

**2014 In Season Escapement Estimates of Fraser River Salmon at Qualark  
Dual-frequency Identification Sonar (DIDSON) Site with Test Fishing Results  
and Species Apportionment**

2014 Project Report to Southern Boundary Restoration and Enhancement Fund

by

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## **ABSTRACT**

The Qualark DIDSON project produces in season estimates of total daily salmon escapement in the Fraser River near Hope, BC. These estimates combine acoustic counts of salmon with species composition information derived from a drifted gill net test fishing program conducted at the acoustic site. Although estimates of daily escapement can be produced for all five species of Pacific salmon, the focus of the Qualark program is on Sockeye Salmon. These in-season escapement estimates can be used in conjunction with hydroacoustic estimates from Pacific Salmon Commissions Mission site and test fisheries to manage fisheries on Fraser River salmon stocks. The total salmon escapement in 2014 was estimated to be 7,465,612, consisting of 6,965,904 Sockeye Salmon, 473,015 Chinook Salmon (including 104,753 jack Chinook Salmon), 22,801 Coho Salmon, and 3,892 Chum Salmon.

## INTRODUCTION

The Qualark site was developed using split-beam technology between 1993 and 1998 and employed a test fishing program to apportion the acoustic estimate by species (Enzenhofer and Cronkite, 1998). The Applied Technologies Section of the Department of Fisheries and Oceans re-activated the Qualark hydroacoustic site on the mainstem of the Fraser River in 2008 using multi-beam (DIDSON) technology to monitor the escapement of adult Pacific Salmon (*Oncorhynchus* spp.) to terminal spawning areas in the upper Fraser River watershed (Enzenhofer et al., 2010). A test fishery was implemented to provide biological and daily species composition data for the acoustic estimates. In recent years the site has been transferred from a research program to an operational project operated by DFO's Fraser Stock Assessment Program. All six Pacific salmon species (Sockeye Salmon (*O. nerka*), Pink Salmon (*O. gorbuscha*), Chinook Salmon (*O. tshawytscha*), Coho Salmon (*O. kisutch*), Chum Salmon (*O. keta*)) and Steelhead Trout (*O. mykiss*) return to spawn in the Fraser River and pass the Qualark site. Sockeye Salmon is the numerically dominant species in the Fraser River in even numbered years (e.g., 2014) while in odd numbered years (e.g., 2013) Pink Salmon are often more abundant than Sockeye Salmon.

The Pacific Salmon Commission (PSC) estimates gross escapement of Fraser River Sockeye Salmon at Mission, BC and this acoustic site is strategically located to provide key information for in season management of Sockeye Salmon fisheries to meet multiple obligations under the Pacific Salmon Treaty. Reliable estimates of Sockeye Salmon escapement in the Fraser River are a prerequisite for achieving spawning escapement goals and harvest allocations. The Mission site poses technical challenges for the acoustic enumeration of salmon that contribute to the concerns among managers and other clients about the reliability of the Mission estimate (Enzenhofer et al, 2010).

In contrast to Mission, Qualark has site characteristics that are closer to the ideal for reliably detecting and tracking salmon, including Sockeye Salmon, as they move upstream (see Enzenhofer et al., 2010).

### Project Goals

The 2014 program at Qualark was funded by Pacific Salmon Commissions (PSC) Southern Boundary Restoration and Enhancement Fund and is the 7th year of paired operation with Mission.

The goals of this project are to:

1. Produce reliable and timely estimates of gross in season salmon escapement in the Fraser River using three study design elements that are complementary to work conducted by PSC staff at Mission:

- Operation of the Qualark DIDSON hydroacoustic enumeration systems in a manner consistent with practices developed from 2008 to 2010 (Enzenhofer et al., 2010);
  - Implementation of the Qualark test fishery consistent with procedures developed during the period 2008 to 2010;
  - Continued evaluation of fish flux occurring outside the normal acoustic monitoring window at Qualark with acoustic sampling on each bank within the 20 to 30 m range for 10 min. per hour throughout the migration period;
2. Provide validation of Sockeye Salmon escapement estimates produced at Mission with the goal of providing managers with the best possible in-season escapement estimates to utilize for effective management of fisheries; and
  3. Provide data that can be used to develop analytical methods to either modify or combine estimates from the Mission and Qualark hydroacoustic sites to provide a more robust estimate of salmon escapement into the Fraser River based on multiple years of data from 2008 to 2014 when both sites were operating.

This report documents hydroacoustic estimates of daily salmon escapement at Qualark in 2014, including daily test fishing catch and species apportionment data.

## **METHODS**

### Study Area

The Qualark hydroacoustic facility is located on the Fraser River in British Columbia, Canada and is 15 km north of Hope, BC and 95 km upstream of Mission, BC. The Qualark site is below many, but not all of the major Sockeye Salmon spawning areas in the Fraser River watershed (Figure 1). There are a number of Sockeye Salmon stocks that spawn below Qualark including Pitt River, Chilliwack River, Harrison River, Birkenhead River, Weaver Creek and Cultus Lake stocks. Estimation of total Sockeye Salmon escapement to the Fraser River requires additional enumeration programs at these locations. Pink Salmon spawn primarily in the mainstem and tributaries of the lower Fraser River below Qualark. Variable proportions of the total Pink Salmon escapement migrate past Qualark and spawn in the mid and upper Fraser River and tributaries.

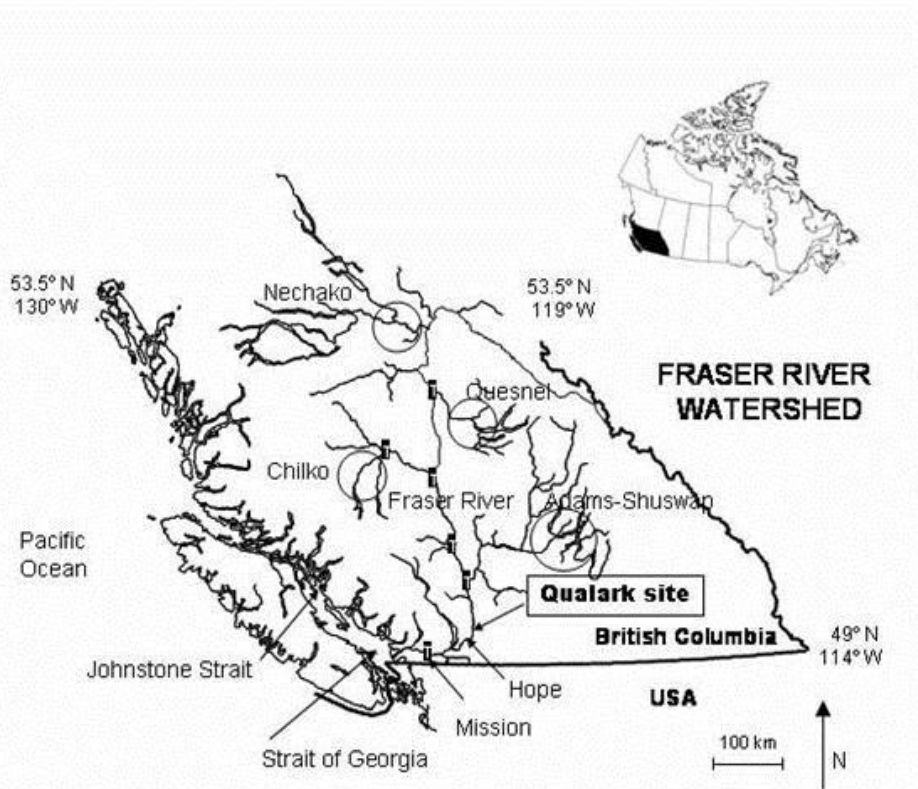


Figure 1. Map showing the Fraser River watershed and location of the Qualark hydroacoustic site near Hope, BC. Some of the major spawning areas including the Nechako, Quesnel, Chilko, and Adams-Shuswap Lake systems are circled.

The Qualark site was originally chosen as an experimental site because the site possessed a number of favorable characteristics (Enzenhofer and Cronkite, 2000). It was on a straight stretch of river with laminar flow, water velocity was high, flows were not tidally-influenced, and substrate and bank configurations were planar and free of obstructions (scaloping, benches, and large boulders) that might impair fish detection or introduce noise to the acoustic system. There was minimal human activity that would alter fish behaviour. These characteristics ensure that fish actively migrate through this area rather than holding or milling, which is a key factor to the success of a riverine acoustic site. The relatively high water velocities and consistent bank slopes combined with the energy conserving migration behaviour of salmon, result in most salmon, including Sockeye Salmon, migrating through the Qualark site within 20 m of the shore regardless of discharge and water level. Consequently it is not necessary to continuously ensoundify the middle of the river, although periodic checks to confirm the absence of fish escapement are necessary and prudent.

The Fraser River is 150 m wide at the Qualark site with discharge ranging from 10,000  $\text{m}^3/\text{s}$  during spring freshet to 700  $\text{m}^3/\text{s}$  during the low water period in winter (Environment Canada, 2014). The river banks have a natural slope of  $21^\circ$  (right-bank) and  $20^\circ$  (left-bank) with

the surface layer comprised of 30-50 cm diameter rock and some large boulders (Figure 2). Left-bank (LB) and right-bank (RB) are relative to an observer facing downstream. Water velocities at the site range from 1.0 m/s near shore to 3-4 m/s in the middle of the river. Flow patterns vary from bank to bank, but in general fine materials are scoured along the right-bank and sand is deposited along the left-bank.

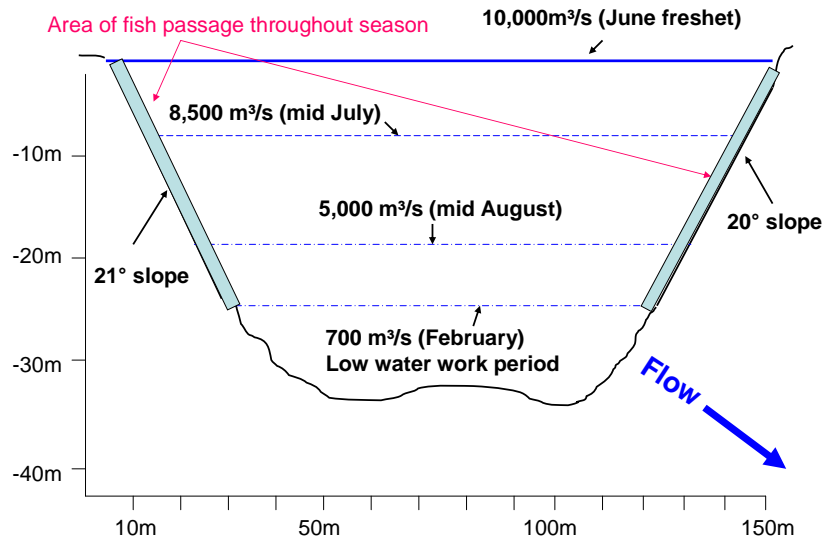


Figure 2. Fraser River cross section at the Qualark hydroacoustics site showing average discharge rates throughout the salmon migration period. Note that the vertical and horizontal scales differ. River flow is toward the viewer.

The RB is accessible by road and heavy equipment was used to refurbish the bank for acoustic work during the low water period in early 2008. The LB site is approximately 150 m downstream of the RB site and is only accessible via boat. Equipment and supplies were moved to the LB by boat and the refurbishment of the acoustic ramp and reinstallation of in-river equipment was done manually during the low water period in February of 2008. Refurbishment of the banks included removing large substrate, leveling the slope, adding sand bags and the track mounted fish deflection weir.

### Equipment

Acoustic data were collected with two standard DIDSON imaging systems (one on each bank). The standard DIDSON imaging systems have high frequency (1.8 MHz) and low frequency modes (1.1MHz) and their output consists of images created by multiple sound beams focused through a moveable lens giving a field of view that is 14° vertical and 29° horizontal (Belcher et al., 2001; Sound Metrics 2007). The RB has hydroelectric lines to the site while the LB power source was a Power Pac (Enzenhofer et al., 2007) that was charged by a combination of a solar panel and a battery charger powered by a generator. The DIDSON systems are affixed

to a track-mounted 6 m long fish deflection weir that can be adjusted in response to changes in river water levels with a remotely controlled winch (Enzenhofer et al., 2010). The DIDSON systems were mounted on an adjustable pole mount that facilitates adjustments to depth, bearing, tilt and roll (Enzenhofer and Cronkite, 2005).

### DIDSON Configuration

The DIDSON system bearing was set so that the beam aim was perpendicular to the river flow with the upstream end of the weir barely visible on the edge of the image. The tilt on RB was set at  $-17^{\circ}$  relative to the surface while LB was  $-14^{\circ}$ . A  $-35^{\circ}$  roll was adopted on both banks. This configuration was fixed throughout the program, although minor adjustments were made to the bearing and tilt as the season progressed. The aiming configuration was verified with a target suspended in the ensonified region to ensure that there were no blind zones near the surface or bottom through which fish could pass undetected and is consistent with protocols outlined by Holmes et al. (2006).

### Sampling Design

Based on split-beam sonar work at the Qualark site in the 1990s (Enzenhofer and Cronkite, 2000) and previous years DIDSON assessments, the majority of fish migration was expected to occur within a range of 5 m from the end of the deflection weir and the remainder were expected within the next 10 m. During times where set gill nets are deployed in the area during First Nations fisheries, fish migration can occur slightly further offshore. We used a systematic range stratified sampling design on each bank that utilized one aiming configuration of the DIDSON to sample between 4.17 m to 29.17 m in range, divided into three range bin files each hour (Enzenhofer et al., 2010; Figure 3). Data were collected for a total of 50 minutes out of each hour. On each bank three files were recorded hourly consisting of:

- 20 minute 5 m window length (4.17 m to 9.17 m) at high frequency mode (1.8 MHz utilizing 96 beams) producing the best available image resolution for counting the majority of fish escapement (Bin 1);
- 20 minute 10 m window length (9.17 m to 19.17 m) at low frequency mode (1.1 MHz utilizing 48 beams) (Bin 2); and
- 10 minute 10 m window length (19.17 m to 29.17 m) at low frequency mode (Long-Range Bin 3).

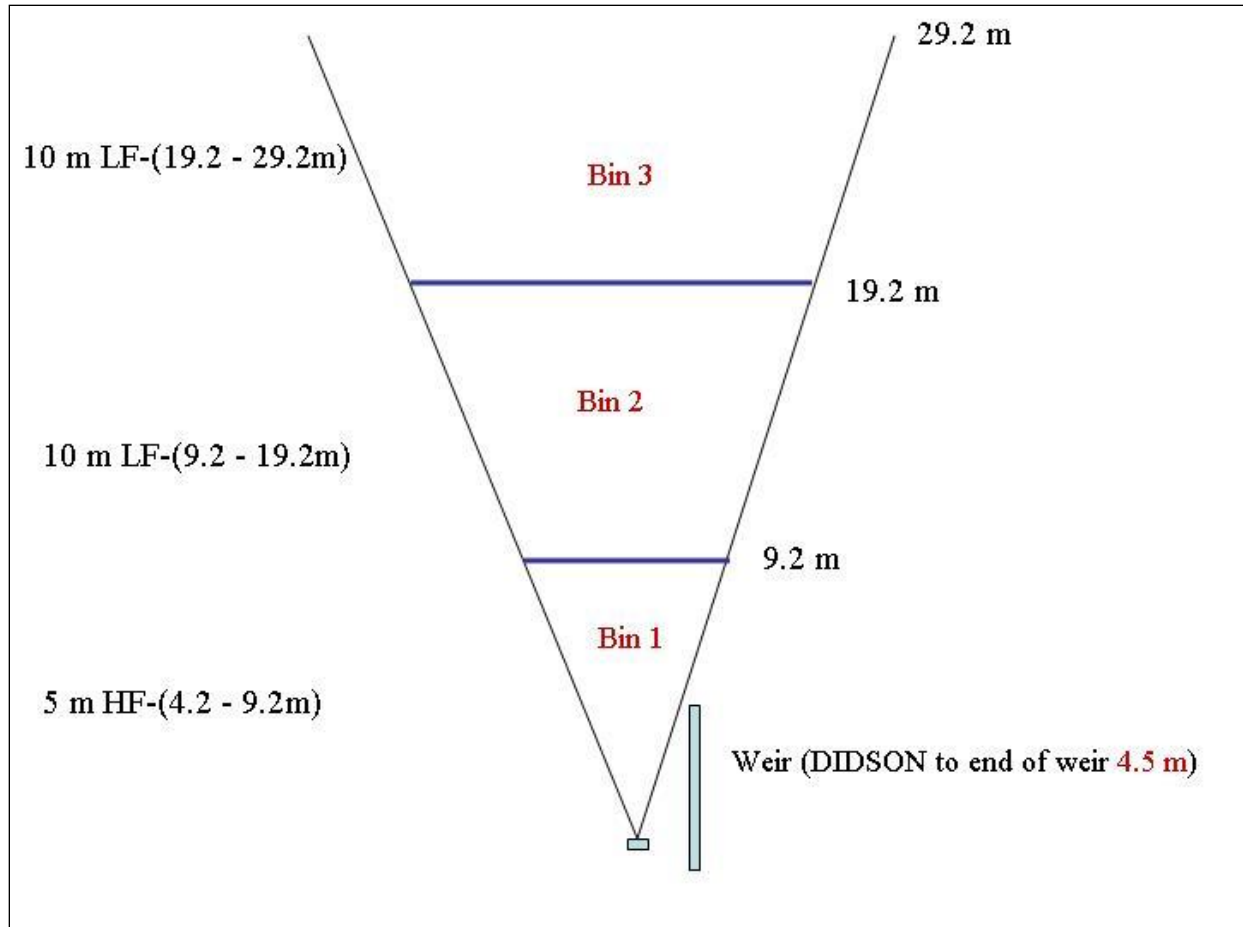


Figure 3. Plan view of the sampling strategy showing one aim configuration of the DIDSON and three range bins to sample 29.17 m range at the Qualark hydroacoustics site. Bin 1 is shown using a 5 m window length at high frequency (HF) starting at 4.17 m from the DIDSON. Bin 2 is shown with a 10 m window length in low frequency (LF) mode, from 9.17 m to 19.17 m from the DIDSON. Bin 3 is a 10 m window length in low frequency mode covering a range between 19.17 m to 29.17 m.

### Data Processing Procedures

The DIDSON data files were saved directly onto laptop computer hard drives and subsequently backed up onto an external hard drive. The data was transferred from the DIDSON computers to a processing computer where the files were manually counted by site personnel applying pre-determined counting criteria to estimate net upstream flux (Enzenhofer et al., 2010). The upstream flux of migrating salmon is calculated as the upstream count minus the downstream count (Xie et al., 2002). Counting criteria addressed the potential for double counting of fish which may move out of or into an adjoining range bin (Figure 4 and 5). The expansion of 20 minute counts to hourly counts has been shown to be representative of the hourly flux (Lilja et al, 2007). In this same way the movement of fish in and out of the end of a range bin in a 20 minute file can be assumed to be representative of the behaviour during the whole hour. A minimum fish size limit was set at 30 cm (measured using the measurement tool on the DIDSON program) to remove smaller native species from the escapement estimate.

Identifiable non-salmon species (e.g. sturgeon) were not included in the counts. Test fishing over the past 7 years at Qualark indicate negligible numbers of non-salmon sized targets present at this site. Counting procedures relating to playback speed and file viewing settings (use of background subtraction, threshold and intensity settings) were utilized to insure consistency between different counters. Counting of files with counts in excess of 1,500 fish in the first 10 minutes was terminated at the 10 minute mark. Net upstream flux for each range bin was expanded to the hour and summed to represent total daily salmon escapement.

