3A95-33

LOWER YUKON RIVER SONAR PROJECT REPORT

1993

by

Steve J. Fleischman

David C. Mesiar

and

Paul A. Skvorc, II

Regional Information Report[1] No. 3A95-33

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
333 Raspberry Road
Anchorage, Alaska 99518

December 1995

---

[1] The Regional Information Report series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accomodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Commercial Fisheries Management and Development Division.

OEO/ADA STATEMENT

The Alaska Department of Fish and Game administers all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, contact the department ADA Coordinator at (voice) 907-465-4120, or (TDD) 907-465-3646. Any person who believes s/he has been discriminated against should write to: ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; or O.E.O., U.S. Department of the Interior, Washington, D.C. 20240.

AUTHORS

Steve J. Fleischman[1] was the Yukon Sonar Biologist for the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, 333 Raspberry Road, Anchorage, Alaska 99518.

David C. Mesiar was the AYK Sonar Biologist for the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, 333 Raspberry Road, Anchorage, Alaska 99518.

Paul A. Skvorc, II is head of the statewide Sonar and Technical Services (STS) group for the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, 333 Raspberry Road, Anchorage, Alaska 99518.

ACKNOWLEDGEMENTS

We thank crew-leader Randy Bachman and the crew of Janice Densham, Tim Drumhiller, Jason Dye, Nathan Green, Carl Pfisterer, and John Snow for competently collecting the sonar and testfishing data reported herein. We also thank Todd LaFlamme for assisting with sonar deployment, and Jeff Bromaghin, Larry Buklis, and Dan Huttunen for reviewing a draft version of this report.

PROJECT SPONSORSHIP

This project was partially supported by U.S./Canada Yukon River funds through Cooperative Agreement Number NA26FP0125-1.

---

[1] Presently with the Alaska Department of Fish and Game, Division of Sport Fish, 333 Raspberry Road, Anchorage, Alaska 99518.

TABLE OF CONTENTS

LIST OF TABLES v

LIST OF FIGURES v

LIST OF APPENDICES vi

ABSTRACT vii

INTRODUCTION 1

METHODS 2
- Hydroacoustic Sampling 2
  - Equipment and Procedures 2
  - Analytical Methods 4
    - Direction of Travel. 4
    - Total Upstream Fish Passage. 5
    - Missing Data. 6
- Species Apportionment 6
  - Equipment and Procedures 6
  - Analytical Methods 7
    - Species Proportions. 7
    - Fish Passage by Species. 9
    - Missing Data. 9
- Variance and Confidence Interval Estimation. 9
  - Total Fish Passage 10
  - Species Proportions. 10
  - Fish Passage by Species. 11

RESULTS 12

DISCUSSION 13

LITERATURE CITED 15

APPENDICES 29

LIST OF TABLES

Table | Page

1. Net selectivity estimates used to adjust testfish catches for unequal probability of capture, Lower Yukon River Sonar 1993 16

2. Mesh sizes used to estimate the relative abundance of the most common fish species encountered in the Yukon River at Pilot Station 17

3. Daily estimates of fish passage by bank, Lower Yukon River Sonar 1993 18

4. Daily estimates of fish passage by species, Lower Yukon River Sonar 1993 20

5. 90% confidence intervals for seasonal passage estimates, Lower Yukon River Sonar 1993 22

6. Comparison of passage estimates based on 24-hour sampling versus standard sampling schedule (three 2.5-hour periods), Lower Yukon River Sonar 1993 23

LIST OF FIGURES

Figure | Page

1. Lower Yukon River sonar site and vicinity 24

2. Daily upstream sonar passage by bank, Lower Yukon River Sonar 1993 25

3. Distance of upstream-passing fish from shore, 4 June through 18 July 1993 26

4. Distance of upstream-passing fish from shore, 19 July through 31 August 1993 27

5. Estimated daily passage of chinook, chum, and coho salmon, Lower Yukon River Sonar 1993 28

LIST OF APPENDICES

Appendix A. Procedures used to estimate gillnet selectivity 30

Appendix B. SAS code used to generate passage estimates and variances, Lower Yukon River Sonar 1993 42

Appendix C. Testfishing results, Lower Yukon River Sonar 1993, one line per drift 54

ABSTRACT

The Yukon River sonar project has estimated daily upstream passage of chinook salmon *(Oncorhynchus tshawytscha)*, summer and fall chum salmon *(O. keta)*, and coho salmon *(O. kisutch)* since 1986. The project was operational in 1993 from 4 June through 31 August. Fish passage for each species was estimated through a two component process: (1) estimation of total fish passage with single-beam sonar, and (2) estimation of species proportions by test-fishing with gillnets of seven different mesh sizes. An estimated total of 1,766,615 ± 28,075 (s.e.) fish passed upstream through the sonar beams in 1993, 19.9% along the right bank and 80.1% along the left bank. Included were an estimated 71,132 ± 6,744 large chinook salmon (>700 mm long), 63,723 ± 6,195 small chinook salmon (<700 mm), 947,192 ± 27,840 summer chum salmon, 291,700 ± 12,294 fall chum salmon, and 41,541 ± 5,347 coho salmon. Due to improved equipment and ideal river conditions, 1993 passage estimates were probably more accurate than those of past years.

KEY WORDS: salmon, hydroacoustic, Yukon River, escapement, species apportionment, net selectivity

INTRODUCTION

Salmon (*Oncorhynchus* spp.) are harvested in both commercial and subsistence fisheries over more than 1,600 km of the Yukon River in Alaska and Canada. These salmon fisheries are critical to the lifestyle and economy of dozens of communities along the river, in many instances providing the largest single source of food and/or income to local residents. Management of these fisheries is complex and difficult due to the number, diversity, and geographic separation of fish stocks and user groups.

Information upon which to base management decisions comes from several sources, each of which has unique strengths and weaknesses. Observations of spawning salmon in tributaries through aerial surveys, mark-recapture, towers, or sonar provide stock-specific estimates or indices of escapement. However, most of this information is obtained after the majority of the fisheries have occurred, and the results are not generally available for use in-season. Gillnet test-fishery catches near the river mouth provide in-season indices of run-strength, but interpretation of these data is confounded by gillnet selectivity, changes in net site characteristics, and varying fish migration routes through the multichannel river mouth. Also, the relationship between test-fishery catches and abundance may not be linear.

Hydroacoustic (sonar) estimates of fish passage from this project complement information obtained from other sources. The project uses single-beam sonar to estimate daily upstream passage of fish. Gillnets of up to seven different mesh sizes are drifted to apportion the passage estimates to species, including chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), and coho salmon (*O. kisutch*). The sonar is deployed at river km 197 near Pilot Station, far enough upriver to avoid the wide, multiple channels of the Yukon River delta. In addition, because salmon migrate from the river mouth to the sonar site in two to three days, the project provides timely information to managers of fisheries downstream of the sonar site. There is only one major spawning tributary (the Andreafsky River) below the sonar site.

The lower Yukon River sonar project has been operational since 1986. The main challenges faced by the project have been to deploy sonar in such a way that it is capable of detecting and counting as large a proportion of the migrating fish as possible, and to develop viable methods for estimating the relative abundance of each species. Major progress has been made in several areas. Species apportionment methodology has been streamlined and improved, net selectivity has been estimated more accurately, and procedures have been developed to detect passage of fish beyond the range of shore-based sonar (Mesiar et al. 1991, Fleischman et al. 1992). Most recently the project has acquired equipment which operates at a lower frequency than the old equipment (120

kHz vs 420 kHz), and is capable of detecting fish at longer ranges. Project objectives in 1993 were to provide daily and seasonal passage estimates for chinook, chum, and coho salmon; and to estimate the precision of seasonal estimates.

METHODS

Hydroacoustic Sampling

Equipment and Procedures

Sonar equipment included Biosonics[1] model 101 and 105 echo sounders configured to transmit and receive at either 420 kHz or 120 kHz, three model 5398 120 kHz 2°x4° elliptical transducers manufactured by International Transducer Corporation[1] (I.T.C.) and configured for dual-beam use, one single-beam 4° circular 120 kHz transducer manufactured by Acoustic Transducers International (A.T.I.)[1], one Biosonics[1] single-beam 420 kHz transducer, two Hydroacoustics Technology Inc.[1] model 401 chart recorder interfaces coupled with two dot matrix printers, and two Hewlett-Packard[1] model 54501A digital storage oscilloscopes. We used the 420 kHz transducer for a short time in June, while diagnosing an unusual noise problem. Otherwise, only 120 kHz transducers were used during the 1993 season. I.T.C. transducers were capable of a wider 4°x9° beam configuration but the sounders were not set up for this configuration in time for the 1993 field season. Transducers were remotely aimed using Remote Ocean Systems[1] dual-axis rotators mounted on metal tripods. Gasoline generators (600 W to 3500 W) supplied 110 VAC power. A Lowrance[1] X-15 fathometer was used to investigate bottom profiles and to detect the presence of fish beyond the sampling range of shore-based sonar.

Two sites were used for hydroacoustic sampling, one on either bank of the river. The right (north) bank has a stable, rocky bottom with a steep, constant slope from shore. One transducer, deployed within 5 m of shore and sampling to a range of 100-200 m, was used on the right bank. The right-bank transducer was aimed to sample two different strata: (stratum 1) low along the river bottom and (stratum 2) 3^0 to 5^0 higher and covering much of the remaining water column.

---

[1] Mention of a company's name does not constitute endorsement.

The left (south) bank is comprised of silt and sand, and contours can be quite dynamic, depending on hydrologic conditions. One nearshore and one offshore transducer (sampling strata 3 and 4, respectively) were deployed on the left bank due to a more complex bottom slope and a tendency for fish to migrate further from shore. The first transducer was deployed within 5 m of shore and the second near a break in the bottom slope, between 30 and 60 meters from shore. Total sampling range on the left bank varied from 152 m to 380 m. Changeable bottom topography required that we occasionally relocate transducers to obtain an improved aim. Both left-bank beams were aimed along the river bottom. Left- and right-bank tripods were nearly directly across the river from each other, at a point where the river was approximately 1030 m wide (Figure 1). River width was measured with a laser range-finding instrument.

