	159252	340470
29-Jul	71	227	298	12817	57	209	266	8035	89%	242	10	12	15	171563	346860
30-Jul	49	149	198	13015	42	139	181	8216	91%	63	2	2	17	178296	351270
31-Jul	20	147	167	13182	14	139	153	8369	92%	178	12	14	20	184711	353070
1-Aug	3	70	73	13255	0	56	56	8425	77%	65	3	3	20	186788	353340
2-Aug	10	102	112	13367	9	95	104	8529	93%	177	9	10	28	189607	354240
3-Aug	24	146	170	13537	11	135	146	8675	86%	141	9	10	41	194002	356400
4-Aug	37	212	249	13786	35	101	136	8811	55%	135	3	3	34	200209	359730
5-Aug	41	82	123	13909	41	82	123	8934	100%	63	2	2	38	202795	363420
6-Aug	50	128	178	14087	40	114	154	9088	87%	22	0	0	28	205971	367920
7-Aug	30	83	113	14200	22	68	90	9178	80%	82	0	0	25	207786	370620
8-Aug	15	144	159	14359	13	120	133	9311	84%	135	4	5	26	209637	371970
9-Aug	33	153	186	14545	27	132	159	9470	85%	68	3	4	25	211866	374940
10-Aug	92	187	279	14824	85	160	245	9715	88%	163	3	4	21	215221	383220

Table E-1. Data used to calculate the inseason sockeye salmon escapement estimates in 1994. These data were preliminary and prepared inseason; refer to other tables in the report for final catch and tag totals.

	Fishwheel Catch				Fishwheel Tags					Grease Harbour				Escapement estimates	
Date	Daily FW1	Daily FW2	Daily Total	Cumm. Catch	Daily FW1	Daily FW2	Daily Total	Cumm. Tagged	Prop. Tag	Daily Catch	Raw Recaps	Adj. Recaps	Exp. Factor	Mark-Recap.	Fishwheel 1 exp. factor (90)
11-Aug	105	238	343	15167	88	210	298	10013	87%	177	8	10	18	219747	392670
12-Aug	123	185	308	15475	40	130	170	10183	55%	71	2	2	16	224668	403740
13-Aug	143	343	486	15961	0	0	0	10183	0%	259	7	9	12	239121	416610
14-Aug	141	274	415	16376	0	0	0	10183	0%	108	4	6	12	249605	429300
15-Aug	87	168	255	16631	17	47	64	10247	25%	129	4	8	12	261478	437130
16-Aug	36	91	127	16758	28	85	113	10360	89%	126	6	13	13	267434	440370
17-Aug	26	84	110	16868	17	70	87	10447	79%	67	3	6	16	272346	442710
18-Aug	25	101	126	16994	13	85	98	10545	78%	119	6	13	30	277161	444960
19-Aug	41	97	138	17132	31	78	109	10654	79%	48	0	0	25	287350	448650
20-Aug	80	84	164	17296	11	39	50	10704	30%	154	4	10	47	296305	455850
21-Aug	110	140	250	17546	0	0	0	10704	0%	43	1	3	47	296305	465750
22-Aug	10	89	99	17645	0	26	26	10730	26%	54	0	0	45	296305	466650
23-Aug	35	59	94	17739	3	50	53	10783	56%	85	0	0	38	296305	469800
24-Aug	33	45	78	17817	0	0	0	10783	0%	105	2	5	74	296305	472770
25-Aug	15	26	41	17858	0	0	0	10783	0%	68	0	0	55	296305	474120
26-Aug	8	16	24	17882	2	5	7	10790	29%	23	1	3		296305	474840
27-Aug	29	11	40	17922	19	5	24	10814	60%	38	0	0		296305	477450
28-Aug	17	9	26	17948	12	4	16	10830	62%	39	0	0		296305	478980
29-Aug	19	9	28	17976	12	4	16	10846	57%	24	0	0		296305	480690
30-Aug	25	1	26	18002	20	0	20	10866	77%	18	0	0		296305	482940
31-Aug	40	5	45	18047	33	5	38	10904	84%	20	0	0		296305	486540
1-Sep	8	11	19	18066	4	10	14	10918	74%					296305	487260
2-Sep	15	3	18	18084	0	2	2	10920	11%					296305	488610
3-Sep	20	0	20	18104	9	0	9	10929	45%					296305	490410
4-Sep	7	0	7	18111	4	0	4	10933	57%					296305	491040
5-Sep	4	0	4	18115	2	0	2	10935	50%					296305	491400
6-Sep	5	0	5	18120	0	0	0	10935	0%					296305	491850
Total	5465	12655	18120		3785	7129	10935			8049	330	639		296305	