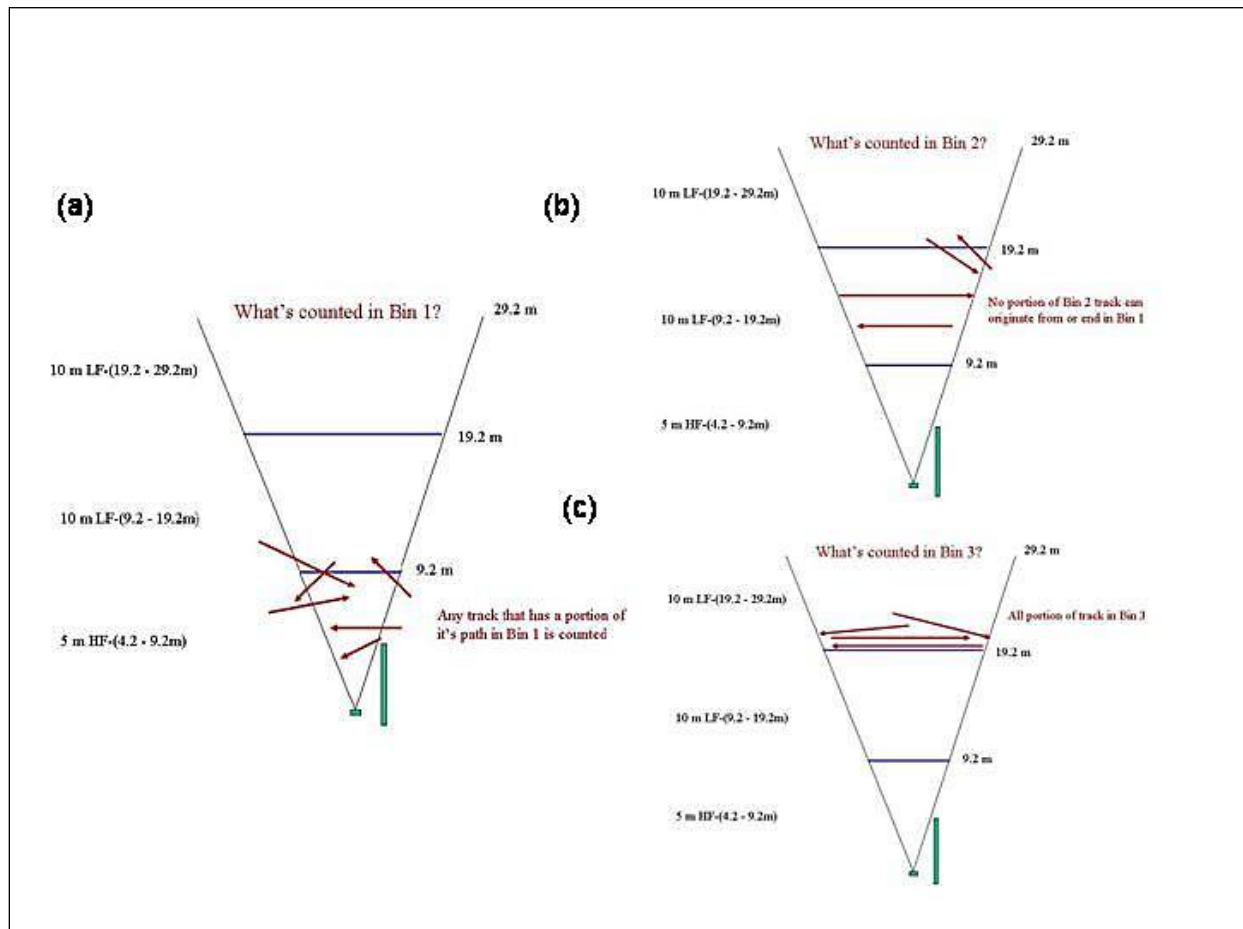


Figure 4. Counting criteria for manual counts of range bins to avoid double counting fish passing through more than one range bin. (a) Any portion of a fish trajectory is included in the Bin 1 count, (b) fish included in Bin 2 counts cannot have any portion of its track in Bin 1, and (c) fish included in the Bin 3 count must have entire portion of track in Bin 3.

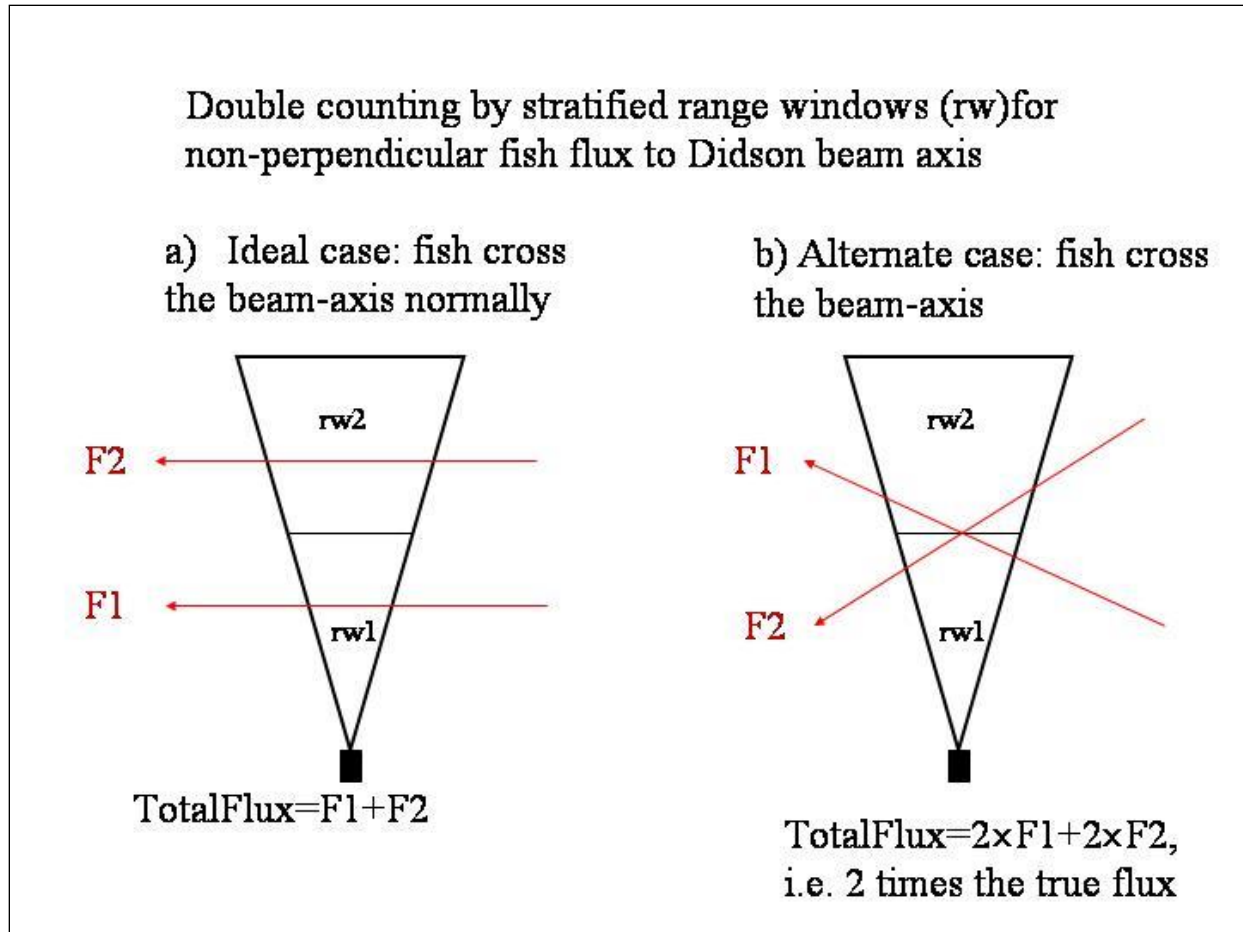


Figure 5. Illustration of fish escapement moving through a fixed location DIDSON imaging sonar configured with one aim and two range windows (rw1 & rw2). a) Two fish tracks (F1 & F2) each passing through only one range window resulting in a correct flux estimate of two, and b) Two fish tracks (F1 & F2) crossing through both range windows potentially resulting in an incorrect double count of four if the counting criteria protocols in Figure 4 are not applied.

### Test Fishing

The complete drift series consisted of 6 gill net drifts per day, seven days per week, one 3-drift set in the morning and one 3-drift set in the evening. Each set of 3 drifts was made close to shore along the right bank and directed at capturing salmon. The morning drift series was conducted from 07:00-08:00 and the evening drift series was conducted from 19:00-20:00. The shortening of day length later in the season resulted in evening drifts being moved to an earlier start time (18:00-19:00). Two additional drifts per week, spaced out over the week, were made beyond 25 m from the right bank using the 5¼ inch mesh net to test for presence/absence of migrating salmon in the offshore regions. The mesh sizes used for the drifts included 4, 4¾, 5¼, 5¾, 6¾ and 8 inch (stretched mesh, 70 mesh hang, and 30 m length). The morning drifts began on the first day using the 4, 5¼, and 6¾ inch meshes in sequence, and the evening drifts began using the 4¾, 5¾ and 8 inch meshes in sequence. On the second day the morning and evening sequences were reversed and on each subsequent day the pattern of drifts was alternated to allow some randomisation of the sampling. Each drift was approximately 4-6 minutes in

duration and began 150 m upstream of the acoustic system and terminated approximately 700 m downstream of the Qualark site.

The date, drift number, mesh size, start and end times were recorded, along with the number of each species of salmon caught in each drift. The number of each species caught in a drift was recorded as retained or released. Fish that were identified by species but escaped were included with the released fish. Sockeye Salmon were retained and Chinook, Coho and Chum Salmon were released whenever possible but were retained if dead or survival was deemed to be unlikely. Chinook and Coho Salmon were assessed for adipose condition (present/absent) prior to release. Comments were recorded relating to the success of the drift and any miscellaneous by-catch. Catch from different drifts was kept in separate labelled totes. Test fishing counts by species and drift were verified when the fish were sampled. The test fishing data was compiled daily (for the previous day) and entered into a MS-Excel spreadsheet database. The daily species proportion was determined from the test fishery data and applied to the total upstream flux to estimate daily escapement by species.

### Sampling

Sex, post orbital fork (POF) length (cm), weight (kgs), scale samples and DNA samples (adipose fin punch) from up to 50 Sockeye Salmon per day were taken. All additional Sockeye Salmon were sampled for sex, POF length and weight (kgs). Chinook Salmon were sampled for sex, fork length (FL), weight (kgs) and scales (10 per fish) and were assessed for adipose condition (present/absent). Heads were retained for all fish with clipped adipose fins. Coho Salmon were assessed and sampled in a similar fashion to Chinook Salmon except that scales were not taken. Chum Salmon were sampled for sex, post orbital hyperal (POH) length, weight (kgs), scale samples (10 per fish) and DNA samples were taken.

### Precision

There are two sources of error that affect the precision of the hydroacoustic estimate. The first source relates to the difference in counts of the same file by different personnel. In order to assess the precision between counters a random number generator was used to randomly select 48 files (8 from each of the 6 range bins) to recount. This is an increase in the number of files recounted from previous years where only 24 files were recounted. Recounts were conducted by experienced staff. The precision was assessed by calculating the coefficient of variation (CV) and average percent error (APE) between the initial counts and recounted files (Enzenhofer et al., 2010).

$$CV = \sqrt{\frac{\sum_{i=1}^R (X_{ij} - \bar{X}_j)^2}{\bar{X}_j^2}} \times 100$$

$$APE = \frac{1}{N} \sum_{j=1}^N \left[ \frac{1}{R} \sum_{i=1}^R \frac{|X_{ij} - \bar{X}_j|}{\bar{X}_j} \right] \times 100$$

where N is the number of events counted by R observers,  $X_{ij}$  is the  $i^{\text{th}}$  count of the  $j^{\text{th}}$  event and  $\bar{X}_j$  is the average count of the  $j^{\text{th}}$  event.

CV was used to identify discrepancies between counters on a day to day basis. The discrepancies can help identify personnel that require further training or if there was an error in which files were counted. For example, files from an incorrect date are occasionally erroneously selected from the file directory and counted. APE was used to determine the precision of the entire dataset. Counter precision of files with low abundance presents a problem as the difference of one or two fish between counts can lead to a large and highly variable APE. A weighted mean of the APE from all files that were recounted was used to estimate counter precision for the season. The files with low abundance that make up a minute portion of the sample do not disproportionately weight the precision estimate when using this method.

The second source of error in the precision of the hydroacoustic estimate is related to the expansion of the 10 or 20 minute files to represent hourly escapement. Lilja et al. (2007) estimated a  $\pm 10\%$  confidence interval on escapement with 10 minute file expansions and a  $\pm 5\%$  confidence interval with 20 minute expansions. Xie and Martens (2014) estimated a mean CV of 5.5% on 10 minute file expansions and a mean CV of 4.1% on 20 minute file expansions from DIDSON data collected at the PSC Mission hydroacoustics site. This would relate to similar confidence intervals at 95% confidence of  $\pm 11\%$  on 10 minute file expansions and  $\pm 8\%$  on 20 minute file expansions. No full hour files were collected at Qualark and thus no actual observed estimates of the file expansion error are possible.

### In-season Reporting

An estimate of salmon escapement by species was calculated on a daily basis for the previous day's data. Escapement was reported on a bi-weekly basis to the Fraser Panel and technical data users in DFO and PSC. Test fishing catch was sent to PSC on a daily basis and a detailed test fishing report was sent out on a monthly basis. The reports were sent by e-mail using a wireless internet card.

## RESULTS

### Environmental Conditions

Discharge decreased throughout the project from 6500 m<sup>3</sup>/s at the start of the project to 1500 m<sup>3</sup>/s near the end of the project (Figure 6). The water temperature varied from 12.5 to 21.0 °C over the course of the project with a short period of mean daily temperatures exceeding 20 °C occurring in mid-August (Figure 6).

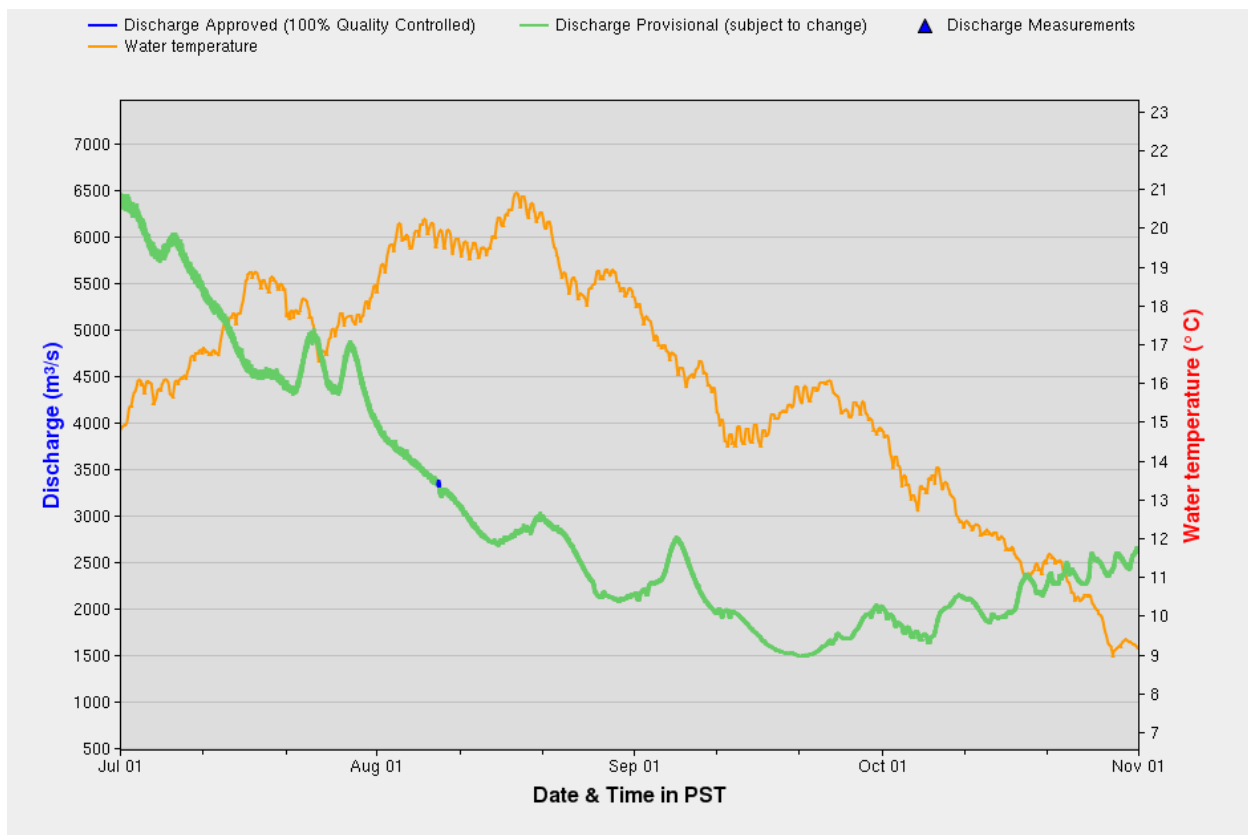


Figure 6. Discharge and water temperature at Qualark hydroacoustic site during the period of operation in 2014 (Environment Canada, 2014).

### Total Salmon Escapement Estimate

Operation of the RB DIDSON system was initiated at 14:36 on 2 July 2014 and the LB DIDSON system was started on 11 July 2014 at 13:01. Installation of the LB was delayed by high water, which hindered access to the LB weir and ramp. RB escapement estimates were used to estimate LB escapement during this period. Analysis of data from previous years found approximately equal proportions of total escapement along each bank. Since daily escapement is

low during this early high water period, bias introduced by this method likely has a minimal impact on the overall estimate of total escapement. The DIDSON systems were shut down on 5 October 2014 (RB at 07:56 and LB at 07:57). The total salmon escapement estimate was 7,465,612 (Figure 7; Appendix 1). The escapement on RB was 3,623,390 representing 49 % of the total estimate. The escapement on LB was 3,842,222 representing the remaining 51 % of the total escapement estimate. Maximum daily salmon escapement occurred on 22 September 2014 at approximately 325,000 fish (Figure 8).

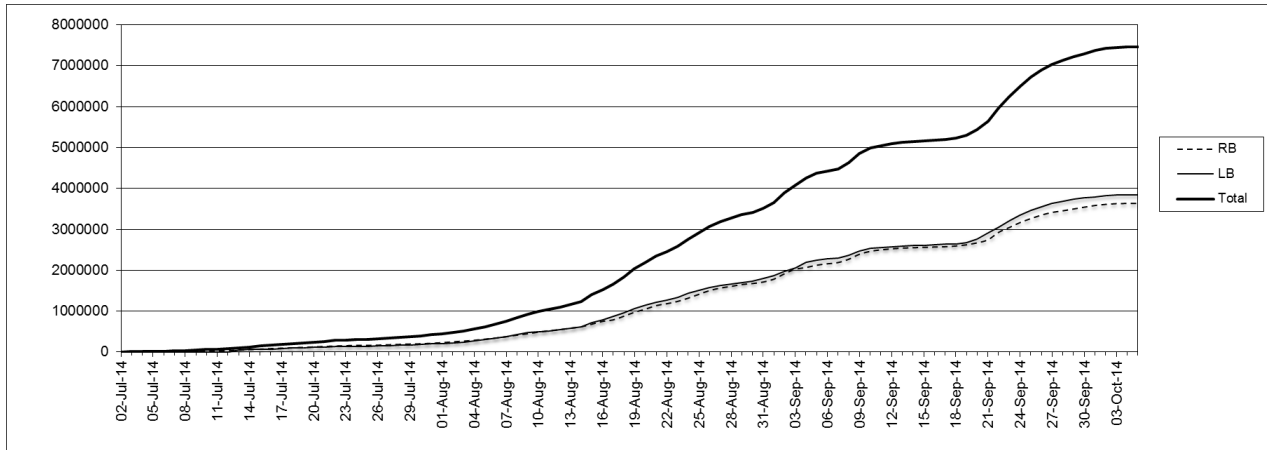


Figure 7. Cumulative daily counts of total salmon escapement derived from DIDSON assessment at Qualark, 2014, including daily cumulative counts by bank.