Hydroacoustic data were collected during three periods beginning at 0600, 1400, and 2130 daily; except from 4 to 9 June, when they were collected twice daily, at 0800 and 2000. Periods were 2.5 hours in duration and consisted of ten 15-minute samples. Samples were collected alternately from each of the two strata per bank (e.g., for the right bank: 0600-0615 lower stratum, 0615-0630 upper stratum, 0630-0645 lower stratum, etc). In order to evaluate the sonar sample design, we also operated the sonar continuously for 24 hours on four different occasions (13-14 August, 18 August, 23 August, and 30 August).

A 40 log(range) time-varied gain (TVG) was used to compensate for two-way spherical spreading loss. Band width was 5 kHz and pulse width 0.4 msec. No correction for absorption was used. The pulse repetition rate was maximized given the maximum range (R) we desired to sample. To do so, the trigger interval (TI) was set to R / 750, rounded up to the nearest one-tenth second. Except for stratum 2, the transducers were aimed so as to produce equally strong bottom signals at multiple ranges (in effect skimming the beam along the bottom.) As most fish were bottom oriented, this procedure approximately maximized the number of fish detected. Chart recorder voltage thresholds were set as low as possible, given the level of background noise present.

We used a downward-looking fathometer to monitor the river channel for presence of fish outside the range of shore-based sonar. Three to six bank-to-bank transects with the fathometer were completed every two or three days between 11 June and 31 August. Transects began and ended within 100 meters upstream or downstream from the sonar transducers on either bank of the river. In past years, transect data were used to estimate passage of fish offshore, beyond the range of the shore-based sonar (Mesiar et al 1991; Fleischman et al 1992). In 1993, transects did not reveal significant numbers of fish beyond sonar range, and no estimates of offshore passage were made.

Analytical Methods

Direction of Travel. In the river, targets detectable to sonar generally travel parallel to the current, whether they be fish moving upstream or debris moving downstream. We aimed the sonar transducers obliquely from shore (15^0-30^0 upstream or downstream from perpendicular), so that the vast majority of targets changed in range as they travelled through the sonar beam. Consequently, most targets left slanted traces on the paper output of the chart recorders, with the direction of the slant diagnostic of direction of travel. For example, when the transducer was aimed downstream from perpendicular, upstream-bound targets changed from long range to short range and downstream-bound targets changed from short to long range. When the transducer is aimed upstream from perpendicular, the situation is reversed. Targets were classified accordingly, and the targets which did not change in range (no slant) were classified as having an unknown direction of travel. Targets of each classification were counted for each of five range intervals (sectors) in each stratum. Downstream-bound targets were assumed to be debris and were not included in daily fish passage estimates. A fraction of targets with unknown direction of travel were added to the upstream targets, based on the relative proportion of upstream and downstream targets in each sector during each 15-minute subsample, i.e.,

$$y_{dbpsqc} = u_{dbpsqc} + \frac{u_{dbpsqc}}{u_{dbpsqc} + w_{dbpsqc}} z_{dbpsqc} , \qquad \textbf{(1)}$$

where:

y = net number of upstream oriented targets,
u = upstream oriented targets (fish),
w = downstream oriented targets (debris),
z = targets with unknown orientation,
d = day,
b = bank,
p = 2.5-hour sonar period within day *d* on bank *b*,
s = stratum of bank *b*,
q = 15-minute sample of sonar period *p*, and
c = range sector within stratum *s*.

Total Upstream Fish Passage. Total net upstream targets (fish) passing through stratum s of bank b during sample q of sonar period p of day d was calculated by summing net upstream targets over all sectors c,

$$y_{dbpsq} = \sum_{c} y_{dbpsqc} \ . \tag{2}$$

Upstream passage rate (in fish per hour) for stratum s of bank b during sonar period p of day d, was estimated by

$$\hat{r}_{dbps} = \frac{\sum_{q} y_{dbpsq}}{\sum_{q} h_{dbpsq}} \ , \tag{3}$$

where h_{dbpsq} is the duration, in hours, of sample q of sonar period p of day d for stratum s of bank b. Upstream passage rate for bank b during sonar period p of day d was estimated by the sum of stratum passage rates for that bank,

$$\hat{r}_{dbp} = \sum_{s} \hat{r}_{dbps} \ . \tag{4}$$

The passage rate for bank b during day d was estimated by the average of period passage rates,

$$\bar{r}_{db} = \frac{\sum_{p=1}^{n_{Sdb}} \hat{r}_{dbp}}{n_{Sdb}} \ , \tag{5}$$

where n_{Sdb} is the number of sonar periods during day d on bank b (usually 3). Finally, estimated total passage of fish past bank b during day d was

$$\hat{y}_{db} = 24 \ \bar{r}_{db} \ . \tag{6}$$

Missing Data. Equipment malfunction, severe weather, or other data needs occasionally resulted in missing sonar data. When individual samples within a sonar period were missed, fish passage was estimated based on existing samples for that period. When one or two complete sonar periods were missed on a stratum, we substituted interpolated values, i.e., the average of passage estimates for the periods preceding and following the missing periods.

Species Apportionment

Equipment and Procedures

Gillnets were drifted through or near the sonar sampling range on each bank to estimate the species composition of upstream-bound fish. Because of the size selectivity of gillnets, seven different mesh sizes were utilized: 8.5" (216 mm), 7.5" (191 mm), 6.5" (165 mm), 5.5" (140 mm), 5" (127 mm), 4" (102 mm) and 2.75" (70 mm). All nets were 25 fathoms (45.7 m) long and 7.6 meters deep; and were constructed of Momoi[1] MTC-50 or MT-50 multifilament nylon twine.

Gillnetting took place during two test-fishing periods daily, usually between 0900-1200 and 1700-2000. During each period, three to five nets were drifted. Each net was drifted once on the right bank and twice on the left bank, for a total of 18 to 24 drifts per day. All drifts were completed with one net before switching to the next net. When a net was drifted twice on the left bank, the two drifts were not done consecutively (drifts were done on alternate banks: left-right-left), so that there was a minimum of 20 minutes between the drifts on the same bank. The first left-bank drift was done relatively near shore (shoreward end 20 to 50 m from shore before 14 July, 40 to 60 m from shore after 14 July). The second left-bank drift originated further offshore so as not to overlap with the first drift (shoreward end 70 to 110 m from shore).

As the water level dropped in July, chum and chinook salmon began migrating farther from the left-bank shore, leaving only non-target species (cisco and whitefish) near shore. Beginning on 14 July, we altered the left-bank test-fishing procedures in response. Once daily, until 17 August, a salmon-sized (5.5" or 6.5") net was drifted very close to the left-bank shore (0 to 40 m range), by controlling one end of the net from the boat and the other end from the beach. These "beachwalks" confirmed that very few upstream-bound target species (chum, chinook, or coho

[1] Mention of a company's name does not constitute endorsement.

salmon) occurred within 40 m of shore. Therefore, beginning 14 July, only sonar data from ranges greater than 40 m were used to estimate fish passage, and all left-bank test-fishing drifts except beachwalks were restricted to the offshore zone (shoreward end of net was kept at least 40 m from the bank).

Analytical Methods

Four times were recorded for each drift: net start out (net starting out of boat, SO), net full out (FO), net start in (SI), and net full in (FI). Fishing time (t), in minutes, for drift j with mesh size m during test-fishing period f on bank b on day d was calculated as

$$t_{dbfmj} = SI - FO + \frac{FO - SO}{2} + \frac{FI - SI}{2} \bullet \qquad (7)$$

Drifts were generally 8-10 minutes in duration but were shortened when necessary to avoid snags or to limit catches during times of very high fish passage. Captured fish were identified to species and measured for length to the nearest 5 mm. Salmon species were measured from mid-eye to tail fork, non-salmon species from snout to tail fork.

Species Proportions. Species composition was estimated using data from drifted nets only; beachwalk data were excluded as they served only to confirm that no target species occurred in the nearshore zone. Species proportions were derived from relative testfish catch-per-unit-effort (CPUE), after first adjusting for gillnet size-selectivity as estimated from previous years' data (Appendix A). Gillnet selectivity estimates for chinook salmon, summer chum salmon, fall chum salmon, coho salmon, whitefish *(Coregonus* spp.*)*, and cisco *(C. sardinella, C. laurettae)* are compiled in Table 1. To date we have captured too few fish to estimate selectivity for pink salmon *(Oncorhynchus gorbuscha)*, sheefish *(Stenodus leucichthys)*, and other minor species.

Daily sonar estimates of fish passage were apportioned to species by bank. Data from two to six mesh sizes were used to estimate the abundance of each species (Table 2). To estimate the proportion of species i, catch c of species i and length class l during drift j of mesh m during test-fish period f on bank b on day d was first adjusted for gillnet selectivity s of species i and length class l in mesh m. Adjusted catch a was calculated as:

$$a_{ildbfmj} = \frac{c_{ildbfmj}}{s_{ilm}}, \tag{8}$$

if selectivity was defined for length class l of species i captured in mesh m. If selectivity was undefined because the fish was outside the range of lengths for which selectivity estimates were available, adjusted catch was set to zero. For pink salmon, sheefish, and other species lacking selectivity estimates altogether (totalling 3.1% of all fish captured), a mean selectivity of 0.694 was used for all fish regardless of length.