Table F-1. Numbers of fish, by age and length, for chinook salmon sampled at the Nass River fishwheels, 1994.

Nose-fork	Age class							Total	Fish sampled but not aged[a]					Total	Portion
length (cm)	31	41	42	52	53	62	72	aged	2M	3M	4M	5M	RG	not aged	not aged
54	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0.00
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1.00
57	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1.00
58	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0.00
59	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0.50
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0.00
62	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0.00
63	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1.00
64	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0.00
65	1	0	4	0	0	0	0	5	2	0	0	0	0	2	0.29
66	0	0	2	1	0	0	0	3	1	0	0	0	0	1	0.25
67	0	0	1	0	0	0	0	1	3	0	0	0	0	3	0.75
68	0	0	4	0	1	0	0	5	0	0	0	0	0	0	0.00
69	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0.00
70	0	0	3	1	1	0	0	5	1	0	0	0	0	1	0.17
71	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0.00
72	0	1	3	0	0	0	0	4	0	0	0	0	1	1	0.20
73	0	0	3	1	0	0	0	4	0	2	0	0	0	2	0.33
74	0	0	2	0	0	0	0	2	0	0	0	0	2	2	0.50
75	0	0	2	2	0	1	0	5	1	0	0	0	0	1	0.17
76	0	0	1	3	0	0	0	4	0	0	0	0	2	2	0.33
77	0	0	0	4	0	0	0	4	0	3	0	0	1	4	0.50
78	0	0	1	2	0	0	0	3	0	3	0	0	0	3	0.50
79	0	0	0	4	0	1	0	5	0	1	0	0	0	1	0.17
80	0	0	2	10	0	0	0	12	0	4	0	0	0	4	0.25
81	0	0	0	9	0	1	0	10	0	0	0	0	3	3	0.23
82	0	0	0	3	0	2	0	5	0	1	0	0	0	1	0.17
83	0	0	0	10	0	1	0	11	0	2	0	0	1	3	0.21
84	0	0	0	13	0	3	0	16	0	2	1	0	0	3	0.16
85	0	0	0	15	0	1	0	16	0	5	1	0	2	8	0.33
86	0	2	0	19	0	1	0	22	0	5	2	0	5	12	0.35
87	0	0	0	16	0	3	0	19	0	1	0	0	3	4	0.17
88	0	0	0	18	0	5	0	23	0	1	0	1	1	3	0.12
89	0	0	0	27	0	0	0	27	0	2	1	0	0	3	0.10

Table F-1. Numbers of fish, by age and length, for chinook salmon sampled at the Nass River fishwheels, 1994.

Nose-fork	Age class							Total	Fish sampled but not aged[a]					Total	Portion
length (cm)	31	41	42	52	53	62	72	aged	2M	3M	4M	5M	RG	not aged	not aged
90	0	0	0	20	0	5	0	25	0	2	0	0	1	3	0.11
91	0	0	0	12	0	11	1	24	0	0	3	0	1	4	0.14
92	0	0	0	13	0	11	0	24	0	1	1	0	3	5	0.17
93	0	0	0	4	0	10	0	14	0	0	2	0	2	4	0.22
94	0	0	0	6	0	11	0	17	0	1	0	0	3	4	0.19
95	0	0	0	4	0	11	0	15	0	1	2	0	1	4	0.21
96	0	0	0	5	0	10	0	15	0	0	2	0	3	5	0.25
97	0	0	0	3	0	9	0	12	0	0	1	0	2	3	0.20
98	0	0	0	3	0	7	0	10	0	0	0	0	0	0	0.00
99	0	0	0	1	0	4	0	5	0	0	0	0	2	2	0.29
100	0	0	0	1	0	5	0	6	0	1	2	0	1	4	0.40
101	0	0	0	1	0	3	0	4	0	0	0	0	0	0	0.00
102	0	0	0	1	0	2	1	4	0	0	3	0	0	3	0.43
103	0	0	0	1	0	3	0	4	0	1	0	0	1	2	0.33
104	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0.00
105	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1.00
106	0	0	0	0	0	2	0	2	0	0	0	0	0	0	
107	0	0	0	0	0	2	0	2	0	0	0	0	0	0	
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
109	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0.33
110	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1.00
111	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0.50
112	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0.50
Total number	1	3	42	236	2	130	2	416	10	39	24	1	46	120	0.22
Percent	0.2	0.7	10.1	56.7	0.5	31.3	0.5	100.0	8.3	32.5	20.0	0.8	38.3	100.0	