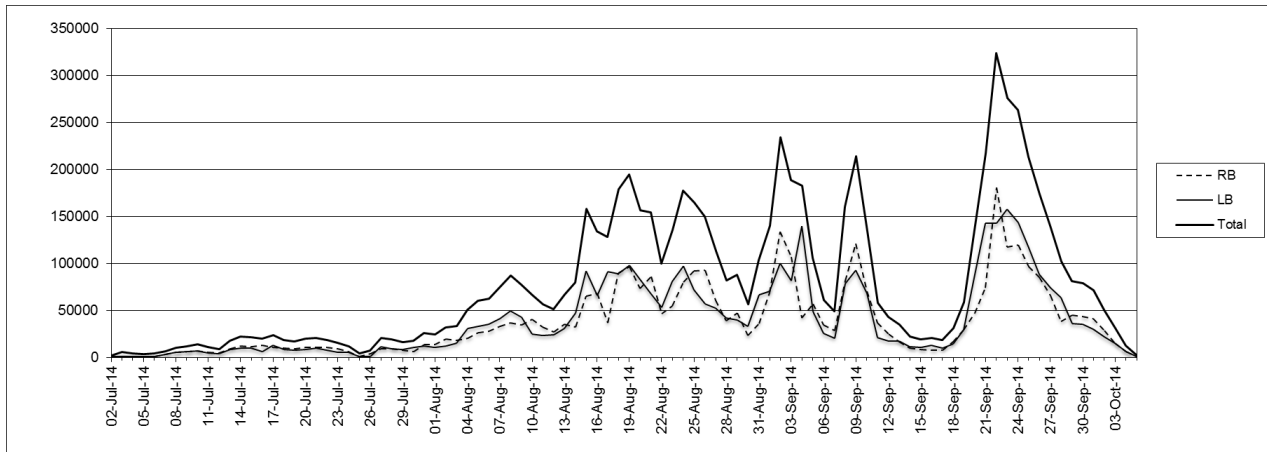


Figure 8. Expanded daily upstream counts of salmon escapement derived from DIDSON assessment at Qualark, 2014, including daily escapement by bank.

Migration Behavior

Approximately 86% of overall migration occurred within 5 m of the end of the fish deflection weirs in 2014 (Table 1). Between 10 September and 5 October 2014 increased migration was observed in the second bin 9.17-19.17 m on RB. This migration behavior has not been observed in the past. Nearly 30% of the migration on RB during this period occurred

further offshore in the absence of external stimulus like set gill net fisheries. During periods of First Nation set gill net fisheries the proportion of migration offshore increased to 30% on RB and 34% and LB. This is in contrast to 6% of the migration occurring offshore during periods where fisheries were not occurring. Figure 9 illustrates the difference in the proportion of migration occurring offshore during First Nation set gill net openings in the area of the Qualark site. This marked increase of offshore escapement in response to fisheries has been observed in previous years.

Table 1. Escapement estimates recorded in the 4.17-9.17 m HF range bin compared to the two LF range bins from 9.17-29.17 m at Qualark for 2014. Escapement is divided by bank and period of time. LB escapement estimates do not include the period where RB escapement was used to estimate LB escapement.

Period	Bank	Escapement	Bin 1 (4.17–9.17m)	Bin 2 (9.17–19.17m)	Bin 3 (19.17–29.17m)
July 2-Oct 5	Both	7,434,231	86%	13%	1%
July 2-Oct 5	Right	3,623,390	82%	17%	1%
July 2-Oct 5	Left	3,810,841	89%	10%	1%
Sept 10-Oct 5	Right	1,237,763	71%	28%	1%
Sept 10-Oct 5	Left	1,378,279	95%	4%	1%
No nets <sup>1</sup>	Right	1,753,722	94%	6%	0%
No nets	Left	3,019,378	95%	5%	1%
Nets in <sup>1</sup>	Right	631,905	70%	28%	2%
Nets in	Left	791,463	66%	29%	5%

1. July 2 to September 9 only, due to anomalous migration behavior observed on RB starting on September 10.

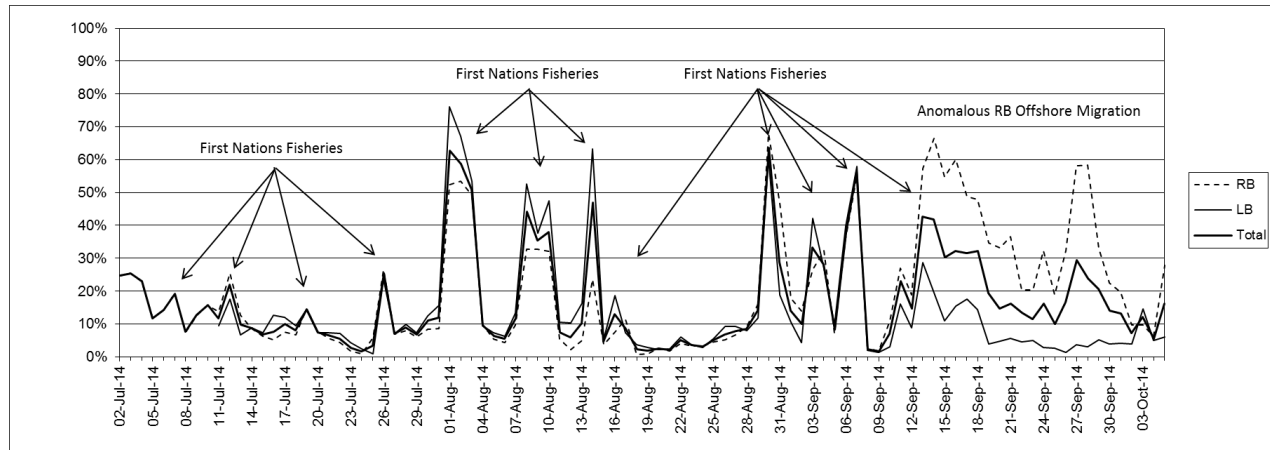


Figure 9. The proportion of daily escapement occurring beyond the first 5 m HF range bin from 9.17 to 29.17 m from the DIDSON at Qualark in 2014. First nation set gill net openings are identified.

Some holding and milling behavior was observed on RB. This behavior occurred periodically at night (21:00-05:00) from the end of August through September. The salmon migration slows and some salmon completely stop migrating and start holding after dark. The holding schools of fish would sway back and forth towards and away from the shore. Circling behavior was observed, where salmon would move upstream then turn downstream, circle and move back up. The combination of these two behaviors creates milling. White Sturgeon are active at night and

startle and scatter the milling salmon further. This behavior has been observed at the site in previous years during similar time periods and environmental conditions.

### Species Proportioning

The test fishing program was initiated on the morning of 3 July 2014, one day after the hydroacoustic program. Species composition from 3 July 2014 was applied to the hydroacoustic estimate for 2 July 2014. The evening drift series changed from 19:00-20:00 to 18:00-19:00 on 29 August 2014. The test fishing program shut down 4 October 2014, with the hydroacoustic program ending on 5 October 2014. Species proportioning from 4 October 2014 was used to estimate species proportioning on the final partial day of hydroacoustic data collection. Species composition in the test fishing program showed a relatively large proportion of Chinook Salmon early in the program though Sockeye Salmon were the dominant species throughout the project (Figure 10; Appendix 1). Coho salmon were first observed in mid-September, they comprised only a small component of daily migration until project termination. Three Chum Salmon were caught in the test fishery in September reflecting low abundance past Qualark. Appendix 2 contains details of test fishery catches by set.

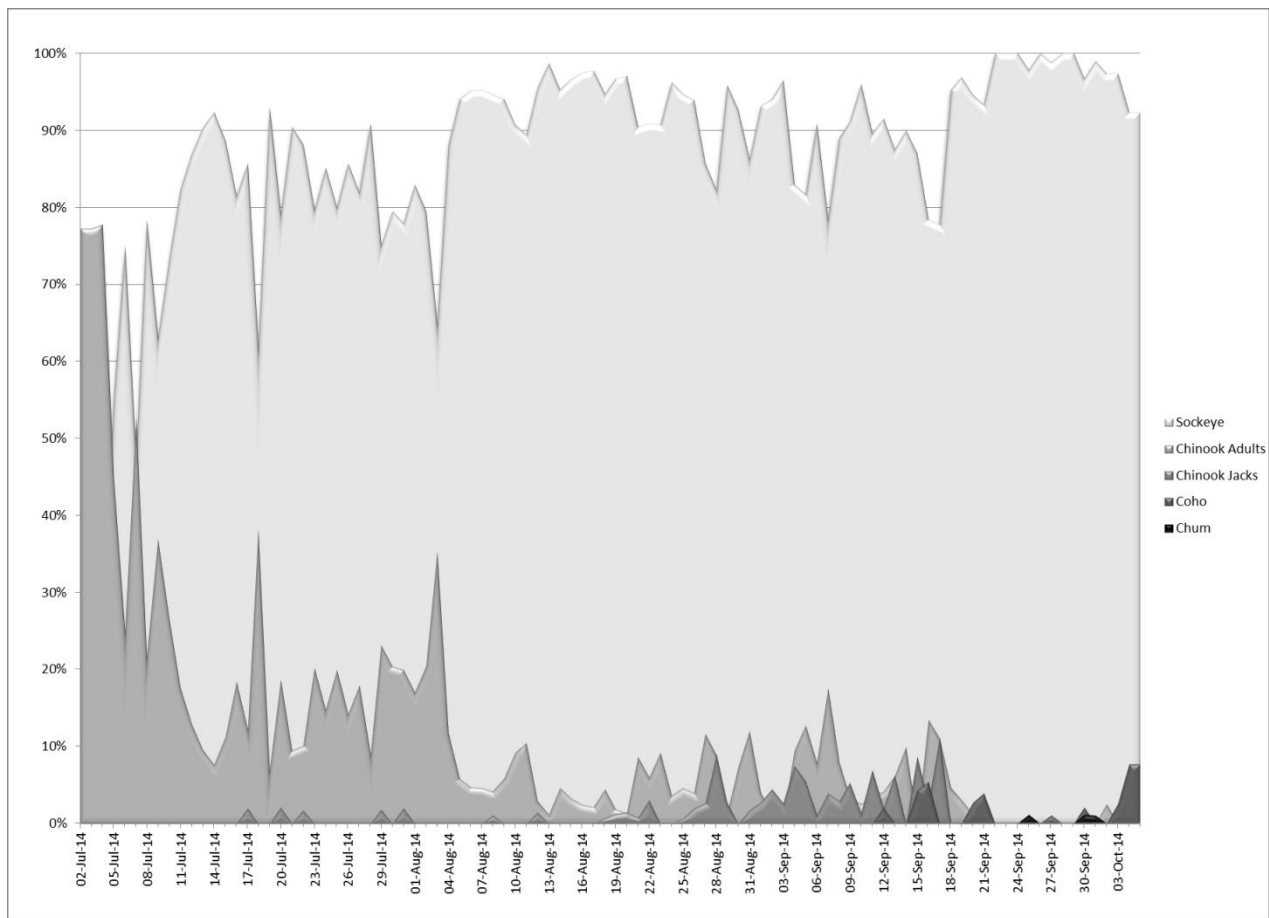


Figure 10. Daily species proportioning derived from the test fishery at Qualark, 2014.

## Escapement by Species

Sockeye Salmon comprised 93% (6,965,904) of the total salmon escapement at Qualark in 2014 (Figure 11; Appendix 1). Sockeye Salmon was the only species present daily throughout the test fishery operation, comprising just over 20% of daily migration in early July to consistently >90% in August and September.

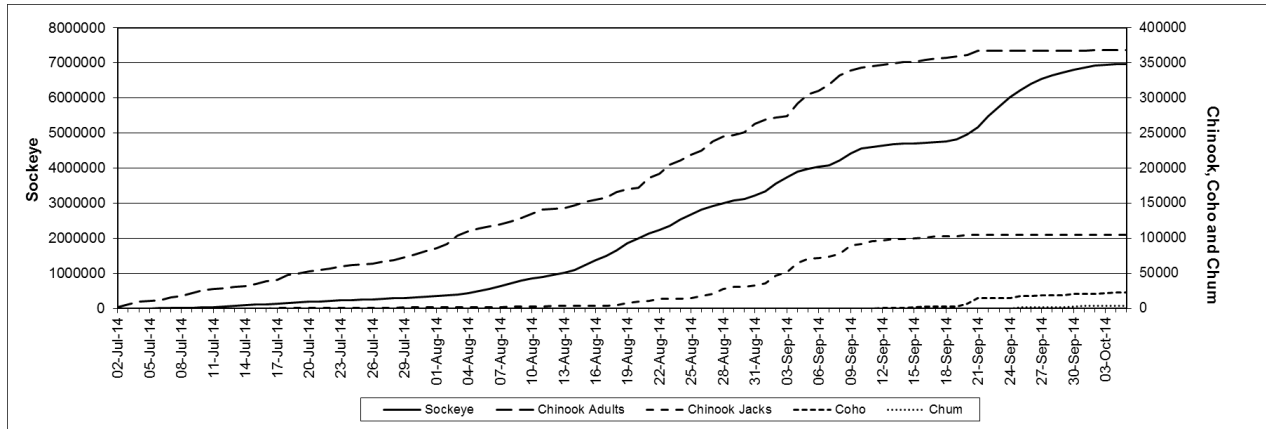


Figure 11. Cumulative daily salmon escapement apportioned by species based on test fishing catch at Qualark, 2014.

The daily abundance of Sockeye Salmon started increasing in the beginning of August (Figure 12; Appendix 1). Daily passage estimates for Sockeye Salmon ranged from a low of 963 on July 4, to a peak of 323,769 on September 22. Multiple peaks were observed between mid-August and mid-September as Summer Run stocks migrated past the site. The troughs in the August abundance curve reflect removals due to commercial fisheries, both marine and in river. The week long reduction in escapement during mid-September reflected a delayed migration of salmon leaving the Strait of Georgia in 2014. Delayed migration of this magnitude has not been observed since the mid 1990's. A final large peak occurred during the last 2 weeks of September as the bulk of the Late Run Sockeye Salmon migrated past the site.

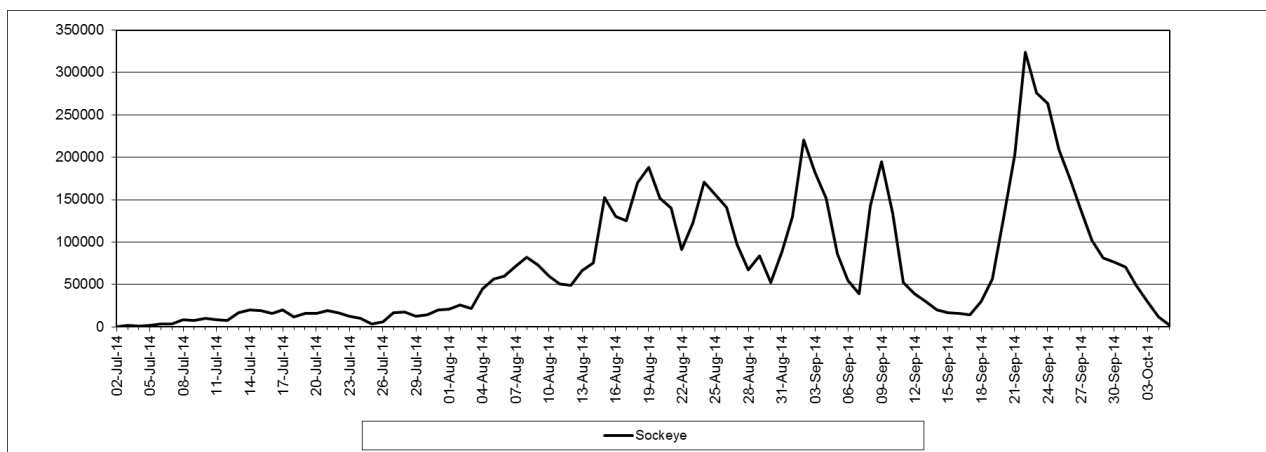


Figure 12. Daily estimates of Sockeye Salmon in the Fraser River at Qualark hydroacoustics site in 2014.

Chinook Salmon comprised 6% (473,015) of total salmon passage at Qualark in 2014 including an estimated 368,262 adult and 104,753 jacks (Figure 11; Appendix 1). Chinook Salmon were observed daily in test fishing catch through September 21. They represented a major component of daily migration through the month of July ranging from just under 80% of daily catch early in the month to 15-20% near months end. Through most of August and September Chinook Salmon comprised <10% of daily migration. The daily Chinook Salmon estimate remained relatively stable until mid-August when Sockeye Salmon escapement increased (Figure 13). At this point through to the first week of September there was a large variation in the daily estimates. Daily passage estimates for Chinook Salmon prior to the end of September ranged from a low of 803 on July 25, to a peak of 31,085 on September 4.

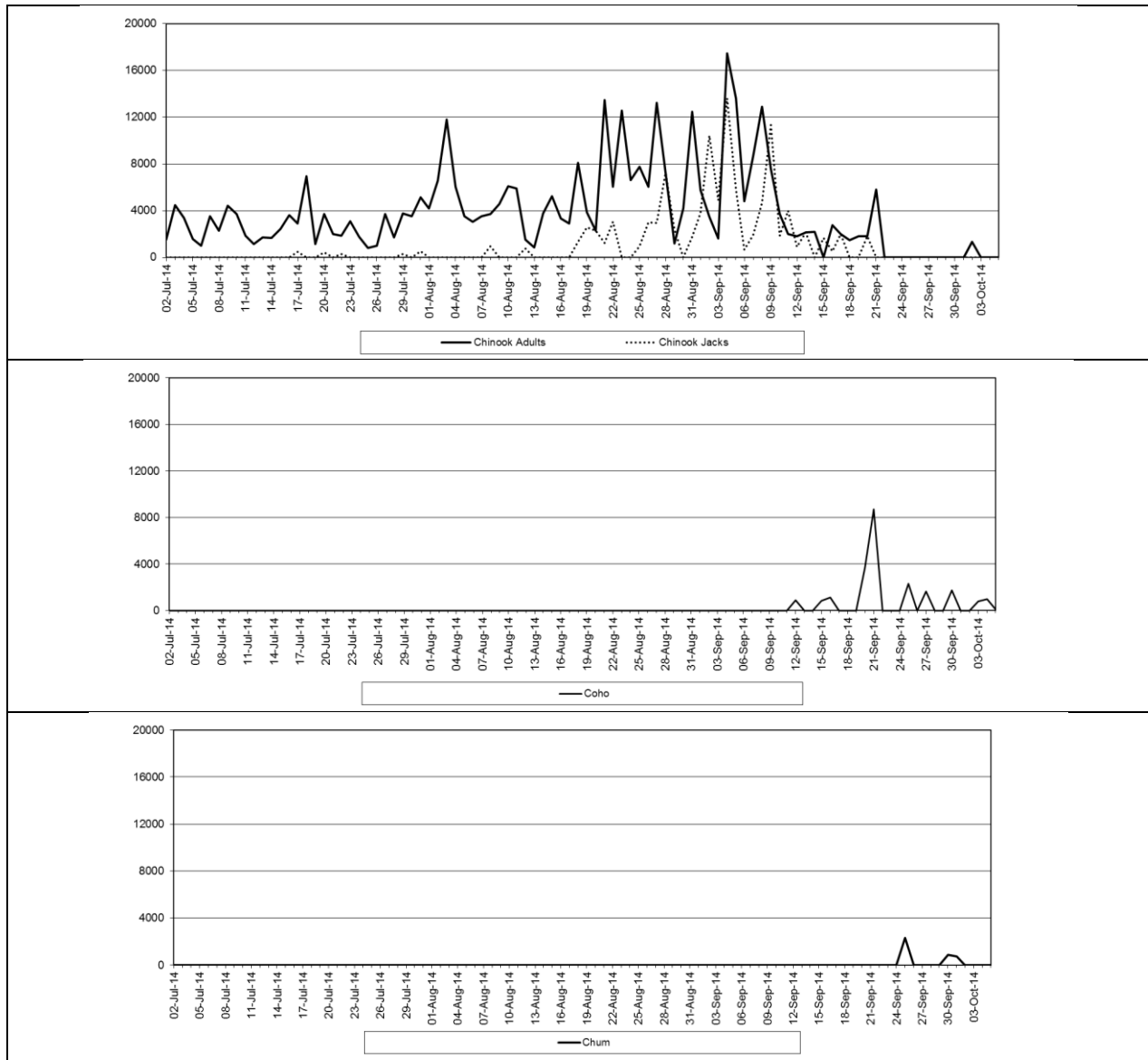


Figure 13. Daily estimates of Chinook, Coho and Chum salmon in the Fraser River at Qualark hydroacoustic site in 2014.