Total effort, in fathom hours, of drift j with mesh size m during test-fishing period f on bank b on day d was calculated as

$$e_{dbfmj} = \frac{25\ t_{dbfmj}}{60}, \tag{9}$$

since all nets were 25 fathoms long. CPUE, across all drifts j with all mesh sizes m, for length class l of species i during test-fishing period f on bank b on day d was computed as the total adjusted catch divided by total effort:

$$CPUE_{ildbf} = \frac{\sum_m \sum_j a_{ildbfmj}}{\sum_m \sum_j e_{dbfmj}}. \tag{10}$$

The proportion p of species i during test-fishing period f on bank b on day d was estimated by the ratio of CPUE for all length classes of species i to the total CPUE for all species,

$$\hat{p}_{idbf} = \frac{\sum_l CPUE_{ildbf}}{\sum_i \sum_l CPUE_{ildbf}}. \tag{11}$$

For bank b on day d, the estimated proportion of species i was estimated as

$$\hat{p}_{idb} = \frac{\sum_{f=1}^{2} CPUE_{idbf}}{\sum_{f=1}^{2}\sum_{i} CPUE_{idbf}} \tag{12}$$

which is the equivalent of the mean of the two test-fishing period proportions, weighted by the total CPUE for all species in each test-fishing period.

Fish Passage by Species. The passage of species i on bank b during day d was estimated by

$$\hat{y}_{idb} = \hat{y}_{db} \; \hat{p}_{idb}. \tag{13}$$

Finally, passage estimates were summed over both banks and all days to obtain a seasonal estimate for species i, Y_i;

$$\hat{Y}_i = \sum_{d}\sum_{b=1}^{2} \hat{y}_{idb} \tag{14}$$

Missing Data. Occasionally insufficient test-fishing data were collected to estimate daily species proportions or their variances. On these days, test-fishing data were pooled with those of adjacent days, and the pooled species proportions were applied to the corresponding several days of sonar passage estimates. This occurred when only one test-fishing period was completed due to logistical problems, or when no fish were caught on one bank during a test-fishing period.

Variance and Confidence Interval Estimation

The project sample design was not randomized in any sense, statistical rigor having been sacrificed for logistical considerations. The timing of the sonar periods approaches that of a systematic sample with a period of eight or twelve hours, however the starting point of the sample was not randomly chosen. The test-fishing periods were timed so as to not overlap with sonar sampling. To obtain parametric estimates of precision, we have treated the data as though the first sonar period of each day had a different random starting time and that both test-fishing periods were scheduled randomly each day.

As described above, point estimates of daily passage by species were the product of sonar passage estimates multiplied by species proportions derived from test gillnetting. Both component factors were subject to sampling error. To estimate the variance of daily species passage estimates, we must first estimate the variance of each component individually.

Total Fish Passage

Sonar sampling periods, each 2.5 hours long, were scheduled at regular (systematic) intervals of approximately eight hours. Treating the systematically sampled sonar counts as a simple random sample would overestimate the variance of the total, since sonar counts were highly autocorrelated (Wolter 1985). To accomodate these characteristics of the data, a variance estimator based on the squared differences of successive observations, recommended by Brannian (1986) and modified from Wolter (1985), was employed;

$$\hat{V}ar(\hat{y}_{db}) = 24^2 \frac{1 - f_{db}}{n_{Sdb}} \frac{\sum_{p=2}^{n_{Sdb}} (\hat{r}_{dbp} - \hat{r}_{db,p-1})^2}{2(n_{Sdb} - 1)}, \qquad \textbf{(15)}$$

where f_{db} denotes the first-stage sampling fraction, usually 7.5 hrs / 24 hrs = 0.31.

Species Proportions

Total fish passage was allocated to species by drifting a suite of gillnets twice daily (morning and evening) on each bank. Species proportions were estimated from relative daily CPUE (equation 12), after adjusting for the effects of gillnet selectivity. In order to estimate the variance of these proportions, we generated two replicate sets of species proportion estimates, one each for the morning and evening sets of drifts. The estimator of the variance of p_{idb} was adapted from Cochran (1977:64), weighting each replicate by total (all species) CPUE:

$$\hat{V}ar(\hat{p}_{idb}) = \frac{1}{n_{Tdb}} \sum_{f=1}^{n_{Tdb}} \left(\frac{m_{dbf}}{\bar{m}_{db}} \right)^2 \frac{(\hat{p}_{idbf} - \hat{p}_{idb})^2}{n_{Tdb} - 1}, \qquad \textbf{(16)}$$

where

n_{Tdb} = number of test-fishing periods

m_{dbf} = CPUE for all species during test-fishing period *f* of day *d* on bank *b*

m_{db} = mean of m_{dbf} over all test-fishing periods *f* during day *d* on bank *b*.

On days when there were insufficient data to estimate the variance of daily species proportions, two or more days of testfishing data were pooled and the variance was calculated over the multiple-day "report period".

Fish Passage by Species

Except for the timing of sonar and test-fishing periods, sonar-derived estimates of total fish passage were independent of gillnet-derived estimates of species proportions. Therefore we calculated the variance of their product (daily species passage estimates $\hat{y}_{idb}$) after Goodman's (1960) formula for the variance of the product of two independent random variables,

$$\hat{V}ar(\hat{y}_{idb}) = \hat{y}^2_{db}\ \hat{V}ar(\hat{p}_{idb}) + \hat{p}^2_{idb}\ \hat{V}ar(\hat{y}_{db}) - \hat{V}ar(\hat{y}_{db})\,\hat{V}ar(\hat{p}_{idb})\ . \qquad \textbf{(17)}$$

Finally, passage estimates (equation **13**) are assumed independent between banks and among days, so the variance of their sum (equation **14**) was estimated by the sum of their variances,

$$\hat{V}ar(\hat{Y}_i) = \sum_d \sum_{b=1}^{2} \hat{V}ar(\hat{y}_{idb})\ . \qquad \textbf{(18)}$$

Assuming normally distributed errors, parametric 90% confidence intervals were calculated as

$$\hat{Y}_i \pm 1.645\sqrt{\hat{V}ar(\hat{Y}_i)}. \qquad \textbf{(19)}$$

We developed SAS program code (Appendix B) to calculate passage estimates and estimates of variance.

RESULTS

The sonar project operated from 4 June through 31 August in 1993. A total of six sonar periods were missed during the season: 22 June period 2 (left bank, due to equipment problems), 14 August period 3 (left bank nearshore stratum, storm), 19 August periods 1 and 2 (both banks, storm), 22 August period 1 (left bank, echo sounder malfunction), and 27 August period 2 (left bank, standard target data collection). Passage estimates were interpolated for the missing periods.

No large underwater bar formed in mid-river as occurred during low water in 1990. Bank-to-bank transects revealed very few fish offshore beyond the range of the sonar. Passage of fish very close to shore on the left bank after 13 July was not estimated because nets deployed there detected no upstream-bound chum or coho salmon (Appendix C).

Excluding non-target species passing near the left-bank shore after 13 July, an estimated 1,766,615 $\pm$ 28,075 (s.e.) fish passed upstream through the sonar beams during this period, 1,415,600 $\pm$ 24,217 (80.1%) along the left bank and 351,015 $\pm$ 6,376 (19.9%) along the right bank. The daily distribution of fish between banks varied over the season (Figure 2). Prior to 19 July, virtually all fish detected were within 200 m of shore on the left bank and within 150 m of shore on the right bank (Figure 3). During the late season (19 July and after), fish were detected more than 300 m from shore on the left bank (Figure 4). Upstream-passing fish were comprised of an estimated 134,855 chinook salmon, 1,238,892 chum salmon, 41,541 $\pm$ 5,347 (s.e.) coho salmon, and 351,327 other fish (Tables 4 and 5). Chinook salmon were comprised of 71,132 $\pm$ 6,744 fish greater than 700 mm in length, and 63,723 $\pm$ 6,195 "jacks" shorter than 700 mm. Most (947,192 $\pm$ 27,840) of the chum salmon passed during the early "summer" season (prior to 19 July); the remainder (291,700 $\pm$ 12,294) passed during the late "fall" season (19 July and after). Chinook salmon passage peaked on 22 June (11,780), chum salmon on 5 July (78,638), and coho salmon on 24 August (4,608; Figure 5).

The project captured 5,681 fish during 1,621 drifts with gillnets totaling 12,158 minutes. The catch consisted of 3,526 chum salmon, 682 chinook salmon, 223 coho salmon, 24 pink salmon, 41 sheefish, 289 whitefish, 787 cisco, and 109 other fish (Appendix C).

Passage estimates from 24-hour data were slightly (3-12%) lower than the standard estimates based on three 2.5-hour periods (Table 6). This may be the result of disrupted fish passage during the two three-hour periods of test-fishing daily; the 24-hour schedule overlaps with the test-fishing periods and the standard sonar schedule does not.

DISCUSSION

Passage estimates for 1993 should be considerably more accurate than for past years. The lower frequency 120 kHz sonar proved capable of detecting targets at longer ranges, and its performance more than doubled the effective range of the sonar relative to previous years. Furthermore, the bottom profile remained exceedingly good all season, and there was no evidence that significant numbers of fish passed in mid-river as happened in 1990 (Mesiar et al., 1991). The final result was that a much larger proportion of fish were detected from shore than was possible in the past, which substantially improved the accuracy and precision of the estimates.

The 1993 season's success was due in part to better than average counting conditions. Unless the salmon move offshore into much deeper and faster water, estimating the passage of salmon at Pilot Station will remain a viable tool. Even with onshore orientation, the task is challenging. Effective use of the sonar is enhanced by the existence of an evenly-sloped bottom profile which enables a clear view of fish at long ranges. Bottom contours can change considerably within and between years and affect fish migration paths. An alternative site exists downriver (Fleischman and Mesiar 1993) which may enhance detection of fish in such an event. Moving the existing sonar system to a new site is time-consuming and risks substantial loss of data, especially if the new site proves unacceptable. Therefore, the new potential site should be thoroughly evaluated for two or three seasons prior to any final decision on relocation.

We have used downward-looking sonar to determine fish distribution. The equipment used, a Lowrance X15 or X16 fathometer, was not designed for such use. A more sophisticated system is needed.

The river exhibited two new phenomena in 1993 which affected the performance of the sonar. From 4 to 25 June the sonar detected persistent noise near shore on the left bank. The noise was persistent but variable in intensity, and existed in a discontinous band along shore that could be mapped with a fathometer. Its source was unknown. It was more difficult, but generally not impossible, to count fish within the zone. Fish appeared to be avoiding this zone to some extent. If so, the effect of the noise phenonenon on the accuracy of the passage estimates was probably minor.