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

Table F-2. Numbers of fish by, age and length, for sockeye salmon sampled at the Nass River fishwheels, 1994.

Nose-fork	Number of fish by age class											Number of fish sampled but could not be aged[a]						Portion
length (cm)	31	32	41	42	43	52	53	62	63	64	Total	1M	2M	3M	RG	S2	S3	not aged
32	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.00
33	0	2	0	0	1	0	0	0	0	0	3	0	0	0	1	0	0	0.33
34	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.00
35	0	3	0	0	0	0	0	0	0	0	3	2	0	0	1	0	0	1.00
36	0	5	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0.20
37	0	16	0	0	0	0	0	0	0	0	16	1	0	0	0	0	0	0.06
38	1	15	0	0	0	0	0	0	0	0	16	1	0	0	0	0	0	0.06
39	0	17	0	0	0	0	0	0	0	0	17	1	0	0	1	0	0	0.12
40	0	7	0	0	1	0	0	0	0	0	8	0	0	0	0	0	0	0.00
41	0	11	0	0	5	0	0	0	0	0	16	1	0	0	1	0	0	0.13
42	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0.00
43	0	1	0	1	8	0	0	0	0	0	10	0	0	0	1	0	0	0.10
44	0	1	0	0	6	0	0	0	0	0	7	2	0	0	1	0	0	0.43
45	0	0	0	1	5	0	0	0	0	0	6	1	0	0	1	0	0	0.33
46	1	0	0	0	4	0	0	0	0	0	5	0	0	0	0	0	0	
47	1	0	0	2	0	0	1	0	0	0	4	0	0	0	0	0	0	
48	3	0	0	1	1	0	1	0	0	0	6	0	0	0	2	0	0	0.33
49	0	0	0	0	1	0	2	0	0	0	3	0	0	0	1	0	0	0.33
50	4	0	0	3	0	1	1	0	0	0	9	0	1	1	0	0	0	0.22
51	1	0	0	8	0	7	9	0	0	0	25	0	1	0	2	0	0	0.12
52	3	0	0	7	0	6	5	0	1	0	22	0	4	0	2	0	0	0.27
53	2	0	2	15	1	3	9	0	0	0	32	0	2	1	0	1	0	0.13
54	2	0	1	21	0	3	22	0	1	0	50	0	2	0	2	0	0	0.08
55	1	0	0	14	0	10	21	0	0	0	46	0	3	2	3	0	0	0.17
56	2	0	1	15	0	10	30	0	2	0	60	0	0	0	1	0	0	0.02
57	1	0	1	28	0	13	32	0	3	0	78	0	3	2	6	0	0	0.14
58	0	0	2	14	0	28	40	0	6	0	90	0	7	1	4	0	0	0.13
59	2	0	0	16	0	30	40	1	2	0	91	0	2	2	3	1	0	0.09
60	0	0	0	19	0	47	68	1	10	0	145	0	7	2	5	1	0	0.10
61	1	0	1	5	0	42	58	0	9	0	116	0	4	5	2	0	0	0.09
62	0	0	0	12	0	63	46	0	8	1	130	0	4	4	4	1	1	0.11
63	0	0	0	7	0	69	31	0	12	0	119	0	1	4	5	2	1	0.11

Table F-2. Numbers of fish by, age and length, for sockeye salmon sampled at the Nass River fishwheels, 1994.