Coho and Chum Salmon comprised <1% (22,801) and <0.1% (3,892) of the 2014 Qualark estimate respectively (Figure 11; Appendix 1). Coho Salmon were first observed in the test fishery catch on September 12, and were seen intermittently through to the project end date. Coho proportions were low and never exceeded 10% of daily catch. Chum Salmon were the rarest species caught in Qualark test fishing, only 3 individuals were captured. Chum Salmon abundance is low due to the site being near the upper extent of Chum Salmon spawning habitat in the Fraser River. All encounters were in late September. No Pink or Steelhead Salmon were caught in the test fishery in 2014.

### Precision

The number of files recounted two or more times by different staff was 3374. The escapement in the recounted files accounted for approximately 10% of the total estimated escapement. The total weighted APE associated with counter precision was 2.41%.

## **DISCUSSION**

The DIDSON hydroacoustic program at Qualark produces daily in-season estimates of salmon escapement in the Fraser River near Hope, BC. Daily escapement estimates at Qualark can be produced regardless of discharge and procedures do not change throughout the duration of the project. In 2014, the total escapement was estimated as 7,465,612 salmon.

The hydroacoustic coverage of the area of salmon migration is complete. The bottom of the ensonified area has been modified resulting in an acoustically non-reflective planar profile. There are no shelves or scalloped areas that can create acoustic shadowing that could potentially obscure salmon escapement. The -35° roll angle is utilized to maximize vertical coverage of the water column. The results of testing estimated coverage on RB to be from the substrate to 46 cm from surface and the LB to 23 cm from the surface. The measurements were conducted from the weir approximately 4 m from the DIDSON. The beam spread beyond this point will further increase coverage as distance from the DIDSON increases. On-site testing has shown that salmon rarely migrate this close to the surface. Migration occurs primarily within 5 meters of the end of the fish deflection weir due to fast, strong flow in mid-river and slower seams of water along the banks. The absence of migration beyond the area of coverage is further supported by the very minimal escapement (~1%) observed in the 19.17-29.17 m range bin and lack of catch in the bi-weekly offshore drifts.

The bank-oriented migratory behavior allows for the collection of high quality 5 m HF DIDSON files that contain the vast majority of the salmon migration, 86% in 2014. The directed upstream migratory behavior combined with the high image quality maximizes the accuracy and precision of the counts. Counting protocols address potential biases associated with fish crossing between range bins. Minimum length requirements remove smaller native fish from the counts.

In 2014, a number of interesting migratory behaviors were observed at Qualark. Late Run Sockeye Salmon appear to have held off of the mouth of the Fraser River longer. This was different from what has been observed in the previous years at the Qualark site but is consistent with behavior in years prior to the re-initialization of the program in 2008. There was anomalous offshore migration on RB during late September. Additionally there was holding and milling behavior observed periodically at night time on RB from the end of August through to the end of September.

The anomalous offshore migration consisted of approximately 30 % of the salmon migrating through bin 2 (9.17-19.17m). Previously, in the absence of external stimuli (gill net fisheries), only approximately 5 % of migration has been observed beyond bin 1 (4.17-9.17m). The offshore migration occurred during day time and night time periods. This behaviour coincided with the lowest discharge experienced in 2014 ( $<2,000 \text{ m}^3/\text{s}$ ). First Nations set gill net fisheries occurring near the site have consistently elicited a similar response from migrating salmon, regardless of discharge level.

Migration continues at night during Sockeye Salmon dominated periods albeit at reduced levels compared to day time passage. In 2014 on RB, the overall percent of day time (0600-2000 hrs) migration was 60% compared to 40% at nighttime (2100-0500 hrs). In contrast, during Pink Salmon dominant periods the migration virtually ceases during hours of darkness. In September of 2013 on RB (Pink Salmon dominant period), the overall percent of day time (0600-2000 hrs) migration was 93% compared to 7% at nighttime (2100-0500 hrs). Some holding and milling behavior was observed at night on RB in 2014. The night time milling behavior occurred primarily in bin 2 with salmon still actively migrating through bin 1. Milling behavior has been observed in previous years.

The anomalous offshore migration and milling behavior are not mutually exclusive events due to the milling occurring primarily in the offshore bins and potentially resulting in increased migration offshore. Milling was observed in the first two weeks of September while increased offshore migration only occurred during this period at times of gill net fisheries. This indicates that though the behaviors are interconnected they are different. Both behaviors were likely a response to the decrease in discharge and the associated increase in water clarity. However if discharge was the sole cause then these behaviors would be expected to be seen on both banks. Since they were only observed on RB these behaviors may reflect differences in the physical structure of RB. Reduced current velocity offshore was observed on RB in September due to the influence of a large boulder approximately 200m upstream of the site. As water levels dropped the boulder emerged creating an offshore low velocity eddy which was being used by salmon. Additionally, there is a large pool approximately 800 m below the site on RB. This area may be used for holding/resting. No holding water exists below the site on LB. If some fish were starting to hold in this water at dusk it is possible that these fish would spread upstream in the slower current observed at the site on RB.

Migratory behaviors have the potential to affect the accuracy and precision of riverine salmon escapement estimates. Despite milling and migration occurring further offshore on RB, all the salmon migration was observed well within the ensouffled area. Procedures used to

account for milling and holding behaviors have been previously implemented and are described below.

The procedures in place to count milling files are:

1. Fish with an obvious direction of passage through the bin are counted while trying to disregard the school of fish swaying back and forth, circling and moving in and out of the bottom and top of the bin.
2. The files are counted twice. One time for upstream and a second time for downstream moving targets. This allows the observer to direct their attention.
3. Circling fish (move down into the beam then turn and move back up) can be accounted for by disregarding them or counting them as down and up. Both methods result in a net upstream migration of 0.
4. All staff members have been directed to process the files in the same manner.

These files are more challenging to work with and require substantially more time to process. The precision of these counts decreases but overall the impact on the quality of the estimate was negligible due to the counting procedures in place and the small portion of the overall migration occurring during milling periods.

The total daily salmon escapement is proportioned by species based on the proportion of each caught in the daily test fishery. The emphasis from a management perspective is on Sockeye Salmon. The total salmon escapement estimate at Qualark in 2014 was 6,965,904 Sockeye; 473,015 Chinook including 104,753 jacks; 22,801 Coho and 3,892 Chum. Despite the high quality of the acoustically derived total salmon escapement estimate and the test fishing being conducted at the location of hydroacoustic site, the representativeness of species proportioning may introduce uncertainty due to small sample sizes in test fishing catch relative to total passage. In addition, the species apportioning procedures applied assume constant catchability through time and by species, if catchability varies, then application of direct proportional expansion could introduce species composition bias.

Daily variation in Chinook Salmon abundance was high during periods where total salmon abundance was high (Figure 13). This could be due to small sample sizes in the catch representing large quantities in the escapement estimate. For example, if the total daily escapement is 300,000 and the test fishery catches 100 salmon then each salmon caught represents 3000 in the species composition estimate. Therefore the chance catch of a small number of the non-dominant species could rapidly over-inflate their escapement estimates during times of high overall escapement. It has been suggested that using a three day running average of the catch by species would reduce error introduced by small daily sample size and better represent the species composition. Figure 14 shows a graphical representation of daily Sockeye Salmon and Chinook Salmon (adult and jacks) escapement estimates using a three day running average of catch. There is a reduction in day to day variation of Chinook Salmon escapement estimates. The removals due to fisheries became more visible and appear to be consistent with the Sockeye Salmon removals especially in the jack Chinook Salmon estimates.

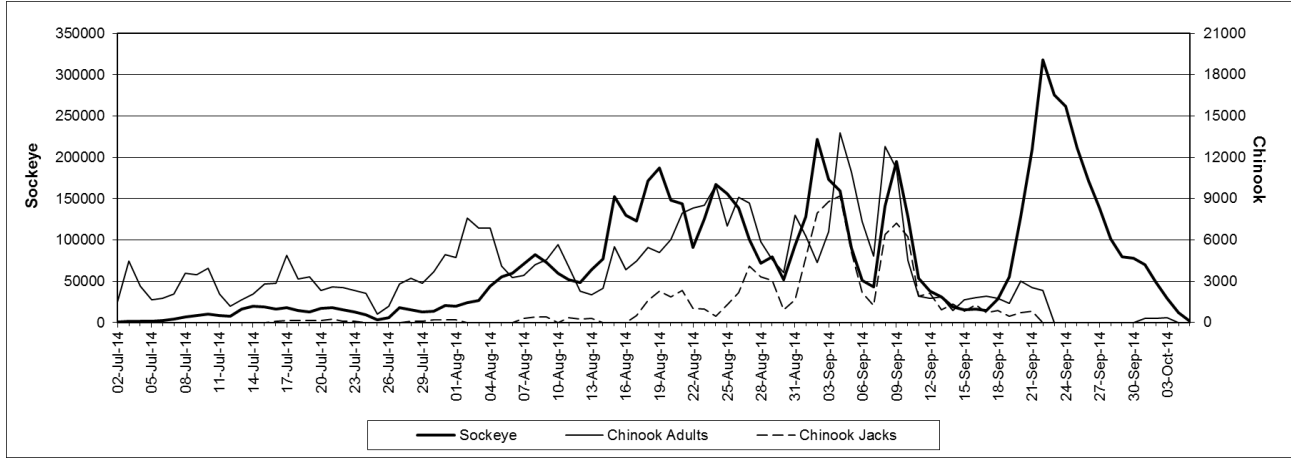


Figure 14. Daily escapement estimates of Sockeye and Chinook Salmon in the Fraser River at Qualark hydroacoustic site in 2014, using a three day running average of catch to proportion the total escapement estimate by species.

There was, however, little impact on the total escapement estimates by species as a result of applying a three day running average to the species composition estimates (Figure 15). The adjusted total Sockeye Salmon escapement estimate would be 6,973,393 (+7,489 from the unadjusted estimate). The total adjusted Chinook Salmon estimate would be 464,084 (-8,931 from the unadjusted estimate) including 102,865 (-1888 from the unadjusted estimate) jack Chinook Salmon. The total adjusted Coho Salmon estimate would be 23,890 (+1,089 from the unadjusted estimate). The total adjusted Chum Salmon estimate would be 4,244 (+352 from the unadjusted estimate). The primary area of concern related to test fishing species apportioning in 2014 relates to the least abundance species. Any impact on Sockeye Salmon estimates is negligible. The test fishing catch may lead to over estimates of the non-dominant species due to the small relative sample sizes obtained when rarer species are more vulnerable to the gear. Conversely, particularly at times of high abundance when the test fishing gear may saturate, rarer species may be underrepresented species if due to low or zero catch due to their rarity.

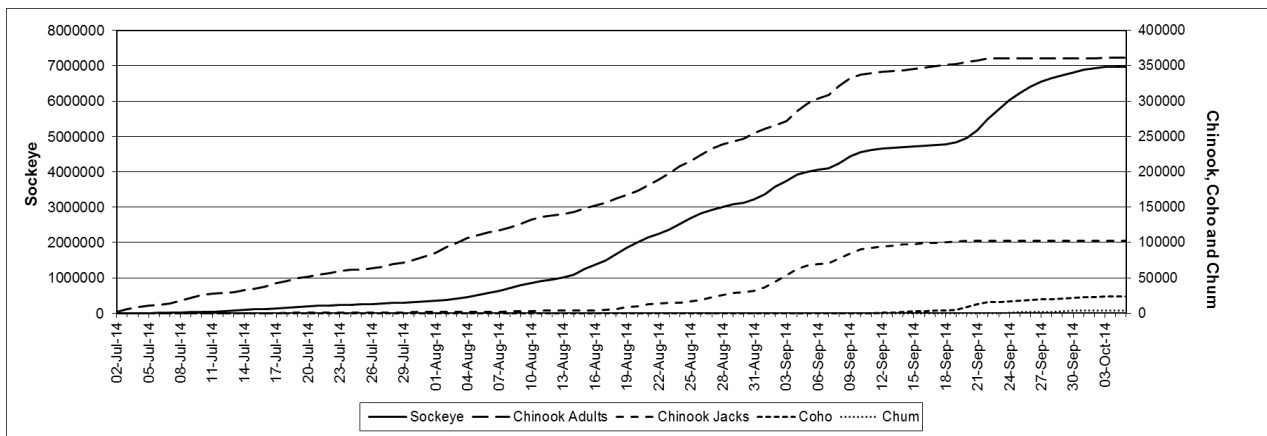


Figure 15. Cumulative daily salmon escapement apportioned by species based on a three day running average of test fishing catch at Qualark, 2014.

## REFERENCES

- Belcher, E. O., Matsuyama, B., and Trimble, G.M. 2001. Object Identification with acoustic lenses. In proceedings of Oceans 2001 Conference, 5-8 November, Honolulu, Hawaii. Marine Technical Society/IEEE. pp. 6-11.
- Environment Canada. 2014. Water Office (Station # 08MF005). <https://wateroffice.ec.gc.ca>.
- Enzenhofer, H., and Cronkite, G. 1998. In-river accessory equipment for fixed location hydroacoustic systems. Can. Tech. Rep. Fish. Aquat. Sci. 2250: 24p.
- Enzenhofer, H.J., and Cronkite, G. 2000. Fixed location hydroacoustic estimation of fish migration in the riverine environment: An operational manual. Can. Tech. Rep. Fish. Aquat. Sci. 2312: 46p.
- Enzenhofer, H.J., and Cronkite, G. 2005. A simple adjustable pole mount for deploying DIDSON and split-beam transducers. Can. Tech. Rep. Fish. Aquat. Sci. 2570: iv + 14 p.
- Enzenhofer, H.J., Cronkite, G.M.W., Holmes, J.A., and Lilja, J. 2007. Power supply system for remote site application. Can. Tech. Rep. Fish. Aquat. Sci. 2730: v + 21p.
- Enzenhofer H.J., Cronkite, G.M.W., and Holmes, J.A. 2010. Application of DIDSON imaging sonar at Qualark Creek on the Fraser River for enumeration of adult pacific salmon: An operational manual. Can. Tech. Rep. Fish. Aquat. Sci. 2869: iv + 37p.
- Holmes, J.A., Cronkite, G.M.W., Enzenhofer, H.J., and Mulligan, T.J. 2006. Accuracy and precision of fish-count data from a dual-frequency identification sonar (DIDSON) imaging system. ICES J. Mar. Sci. 63: 543-555.
- Lilja, J., Ridley, T., Cronkite, G.M.W., Enzenhofer, H.J., and Holmes, J.A. 2008. Optimizing sampling effort within a systematic design for estimating abundant escapement of sockeye salmon (*Oncorhynchus nerka*) in their natal river. Fish. Res. 90: 118-127.
- Sound Metrics Corporation. 2007. Dual-Frequency Identification Sonar DIDSON Operational Manual V5.15 (14 November 2007).
- Xie, Y., and Martens, F.J. 2014. An Empirical Approach for Estimating the Precision of Hydroacoustic Fish Counts by Systematic Hourly Sampling. North American Journal of Fisheries Management 34:535-545.
- Xie, Y., Mulligan, T.J., Cronkite, G.M.W., and Gray, A.P. 2002. Assessment of potential bias in hydroacoustic estimation of Fraser River sockeye and pink salmon at Mission, B.C. Pacific Salmon Comm. Tech. Rep. No. 11: 42.

## APPENDICES

Appendix 1. Daily total and cumulative salmon escapement by bank, daily catch, daily species proportions and daily and cumulative escapement by species from Qualark hydroacoustic and test fishing programs in 2014.