Second, for a short period after a storm on 18-19 August, we were unable to detect fish or bottom echoes at long range (>150 m) on the left bank. Fathometer profiles and redeployment of the transducer pods showed no degradation in the bottom profile. Approximately 30 hours after the storm fish and bottom were again visible to 300 m and a 20+ cm layer of organic matter had been deposited on the left bank beach. Increased particulate matter may have caused dispersion of the sonar signal,

analogous to the condition created by fog for headlights. Because of the short duration of these unusual conditions, their effect on seasonal passage estimates was again minor.

LITERATURE CITED

Brannian, L. 1986. Development of an approximate variance for sonar counts. 24 December Memorandum to William Arvey, AYK Regional Biologist, Commercial Fisheries Division, Alaska Department of Fish and Game. 333 Raspberry Rd., Anchorage, Ak 99518.

Cochran, W.G. 1977. Sampling Techniques, third edition. John Wiley and Sons, New York.

Fleischman, S., D.C. Mesiar, and P. Skvorc. 1992. Yukon River Sonar Escapement Estimate 1991. Regional Information Report No. 3A92-08. Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, AK 99518.

Fleischman, S.J., and D.C. Mesiar. 1993. Lower Yukon River Sonar Progress Report 1992. Regional Information Report No. 3A93-05. Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, AK 99518.

Goodman, L.A. 1960. On the exact variance of products. J. Amer. Stat. Assoc. 55:708-713.

Mesiar, D.C., K.D. Vaught, S. Fleischman, and P. Skvorc. 1991. Yukon River Sonar Escapement Estimate 1990. Regional Information Report No. 3A91-08. Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, AK 99518.

Wolter, K.M. 1985. Introduction to Variance Estimation. Springer-Verlag, New York.

Table 1. Net selectivity estimates used to adjust testfish catches for unequal probability of capture, Lower Yukon River Sonar 1993.

Species	Length Class Midpoint	Mesh Size in Inches 2.75	4.0	5.0	5.5	6.5	7.5	8.5
JACK	480		0.278	0.985	0.176			
JACK	520		0.084	0.805	0.962	0.288	0.179	
JACK	560		0.402	0.426	0.977	0.419	0.172	
JACK	600		0.133	0.389	0.665	0.909	0.256	0.187
JACK	640		0.181	0.191	0.558	1.000	0.578	0.337
JACK	680		0.155	0.328	0.383	0.924	0.615	0.299
CHINOOK	720		0.184	0.163	0.379	0.811	0.994	0.526
CHINOOK	760		0.158	0.335	0.451	0.701	0.993	0.630
CHINOOK	800		0.229	0.303	0.272	0.463	0.980	0.952
CHINOOK	840			0.231	0.207	0.510	0.776	1.000
CHINOOK	880			0.343	0.395	0.551	0.873	0.992
CHINOOK	920			0.258	0.139	0.539	0.437	0.970
CHINOOK	960			0.390	0.521	0.467	0.526	0.938
CHINOOK	1000					0.477	0.897	0.523
SCHUM	470		0.401	0.739				
SCHUM	490		0.219	0.937	0.264			
SCHUM	510			0.999	0.500			
SCHUM	530			0.914	0.912			
SCHUM	550			0.660	0.987	0.150		
SCHUM	570			0.470	0.981	0.338		
SCHUM	590			0.322	0.893	0.745		
SCHUM	610			0.179	0.463	0.972	0.219	
SCHUM	630				0.419	1.000	0.476	0.156
SCHUM	650				0.363	0.977	0.756	0.190
SCHUM	670				0.274	0.905	0.911	0.291
SCHUM	690				0.271	0.852	0.930	0.445
SCHUM	710				0.209	0.748	0.985	0.683
FCHUM	470		0.382	0.934				
FCHUM	490		0.238	0.999	0.342			
FCHUM	510		0.146	0.905	0.603			
FCHUM	530			0.542	0.993			
FCHUM	550			0.311	0.969	0.223		
FCHUM	570			0.263	0.832	0.396		
FCHUM	590			0.209	0.758	0.772		
FCHUM	610				0.521	0.928		
FCHUM	630				0.362	0.998		
FCHUM	650				0.367	0.969		
FCHUM	670				0.287	0.858		
FCHUM	690				0.358	0.699		
FCHUM	710				0.527	0.263		
FCHUM	730					0.370		
COHO	420		0.979	0.378	0.211			
COHO	460		0.513	0.825	0.613			
COHO	500		0.496	0.983	0.995			
COHO	540		0.321	0.809	0.977	0.349		
COHO	580		0.306	0.603	0.973	0.615		
COHO	620		0.378	0.618	0.925	0.686		
COHO	660		0.474	1.000	1.000	0.895		
WHITE	300	0.939						
WHITE	400	0.310	0.997					
WHITE	500	0.297	0.826	0.997				
CISCO	280	0.486						
CISCO	320	0.953						
CISCO	360	0.894						
CISCO	400	0.480	0.500					
CISCO	440		0.790					
CISCO	480		0.994					

Table 2. Mesh sizes used to estimate the relative abundance of the most common fish species encountered in the Yukon River at Pilot Station.

	Mesh size in inches						
Species	2.75	4.0	5.0	5.5	6.5	7.5	8.5
CHINOOK		X	X	X	X	X	X
SCHUM		X	X	X	X	X	
FCHUM		X	X	X	X		
COHO		X	X	X	X		
PINK		X	X				
SHEEFISH				X	X	X	
WHITEFISH	X	X	X				
JACK		X	X	X	X	X	X
OTHER		X	X	X			
CISCO	X	X					

Table 3. Daily estimates of fish passage by bank, Lower Yukon River Sonar 1993.

DATE	LEFT BANK PASSAGE	STD ERROR	RIGHT BANK PASSAGE	STD ERROR	TOTAL	STD ERROR	COEFFICIENT OF VARIATION
04JUN93	.	.	350	93	350	93	0.27
05JUN93	.	.	168	45	168	45	0.26
06JUN93	733	55	226	53	958	77	0.08
07JUN93	1,365	103	708	167	2,073	196	0.09
08JUN93	1,453	110	260	61	1,713	126	0.07
09JUN93	4,480	883	534	153	5,014	896	0.18
10JUN93	4,198	827	1,018	293	5,216	877	0.17
11JUN93	2,097	198	1,825	600	3,922	632	0.16
12JUN93	4,538	255	1,079	262	5,617	366	0.07
13JUN93	3,161	209	553	78	3,714	223	0.06
14JUN93	3,410	225	646	91	4,055	243	0.06
15JUN93	8,358	1,211	2,353	121	10,712	1,217	0.11
16JUN93	13,415	1,944	2,443	126	15,857	1,948	0.12
17JUN93	6,491	681	2,575	534	9,066	865	0.10
18JUN93	8,258	866	2,013	417	10,270	961	0.09
19JUN93	11,841	1,281	2,948	198	14,789	1,296	0.09
20JUN93	9,463	1,024	4,667	313	14,130	1,070	0.08
21JUN93	39,002	13,462	6,769	494	45,771	13,471	0.29
22JUN93	53,477	1,298	11,271	330	64,748	1,339	0.02
23JUN93	38,105	3,283	10,152	1,697	48,257	3,696	0.08
24JUN93	33,138	3,404	9,108	624	42,246	3,461	0.08
25JUN93	22,945	2,357	8,191	561	31,136	2,423	0.08
26JUN93	34,366	2,131	6,837	1,843	41,202	2,817	0.07
27JUN93	32,798	3,590	7,231	919	40,029	3,706	0.09
28JUN93	26,263	2,875	3,948	502	30,212	2,919	0.10
29JUN93	31,074	4,183	6,683	887	37,757	4,276	0.11
30JUN93	28,131	3,787	11,151	1,479	39,282	4,066	0.10
01JUL93	27,422	2,632	7,431	555	34,853	2,690	0.08
02JUL93	17,889	1,171	5,718	973	23,607	1,522	0.06
03JUL93	9,408	897	2,452	196	11,860	918	0.08
04JUL93	24,536	1,781	9,007	1,239	33,543	2,170	0.06
05JUL93	64,789	4,703	16,978	2,336	81,767	5,251	0.06
06JUL93	52,115	5,435	16,309	1,824	68,424	5,732	0.08
07JUL93	48,220	5,093	14,224	689	62,444	5,139	0.08
08JUL93	64,596	5,541	16,043	1,562	80,639	5,757	0.07
09JUL93	44,620	4,921	8,792	860	53,412	4,996	0.09
10JUL93	22,024	3,181	4,804	791	26,828	3,277	0.12
11JUL93	25,797	3,517	4,399	535	30,196	3,557	0.12
12JUL93	40,640	1,217	4,915	132	45,555	1,224	0.03
13JUL93	22,551	5,225	4,871	757	27,422	5,280	0.19
14JUL93	8,144	413	3,279	285	11,423	502	0.04
15JUL93	6,639	337	2,364	206	9,002	395	0.04
16JUL93	9,376	1,639	3,804	152	13,180	1,646	0.12
17JUL93	22,918	2,018	4,357	211	27,274	2,029	0.07
18JUL93	17,623	1,552	4,407	214	22,030	1,567	0.07
SUBTOTAL	951,863		239,859		1,191,722		

Table 3 (page 2 of 2).