Nose-fork	Number of fish by age class											Number of fish sampled but could not be aged[a]						Portion
length (cm)	31	32	41	42	43	52	53	62	63	64	Total	1M	2M	3M	RG	S2	S3	not aged
64	1	0	0	9	0	61	41	0	17	0	129	0	4	3	4	2	2	0.12
65	0	0	0	2	0	47	20	0	11	0	80	0	0	5	0	1	0	0.08
66	0	0	0	3	0	46	16	0	11	0	76	0	1	3	6	2	0	0.16
67	0	0	0	4	0	31	11	0	18	0	64	0	1	3	3	3	1	0.17
68	0	0	0	5	0	22	16	0	8	0	51	0	0	0	3	4	2	0.18
69	0	0	0	1	0	12	8	0	8	0	29	0	0	1	0	1	3	0.17
70	0	0	0	0	0	18	5	0	9	0	32	0	0	2	3	2	1	0.25
71	0	0	0	1	0	6	4	0	4	0	15	0	0	1	0	0	0	0.07
72	0	0	0	0	0	1	3	0	3	0	7	0	0	1	0	0	1	0.29
73	0	0	0	0	0	1	0	0	3	0	4	0	0	0	0	0	0	
74	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	2	1.00
75	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	
76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
79	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0.00
Total	26	84	8	214	33	579	540	2	149	1	1636	10	47	43	68	21	14	0.12

Table F-3. Summary of weekly age composition of sockeye sampled at the Nass River fishwheels, 1994.

Week ending	Stat. week	Weekly abundance[b]	Number of fish by age class											Proportions by week									
			31	32	41	42	43	52	53	62	63	64	Total	31	32	41	42	43	52	53	62	63	64
11-Jun	24	191	0	0	0	0	0	6	0	0	2	0	8	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.250	0.000
18-Jun	25	2751	8	0	1	4	0	57	3	1	7	0	81	0.099	0.000	0.012	0.049	0.000	0.704	0.037	0.012	0.086	0.000
25-Jun	26	13130	11	0	5	6	0	89	10	0	13	0	134	0.082	0.000	0.037	0.045	0.000	0.664	0.075	0.000	0.097	0.000
2-Jul	27	36824	7	0	2	14	0	70	23	0	12	0	128	0.055	0.000	0.016	0.109	0.000	0.547	0.180	0.000	0.094	0.000
9-Jul	28	43094	0	0	0	27	0	71	49	0	12	0	159	0.000	0.000	0.000	0.170	0.000	0.447	0.308	0.000	0.075	0.000
16-Jul	29	37220	0	0	0	29	0	49	48	0	9	0	135	0.000	0.000	0.000	0.215	0.000	0.363	0.356	0.000	0.067	0.000
23-Jul	30	26460	0	0	0	35	0	36	55	0	12	0	138	0.000	0.000	0.000	0.254	0.000	0.261	0.399	0.000	0.087	0.000
30-Jul	31	44762	0	0	0	24	0	65	51	1	12	0	153	0.000	0.000	0.000	0.157	0.000	0.425	0.333	0.007	0.078	0.000
6-Aug	32	24707	0	0	0	23	0	46	66	0	18	0	153	0.000	0.000	0.000	0.150	0.000	0.301	0.431	0.000	0.118	0.000
13-Aug	33	54491	0	0	0	20	1	33	44	0	14	1	113	0.000	0.000	0.000	0.177	0.009	0.292	0.389	0.000	0.124	0.009
20-Aug	34	41634	0	0	0	9	1	20	88	0	17	0	135	0.000	0.000	0.000	0.067	0.007	0.148	0.652	0.000	0.126	0.000
27-Aug	35	17848	0	0	0	8	3	16	55	0	10	0	92	0.000	0.000	0.000	0.087	0.033	0.174	0.598	0.000	0.109	0.000
3-Sep	36	4198	0	2	0	12	1	20	49	0	11	0	95	0.000	0.021	0.000	0.126	0.011	0.211	0.516	0.000	0.116	0.000
10-Sep	37	691	0	0	0	1	0	1	2	0	1	0	5	0.000	0.000	0.000	0.200	0.000	0.200	0.400	0.000	0.200	0.000
Totals[a]		348001	26	2	8	211	6	581	542	2	150	1	1529	0.017	0.001	0.005	0.138	0.004	0.380	0.354	0.001	0.098	0.001
		Weighted average proportions based on weekly abundance:												0.010	0.000	0.003	0.150	0.004	0.354	0.379	0.001	0.098	0.001

[a] These totals are different from those in Table D-2 because there were four fish whose scales were taken but the fish were not measured.