Date	Total Expanded Daily Count			Cumulative Daily Count			Daily Catch						Species Proportion					Daily Species Count					Cumulative Species Count				
	RB	LB	Total	RB	LB	Total	Sockeye	Chinook	Chinook Jacks	Coho	Chum	Total	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum
2-Jul-14	986	986	1971	986	986	1971						0	0.23	0.77	0.00	0.00	0.00	448	1523	0	0	0	448	1523	0	0	0
3-Jul-14	2903	2903	5805	2903	2903	7776	5	17	0	0	0	22	0.23	0.77	0.00	0.00	0.00	1319	4486	0	0	0	1767	6009	0	0	0
4-Jul-14	2166	2166	4332	2166	2166	12108	2	7	0	0	0	9	0.22	0.78	0.00	0.00	0.00	963	3369	0	0	0	2730	9378	0	0	0
5-Jul-14	1739	1739	3477	1739	1739	15585	16	13	0	0	0	29	0.55	0.45	0.00	0.00	0.00	1918	1559	0	0	0	4648	10937	0	0	0
6-Jul-14	1994	1994	3987	1994	1994	19572	6	2	0	0	0	8	0.75	0.25	0.00	0.00	0.00	2990	997	0	0	0	7639	11933	0	0	0
7-Jul-14	3345	3345	6690	3345	3345	26262	9	10	0	0	0	19	0.47	0.53	0.00	0.00	0.00	3169	3521	0	0	0	10807	15455	0	0	0
8-Jul-14	5248	5248	10496	5248	5248	36758	29	8	0	0	0	37	0.78	0.22	0.00	0.00	0.00	8226	2269	0	0	0	19034	17724	0	0	0
9-Jul-14	6000	6000	12000	6000	6000	48758	29	17	0	0	0	46	0.63	0.37	0.00	0.00	0.00	7565	4435	0	0	0	26599	22159	0	0	0
10-Jul-14	7002	7002	14004	7002	7002	62762	22	8	0	0	0	30	0.73	0.27	0.00	0.00	0.00	10270	3734	0	0	0	36869	25893	0	0	0
11-Jul-14	5462	5093	10554	5462	5093	73316	28	6	0	0	0	34	0.82	0.18	0.00	0.00	0.00	8692	1862	0	0	0	45560	27755	0	0	0
12-Jul-14	4779	4103	8882	4779	4103	82197	20	3	0	0	0	23	0.87	0.13	0.00	0.00	0.00	7723	1158	0	0	0	53283	28914	0	0	0
13-Jul-14	9557	8423	17979	9557	8423	100176	28	3	0	0	0	31	0.90	0.10	0.00	0.00	0.00	16239	1740	0	0	0	69523	30654	0	0	0
14-Jul-14	12251	9755	22005	12251	9755	122181	60	5	0	0	0	65	0.92	0.08	0.00	0.00	0.00	20312	1693	0	0	0	89835	32347	0	0	0
15-Jul-14	11804	9696	21500	11804	9696	143681	47	6	0	0	0	53	0.89	0.11	0.00	0.00	0.00	19066	2434	0	0	0	108900	34780	0	0	0
16-Jul-14	12849	6652	19501	12849	6652	163182	66	15	0	0	0	81	0.81	0.19	0.00	0.00	0.00	15890	3611	0	0	0	124790	38392	0	0	0
17-Jul-14	10650	12940	23590	10650	12940	186772	42	6	1	0	0	49	0.86	0.12	0.02	0.00	0.00	20220	2889	481	0	0	145010	41280	481	0	0
18-Jul-14	9860	8354	18213	9860	8354	204985	21	13	0	0	0	34	0.62	0.38	0.00	0.00	0.00	11249	6964	0	0	0	156259	48244	0	0	0
19-Jul-14	9270	7481	16751	9270	7481	221735	40	3	0	0	0	43	0.93	0.07	0.00	0.00	0.00	15582	1169	0	0	0	171841	49413	481	0	0
20-Jul-14	11066	8844	19910	11066	8844	241645	38	9	1	0	0	48	0.79	0.19	0.02	0.00	0.00	15762	3733	415	0	0	187603	53146	896	0	0
21-Jul-14	10699	10187	20886	10699	10187	262531	57	6	0	0	0	63	0.90	0.10	0.00	0.00	0.00	18897	1989	0	0	0	206500	55135	896	0	0
22-Jul-14	10823	7572	18395	10823	7572	280925	52	6	1	0	0	59	0.88	0.10	0.02	0.00	0.00	16212	1871	312	0	0	222712	57006	1208	0	0
23-Jul-14	9630	5603	15233	9630	5603	296158	59	15	0	0	0	74	0.80	0.20	0.00	0.00	0.00	12145	3088	0	0	0	234856	60093	1208	0	0
24-Jul-14	6522	5301	11823	6522	5301	307981	46	8	0	0	0	54	0.85	0.15	0.00	0.00	0.00	10071	1752	0	0	0	244928	61845	1208	0	0
25-Jul-14	1919	2096	4014	1919	2096	311995	12	3	0	0	0	15	0.80	0.20	0.00	0.00	0.00	3211	803	0	0	0	248139	62648	1208	0	0
26-Jul-14	4200	2793	6993	4200	2793	318988	24	4	0	0	0	28	0.86	0.14	0.00	0.00	0.00	5994	999	0	0	0	254133	63647	1208	0	0
27-Jul-14	9015	11693	20708	9015	11693	339695	41	9	0	0	0	50	0.82	0.18	0.00	0.00	0.00	16980	3727	0	0	0	271113	67374	1208	0	0
28-Jul-14	9512	9599	19110	9512	9599	358805	50	5	0	0	0	55	0.91	0.09	0.00	0.00	0.00	17373	1737	0	0	0	288486	69111	1208	0	0
29-Jul-14	7922	8345	16267	7922	8345	375072	42	13	1	0	0	56	0.75	0.23	0.02	0.00	0.00	12200	3776	290	0	0	300686	72887	1498	0	0
30-Jul-14	6396	10952	17348	6396	10952	392419	35	9	0	0	0	44	0.80	0.20	0.00	0.00	0.00	13799	3548	0	0	0	314485	76436	1498	0	0
31-Jul-14	13590	12129	25719	13590	12129	418138	39	10	1	0	0	50	0.78	0.20	0.02	0.00	0.00	20061	5144	514	0	0	334546	81580	2013	0	0
01-Aug-14	13991	10632	24623	13991	10632	442761	34	7	0	0	0	41	0.83	0.17	0.00	0.00	0.00	20419	4204	0	0	0	354965	85783	2013	0	0
02-Aug-14	19628	12516	32144	19628	12516	474904	31	8	0	0	0	39	0.79	0.21	0.00	0.00	0.00	25550	6594	0	0	0	380515	92377	2013	0	0
03-Aug-14	18443	15063	33506	18443	15063	508410	22	12	0	0	0	34	0.65	0.35	0.00	0.00	0.00	21680	11825	0	0	0	402195	104202	2013	0	0
04-Aug-14	20208	30621	50829	20208	30621	559239	52	7	0	0	0	59	0.88	0.12	0.00	0.00	0.00	44798	6031	0	0	0	446993	110233	2013	0	0
05-Aug-14	26587	33420	60007	26587	33420	619246	80	5	0	0	0	85	0.94	0.06	0.00	0.00	0.00	56477	3530	0	0	0	503470	113763	2013	0	0
06-Aug-14	27618	35126	62744	27618	35126	681989	98	5	0	0	0	103	0.95	0.05	0.00	0.00	0.00	59698	3046	0	0	0	563168	116809	2013	0	0
07-Aug-14	33173	41372	74545	33173	41372	756534	60	3	0	0	0	63	0.95	0.05	0.00	0.00	0.00	70995	3550	0	0	0	634163	120358	2013	0	0
08-Aug-14	37253	49659	86912	37253	49659	843445	88	4	1	0	0	93	0.95	0.04	0.01	0.00	0.00	82239	3738	935	0	0	716402	124096	2947	0	0
09-Aug-14	34553	43047	77600	34553	43047	921045	48	3	0	0	0	51	0.94	0.06	0.00	0.00	0.00	73035	4565	0	0	0	789437	128661	2947	0	0
10-Aug-14	40554	25230	65784	40554	25230	986829	39	4	0	0	0	43	0.91	0.09	0.00	0.00	0.00	59665	6119	0	0	0	849101	134781	2947	0	0
11-Aug-14	32823	23430	56253	32823	23430	1043082	51	6	0	0	0	57	0.89	0.11	0.00	0.00	0.00	50332	5921	0	0	0	899433	140702	2947	0	0
12-Aug-14	26960	24189	51149	26960	24189	1094230	64	2	1	0	0	67	0.96	0.03	0.01	0.00	0.00	48858	1527	763	0	0	948291	142229	3711	0	0
13-Aug-14	35502	31295	66797	35502	31295	1161027	78	1	0	0	0	79	0.99	0.01	0.00	0.00	0.00	65951	846	0	0	0	1014242	143074	3711	0	0
14-Aug-14	32543	47007	79550	32543	47007	1240576	81	4	0	0	0	85	0.95	0.05	0.00	0.00	0.00	75806	3744	0	0	0	1090048	146818	3711	0	0
15-Aug-14	65348	92402	157749	65348	92402	1398325	116	4	0	0	0	120	0.97	0.03	0.00	0.00	0.00	152491	5258	0	0	0	1242539	152076	3711	0	0
16-Aug-14	67955	65921	133875	67955	65921	1532200	78	2	0	0	0	80	0.98	0.03	0.00	0.00	0.00	130528	3347	0	0	0	1373067	155423	3711	0	0
17-Aug-14	36821	91274	128094	36821	91274	1660294	43	1	0	0	0	44	0.98	0.02	0.00	0.00	0.00	125183	2911	0	0	0	1498250	158334	3711	0	0

Appendix 1 cont.

Date	Total Expanded Daily Count			Cumulative Daily Count			Daily Catch						Species Proportion					Daily Species Count					Cumulative Species Count				
	RB	LB	Total	RB	LB	Total	Sockeye	Chinook	Chinook Jacks	Coho	Chum	Total	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum	Sockeye	Chinook Adults	Chinook Jacks	Coho	Chum
18-Aug-14	89658	89448	179106	878765	960635	1839400	126	6	1	0	0	133	0.95	0.05	0.01	0.00	0.00	169679	8080	1347	0	0	1667929	166414	5057	0	0
19-Aug-14	96680	98055	194735	975445	1058690	2034135	147	3	2	0	0	152	0.97	0.02	0.01	0.00	0.00	188329	3843	2562	0	0	1856258	170258	7620	0	0
20-Aug-14	73424	83039	156462	1048868	1141729	2190597	133	2	2	0	0	137	0.97	0.01	0.01	0.00	0.00	151894	2284	2284	0	0	2008151	172542	9904	0	0
21-Aug-14	86582	67775	154356	1135450	1209503	2344953	114	11	1	0	0	126	0.90	0.09	0.01	0.00	0.00	139655	13476	1225	0	0	2147807	186017	11129	0	0
22-Aug-14	46728	53190	99918	1182178	1262693	2444871	60	4	2	0	0	66	0.91	0.06	0.03	0.00	0.00	90835	6056	3028	0	0	2238641	192073	14157	0	0
23-Aug-14	54909	80705	135614	1237087	1343398	2580485	88	9	0	0	0	97	0.91	0.09	0.00	0.00	0.00	123031	12583	0	0	0	2361672	204656	14157	0	0
24-Aug-14	80471	97098	177569	1317557	1440406	2758053	103	4	0	0	0	107	0.96	0.04	0.00	0.00	0.00	170930	6638	0	0	0	2532603	211294	14157	0	0
25-Aug-14	92408	71925	164333	1409965	1512421	2922386	160	8	1	0	0	169	0.95	0.05	0.01	0.00	0.00	155581	7779	972	0	0	2688184	219073	15129	0	0
26-Aug-14	92840	56973	149813	1502804	1569394	3072198	93	4	2	0	0	99	0.94	0.04	0.02	0.00	0.00	140733	6053	3027	0	0	2828917	225126	18156	0	0
27-Aug-14	60503	52665	113168	1563307	1622059	3185366	66	9	2	0	0	77	0.86	0.12	0.03	0.00	0.00	97001	13227	2939	0	0	2925917	238353	21095	0	0
28-Aug-14	39011	42492	81503	1602317	1664551	3266868	37	4	4	0	0	45	0.82	0.09	0.09	0.00	0.00	67013	7245	7245	0	0	2992931	245598	28340	0	0
29-Aug-14	47399	40271	87669	1649716	1704821	3354537	70	1	2	0	0	73	0.96	0.01	0.03	0.00	0.00	84066	1201	2402	0	0	3076997	246799	30742	0	0
30-Aug-14	23211	33257	56468	1672927	1738078	3411005	50	4	0	0	0	54	0.93	0.07	0.00	0.00	0.00	52285	4183	0	0	0	3129281	250981	30742	0	0
31-Aug-14	36560	66719	103278	1709486	1804796	3514283	50	7	1	0	0	58	0.86	0.12	0.02	0.00	0.00	89033	12465	1781	0	0	3218314	263446	32522	0	0
01-Sep-14	69062	70661	139722	1778548	1875457	3654005	68	3	2	0	0	73	0.93	0.04	0.03	0.00	0.00	130152	5742	3828	0	0	3348466	269188	36350	0	0
02-Sep-14	133821	100283	234104	1912369	1975739	3888108	127	2	6	0	0	135	0.94	0.01	0.04	0.00	0.00	220231	3468	10405	0	0	3568697	272656	46755	0	0
03-Sep-14	107430	81423	188853	2019799	2057162	4076961	111	1	3	0	0	115	0.97	0.01	0.03	0.00	0.00	182284	1642	4927	0	0	3750981	274298	51681	0	0
04-Sep-14	42477	140145	182622	2062276	2197307	4259583	78	9	7	0	0	94	0.83	0.10	0.07	0.00	0.00	151537	17485	13600	0	0	3902518	291784	65281	0	0
05-Sep-14	56849	49106	105954	2119124	2246413	4365537	89	14	6	0	0	109	0.82	0.13	0.06	0.00	0.00	86513	13609	5832	0	0	3989031	305392	71113	0	0
06-Sep-14	34992	25566	60558	2154116	2271979	4426095	80	7	1	0	0	88	0.91	0.08	0.01	0.00	0.00	55053	4817	688	0	0	4044084	310209	71801	0	0
07-Sep-14	28403	20778	49181	2182519	2292757	4475276	40	9	2	0	0	51	0.78	0.18	0.04	0.00	0.00	38573	8679	1929	0	0	4082657	318888	73730	0	0
08-Sep-14	81839	78645	160484	2264357	2371402	4635759	122	11	4	0	0	137	0.89	0.08	0.03	0.00	0.00	142912	12886	4686	0	0	4225569	331774	78416	0	0
09-Sep-14	121271	92541	213812	2385628	2463943	4849571	103	4	6	0	0	113	0.91	0.04	0.05	0.00	0.00	194890	7569	11353	0	0	4420460	339342	89769	0	0
10-Sep-14	70841	68252	139092	2456468	2532194	4988663	72	2	1	0	0	75	0.96	0.03	0.01	0.00	0.00	133528	3709	1855	0	0	4553988	343052	91623	0	0
11-Sep-14	36587	21479	58065	2493055	2553673	5046728	52	2	4	0	0	58	0.90	0.03	0.07	0.00	0.00	52058	2002	4004	0	0	4606046	345054	95628	0	0
12-Sep-14	25140	17543	42683	2518195	2571215	5089410	43	2	1	1	0	47	0.91	0.04	0.02	0.02	0.00	39050	1816	908	908	0	4645096	346870	96536	908	0
13-Sep-14	16911	17558	34469	2535106	2588773	5123879	14	1	1	0	0	16	0.88	0.06	0.06	0.00	0.00	30160	2154	2154	0	0	4675256	349024	98690	908	0
14-Sep-14	10363	11505	21868	2545468	2600278	5145746	9	1	0	0	0	10	0.90	0.10	0.00	0.00	0.00	19681	2187	0	0	0	4694937	351211	98690	908	0
15-Sep-14	8438	10676	19113	2553906	2610953	5164859	20	0	2	1	0	23	0.87	0.00	0.09	0.04	0.00	16620	0	1662	831	0	4711557	351211	100352	1739	0
16-Sep-14	7674	12788	20462	2561580	2623741	5185321	29	5	1	2	0	37	0.78	0.14	0.03	0.05	0.00	16037	2765	553	1106	0	4727594	353976	100905	2845	0
17-Sep-14	8120	9999	18119	2569699	2633740	5203439	14	2	2	0	0	18	0.78	0.11	0.11	0.00	0.00	14092	2013	2013	0	0	4741687	355989	102918	2845	0
18-Sep-14	16689	14724	31413	2586388	2648463	5234852	20	1	0	0	0	21	0.95	0.05	0.00	0.00	0.00	29917	1496	0	0	0	4771603	357485	102918	2845	0
19-Sep-14	29364	29109	58473	2615752	2677572	5293325	31	1	0	0	0	32	0.97	0.03	0.00	0.00	0.00	56646	1827	0	0	0	4828249	359312	102918	2845	0
20-Sep-14	47372	88434	135806	2663124	2766006	5429130	70	1	1	2	0	74	0.95	0.01	0.01	0.03	0.00	128465	1835	1835	3670	0	4956714	361148	104753	6516	0
21-Sep-14	74556	142572	217128	2737680	2908578	5646258	70	2	0	3	0	75	0.93	0.03	0.00	0.04	0.00	202652	5790	0	8685	0	5159366	366938	104753	15201	0
22-Sep-14	181055	142715	323769	2918734	3051293	5970027	109	0	0	0	0	109	1.00	0.00	0.00	0.00	0.00	323769	0	0	0	0	5483135	366938	104753	15201	0
23-Sep-14	117854	157874	275727	3036588	3209166	6245754	92	0	0	0	0	92	1.00	0.00	0.00	0.00	0.00	275727	0	0	0	0	5758862	366938	104753	15201	0
24-Sep-14	119828	143660	263487	3156415	3352826	6509241	119	0	0	0	0	119	1.00	0.00	0.00	0.00	0.00	263487	0	0	0	0	6022349	366938	104753	15201	0
25-Sep-14	96881	116484	213365	3253296	3469310	6722605	90	0	0	1	1	92	0.98	0.00	0.00	0.01	0.01	208726	0	0	2319	2319	6231075	366938	104753	17520	2319
26-Sep-14	85559	88392	173951	3338854	3557702	6896556	92	0	0	0	0	92	1.00	0.00	0.00	0.00	0.00	173951	0	0	0	0	6405026	366938	104753	17520	2319
27-Sep-14	65843	74064	139907	3404698	3631766	7036463	84	0	0	1	0	85	0.99	0.00	0.00	0.01	0.00	138261	0	0	1646	0	6543287	366938	104753	19166	2319
28-Sep-14	38412	63707	102119	3443110	3695472	7138582	45	0	0	0	0	45	1.00	0.00	0.00	0.00	0.00	102119	0	0	0	0	6645406	366938	104753	19166	2319
29-Sep-14	44886	36197	81083	3487996	3731669	7219664	44	0	0	0	0	44	1.00	0.00	0.00	0.00	0.00	81083	0	0	0	0	6726488	366938	104753	19166	2319
30-Sep-14	43514	35484	78998	3531509	3767153	7298662	89	0	0	2	1	92	0.97	0.00	0.00	0.02	0.01	76421	0	0	1717	859	6802910	366938	104753	20883	3178
01-Oct-14	41111	30269	71379	3572620	3797421	7370061	99	0	0	1	100	100	0.99	0.00	0.00	0.01	0.00	70665	0	0	0	714	6873575	366938	104753	20883	3892
02-Oct-14	28502	21801	50303	3601121	3819222	7420343	37	1	0	0	0	38	0.97	0.03	0.00	0.00	0.00	48979	1324	0	0	0	6922553	368262	104753	20883	3892
03-Oct-14	15329	15587	30915	3616450	3834809	7451258	37	0	0	1	0	38	0.97	0.00	0.00	0.03	0.00	30101	0	0	814	0	6952655	368262	104753	21697	3892
04-Oct-14	6129</																										

Appendix 2. Catch by drift from Qualark drift gill net test fishing program in 2014 including drift number, location, start and end times, duration, mesh size and comments.

Date	Drift	Location	Time			Mesh Size	Caught					Total	Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum		
3/7/14	1	near	07:01	07:05	04:00	4.00	0	2	0	0	0	2	2 Chinook hit the net but released before pulling in.
3/7/14	2	near	07:19	07:24	05:00	5.25	2	3	0	0	0	5	
3/7/14	3	near	07:42	07:47	05:00	6.75	1	3	0	0	0	4	
3/7/14	4	near	19:00	19:04	04:00	4.75	0	0	0	0	0	0	
3/7/14	5	near	19:20	19:25	05:00	5.75	2	8	0	0	0	10	Four Chinook bleeding badly, not revivable.
3/7/14	6	near	19:40	19:45	05:00	8.00	0	1	0	0	0	1	
4/7/14	1	near	07:04	07:09	05:00	4.75	0	1	0	0	0	1	One Chinook DOA.
4/7/14	2	near	07:22	07:26	04:00	5.75	0	0	0	0	0	0	
4/7/14	3	near	07:42	07:47	05:00	8.00	1	1	0	0	0	2	Chinook unable to revive.
4/7/14	4	near	19:03	19:08	05:00	4.00	0	2	0	0	0	2	One Chinook caught in net too badly to release, one released safely.
4/7/14	5	near	19:24	19:29	05:00	5.25	1	3	0	0	0	4	One Chinook hit then released itself, one released safely, one unable to revive.
4/7/14	6	near	19:41	19:46	05:00	6.75	0	0	0	0	0	0	
5/7/14	1	near	07:01	07:06	05:00	4.00	1	2	0	0	0	3	Chinook bleeding from gills.
5/7/14	2	near	07:20	07:25	05:00	5.25	8	0	0	0	0	8	
5/7/14	3	near	07:42	07:48	06:00	6.75	0	3	0	0	0	3	Chinooks unable to revive.
5/7/14	4	near	19:01	19:06	05:00	4.75	2	2	0	0	0	4	Released one Chinook safely, one not revivable.
5/7/14	5	near	19:21	19:27	06:00	5.75	3	5	0	0	0	8	Three Chinook released safely, two DOA.
5/7/14	6	near	19:42	19:47	05:00	8.00	2	1	0	0	0	3	One Chinook released safely.
6/7/14	1	near	07:00	07:05	05:00	4.75	0	0	0	0	0	0	No fish. Six hour First Nation fishing opening from 6 AM.
6/7/14	2	near	07:20	07:25	05:00	5.75	2	1	0	0	0	3	Chinook unable to revive.
6/7/14	3	near	07:42	07:47	05:00	8.00	0	0	0	0	0	0	
6/7/14	4	near	19:00	19:05	05:00	4.00	1	0	0	0	0	1	
6/7/14	5	near	19:20	19:25	05:00	5.25	2	1	0	0	0	3	Chinook unable to revive.
6/7/14	6	near	19:39	19:44	05:00	6.75	1	0	0	0	0	1	
7/7/14	1	near	07:00	07:04	04:00	4.00	2	0	0	0	0	2	
7/7/14	2	near	07:21	07:26	05:00	5.25	5	1	0	0	0	6	
7/7/14	3	near	07:41	07:47	06:00	6.75	0	2	0	0	0	2	Chinook unable to revive.
7/7/14	7	far	07:53	07:57	04:00	5.25	0	0	0	0	0	0	Offshore drift.
7/7/14	4	near	19:00	19:05	05:00	4.75	0	5	0	0	0	5	Three Chinook released safely, two unable to revive.
7/7/14	5	near	19:21	19:26	05:00	5.75	2	1	0	0	0	3	
7/7/14	6	near	19:40	19:46	06:00	8.00	0	1	0	0	0	1	One Chinook released safely.
8/7/14	1	near	07:00	07:05	05:00	4.75	13	1	0	0	0	14	One Chinook unable to revive.
8/7/14	2	near	07:20	07:25	05:00	5.75	6	5	0	0	0	11	Three Chinook released safely.
8/7/14	3	near	07:40	07:45	05:00	8.00	1	0	0	0	0	1	
8/7/14	4	near	19:05	19:11	06:00	4.00	3	0	0	0	0	3	
8/7/14	5	near	19:22	19:27	05:00	5.25	5	2	0	0	0	7	One clipped Chinook.
8/7/14	6	near	19:43	19:48	05:00	6.75	1	0	0	0	0	1	
9/7/14	1	near	07:00	07:05	05:00	4.00	0	0	0	0	0	0	
9/7/14	2	near	07:22	07:27	05:00	5.25	14	6	0	0	0	20	One Chinook released safely.
9/7/14	3	near	07:40	07:45	05:00	6.75	0	2	0	0	0	2	Two Chinook unable to revive.
9/7/14	4	near	19:00	19:05	05:00	4.75	8	4	0	0	0	12	Two Chinook released safely, two Chinook unable to revive.
9/7/14	5	near	19:22	19:27	05:00	5.75	2	0	0	0	0	2	
9/7/14	6	near	19:40	19:45	05:00	8.00	5	5	0	0	0	10	Four Chinook released. One unable to revive.