DATE	LEFT BANK PASSAGE	STD ERROR	RIGHT BANK PASSAGE	STD ERROR	TOTAL	STD ERROR	COEFFICIENT OF VARIATION
19JUL93	5,765	981	2,501	217	8,266	1,005	0.12
20JUL93	4,160	284	3,241	304	7,401	416	0.06
21JUL93	7,570	360	2,530	231	10,100	428	0.04
22JUL93	4,740	226	1,949	178	6,688	287	0.04
23JUL93	5,767	523	2,920	55	8,687	526	0.06
24JUL93	6,795	219	2,045	161	8,839	272	0.03
25JUL93	8,209	265	4,108	324	12,316	418	0.03
26JUL93	6,998	667	1,932	265	8,931	718	0.08
27JUL93	11,585	1,152	6,086	1,216	17,671	1,675	0.09
28JUL93	12,790	2,218	6,070	895	18,860	2,392	0.13
29JUL93	20,654	1,578	3,659	350	24,314	1,616	0.07
30JUL93	8,149	945	4,408	351	12,556	1,008	0.08
31JUL93	6,621	768	3,344	266	9,964	812	0.08
01AUG93	4,979	155	3,941	751	8,920	767	0.09
02AUG93	7,702	1,393	2,217	145	9,919	1,400	0.14
03AUG93	16,598	1,199	3,229	416	19,827	1,269	0.06
04AUG93	21,676	1,566	2,926	377	24,601	1,611	0.07
05AUG93	22,922	2,199	2,426	106	25,348	2,201	0.09
06AUG93	11,316	2,047	2,856	871	14,173	2,225	0.16
07AUG93	8,529	823	1,859	219	10,387	852	0.08
08AUG93	6,923	804	1,328	163	8,251	820	0.10
09AUG93	7,749	214	1,938	262	9,687	339	0.03
10AUG93	7,390	976	2,655	282	10,045	1,016	0.10
11AUG93	9,583	721	2,071	326	11,654	791	0.07
12AUG93	6,794	1,219	1,824	280	8,618	1,251	0.15
13AUG93	5,905	315	2,030	485	7,935	578	0.07
14AUG93	7,788	1,172	1,545	96	9,333	1,176	0.13
15AUG93	6,987	697	2,801	343	9,787	777	0.08
16AUG93	19,583	2,536	1,586	166	21,169	2,541	0.12
17AUG93	46,375	2,870	5,732	786	52,107	2,976	0.06
18AUG93	37,004	2,290	3,336	457	40,341	2,336	0.06
19AUG93	14,890	1,049	1,895	230	16,785	1,074	0.06
20AUG93	12,388	872	1,910	232	14,299	903	0.06
21AUG93	5,477	270	1,838	265	7,315	378	0.05
22AUG93	5,496	271	2,532	365	8,028	455	0.06
23AUG93	11,257	525	996	101	12,254	535	0.04
24AUG93	12,021	997	1,956	287	13,978	1,038	0.07
25AUG93	8,690	614	1,842	233	10,532	656	0.06
26AUG93	6,253	463	1,248	272	7,501	537	0.07
27AUG93	4,808	356	1,455	317	6,263	477	0.08
28AUG93	4,696	1,605	1,516	562	6,212	1,700	0.27
29AUG93	5,116	482	513	58	5,629	485	0.09
30AUG93	2,949	386	1,231	219	4,180	443	0.11
31AUG93	4,092	535	1,131	201	5,223	572	0.11
SUBTOTAL	463,737		111,156		574,893		
TOTAL	1415,600	24,217	351,015	6,376	1766,615	28,075	0.01

Table 4. Daily estimates of fish passage by species, Lower Yukon River Sonar 1993.

REPORT PERIOD	ENDING ON	TOTAL ALL SPECIES	CHINOOK	JACK	SCHUM	SHEEFISH	COHO	PINK	WHITE	CISCO	OTHER
1	04JUN93	350	63	0	0	71	0	0	0	216	0
1	05JUN93	168	30	0	0	34	0	0	0	104	0
2	06JUN93	958	88	0	450	0	0	0	233	187	0
2	07JUN93	2,073	186	0	838	0	0	0	461	587	0
2	08JUN93	1,713	160	0	892	0	0	0	444	216	0
3	09JUN93	5,014	1,458	469	2,651	116	0	0	71	248	0
3	10JUN93	5,216	1,488	492	2,590	172	0	0	67	406	0
4	11JUN93	3,922	426	767	2,511	100	0	0	0	118	0
5	12JUN93	5,617	1,364	1,259	2,721	274	0	0	0	0	0
6	13JUN93	3,714	1,103	1,100	728	0	0	0	0	783	0
6	14JUN93	4,055	1,200	1,190	785	0	0	0	0	879	0
7	15JUN93	10,712	3,053	2,233	5,215	210	0	0	0	0	0
7	16JUN93	15,857	4,712	3,440	7,369	337	0	0	0	0	0
8	17JUN93	9,066	822	867	6,006	128	0	0	0	1,243	0
8	18JUN93	10,270	865	1,024	6,720	163	0	0	0	1,498	0
9	19JUN93	14,789	2,182	2,396	10,212	0	0	0	0	0	0
9	20JUN93	14,130	2,051	2,472	9,606	0	0	0	0	0	0
10	21JUN93	45,771	2,827	3,108	39,690	0	0	0	0	145	0
11	22JUN93	64,748	11,780	6,171	46,797	0	0	0	0	0	0
12	23JUN93	48,257	5,456	3,089	39,276	0	0	0	0	436	0
13	24JUN93	42,246	2,533	3,479	34,737	557	0	0	0	940	0
13	25JUN93	31,136	1,917	2,644	25,284	479	0	0	0	813	0
14	26JUN93	41,202	4,371	8,249	25,494	479	0	0	0	2,609	0
15	27JUN93	40,029	1,289	454	31,380	119	0	0	0	6,787	0
15	28JUN93	30,212	1,032	306	23,775	65	0	0	0	5,033	0
16	29JUN93	37,757	1,216	2,460	31,324	0	29	0	0	2,728	0
16	30JUN93	39,282	1,243	2,300	32,865	0	49	0	0	2,826	0
17	01JUL93	34,853	892	1,673	28,261	0	0	0	144	3,884	0
18	02JUL93	23,607	611	709	21,105	637	0	0	92	453	0
19	03JUL93	11,860	1,015	255	9,725	0	0	0	0	865	0
20	04JUL93	33,543	429	179	32,151	62	0	0	170	478	74
20	05JUL93	81,767	1,133	472	78,638	164	0	0	320	901	139
21	06JUL93	68,424	6,193	1,273	56,889	171	0	0	0	3,898	0
22	07JUL93	62,444	1,434	473	58,216	0	0	0	148	1,923	250
23	08JUL93	80,639	804	838	74,495	184	0	0	0	4,318	0
24	09JUL93	53,412	610	4,642	47,022	879	0	0	0	260	0
25	10JUL93	26,828	1,458	530	20,718	0	0	0	1,484	1,644	994
26	11JUL93	30,196	146	213	21,821	0	0	0	490	6,767	760
27	12JUL93	45,555	1,355	0	33,897	0	0	0	6,147	4,156	0
28	13JUL93	27,422	137	0	15,205	0	0	0	6,206	5,874	0
29	14JUL93	11,423	0	0	9,812	0	0	0	489	0	1,122
29	15JUL93	9,002	0	0	7,699	0	0	0	399	0	905
30	16JUL93	13,180	0	510	6,952	0	0	0	817	4,585	319
31	17JUL93	27,274	0	326	19,243	335	0	30	592	6,520	227
31	18JUL93	22,030	0	251	15,425	257	0	31	455	5,430	179
TOTAL 4JUN-18JUL 1,		91,722	71,132	62,314	947,192	5,993	78	61	19,225	80,758	4,969
STANDARD ERROR		26,297	6,744	6,075	27,840	1,686	58	54	6,293	13,582	1,377

(1) Estimates for other species do not include fish passing close to left-bank shore after 13 July.

Table 4 (page 2 of 2).

REPORTING PERIOD	ENDING ON	TOTAL ALL SPECIES	JACK	SHEEFISH	FCHUM	COHO	PINK	WHITE	CISCO	OTHER
34	19JUL93	8,266	0	0	1,392	0	0	2,431	4,383	60
35	20JUL93	7,401	0	0	5,740	0	259	364	1,038	0
36	21JUL93	10,100	0	168	4,740	0	0	1,290	3,902	0
36	22JUL93	6,688	0	105	3,135	0	0	818	2,630	0
37	23JUL93	8,687	0	390	3,251	0	0	364	4,681	0
38	24JUL93	8,839	65	0	799	0	0	3,847	4,129	0
38	25JUL93	12,316	79	0	1,305	0	0	4,718	6,214	0
39	26JUL93	8,931	0	0	967	0	0	302	7,662	0
40	27JUL93	17,671	685	0	9,214	0	290	1,889	4,972	621
41	28JUL93	18,860	0	0	4,082	0	0	3,122	11,655	0
42	29JUL93	24,314	580	0	15,295	0	0	1,036	7,340	62
43	30JUL93	12,556	0	0	4,790	0	0	862	6,773	131
43	31JUL93	9,964	0	0	3,849	0	0	687	5,329	99
44	01AUG93	8,920	0	0	3,472	0	0	251	5,197	0
45	02AUG93	9,919	0	0	5,556	0	627	0	3,736	0
46	03AUG93	19,827	0	0	14,776	0	0	0	4,900	151
46	04AUG93	24,601	0	0	18,945	0	0	0	5,459	197
47	05AUG93	25,348	0	0	21,719	269	137	156	2,999	68
48	06AUG93	14,173	0	253	12,153	0	0	328	1,188	250
49	07AUG93	10,387	0	0	5,353	0	0	0	5,035	0
50	08AUG93	8,251	0	0	3,569	1,385	0	1,132	2,166	0
51	09AUG93	9,687	0	0	97	1,066	0	0	8,524	0
52	10AUG93	10,045	0	0	535	598	0	690	8,221	0
53	11AUG93	11,654	0	0	6,687	0	0	203	4,764	0
54	12AUG93	8,618	0	0	5,263	1,816	0	572	577	390
55	13AUG93	7,935	0	0	797	1,732	113	36	5,257	0
56	14AUG93	9,333	0	0	3,707	77	0	773	4,776	0
57	15AUG93	9,787	0	0	3,780	1,744	0	0	4,202	63
58	16AUG93	21,169	0	0	14,566	785	0	188	5,589	41
59	17AUG93	52,107	0	0	39,527	3,701	0	2,168	6,613	98
59	18AUG93	40,341	0	0	31,286	2,735	0	1,586	4,676	57
60	19AUG93	16,785	0	0	6,987	2,949	0	26	6,823	0
60	20AUG93	14,299	0	0	5,844	2,546	0	27	5,882	0
61	21AUG93	7,315	0	0	3,000	1,820	0	107	2,322	66
61	22AUG93	8,028	0	0	3,082	2,219	0	147	2,489	91
62	23AUG93	12,254	0	0	6,825	1,571	0	53	3,805	0
63	24AUG93	13,978	0	0	2,857	4,608	0	0	6,513	0
64	25AUG93	10,532	0	0	739	1,688	0	0	8,104	0
65	26AUG93	7,501	0	49	2,629	735	0	252	3,837	0
65	27AUG93	6,263	0	57	2,028	664	0	215	3,299	0
66	28AUG93	6,212	0	0	3,735	1,461	0	0	1,015	0
67	29AUG93	5,629	0	0	1,484	1,184	0	535	2,426	0
68	30AUG93	4,180	0	0	915	1,853	0	0	1,411	0
68	31AUG93	5,223	0	0	1,227	2,336	0	0	1,560	0
TOTAL 19JUL-31AUG		574,893	1,409	1,022	291,700	41,541	1,426	31,175	204,176	2,444
STANDARD ERROR		9,834	1,214	336	12,294	5,347	632	4,912	12,218	658

(1) Estimates for other species do not include fish passing close to left-bank shore after 13 July.