[b] Based on reconstructed abundance using tag recovery information from the Meziadin fishway.

Table F-4. Summary of the numbers, mean lengths (nose-fork, cm) of successfully aged sockeye salmon from the Nass River fishwheel catch, 1994.

	June			July			August			September			All fish		
Age class	N	Mean	SD[a]	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
31	23	52.5	5.5	3	52.0	5.0	0			0			26	52.4	5.4
32	0			0			2	42.0	2.8	0			2	42.0	2.8
41	7	56.0	2.9	1	58.0		0			0			8	56.3	2.8
42	15	57.9	5.4	128	57.2	4.0	66	58.5	5.4	3	58.0	3.6	212	57.7	4.6
43	0			0			6	47.5	3.3	0			6	47.5	3.3
52	202	61.8	3.6	246	63.0	4.3	127	63.4	4.3	4	62.8	7.5	579	62.7	4.1
53	25	58.7	3.6	221	58.7	3.6	282	61.8	4.4	12	62.0	6.3	540	60.4	4.4
62	1	60.0		1	59.0		0			0			2	59.5	0.7
63	32	62.0	2.6	50	64.5	3.7	61	66.3	4.8	6	67.5	4.2	149	64.8	4.4
64	0			0			1	62.0		0			1	62.0	
Totals	305	60.5	4.6	650	60.5	4.8	545	62.0	5.3	25	63.0	6.2	1525	61.1	5.0

a - Standard deviation

Table F-5. Summary of length data for both aged and unaged coho salmon sampled at the Nass River fishwheels, 1994.

Nose-fork	Age class			Total	Not aged[a]		Total	Portion
length (cm)	32	43	54	aged	1M	RG	not aged	not aged
42	0	1	0	1	0	0	0	0.00
43	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	
47	2	0	0	2	0	0	0	0.00
48	0	1	0	1	1	1	2	0.67
49	1	0	0	1	0	0	0	0.00
50	1	3	0	4	1	0	1	0.20
51	3	0	0	3	0	0	0	0.00
52	3	2	0	5	1	0	1	0.17
53	1	6	1	8	1	1	2	0.20
54	4	3	0	7	0	0	0	0.00
55	2	1	0	3	1	0	1	0.25
56	8	3	0	11	2	0	2	0.15
57	4	6	0	10	1	0	1	0.09
58	3	4	0	7	0	2	2	0.22
59	3	4	1	8	2	1	3	0.27
60	7	3	0	10	2	1	3	0.23
61	7	6	0	13	1	0	1	0.07
62	12	7	0	19	3	0	3	0.14
63	17	9	0	26	0	0	0	0.00
64	18	10	0	28	10	1	11	0.28
65	24	21	0	45	5	3	8	0.15
66	16	15	0	31	3	1	4	0.11
67	21	21	0	42	9	0	9	0.18
68	26	21	0	47	2	1	3	0.06
69	25	23	0	48	10	1	11	0.19
70	17	29	0	46	2	2	4	0.08
71	22	23	0	45	5	1	6	0.12
72	17	19	0	36	2	1	3	0.08
73	7	11	0	18	4	0	4	0.18
74	9	5	0	14	7	0	7	0.33
75	5	5	0	10	0	0	0	0.00
76	2	5	0	7	0	1	1	0.13
77	1	2	0	3	0	0	0	0.00
78	2	1	0	3	0	0	0	0.00
79	1	0	0	1	0	0	0	0.00
Total number	291	270	2	563	75	18	93	0.14
Percent	51.7	48.0	0.4	100.0	80.6	19.4	100.0	

[a] Age error codes: 1M refers to 1 marine annuli; RG is regenerated scale.