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments	
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total		
10/7/14	1	near	07:00	07:06	06:00	4.75	11	2	0	0	0	0	13	Unable to release Chinook.
10/7/14	2	near	07:21	07:27	06:00	5.75	3	0	0	0	0	0	3	
10/7/14	3	near	07:40	07:41	01:00	8.00	0	0	0	0	0	0	0	Incomplete drift.
10/7/14	4	near	19:01	19:06	05:00	4.00	5	1	0	0	0	0	6	
10/7/14	5	near	19:20	19:27	07:00	5.25	3	1	0	0	0	0	4	Chinook had hook mark, bleeding from the mouth.
10/7/14	6	near	19:42	19:48	06:00	6.75	0	4	0	0	0	0	4	Two Chinook released safely and two Chinook unable to revive.
10/7/14	7	far	07:50	07:54	04:00	5.25	0	0	0	0	0	0	0	Offshore drift.
11/7/14	1	near	07:00	07:05	05:00	4.00	0	0	0	0	0	0	0	No fish.
11/7/14	2	near	07:20	07:26	06:00	5.25	22	1	0	0	0	0	23	One Chinook dead.
11/7/14	3	near	07:40	07:45	05:00	6.75	1	3	0	0	0	0	4	Revived 2 Chinook.
11/7/14	4	near	19:00	19:06	06:00	4.75	4	0	0	0	0	0	4	FN fishing opening tonight at 1800.
11/7/14	5	near	19:21	19:27	06:00	5.75	1	0	0	0	0	0	1	
11/7/14	6	near	19:40	19:45	05:00	8.00	0	2	0	0	0	0	2	Two Chinook released safely.
12/7/14	1	near	07:00	07:06	06:00	4.75	8	1	0	0	0	0	9	Chinook unable to revive.
12/7/14	2	near	07:21	07:26	05:00	5.75	0	0	0	0	0	0	0	No fish.
12/7/14	3	near	07:40	07:46	06:00	8.00	1	0	0	0	0	0	1	
12/7/14	4	near	19:04	19:11	07:00	4.00	3	1	0	0	0	0	4	Chinook unable to revive.
12/7/14	5	near	19:20	19:26	06:00	5.25	8	1	0	0	0	0	9	Chinook unable to revive.
12/7/14	6	near	19:40	19:43	03:00	6.75	0	0	0	0	0	0	0	Incomplete drift. Hung up.
13/7/14	1	near	07:00	07:06	06:00	4.00	12	0	0	0	0	0	12	Fish caught throughout net.
13/7/14	2	near	07:20	07:26	06:00	5.25	3	2	0	0	0	0	5	One Chinook released safely. One Chinook unable to revive.
13/7/14	3	near	07:42	07:47	05:00	6.75	7	0	0	0	0	0	7	
13/7/14	4	near	19:00	19:05	05:00	4.75	3	1	0	0	0	0	4	Deer sighted at end of drift on the shore.
13/7/14	5	near	19:22	19:28	06:00	5.75	0	0	0	0	0	0	0	No fish.
13/7/14	6	near	19:42	19:48	06:00	8.00	3	0	0	0	0	0	3	
14/7/14	1	near	07:00	07:06	06:00	4.75	37	2	0	0	0	0	39	All fish dead.
14/7/14	2	near	07:20	07:26	06:00	5.75	2	0	0	0	0	0	2	
14/7/14	3	near	07:42	07:47	05:00	8.00	2	1	0	0	0	0	3	One big Chinook fell off the net. Escaped adipose condition unknown.
14/7/14	7	far	07:50	07:54	04:00	5.25	0	0	0	0	0	0	0	Offshore drift.
14/7/14	4	near	19:00	19:05	05:00	4.00	9	1	0	0	0	0	10	One Chinook fell off the net. Escaped adipose condition unknown.
14/7/14	5	near	19:20	19:26	06:00	5.25	8	1	0	0	0	0	9	Unable to revive Chinook.
14/7/14	6	near	19:42	19:47	05:00	6.75	2	0	0	0	0	0	2	
15/7/14	1	near	07:00	07:05	05:00	4.00	7	0	0	0	0	0	7	
15/7/14	2	near	07:20	07:25	05:00	5.25	27	1	0	0	0	0	28	
15/7/14	3	near	07:42	07:48	06:00	6.75	2	1	0	0	0	0	3	One Chinook may be partial adipose clip.
15/7/14	4	near	19:00	19:05	05:00	4.75	9	2	0	0	0	0	11	Two Chinook too tangled in net to release.
15/7/14	5	near	19:20	19:25	05:00	5.75	1	0	0	0	0	0	1	
15/7/14	6	near	19:41	19:48	07:00	8.00	1	2	0	0	0	0	3	Two Chinook unable to revive.
16/7/14	1	near	07:00	07:06	06:00	4.75	36	6	0	0	0	0	42	Two Chinook released and two unable to revive. One Chinook escaped.
16/7/14	2	near	07:20	07:26	06:00	5.75	10	2	0	0	0	0	12	One clipped Chinook. Seal hanging around the weir.
16/7/14	3	near	07:42	07:48	06:00	8.00	1	0	0	0	0	0	1	
16/7/14	4	near	19:00	19:06	06:00	4.00	11	1	0	0	0	0	12	
16/7/14	5	near	19:20	19:28	08:00	5.25	6	2	0	0	0	0	8	Chinook bleeding from gills.
16/7/14	6	near	19:50	19:55	05:00	6.75	2	4	0	0	0	0	6	2 Chinook released. 2 unable to revive.
17/7/14	1	near	07:00	07:06	06:00	4.00	17	0	1	0	0	0	18	
17/7/14	2	near	07:20	07:28	08:00	5.25	16	1	0	0	0	0	17	Hung up. Reset. Good drift after reset.
17/7/14	3	near	07:42	07:47	05:00	6.75	0	1	0	0	0	0	1	
17/7/14	7	far	07:52	07:57	05:00	5.25	0	0	0	0	0	0	0	Offshore drift.
17/7/14	4	near	19:00	19:06	06:00	4.75	5	2	0	0	0	0	7	One Chinook released, one Chinook unable to revive.
17/7/14	5	near	19:20	19:26	06:00	5.75	4	2	0	0	0	0	6	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
17/7/14	6	near	19:40	19:46	06:00	8.00	0	0	0	0	0	0	Good drift. No fish.
18/7/14	1	near	07:00	07:08	08:00	4.75	6	3	0	0	0	9	Bad drift, net drifted into shore. All fish dead.
18/7/14	2	near	07:20	07:25	05:00	5.75	0	0	0	0	0	0	
18/7/14	3	near	07:40	07:45	05:00	8.00	5	3	0	0	0	8	Unable to revive Chinook.
18/7/14	4	near	19:00	19:06	06:00	4.00	4	3	0	0	0	7	
18/7/14	5	near	19:20	19:26	06:00	5.25	5	0	0	0	0	5	Fish caught throughout net.
18/7/14	6	near	19:40	19:46	06:00	6.75	1	4	0	0	0	5	One Chinook dead, three released.
19/7/14	1	near	07:00	07:06	06:00	4.00	6	0	0	0	0	6	First Nations fish opening 6am to 3pm.
19/7/14	2	near	07:20	07:26	06:00	5.25	5	0	0	0	0	5	
19/7/14	3	near	07:40	07:46	06:00	6.75	3	0	0	0	0	3	
19/7/14	4	near	19:04	19:10	06:00	4.75	22	1	0	0	0	23	
19/7/14	5	near	19:22	19:27	05:00	5.75	0	0	0	0	0	0	
19/7/14	6	near	19:42	19:48	06:00	8.00	4	2	0	0	0	6	
20/7/14	1	near	07:00	07:06	06:00	4.75	14	8	1	0	0	23	
20/7/14	2	near	07:20	07:25	05:00	5.75	0	0	0	0	0	0	
20/7/14	3	near	07:42	07:48	06:00	8.00	3	1	0	0	0	4	
20/7/14	4	near	19:01	19:07	06:00	4.00	16	0	0	0	0	16	Fish caught throughout net.
20/7/14	5	near	19:20	19:26	06:00	5.25	4	0	0	0	0	4	
20/7/14	6	near	19:40	19:43	03:00	6.75	1	0	0	0	0	1	Incomplete drift.
21/7/14	1	near	07:00	07:04	04:00	4.00	5	1	0	0	0	6	Incomplete drift. Net hung up above.
21/7/14	2	near	07:19	07:25	06:00	5.25	13	0	0	0	0	13	
21/7/14	3	near	07:40	07:45	05:00	6.75	1	0	0	0	0	1	
21/7/14	7	far	07:49	07:53	04:00	5.25	0	0	0	0	0	0	Offshore drift.
21/7/14	4	near	19:00	19:06	06:00	4.75	32	2	0	0	0	34	Two Chinook released safely.
21/7/14	5	near	19:21	19:24	03:00	5.75	0	0	0	0	0	0	Incomplete drift, net hung up.
21/7/14	6	near	19:40	19:46	06:00	8.00	6	3	0	0	0	9	One Chinook fell off the net and escaped. Other 2 Chinooks released.
22/7/14	1	near	07:00	07:06	06:00	4.75	29	0	1	0	0	30	One Chinook jack not revivable.
22/7/14	2	near	07:20	07:25	05:00	5.75	2	0	0	0	0	2	
22/7/14	3	near	07:41	07:47	06:00	8.00	5	3	0	0	0	8	
22/7/14	4	near	19:00	19:05	05:00	4.00	7	2	0	0	0	9	One Chinook revived. One Chinook released safely.
22/7/14	5	near	19:20	19:25	05:00	5.25	9	0	0	0	0	9	
22/7/14	6	near	19:40	19:46	06:00	6.75	0	1	0	0	0	1	One small Chinook released.
23/7/14	1	near	07:01	07:06	05:00	6.75	8	10	0	0	0	18	Five Chinook released. 5 Chinook unable to revive. Wrong mesh order.
23/7/14	2	near	07:21	07:27	06:00	4.00	4	0	0	0	0	4	
23/7/14	3	near	07:41	07:46	05:00	5.25	15	2	0	0	0	17	
23/7/14	4	near	19:01	19:06	05:00	4.75	25	2	0	0	0	27	Two Chinook released.
23/7/14	5	near	19:20	19:25	05:00	5.75	2	0	0	0	0	2	
23/7/14	6	near	19:40	19:46	06:00	8.00	5	1	0	0	0	6	One Chinook bleeding too badly to be revived.
24/7/14	1	near	07:00	07:05	05:00	4.75	24	3	0	0	0	27	3 Chinook dead.
24/7/14	2	near	07:20	07:25	05:00	5.75	3	1	0	0	0	4	One Chinook released.
24/7/14	3	near	07:40	07:46	06:00	8.00	5	4	0	0	0	9	
24/7/14	7	far	07:50	07:54	04:00	5.25	0	0	0	0	0	0	Offshore drift.
24/7/14	4	near	19:00	19:05	05:00	4.00	5	0	0	0	0	5	
24/7/14	5	near	19:20	19:26	06:00	5.25	5	0	0	0	0	5	
24/7/14	6	near	19:40	19:46	06:00	6.75	4	0	0	0	0	4	One possible sturgeon hit net.
25/7/14	1	near	07:00	07:05	05:00	4.00	3	1	0	0	0	4	Very dirty water.
25/7/14	2	near	07:21	07:27	06:00	5.25	6	0	0	0	0	6	
25/7/14	3	near	07:41	07:46	05:00	6.75	1	0	0	0	0	1	One sockeye fell off while pulling in the net.
25/7/14	4	near	19:00	19:05	05:00	4.75	1	1	0	0	0	2	One six foot sturgeon released.
25/7/14	5	near	19:20	19:26	06:00	5.75	1	0	0	0	0	1	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments	
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total		
25/7/14	6	near	19:41	19:46	05:00	8.00	0	1	0	0	0	0	1	
26/7/14	1	near	07:00	07:06	06:00	4.75	15	0	0	0	0	0	15	First Nations fish opening 6am to 6pm.
26/7/14	2	near	07:21	07:27	06:00	5.75	0	0	0	0	0	0	0	
26/7/14	3	near	07:41	07:45	04:00	8.00	1	1	0	0	0	0	2	Incomplete drift.
26/7/14	4	near	19:01	19:05	04:00	4.00	3	2	0	0	0	0	5	Two Chinook released.
26/7/14	5	near	19:20	19:22	02:00	5.25	0	0	0	0	0	0	0	Hung up just above the weir.
26/7/14	6	near	19:40	19:46	06:00	6.75	5	1	0	0	0	0	6	One Chinook fell off net and escaped.
27/7/14	1	near	07:00	07:05	05:00	4.00	8	1	0	0	0	0	9	One Chinook unable to revive.
27/7/14	2	near	07:20	07:25	05:00	5.25	14	1	0	0	0	0	15	American Shad caught in the net.
27/7/14	3	near	07:40	07:46	06:00	6.75	1	2	0	0	0	0	3	One adipose clipped Chinook.
27/7/14	4	near	19:00	19:05	05:00	4.75	14	0	0	0	0	0	14	Fish caught throughout net.
27/7/14	5	near	19:22	19:27	05:00	5.75	4	1	0	0	0	0	5	One Chinook released.
27/7/14	6	near	19:42	19:48	06:00	8.00	0	4	0	0	0	0	4	Two Chinook unable to revive, two Chinook released.
28/7/14	1	near	07:02	07:07	05:00	4.75	35	0	0	0	0	0	35	
28/7/14	2	near	07:28	07:33	05:00	5.75	2	1	0	0	0	0	3	
28/7/14	3	near	07:42	07:47	05:00	8.00	1	2	0	0	0	0	3	
28/7/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	0	Offshore drift.
28/7/14	4	near	07:00	07:05	05:00	4.00	6	0	0	0	0	0	6	
28/7/14	5	near	07:25	07:34	09:00	5.25	6	1	0	0	0	0	7	Net stalled. Had to reset.
28/7/14	6	near	07:48	07:53	05:00	6.75	0	1	0	0	0	0	1	
29/7/14	1	near	07:00	07:06	06:00	4.00	24	3	0	0	0	0	27	One clipped Chinook retained. One Chinook fell out of net and escaped.
29/7/14	2	near	07:22	07:25	03:00	5.25	4	0	0	0	0	0	4	Incomplete drift. Net drifted into shore.
29/7/14	3	near	07:40	07:45	05:00	6.75	2	4	0	0	0	0	6	
29/7/14	4	near	19:00	19:07	07:00	4.75	8	2	1	0	0	0	11	
29/7/14	5	near	19:21	19:26	05:00	5.75	2	0	0	0	0	0	2	One badly bruised sockeye.
29/7/14	6	near	19:42	19:48	06:00	8.00	2	4	0	0	0	0	6	Three Chinook released safely.
30/7/14	1	near	07:00	07:05	05:00	4.75	23	3	0	0	0	0	26	Two Chinook released safely and one unable to revive.
30/7/14	2	near	07:22	07:27	05:00	5.75	2	1	0	0	0	0	3	
30/7/14	3	near	07:40	07:45	05:00	8.00	3	3	0	0	0	0	6	
30/7/14	4	near	19:00	19:05	05:00	4.00	1	1	0	0	0	0	2	
30/7/14	5	near	19:20	19:25	05:00	5.25	6	0	0	0	0	0	6	
30/7/14	6	near	19:40	19:46	06:00	6.75	0	1	0	0	0	0	1	
31/7/14	1	near	07:00	07:07	07:00	4.00	20	0	1	0	0	0	21	
31/7/14	2	near	07:20	07:25	05:00	5.25	5	0	0	0	0	0	5	
31/7/14	3	near	07:40	07:45	05:00	6.75	9	7	0	0	0	0	16	One clipped Chinook. Five Chinook released safely.
31/7/14	7	far	07:50	07:54	04:00	5.25	0	0	0	0	0	0	0	25 m offshore.
31/7/14	4	near	19:00	19:05	05:00	4.75	2	1	0	0	0	0	3	First Nations opening for 3 days.
31/7/14	5	near	19:20	19:25	05:00	5.75	3	1	0	0	0	0	4	
31/7/14	6	near	19:40	19:45	05:00	8.00	0	1	0	0	0	0	1	Unable to revive Chinook.
1/8/14	1	near	07:00	07:06	06:00	4.75	19	2	0	0	0	0	21	Two Chinook released.
1/8/14	2	near	07:22	07:28	06:00	5.75	7	1	0	0	0	0	8	
1/8/14	3	near	07:40	07:46	06:00	8.00	2	0	0	0	0	0	2	
1/8/14	4	near	19:00	19:05	05:00	4.00	4	0	0	0	0	0	4	
1/8/14	5	near	19:21	19:27	06:00	5.25	2	1	0	0	0	0	3	
1/8/14	6	near	19:40	19:46	06:00	6.75	0	3	0	0	0	0	3	Three Chinook released.
2/8/14	1	near	07:00	07:05	05:00	4.00	20	0	0	0	0	0	20	
2/8/14	2	near	07:22	07:27	05:00	5.25	2	0	0	0	0	0	2	
2/8/14	3	near	07:40	07:46	06:00	6.75	4	6	0	0	0	0	10	Two clipped Chinook, four unclipped released.
2/8/14	4	near	19:00	19:05	05:00	4.75	3	0	0	0	0	0	3	Net drifted into shore 3/4 of the way through drift.
2/8/14	5	near	19:20	19:25	05:00	5.75	0	1	0	0	0	0	1	Caught a huge branch.
2/8/14	6	near	19:40	19:45	05:00	8.00	2	1	0	0	0	0	3	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
3/8/14	1	near	07:00	07:06	06:00	4.75	14	2	0	0	0	16	Two Chinook released.
3/8/14	2	near	07:20	07:26	06:00	5.75	3	2	0	0	0	5	
3/8/14	3	near	07:42	07:47	05:00	8.00	0	1	0	0	0	1	
3/8/14	4	near	19:00	19:04	04:00	4.00	0	3	0	0	0	3	One Chinook released safely. Two Chinook fell off the net and escaped.
3/8/14	5	near	19:20	19:25	05:00	5.25	4	1	0	0	0	5	
3/8/14	6	near	19:40	19:45	05:00	6.75	1	3	0	0	0	4	Two Chinook released. One Chinook unable to revive.
4/8/14	1	near	07:00	07:05	05:00	4.00	20	1	0	0	0	21	
4/8/14	2	near	07:23	07:29	06:00	5.25	9	0	0	0	0	9	
4/8/14	3	near	07:42	07:47	05:00	6.75	0	2	0	0	0	2	
4/8/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	Offshore drift.
4/8/14	4	near	19:00	19:06	06:00	4.75	22	3	0	0	0	25	Fish caught throughout net. 3 Chinook released.
4/8/14	5	near	19:20	19:26	06:00	5.75	0	1	0	0	0	1	One huge sturgeon released.
4/8/14	6	near	19:41	19:44	03:00	8.00	1	0	0	0	0	1	Incomplete drift. Net hung up.
5/8/14	1	near	07:00	07:06	06:00	4.75	45	2	0	0	0	47	Two Chinook unable to revive.
5/8/14	2	near	07:26	07:31	05:00	5.75	2	1	0	0	0	3	
5/8/14	3	near	07:42	07:47	05:00	8.00	7	1	0	0	0	8	
5/8/14	4	near	19:00	19:05	05:00	4.00	0	0	0	0	0	0	Good drift. No fish.
5/8/14	5	near	19:20	19:26	06:00	5.25	26	1	0	0	0	27	One Chinook released.
5/8/14	6	near	19:46	19:51	05:00	6.75	0	0	0	0	0	0	
6/8/14	1	near	07:00	07:06	06:00	4.00	43	2	0	0	0	45	One Chinook released. One Chinook retained. May be a partial clip.
6/8/14	2	near	07:22	07:28	06:00	5.25	9	1	0	0	0	10	
6/8/14	3	near	07:40	07:45	05:00	6.75	3	1	0	0	0	4	
6/8/14	4	near	19:00	19:07	07:00	4.75	39	1	0	0	0	40	One Chinook released.
6/8/14	5	near	19:20	19:26	06:00	5.75	2	0	0	0	0	2	
6/8/14	6	near	19:41	19:44	03:00	8.00	2	0	0	0	0	2	Incomplete drift. Net hung up.
7/8/14	1	near	07:00	07:06	06:00	4.75	35	1	0	0	0	36	
7/8/14	2	near	07:27	07:32	05:00	5.75	4	1	0	0	0	5	One Chinook escaped while pulling in the net. Adipose condition not assessed.
7/8/14	3	near	07:40	07:45	05:00	8.00	4	0	0	0	0	4	
7/8/14	7	far	07:52	07:56	04:00	5.25	0	0	0	0	0	0	Offshore drift.
7/8/14	4	near	19:00	19:05	05:00	4.00	11	0	0	0	0	11	First Nations opening for next three days.
7/8/14	5	near	19:20	19:25	05:00	5.25	4	1	0	0	0	5	One Chinook released safely.
7/8/14	6	near	19:40	19:46	06:00	6.75	2	0	0	0	0	2	
8/8/14	1	near	07:00	07:06	06:00	4.00	44	0	1	0	0	45	Fish caught throughout the net.
8/8/14	2	near	07:22	07:27	05:00	5.25	7	0	0	0	0	7	
8/8/14	3	near	07:40	07:46	06:00	6.75	9	2	0	0	0	11	One clipped Chinook. One Chinook released.
8/8/14	4	near	19:00	19:06	06:00	4.75	27	0	0	0	0	27	
8/8/14	5	near	19:23	19:30	07:00	5.75	1	2	0	0	0	3	
8/8/14	6	near	19:42	19:45	03:00	8.00	0	0	0	0	0	0	Incomplete drift. Hung up badly.
9/8/14	1	near	07:00	07:06	06:00	4.75	38	1	0	0	0	39	One Chinook bleeding. Unable to release.
9/8/14	2	near	07:22	07:28	06:00	5.75	0	1	0	0	0	1	One Chinook released.
9/8/14	3	near	07:42	07:47	05:00	8.00	1	0	0	0	0	1	
9/8/14	4	near	19:00	19:05	05:00	4.00	0	0	0	0	0	0	
9/8/14	5	near	19:22	19:28	06:00	5.25	5	1	0	0	0	6	
9/8/14	6	near	19:40	19:45	05:00	6.75	4	0	0	0	0	4	Net hit the bottom.
10/8/14	1	near	07:00	07:05	05:00	4.00	11	0	0	0	0	11	
10/8/14	2	near	07:22	07:27	05:00	5.25	12	3	0	0	0	15	All Chinook released safely.
10/8/14	3	near	07:42	07:46	04:00	6.75	4	1	0	0	0	5	3/4 drift. Net drifted into the shore.
10/8/14	4	near	19:02	19:07	05:00	4.75	12	0	0	0	0	12	
10/8/14	5	near	19:20	19:25	05:00	5.75	0	0	0	0	0	0	
10/8/14	6	near	19:43	19:48	05:00	8.00	0	0	0	0	0	0	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments	
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total		
11/8/14	1	near	07:00	07:06	06:00	4.75	27	1	0	0	0	0	28	One Chinook released.
11/8/14	2	near	07:20	07:23	03:00	5.75	2	0	0	0	0	0	2	Incomplete drift. Net hung up.
11/8/14	3	near	07:40	07:45	05:00	8.00	7	2	0	0	0	0	9	One Chinook fell off net and escaped.
11/8/14	7	far	07:50	07:53	03:00	5.25	0	0	0	0	0	0	0	Offshore drift.
11/8/14	4	near	19:00	19:04	04:00	4.00	8	0	0	0	0	0	8	Incomplete drift. Net drifted into shore.
11/8/14	5	near	19:20	19:25	05:00	5.25	5	2	0	0	0	0	7	
11/8/14	6	near	19:40	19:42	02:00	6.75	2	1	0	0	0	0	3	Incomplete drift.
12/8/14	1	near	07:00	07:06	06:00	4.00	26	1	0	0	0	0	27	
12/8/14	2	near	07:27	07:32	05:00	5.25	3	0	0	0	0	0	3	
12/8/14	3	near	07:42	07:45	03:00	6.75	2	0	1	0	0	0	3	Incomplete drift. Hung up twice.
12/8/14	4	near	19:00	19:05	05:00	4.75	28	0	0	0	0	0	28	
12/8/14	5	near	19:22	19:27	05:00	5.75	2	0	0	0	0	0	2	
12/8/14	6	near	19:40	19:45	05:00	8.00	3	1	0	0	0	0	4	
13/8/14	1	near	07:00	07:05	05:00	4.75	46	0	0	0	0	0	46	Fish caught throughout the net.
13/8/14	2	near	07:20	07:25	05:00	5.75	1	0	0	0	0	0	1	
13/8/14	3	near	07:42	07:48	06:00	8.00	21	0	0	0	0	0	21	
13/8/14	4	near	19:00	19:06	06:00	4.00	1	0	0	0	0	0	1	
13/8/14	5	near	19:22	19:27	05:00	5.25	9	0	0	0	0	0	9	
13/8/14	6	near	19:42	19:48	06:00	6.75	0	1	0	0	0	0	1	
14/8/14	1	near	07:00	07:02	02:00	4.00	11	0	0	0	0	0	11	Incomplete drift. Hung up at weir.
14/8/14	2	near	07:22	07:27	05:00	5.25	7	0	0	0	0	0	7	
14/8/14	3	near	07:42	07:48	06:00	6.75	3	2	0	0	0	0	5	
14/8/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	0	Offshore drift.
14/8/14	4	near	19:00	19:06	06:00	4.75	59	0	0	0	0	0	59	
14/8/14	5	near	19:28	19:31	03:00	5.75	1	2	0	0	0	0	3	Incomplete drift hung up past weir.
14/8/14	6	near	19:44	19:47	03:00	8.00	0	0	0	0	0	0	0	Hung up badly same spot.
15/8/14	1	near	07:00	07:06	06:00	4.75	51	2	0	0	0	0	53	One Chinook released other unable to revive.
15/8/14	2	near	07:21	07:26	05:00	5.75	5	0	0	0	0	0	5	Finding lots of fish hooks in fish and net.
15/8/14	3	near	07:42	07:47	05:00	8.00	17	1	0	0	0	0	18	
15/8/14	4	near	19:00	19:06	06:00	4.00	31	0	0	0	0	0	31	
15/8/14	5	near	19:22	19:27	05:00	5.25	7	0	0	0	0	0	7	
15/8/14	6	near	19:40	19:46	06:00	6.75	5	1	0	0	0	0	6	
16/8/14	1	near	07:00	07:06	06:00	4.00	33	1	0	0	0	0	34	Two jack sockeye, one Chinook released.
16/8/14	2	near	07:22	07:28	06:00	5.25	27	0	0	0	0	0	27	
16/8/14	3	near	07:49	07:54	05:00	6.75	1	0	0	0	0	0	1	Net touched bottom but did not hang up.
16/8/14	4	near	19:00	19:06	06:00	4.75	16	1	0	0	0	0	17	
16/8/14	5	near	19:22	19:27	05:00	5.75	0	0	0	0	0	0	0	
16/8/14	6	near	19:42	19:48	06:00	8.00	1	0	0	0	0	0	1	
17/8/14	1	near	07:03	07:09	06:00	4.75	14	0	0	0	0	0	14	
17/8/14	2	near	07:23	07:28	05:00	5.75	0	0	0	0	0	0	0	Good drift. No fish.
17/8/14	3	near	07:42	07:48	06:00	8.00	5	0	0	0	0	0	5	
17/8/14	4	near	19:02	19:04	02:00	4.00	14	0	0	0	0	0	14	Incomplete drift. Hung up at the weir.
17/8/14	5	near	19:20	19:26	06:00	5.25	7	0	0	0	0	0	7	
17/8/14	6	near	19:41	19:45	04:00	6.75	3	1	0	0	0	0	4	Incomplete drift. Net drifted into shore.
18/8/14	1	near	07:00	07:06	06:00	4.00	54	0	0	0	0	0	54	
18/8/14	2	near	07:22	07:27	05:00	5.25	2	2	0	0	0	0	4	
18/8/14	3	near	07:40	07:45	05:00	6.75	23	2	0	0	0	0	25	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
18/8/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	Offshore drift.
18/8/14	4	near	19:00	19:06	06:00	4.75	27	0	1	0	0	0	
18/8/14	5	near	19:22	19:29	07:00	5.75	10	0	0	0	0	0	
18/8/14	6	near	19:42	19:47	05:00	8.00	10	2	0	0	0	0	
19/8/14	1	near	07:00	07:06	06:00	4.75	61	0	0	0	0	0	
19/8/14	2	near	07:20	07:25	05:00	5.75	24	0	1	0	0	0	
19/8/14	3	near	07:40	07:45	05:00	8.00	2	0	0	0	0	0	
19/8/14	4	near	19:00	19:06	06:00	4.00	26	0	1	0	0	0	
19/8/14	5	near	19:22	19:28	06:00	5.25	22	1	0	0	0	0	One Chinook released.
19/8/14	6	near	19:42	19:48	06:00	6.75	12	2	0	0	0	0	Two Chinook released.
20/8/14	1	near	07:00	07:06	06:00	4.00	43	0	1	0	0	0	
20/8/14	2	near	07:20	07:22	02:00	5.25	2	0	0	0	0	0	Drift incomplete, hung up just past weir.
20/8/14	3	near	07:40	07:45	05:00	6.75	24	1	0	0	0	0	
20/8/14	4	near	19:02	19:07	05:00	4.75	51	1	0	0	0	0	Chinook bleeding from gills.
20/8/14	5	near	19:33	19:38	05:00	5.75	3	0	0	0	0	0	
20/8/14	6	near	19:50	19:56	06:00	8.00	10	0	1	0	0	0	
21/8/14	1	near	07:00	07:07	07:00	4.75	50	4	0	0	0	0	Three Chinook released, one DOA.
21/8/14	2	near	07:20	07:26	06:00	5.75	14	3	0	0	0	0	Three Chinook released.
21/8/14	3	near	07:40	07:46	06:00	8.00	11	0	0	0	0	0	
21/8/14	7	far	07:50	07:53	03:00	5.25	0	0	0	0	0	0	Offshore drift.
21/8/14	4	near	07:00	07:06	06:00	4.00	36	0	0	0	0	0	
21/8/14	5	near	07:20	07:25	05:00	5.25	2	2	1	0	0	0	One Chinook jack dead, two adult Chinook released.
21/8/14	6	near	07:40	07:46	06:00	6.75	1	2	0	0	0	0	Two Chinook released.
22/8/14	1	near	07:00	07:06	06:00	4.00	27	0	1	0	0	0	
22/8/14	2	near	07:22	07:28	06:00	5.25	0	0	1	0	0	0	
22/8/14	3	near	07:40	07:45	05:00	6.75	10	3	0	0	0	0	
22/8/14	4	near	19:00	19:06	06:00	4.75	22	1	0	0	0	0	One Chinook unable to revive.
22/8/14	5	near	19:20	19:25	05:00	5.75	1	0	0	0	0	0	3/4 drift. Net drifted into the shore.
22/8/14	6	near	19:43	19:46	03:00	8.00	0	0	0	0	0	0	Incomplete drift net hung up.
23/8/14	1	near	07:00	07:06	06:00	4.75	41	3	0	0	0	0	Two Chinook released.
23/8/14	2	near	07:20	07:26	06:00	5.75	2	1	0	0	0	0	
23/8/14	3	near	07:40	07:46	06:00	8.00	15	0	0	0	0	0	
23/8/14	4	near	19:00	19:06	06:00	4.00	22	1	0	0	0	0	
23/8/14	5	near	19:22	19:28	06:00	5.25	1	2	0	0	0	0	Two Chinook released.
23/8/14	6	near	19:42	19:48	06:00	6.75	7	2	0	0	0	0	Two Chinook released.
24/8/14	1	near	07:00	07:07	07:00	4.00	45	0	0	0	0	0	Fish caught throughout the net.
24/8/14	2	near	07:24	07:30	06:00	5.25	20	0	0	0	0	0	
24/8/14	3	near	07:42	07:48	06:00	6.75	2	0	0	0	0	0	
24/8/14	4	near	19:00	19:06	06:00	4.75	21	1	0	0	0	0	
24/8/14	5	near	19:20	19:26	06:00	5.75	14	3	0	0	0	0	
24/8/14	6	near	19:42	19:48	06:00	8.00	1	0	0	0	0	0	
25/8/14	1	near	07:00	07:06	06:00	4.75	88	2	0	0	0	0	Lots of fish.
25/8/14	2	near	07:20	07:26	06:00	5.75	2	0	0	0	0	0	
25/8/14	3	near	07:40	07:46	06:00	8.00	8	0	0	0	0	0	
25/8/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	Offshore drift.
25/8/14	4	near	19:00	19:06	06:00	4.00	48	3	1	0	0	0	
25/8/14	5	near	19:20	19:26	06:00	5.25	4	0	0	0	0	0	
25/8/14	6	near	19:40	19:46	06:00	6.75	10	3	0	0	0	0	
26/8/14	1	near	07:00	07:07	07:00	4.00	35	0	2	0	0	0	Two Chinook jacks unable to revive.
26/8/14	2	near	07:20	07:26	06:00	5.25	3	1	0	0	0	0	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
26/8/14	3	near	07:42	07:48	06:00	6.75	2	1	0	0	0	3	
26/8/14	4	near	19:00	19:06	06:00	4.75	44	1	0	0	0	45	
26/8/14	5	near	19:20	19:26	06:00	5.75	9	1	0	0	0	10	
26/8/14	6	near	19:42	19:44	02:00	8.00	0	0	0	0	0	0	Incomplete drift. Hung up just past weir.
27/8/14	1	near	07:00	07:06	06:00	4.75	35	1	0	0	0	36	
27/8/14	2	near	07:22	07:28	06:00	5.75	11	0	0	0	0	11	
27/8/14	3	near	07:43	07:49	06:00	8.00	6	1	0	0	0	7	
27/8/14	4	near	19:00	19:07	07:00	4.00	3	3	2	0	0	8	
27/8/14	5	near	19:21	19:27	06:00	5.25	1	0	0	0	0	1	
27/8/14	6	near	19:40	19:47	07:00	6.75	10	4	0	0	0	14	All Chinook released safely.
28/8/14	1	near	07:00	07:07	07:00	4.00	21	1	3	0	0	25	One Chinook released safely. All Chinook jacks dead.
28/8/14	2	near	07:22	07:28	06:00	5.25	4	2	0	0	0	6	
28/8/14	3	near	07:42	07:48	06:00	6.75	0	0	0	0	0	0	
28/8/14	7	far	07:53	07:56	03:00	5.25	0	0	0	0	0	0	Offshore drift.
28/8/14	4	near	19:00	19:06	06:00	4.75	9	1	1	0	0	11	
28/8/14	5	near	19:22	19:29	07:00	5.75	0	0	0	0	0	0	Bad drift. Hit bottom a couple of times.
28/8/14	6	near	19:42	19:48	06:00	8.00	3	0	0	0	0	3	
29/8/14	1	near	07:00	07:06	06:00	4.75	49	0	1	0	0	50	
29/8/14	2	near	07:26	07:34	08:00	5.75	3	0	0	0	0	3	Net hit bottom at weir.
29/8/14	3	near	07:43	07:49	06:00	8.00	0	0	0	0	0	0	
29/8/14	4	near	18:01	18:07	06:00	4.00	17	1	1	0	0	19	Started hour early for daylight.
29/8/14	5	near	18:20	18:26	06:00	5.25	1	0	0	0	0	1	
29/8/14	6	near	18:40	18:46	06:00	6.75	0	0	0	0	0	0	
30/8/14	1	near	07:00	07:07	07:00	4.00	18	0	0	0	0	18	
30/8/14	2	near	07:26	07:32	06:00	5.25	8	1	0	0	0	9	
30/8/14	3	near	07:42	07:48	06:00	6.75	0	2	0	0	0	2	Two Chinook released.
30/8/14	4	near	18:00	18:06	06:00	4.75	24	1	0	0	0	25	
30/8/14	5	near	18:20	18:27	07:00	5.75	0	0	0	0	0	0	
30/8/14	6	near	18:42	18:45	03:00	8.00	0	0	0	0	0	0	Incomplete hung up.
31/8/14	1	near	07:00	07:06	06:00	4.75	9	0	0	0	0	9	
31/8/14	2	near	07:21	07:27	06:00	5.75	5	0	0	0	0	5	
31/8/14	3	near	07:40	07:46	06:00	8.00	2	1	0	0	0	3	
31/8/14	4	near	18:00	18:06	06:00	4.00	27	1	1	0	0	29	
31/8/14	5	near	18:20	18:26	06:00	5.25	5	1	0	0	0	6	Hit bottom at weir but still was able to complete full drift.
31/8/14	6	near	18:43	18:49	06:00	6.75	2	4	0	0	0	6	
1/9/14	1	near	07:00	07:06	06:00	4.00	23	2	2	0	0	27	
1/9/14	2	near	07:20	07:26	06:00	5.25	13	0	0	0	0	13	
1/9/14	3	near	07:40	07:47	07:00	6.75	6	0	0	0	0	6	
1/9/14	7	far	07:52	07:54	02:00	5.25	0	0	0	0	0	0	Offshore drift.
1/9/14	4	near	18:00	18:07	07:00	4.75	24	1	0	0	0	25	One Chinook unable to revive.
1/9/14	5	near	18:32	18:38	06:00	5.75	1	0	0	0	0	1	
1/9/14	6	near	18:44	18:49	05:00	8.00	1	0	0	0	0	1	
2/9/14	1	near	07:00	07:07	07:00	4.75	56	0	1	0	0	57	Fish caught throughout net.
2/9/14	2	near	07:22	07:28	06:00	5.75	4	0	0	0	0	4	
2/9/14	3	near	07:43	07:49	06:00	8.00	10	1	1	0	0	12	Unable to revive Chinook.
2/9/14	4	near	18:00	18:06	06:00	4.00	49	0	4	0	0	53	
2/9/14	5	near	18:22	18:27	05:00	5.25	0	0	0	0	0	0	Bad drift. Hit bottom twice. Lost half the lead line.
2/9/14	6	near	18:43	18:49	06:00	6.75	8	1	0	0	0	9	
3/9/14	1	near	07:00	07:06	06:00	4.00	55	0	1	0	0	56	First Nations opening 10 AM- 10 AM. 24 hrs.
3/9/14	2	near	07:22	07:28	06:00	5.25	17	0	1	0	0	18	
3/9/14	3	near	07:43	07:48	05:00	6.75	3	1	0	0	0	4	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
3/9/14	4	near	18:00	18:06	06:00	4.75	28	0	1	0	0	29	
3/9/14	5	near	18:22	18:28	06:00	5.75	3	0	0	0	0	3	
3/9/14	6	near	18:44	18:50	06:00	8.00	5	0	0	0	0	5	
4/9/14	1	near	07:00	07:06	06:00	4.75	39	3	1	0	0	43	Two Chinook released. Two Chinook jacks unable to revive.
4/9/14	2	near	07:22	07:27	05:00	5.75	3	2	0	0	0	5	
4/9/14	3	near	07:40	07:46	06:00	8.00	0	3	0	0	0	3	
4/9/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	Offshore drift.
4/9/14	4	near	18:00	18:06	06:00	4.00	26	0	5	0	0	31	Five Chinook jacks dead.
4/9/14	5	near	18:23	18:29	06:00	5.25	10	1	1	0	0	12	
4/9/14	6	near	18:42	18:47	05:00	6.75	0	0	0	0	0	0	Good drift. No fish.
5/9/14	1	near	07:00	07:06	06:00	4.00	43	0	5	0	0	48	
5/9/14	2	near	07:22	07:28	06:00	5.25	10	4	0	0	0	14	
5/9/14	3	near	07:43	07:49	06:00	6.75	3	2	0	0	0	5	
5/9/14	4	near	18:00	18:06	06:00	4.75	30	4	1	0	0	35	4 Chinook released.
5/9/14	5	near	18:22	18:29	07:00	5.75	2	4	0	0	0	6	One Chinook bleeding from the gills, all others released.
5/9/14	6	near	18:43	18:48	05:00	8.00	1	0	0	0	0	1	
6/9/14	1	near	07:00	07:04	04:00	4.75	38	0	0	0	0	38	Incomplete drift. Hung up at weir.
6/9/14	2	near	07:22	07:28	06:00	5.75	18	4	0	0	0	22	
6/9/14	3	near	07:42	07:48	06:00	8.00	0	1	0	0	0	1	
6/9/14	4	near	18:01	18:07	06:00	4.00	9	0	1	0	0	10	
6/9/14	5	near	18:25	18:31	06:00	5.25	13	0	0	0	0	13	
6/9/14	6	near	18:40	18:46	06:00	6.75	2	2	0	0	0	4	
7/9/14	1	near	07:00	07:06	06:00	4.00	18	0	1	0	0	19	
7/9/14	2	near	07:22	07:28	06:00	5.25	10	0	0	0	0	10	
7/9/14	3	near	07:42	07:47	05:00	6.75	1	2	1	0	0	4	Two Chinook released.
7/9/14	4	near	18:06	18:12	06:00	4.75	10	2	0	0	0	12	
7/9/14	5	near	18:22	18:27	05:00	5.75	1	2	0	0	0	3	Two Chinook released.
7/9/14	6	near	18:43	18:49	06:00	8.00	0	3	0	0	0	3	All Chinook released, mostly smaller Chinook.
8/9/14	1	near	07:00	07:06	06:00	4.75	37	1	0	0	0	38	One Chinook released.
8/9/14	2	near	07:25	07:30	05:00	5.75	9	6	0	0	0	15	Four Chinook released. Two Chinook bleeding badly.
8/9/14	3	near	07:43	07:49	06:00	8.00	1	1	2	0	0	4	
8/9/14	7	far	07:56	07:59	03:00	5.25	0	0	0	0	0	0	Offshore drift.
8/9/14	4	near	18:00	18:06	06:00	4.00	60	1	2	0	0	63	Unable to revive Chinook.
8/9/14	5	near	18:20	18:26	06:00	5.25	3	2	0	0	0	5	
8/9/14	6	near	18:43	18:49	06:00	6.75	12	0	0	0	0	12	
9/9/14	1	near	07:00	07:05	05:00	4.00	52	0	1	0	0	53	Fish caught throughout the net.
9/9/14	2	near	07:22	07:28	06:00	5.25	17	2	0	0	0	19	One Chinook released, one dead.
9/9/14	3	near	07:44	07:49	05:00	6.75	1	0	0	0	0	1	
9/9/14	4	near	18:00	18:07	07:00	4.75	30	1	3	0	0	34	Four Chinook jacks dead.
9/9/14	5	near	18:25	18:30	05:00	5.75	1	2	0	0	0	3	2 Chinook unable to revive.
9/9/14	6	near	18:43	18:49	06:00	8.00	2	0	1	0	0	3	
10/9/14	1	near	07:00	07:06	06:00	4.75	40	2	0	0	0	42	Two Chinook released.
10/9/14	2	near	07:22	07:28	06:00	5.75	4	0	0	0	0	4	
10/9/14	3	near	07:45	07:51	06:00	8.00	2	0	0	0	0	2	
10/9/14	4	near	18:02	18:08	06:00	4.00	21	0	1	0	0	22	
10/9/14	5	near	18:22	18:24	02:00	5.25	1	0	0	0	0	1	Incomplete drift. Hung up at the weir.
10/9/14	6	near	18:42	18:48	06:00	6.75	4	0	0	0	0	4	
11/9/14	1	near	07:01	07:07	06:00	4.00	28	0	3	0	0	31	
11/9/14	2	near	07:22	07:28	06:00	5.25	0	0	0	0	0	0	
11/9/14	3	near	07:40	07:46	06:00	6.75	2	1	0	0	0	3	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
11/9/14	7	far	07:53	07:57	04:00	5.25	0	0	0	0	0	0	Offshore drift.
11/9/14	4	near	18:03	18:09	06:00	4.75	19	0	1	0	0	0	20
11/9/14	5	near	18:26	18:31	05:00	5.75	3	1	0	0	0	0	4
11/9/14	6	near	18:42	18:48	06:00	8.00	0	0	0	0	0	0	0
12/9/14	1	near	07:00	07:06	06:00	4.75	36	2	1	0	0	0	39
12/9/14	2	near	07:22	07:28	06:00	5.75	7	0	0	0	0	0	7
12/9/14	3	near	07:42	07:45	03:00	8.00	0	0	0	0	0	0	0
12/9/14	4	near	18:00	18:06	06:00	4.00	0	0	0	1	0	1	1
12/9/14	5	near	18:22	18:28	06:00	5.25	0	0	0	0	0	0	0
12/9/14	6	near	18:42	18:48	06:00	6.75	0	1	0	0	0	0	1
13/9/14	1	near	07:00	07:05	05:00	4.00	11	0	1	0	0	0	12
13/9/14	2	near	07:22	07:28	06:00	5.75	0	0	0	0	0	0	0
13/9/14	3	near	07:43	07:49	06:00	6.75	0	0	0	0	0	0	0
13/9/14	4	near	18:02	18:08	06:00	4.75	2	0	0	0	0	0	2
13/9/14	5	near	18:23	18:28	05:00	5.75	1	1	0	0	0	0	2
13/9/14	6	near	18:43	18:49	06:00	8.00	0	0	0	0	0	0	0
14/9/14	1	near	07:00	07:03	03:00	4.75	6	1	0	0	0	0	7
14/9/14	2	near	07:20	07:22	02:00	5.75	0	0	0	0	0	0	0
14/9/14	3	near	07:40	07:45	05:00	8.00	1	0	0	0	0	0	1
14/9/14	4	near	18:10	18:16	06:00	4.00	0	0	0	0	0	0	0
14/9/14	5	near	18:25	18:30	05:00	5.25	2	0	0	0	0	0	2
14/9/14	6	near	18:45	18:51	06:00	6.75	0	0	0	0	0	0	0
15/9/14	1	near	07:00	07:06	06:00	4.00	12	0	0	1	0	0	13
15/9/14	2	near	07:20	07:27	07:00	5.25	4	0	0	0	0	0	4
15/9/14	3	near	07:40	07:46	06:00	6.75	0	0	0	0	0	0	0
15/9/14	7	far	07:53	07:56	03:00	5.25	0	0	0	0	0	0	0
15/9/14	4	near	18:00	18:05	05:00	4.75	4	0	2	0	0	0	6
15/9/14	5	near	18:23	18:26	03:00	5.75	0	0	0	0	0	0	0
15/9/14	6	near	18:42	18:48	06:00	8.00	0	0	0	0	0	0	0
16/9/14	1	near	07:00	07:07	07:00	4.75	23	2	1	1	0	0	27
16/9/14	2	near	07:22	07:28	06:00	5.75	0	1	0	0	0	0	1
16/9/14	3	near	07:42	07:49	07:00	8.00	0	0	0	0	0	0	0
16/9/14	4	near	18:00	18:06	06:00	4.00	0	1	0	1	0	0	2
16/9/14	5	near	18:22	18:28	06:00	5.25	5	1	0	0	0	0	6
16/9/14	6	near	18:43	18:48	05:00	6.75	1	0	0	0	0	0	1
17/9/14	1	near	07:00	07:06	06:00	4.00	4	1	1	0	0	0	6
17/9/14	2	near	07:22	07:24	02:00	5.25	0	0	0	0	0	0	0
17/9/14	3	near	07:40	07:45	05:00	6.75	1	1	0	0	0	0	2
17/9/14	4	near	18:00	18:07	07:00	4.75	9	0	0	0	0	0	9
17/9/14	5	near	18:22	18:28	06:00	5.75	0	0	0	0	0	0	0
17/9/14	6	near	18:39	18:45	06:00	8.00	0	0	0	0	0	0	0
18/9/14	1	near	07:00	07:06	06:00	4.75	5	0	0	0	0	0	5
18/9/14	2	near	07:20	07:26	06:00	5.75	3	1	0	0	0	0	4
18/9/14	3	near	07:43	07:49	06:00	8.00	2	0	0	0	0	0	2
18/9/14	7	far	07:53	07:56	03:00	5.25	0	0	0	0	0	0	0
18/9/14	4	near	18:05	18:11	06:00	4.00	2	0	0	0	0	0	2
18/9/14	5	near	18:24	18:31	07:00	5.25	7	0	0	0	0	0	7
18/9/14	6	near	18:43	18:49	06:00	6.75	1	0	0	0	0	0	1
19/9/14	1	near	07:01	07:07	06:00	4.00	5	0	0	0	0	0	5
19/9/14	2	near	07:23	07:29	06:00	5.25	4	0	0	0	0	0	4