Table 5. 90% confidence intervals for seasonal passage estimates, Lower Yukon River Sonar 1993.

	Point Estimate	Standard Error	L. Bound 90% C.	U. Bound 90% C.I.
Chinook Salmon	71,132	6,744	60,038	82,226
Jack Chinook	63,723	6,195	53,532	73,914
Summer Chum	947,192	27,840	901,395	992,989
Fall Chum	291,700	12,294	271,476	311,924
Coho Salmon	41,541	5,347	32,745	50,337

Table 6. Comparison of passage estimates based on 24-hour sampling versus standard sampling schedule (three 2.5-hour periods), Lower Yukon River Sonar 1993.

	13-14 August	18 August	23 August	30 August*	TOTAL
24-hour Estimate	7,836	38,938	11,221	2,565	60,560
Standard Estimate	8,561	40,341	12,254	2,949	64,105
(s.e.)	(1,019)	(5,726)	(535)	(291)	(5,848)

* left-bank only

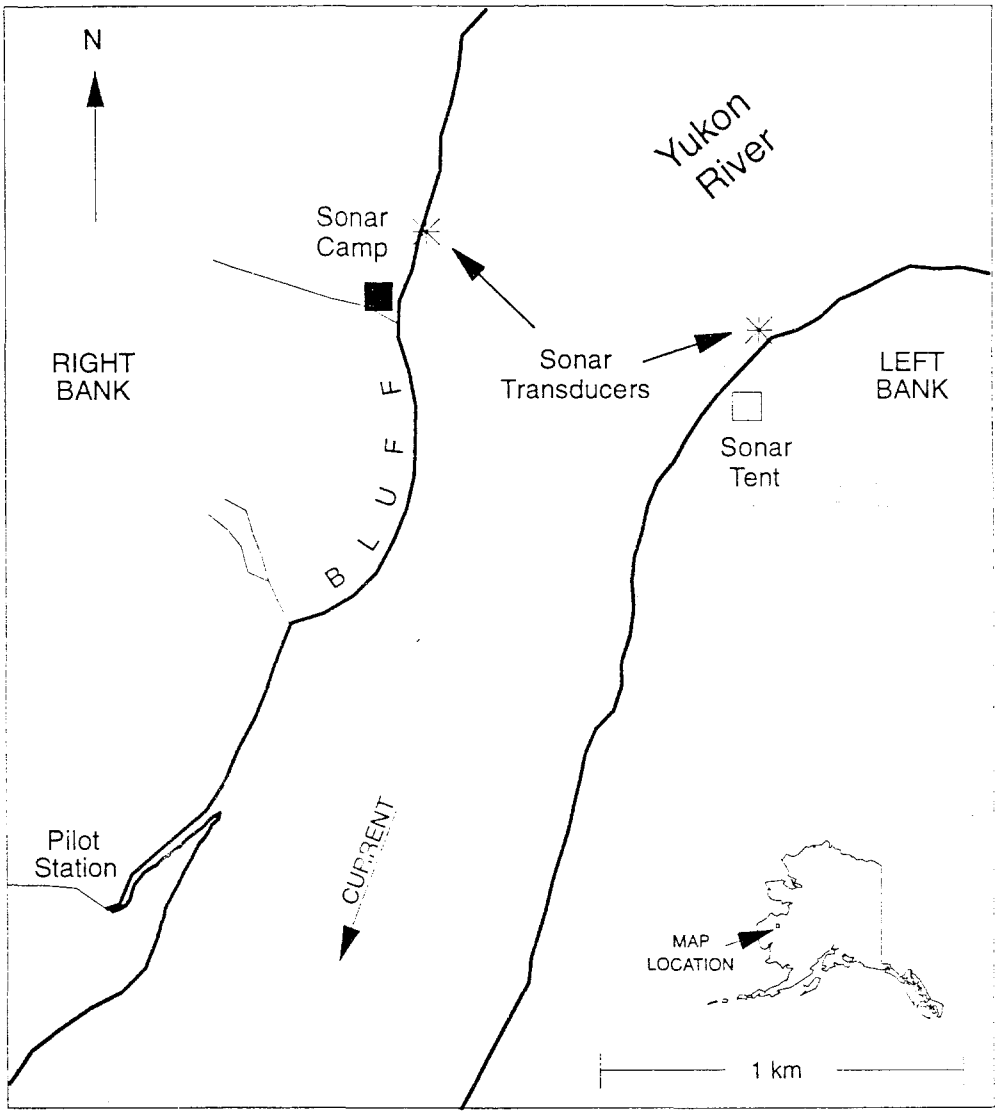

Figure 1. Lower Yukon River sonar site and vicinity.

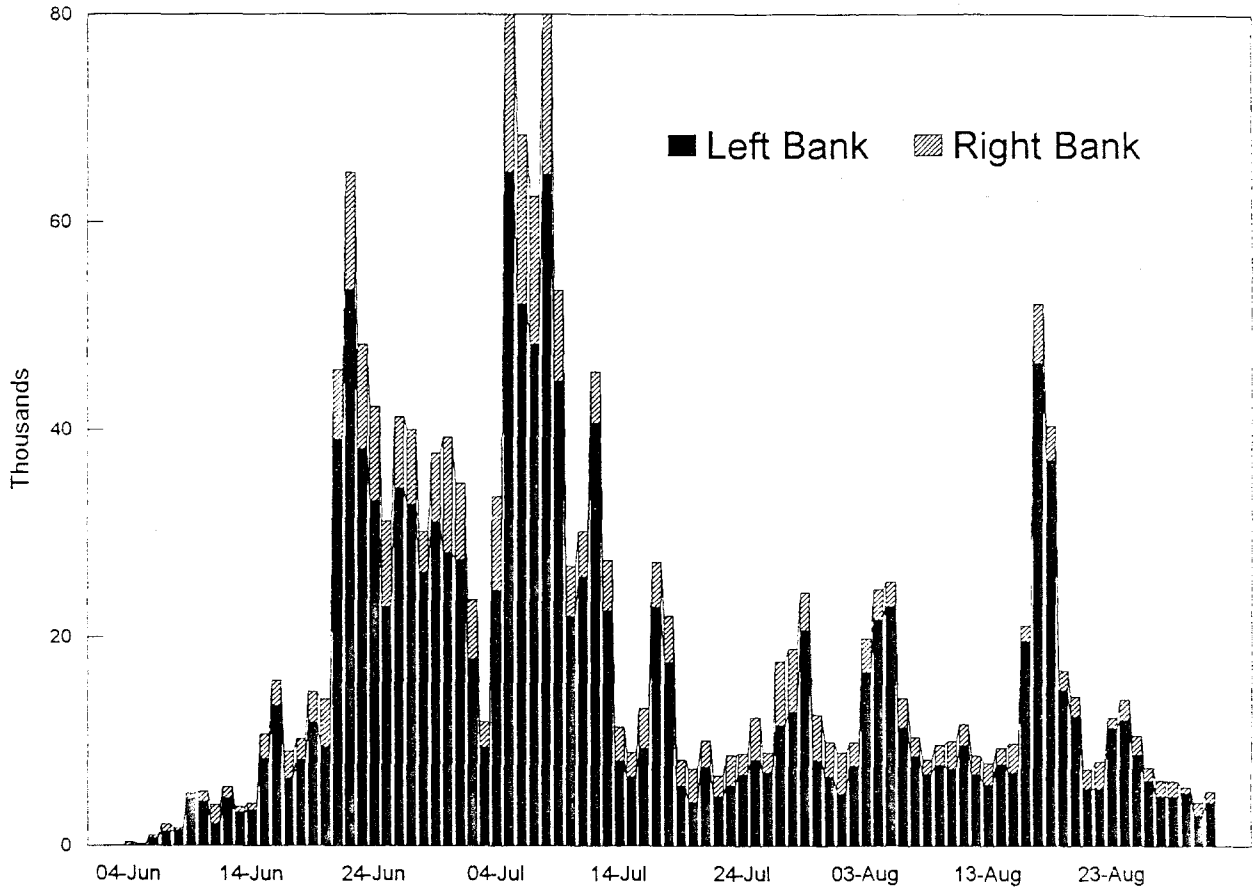

Figure 2. Daily upstream sonar passage by bank, Lower Yukon River Sonar 1993.

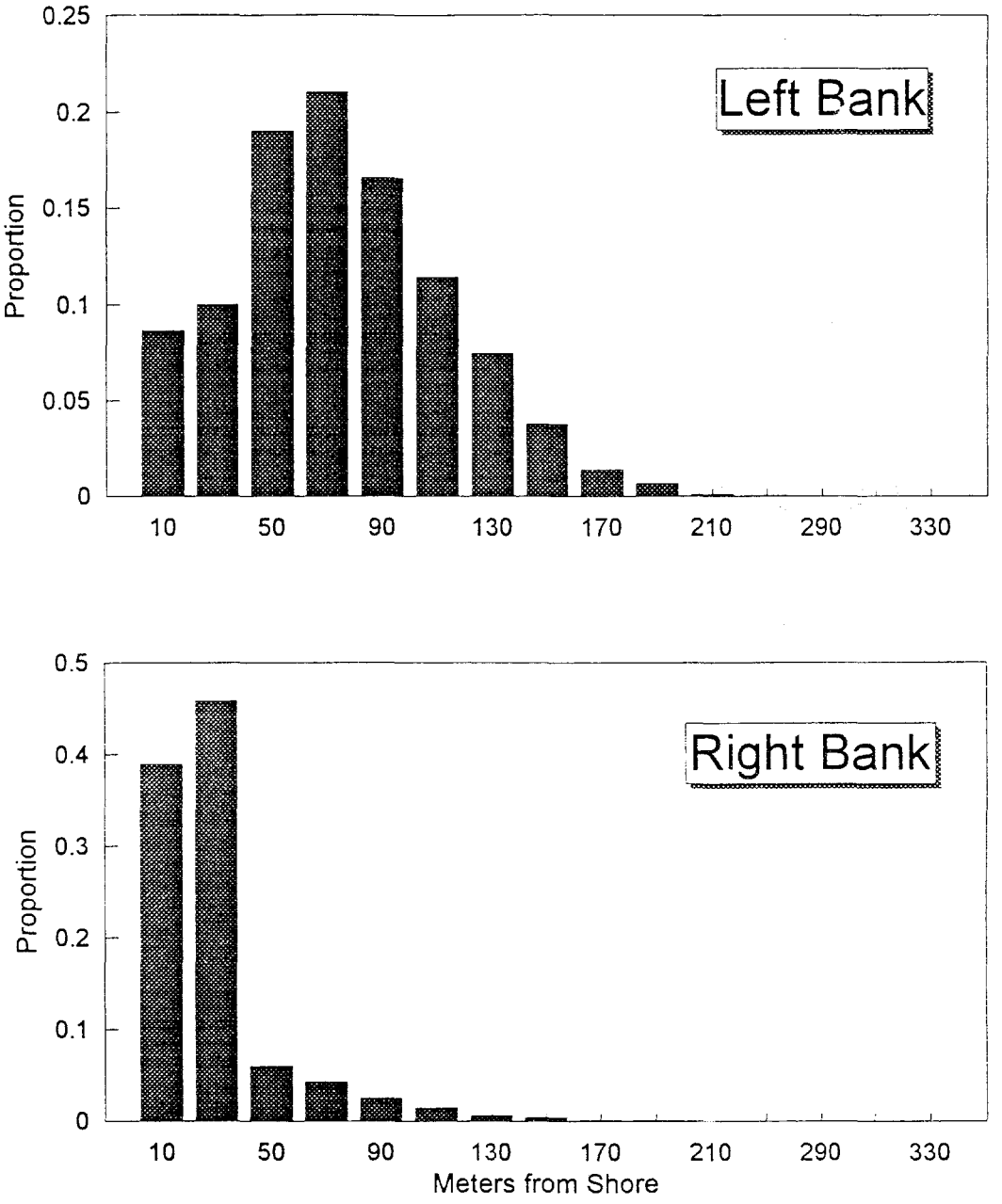

Figure 3. Distance of upstream-passing fish from shore, 4 June through 18 July 1993.

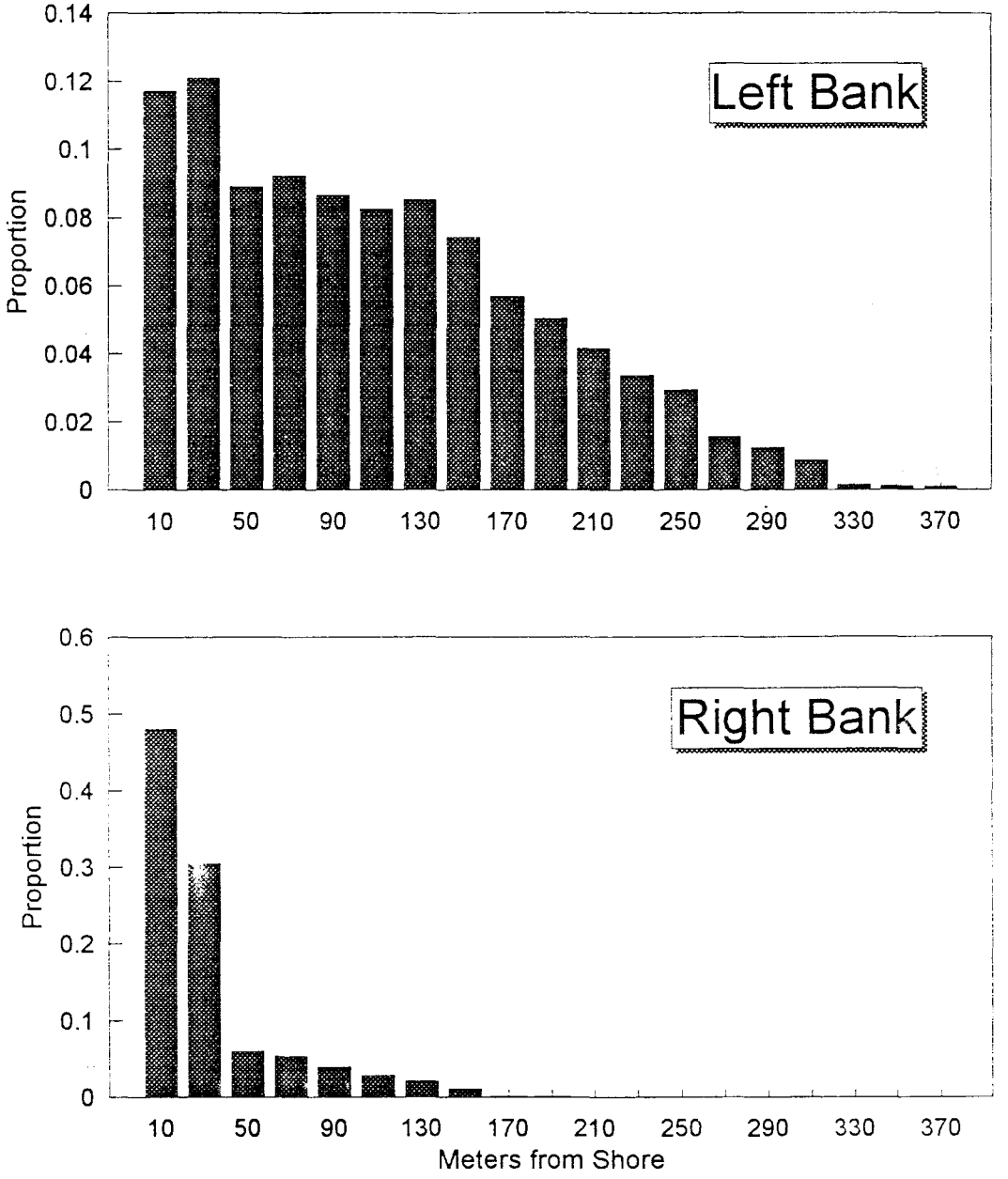

Figure 4. Distance of upstream-passing fish from shore, 19 July through 31 August 1993.

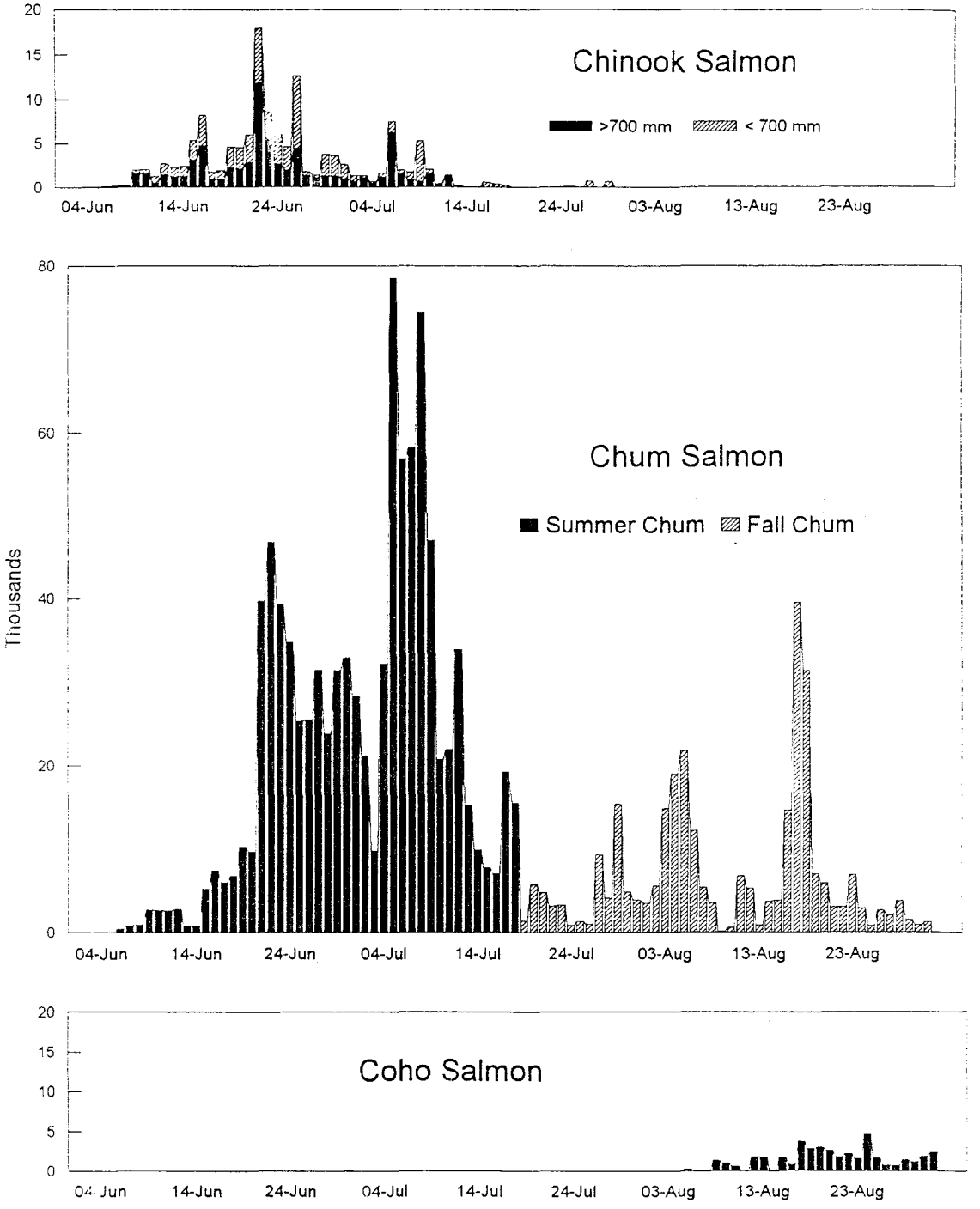

Figure 5. Estimated daily passage of chinook, chum, and coho salmon, Lower Yukon River Sonar 1993.