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught						Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum	Total	
19/9/14	3	near	07:40	07:46	06:00	6.75	4	0	0	0	0	4	
19/9/14	4	near	18:01	18:07	06:00	4.75	8	0	0	0	0	8	
19/9/14	5	near	18:23	18:29	06:00	5.75	10	1	0	0	0	11	
19/9/14	6	near	18:43	18:48	05:00	8.00	0	0	0	0	0	0	Good drift. No fish.
20/9/14	1	near	07:00	07:06	06:00	4.75	35	0	1	1	0	37	One Coho dead.
20/9/14	2	near	07:23	07:29	06:00	5.75	9	0	0	0	0	9	
20/9/14	3	near	07:40	07:46	06:00	8.00	2	0	0	0	0	2	
20/9/14	4	near	18:00	18:06	06:00	4.00	12	0	0	1	0	13	One jack Coho released.
20/9/14	5	near	18:22	18:28	06:00	5.25	4	0	0	0	0	4	
20/9/14	6	near	18:43	18:49	06:00	6.75	8	1	0	0	0	9	One Chinook released.
21/9/14	1	near	07:05	07:12	07:00	4.00	35	0	0	3	0	38	
21/9/14	2	near	07:26	07:33	07:00	5.25	9	0	0	0	0	9	
21/9/14	3	near	07:45	07:52	07:00	6.75	9	2	0	0	0	11	One Chinook released. One bleeding from gills.
21/9/14	4	near	18:02	18:08	06:00	4.75	0	0	0	0	0	0	Good drift. No fish.
21/9/14	5	near	18:22	18:28	06:00	5.75	17	0	0	0	0	17	
21/9/14	6	near	18:42	18:45	03:00	8.00	0	0	0	0	0	0	Incomplete drift. Hung up.
22/9/14	1	near	07:00	07:07	07:00	4.75	53	0	0	0	0	53	
22/9/14	2	near	07:26	07:31	05:00	5.75	11	0	0	0	0	11	
22/9/14	3	near	07:40	07:46	06:00	8.00	3	0	0	0	0	3	
22/9/14	7	far	07:54	07:57	03:00	5.25	0	0	0	0	0	0	Offshore drift.
22/9/14	4	near	18:00	18:06	06:00	4.00	10	0	0	0	0	10	
22/9/14	5	near	18:22	18:28	06:00	5.25	16	0	0	0	0	16	
22/9/14	6	near	18:43	18:49	06:00	6.75	16	0	0	0	0	16	
23/9/14	1	near	07:00	07:07	07:00	4.00	6	0	0	0	0	6	
23/9/14	2	near	07:20	07:26	06:00	5.25	27	0	0	0	0	27	
23/9/14	3	near	07:42	07:48	06:00	6.75	15	0	0	0	0	15	
23/9/14	4	near	18:00	18:02	02:00	4.75	2	0	0	0	0	2	Incomplete drift. Hung up above the weir.
23/9/14	5	near	18:22	18:27	05:00	5.75	30	0	0	0	0	30	
23/9/14	6	near	18:40	18:46	06:00	8.00	12	0	0	0	0	12	
24/9/14	1	near	07:00	07:07	07:00	4.75	47	0	0	0	0	47	
24/9/14	2	near	07:20	07:26	06:00	5.75	14	0	0	0	0	14	
24/9/14	3	near	07:44	07:50	06:00	8.00	17	0	0	0	0	17	
24/9/14	4	near	18:00	18:06	06:00	4.00	14	0	0	0	0	14	
24/9/14	5	near	18:22	18:29	07:00	5.25	20	0	0	0	0	20	
24/9/14	6	near	18:40	18:47	07:00	6.75	7	0	0	0	0	7	
25/9/14	1	near	07:10	07:16	06:00	4.00	14	0	0	0	0	14	
25/9/14	2	near	07:30	07:36	06:00	5.25	15	0	0	1	1	17	One Coho released, one chum DOA.
25/9/14	3	near	07:50	07:56	06:00	6.75	11	0	0	0	0	11	
25/9/14	7	far	08:03	08:06	03:00	5.25	0	0	0	0	0	0	Offshore drift.
25/9/14	4	near	18:00	18:06	06:00	4.75	28	0	0	0	0	28	
25/9/14	5	near	18:23	18:29	06:00	5.75	13	0	0	0	0	13	
25/9/14	6	near	18:42	18:48	06:00	8.00	9	0	0	0	0	9	
26/9/14	1	near	07:00	07:06	06:00	4.75	38	0	0	0	0	38	
26/9/14	2	near	07:22	07:28	06:00	5.75	10	0	0	0	0	10	
26/9/14	3	near	07:45	07:51	06:00	8.00	11	0	0	0	0	11	
26/9/14	4	near	18:05	18:12	07:00	4.00	11	0	0	0	0	11	
26/9/14	5	near	18:25	18:29	04:00	5.25	14	0	0	0	0	14	Net drifted into shore 3/4 of the way through drift.
26/9/14	6	near	18:42	18:48	06:00	6.75	8	0	0	0	0	8	
27/9/14	1	near	07:00	07:06	06:00	4.00	31	0	0	1	0	32	One Coho released.
27/9/14	2	near	07:23	07:29	06:00	5.25	9	0	0	0	0	9	
27/9/14	3	near	07:40	07:46	06:00	6.75	6	0	0	0	0	6	

## Appendix 2 cont.

Date	Drift	Location	Time			Mesh Size	Caught					Total	Comments
			Start	End	Duration		Sockeye	Chinook	Chin. Jacks	Coho	Chum		
27/9/14	4	near	18:00	18:06	06:00	4.75	3	0	0	0	0	3	
27/9/14	5	near	18:22	18:28	06:00	5.75	12	0	0	0	0	12	
27/9/14	6	near	18:42	18:48	06:00	8.00	23	0	0	0	0	23	
28/9/14	1	near	07:00	07:06	06:00	4.75	18	0	0	0	0	18	
28/9/14	2	near	07:22	07:28	06:00	5.75	13	0	0	0	0	13	
28/9/14	3	near	07:40	07:42	02:00	8.00	6	0	0	0	0	6	Incomplete drift. Hung up.
28/9/14	4	near	18:00	18:06	06:00	4.00	3	0	0	0	0	3	
28/9/14	5	near	18:22	18:28	06:00	5.25	2	0	0	0	0	2	
28/9/14	6	near	18:42	18:47	05:00	6.75	3	0	0	0	0	3	
29/9/14	1	near	07:00	07:06	06:00	4.00	11	0	0	0	0	11	
29/9/14	2	near	07:21	07:27	06:00	5.25	9	0	0	0	0	9	
29/9/14	3	near	07:39	07:45	06:00	6.75	2	0	0	0	0	2	
29/9/14	7	far	07:50	07:53	03:00	5.25	0	0	0	0	0	0	Offshore drift.
29/9/14	4	near	18:00	18:06	06:00	4.75	13	0	0	0	0	13	
29/9/14	5	near	18:22	18:28	06:00	5.75	6	0	0	0	0	6	
29/9/14	6	near	18:40	18:46	06:00	8.00	3	0	0	0	0	3	
30/9/14	1	near	07:00	07:06	06:00	4.75	31	0	0	2	0	33	Two Coho released.
30/9/14	2	near	07:22	07:29	07:00	5.75	16	0	0	0	0	16	Fish caught throughout the drift
30/9/14	3	near	07:42	07:48	06:00	8.00	14	0	0	0	1	15	
30/9/14	4	near	18:00	18:06	06:00	4.00	25	0	0	0	0	25	
30/9/14	5	near	18:23	18:26	03:00	5.25	2	0	0	0	0	2	Incomplete drift. Hung up after weir.
30/9/14	6	near	18:45	18:50	05:00	6.75	1	0	0	0	0	1	
1/10/14	1	near	07:00	07:06	06:00	4.00	6	0	0	0	0	6	
1/10/14	2	near	07:20	07:26	06:00	5.25	32	0	0	0	0	32	
1/10/14	3	near	07:42	07:48	06:00	6.75	1	0	0	0	0	1	
1/10/14	4	near	18:00	18:06	06:00	4.75	51	0	0	0	1	52	
1/10/14	5	near	18:25	18:31	06:00	5.75	3	0	0	0	0	3	
1/10/14	6	near	18:42	18:48	06:00	8.00	6	0	0	0	0	6	
2/10/14	1	near	07:02	07:08	06:00	4.75	21	0	0	0	0	21	
2/10/14	2	near	07:23	07:29	06:00	5.75	4	1	0	0	0	5	
2/10/14	3	near	07:38	07:44	06:00	8.00	3	0	0	0	0	3	
2/10/14	7	far	07:52	07:55	03:00	5.25	0	0	0	0	0	0	Offshore drift.
2/10/14	4	near	18:02	18:08	06:00	4.00	5	0	0	0	0	5	
2/10/14	5	near	18:23	18:29	06:00	5.25	0	0	0	0	0	0	
2/10/14	6	near	18:43	18:49	06:00	6.75	4	0	0	0	0	4	
3/10/14	1	near	07:00	07:06	06:00	4.00	15	0	0	0	0	15	
3/10/14	2	near	07:22	07:28	06:00	5.25	2	0	0	0	0	2	
3/10/14	3	near	07:43	07:49	06:00	6.75	1	0	0	0	0	1	
3/10/14	4	near	18:00	18:06	06:00	4.75	3	0	0	0	0	3	
3/10/14	5	near	18:22	18:28	06:00	5.75	12	0	0	1	0	13	One Coho unable to revive.
3/10/14	6	near	18:40	18:46	06:00	8.00	4	0	0	0	0	4	
4/10/14	1	near	07:02	07:08	06:00	4.75	6	0	0	0	0	6	
4/10/14	2	near	07:22	07:25	03:00	5.75	1	0	0	0	0	1	Incomplete drift, hung up after weir. Net trashed.
4/10/14	3	near	07:39	07:45	06:00	8.00	2	0	0	0	0	2	
4/10/14	4	near	18:00	18:03	03:00	4.00	0	0	0	0	0	0	Hung up, net trashed.
4/10/14	5	near	18:19	18:25	06:00	5.25	3	0	0	1	0	4	
4/10/14	6	near	18:30	18:36	06:00	6.75	0	0	0	0	0	0	