APPENDICES

APPENDIX A: PROCEDURES USED TO ESTIMATE GILLNET SELECTIVITY

Introduction

Gillnet size selectivity has customarily been represented by plotting relative efficiency of capture versus fish length, one curve per mesh size (Figure A1). Fish length at which selectivity is maximized increases with mesh size. Such mesh-specific curves can be thought of as cross-sections of a more general surface function relating efficiency of capture (selectivity) to both fish length and mesh size (Figure A2). Cross-sections such as those of Figure A1, parallel to the fish-length axis at specific mesh sizes, have been termed "Type A" curves; and cross-sections parallel to the mesh-size axis for specific fish lengths "Type B" curves (Hamley 1975).

If independent, unbiased estimates of fish size distribution exist, gillnet selectivity can be estimated directly by comparing gillnet catch data with the actual length distribution (e.g., Hamley and Regier 1973). Lacking such information, selectivity must be estimated by indirect means. The indirect method described here is adapted from McCombie and Fry (1960) and Ishida (1969).

The method requires catch-per-unit-effort (CPUE) data, by length class, from several mesh sizes fished on the same population. A matrix of such CPUE values (Table A1) is used to obtain a selectivity matrix of the same dimension (see Figure A2). Within columns of the CPUE matrix, individual values are a function of the relative efficiency (selectivity) of each mesh size in capturing the same length-class of fish. Plots of CPUE versus mesh size, one plot for each length-class (Figure 3), estimate the shape of vertical cross-sections of the selectivity function (i.e., Type B selectivity curves). The heights of such estimated curves differ widely and reflect the (unknown) relative abundance of each length-class of fish. To fully describe the net selectivity function one only needs to correctly scale the height of these curves relative to each other.

To do so requires that the following two assumptions be made.

(1) The maximum efficiency of capture is equal among mesh sizes, and also among size classes. That is, all Type A and Type B selectivity curves have the same maximum height, set equal to one. This assumption is untestable without independent information on the size distribution of the fish population under study.

(2) Within a certain size range of fish, the efficiency of capture of a gillnet with mesh size m for fish of length l is equal to that of mesh size km to fish of length kl, where k is any constant. For instance, if 5" stretched mesh gillnets capture chum salmon of length 500 mm with maximum efficiency, then 6" gillnets will capture chum salmon of length 600 mm with maximum efficiency. Unlike assumption 1, this assumption can later be tested with the data at hand; and if departures are found, remedial measures can be taken.

The relationship dictated by assumptions 1 and 2 is depicted graphically in Figure A4. Note that, given this scenario, the entire selectivity function is specified once a single cross-section, horizontal or vertical, is known. Additional cross sections can be generated by multiplying the fish length or

mesh size axis by the appropriate factor k. Also note that selectivity for any fish-length/mesh-size combination is determined solely by the ratio of fish length to mesh size. For example define:

$$\textit{Length perimeter ratio} = LPR = \frac{\textit{(Fish fork length in mm)}}{\textit{(Stretched mesh measurement in inches)} * 2 * 25.4}$$

where both the numerator and denominator are expressed in millimeters, and mesh size is multiplied by two to convert from stretched mesh to mesh perimeter. (Mesh perimeter was chosen as a more meaningful measurement because it translates directly to fish girth.) For the hypothetical selectivity function depicted in Figure A4, lines of equal LPR radiate from the origin, and connect points of equal selectivity. For instance, efficiency of capture is greatest (selectivity = 1) along the line LPR = 2, and selectivity equals 0.2 along the lines LPR = 1.5 and LPR = 2.5, respectively. For purposes of this method, it is only necessary that assumption 2 hold for a narrow zone on either side of the ridge of maximum capture efficiency, for instance from LPR = 1.8 to LPR = 2.2.

Methods

Given these two assumptions one can estimate the entire selectivity function from the columns of a CPUE matrix such as that in Table A1. As mentioned previously, the columns of the CPUE matrix estimate the shape, but not the heights, of the corresponding Type B selectivity curves. The method below superimposes all estimated Type B curves and allows an approximate curve to be fit to all the data. This fitted curve is then used to scale individual curve maxima to their proper heights. The following steps are required.

(1) Divide all CPUE values within each column (size class) by the maximum CPUE for that size class. Now all columns have a maximum "relative CPUE" of 1.0. This is a first approximation to standardizing the maximum height of all Type B curves to one. After step one the plot of relative CPUE versus mesh size looks like Figure A5. All individual curves have the same height but peak at different points along the mesh size axis.

(2) Plot all individual curves versus LPR instead of mesh size (Figure A6). Now all curves should be roughly superimposed both in height and location, and represent a first approximation of the composite general selectivity curve. If the data fit assumption 2 above, then the maxima of the individual curves will now all occur within a narrow range, probably near LPR = 2. In general, gillnets appear to capture Alaska salmon most efficiently with fork lengths roughly twice the perimeter of the mesh.

(3) Assess whether assumption 2 is valid for this particular combination of species, gear, and conditions. If valid, there will be no tendency for maxima of individual curves to systematically increase or decrease with changing size class, or for the width or the shape of

the individual curves to change systematically with size class. Results are more sensitive to systematic changes in maxima than to changes in width or shape of the curves.

(4) Because maximum relative CPUE equals one for all size classes, the superimposed data will show a flat top, an unrealistic shape for the general selectivity curve. Unless a very large number of mesh sizes have been used, it is unlikely that the mesh with the maximum CPUE represents the true optimal catch efficiency (selectivity) for a given size class; i.e., the true optimum mesh likely falls somewhere between two mesh sizes. Therefore the maximal catch efficiency for most length classes should be somewhat less than 1.0.

Therefore, if assumption 2 appears valid, fit a smooth curve to the superimposed data points resulting from step 2 (Figure A7). Lognormal or other positively skewed functions have worked well in the past. It is more important that the curve fit the data well around the peak of the composite data (e.g., $1.8 < LPR < 2.2$) than at higher or lower values of LPR. Force the maximum height of the fitted curve to be one.

(5) For each length class, find the maximum fitted value from among the mesh sizes used. (In other words, what is the height of the fitted curve for the mesh size with the LPR value most near the fitted curve's peak.) Within each size class, multiply all values of relative CPUE by the maximum fitted value for that size class. In other words, for each size class, adjust the relative CPUE of each mesh downward by a factor dependent upon how far the optimal mesh size missed the true optimum. This has the effect of rounding the flat top of the composite curve (Figure A8).

(6) Steps 4 and 5 can be repeated on the adjusted data. Depending upon how well the data fit the assumptions stated, the resulting values of adjusted relative CPUE are now reasonably good estimates of net selectivity, and can be plotted in the conventional "Type A" manner (versus length class, one plot per mesh size).

Literature Cited

Hamley, J.M. 1975. Review of gillnet selectivity. J. Fish. Res. Board Can. 32:1943-1969.

Hamley J.M., and H.A. Regier. 1973. Direct estimates of gillnet selectivity to walleye. J. Fish. Res. Board Can. 30: 817-830.

Ishida, T. 1969. The salmon gillnet mesh selectivity curve. Int. North Pac. Fish. Comm. Bull. 26:1-11.

McCombie, A.M., and F.E.J. Fry. 1960. Selectivity of gill nets for lake whitefish. Trans. Am. Fish. Soc. 89: 176-184.

Table A1. An example of a CPUE matrix needed to estimate gillnet selectivity (units are fish caught per 10,000 fathom-hours of effort).

	Fish Length in mm										
Mesh Size in inches	**470**	**490**	**510**	**530**	**550**	**570**	**590**	**610**	**630**	**650**	**670**
6.5	5	5	14	52	269	722	1368	1501	975	448	133
5.5	3	39	186	643	1169	1516	1344	843	353	170	45
5.0	33	114	28	351	375	479	370	171	109	24	0
4.0	14	27	45	72	54	72	86	72	36	27	14

Table A2. Gillnet selectivity (relative efficiency of capture) estimates calculated from the CPUE matrix in Table A1 (see also Figure A2).

	Fish Length in mm										
Mesh Size in inches	**470**	**490**	**510**	**530**	**550**	**570**	**590**	**610**	**630**	**650**	**670**
6.5	0.16	0.05	0.05	0.09	0.25	0.44	0.75	0.96	1.00	0.98	0.95
5.5	0.08	0.37	0.67	0.96	0.99	0.92	0.74	0.54	0.39	0.41	0.32
5.0	0.97	1.00	0.95	0.58	0.34	0.29	0.20	0.11	0.12	0.06	0.00
4.0	0.40	0.26	0.16	0.12	0.05	0.04	0.05	0.05	0.04	0.07	0.10

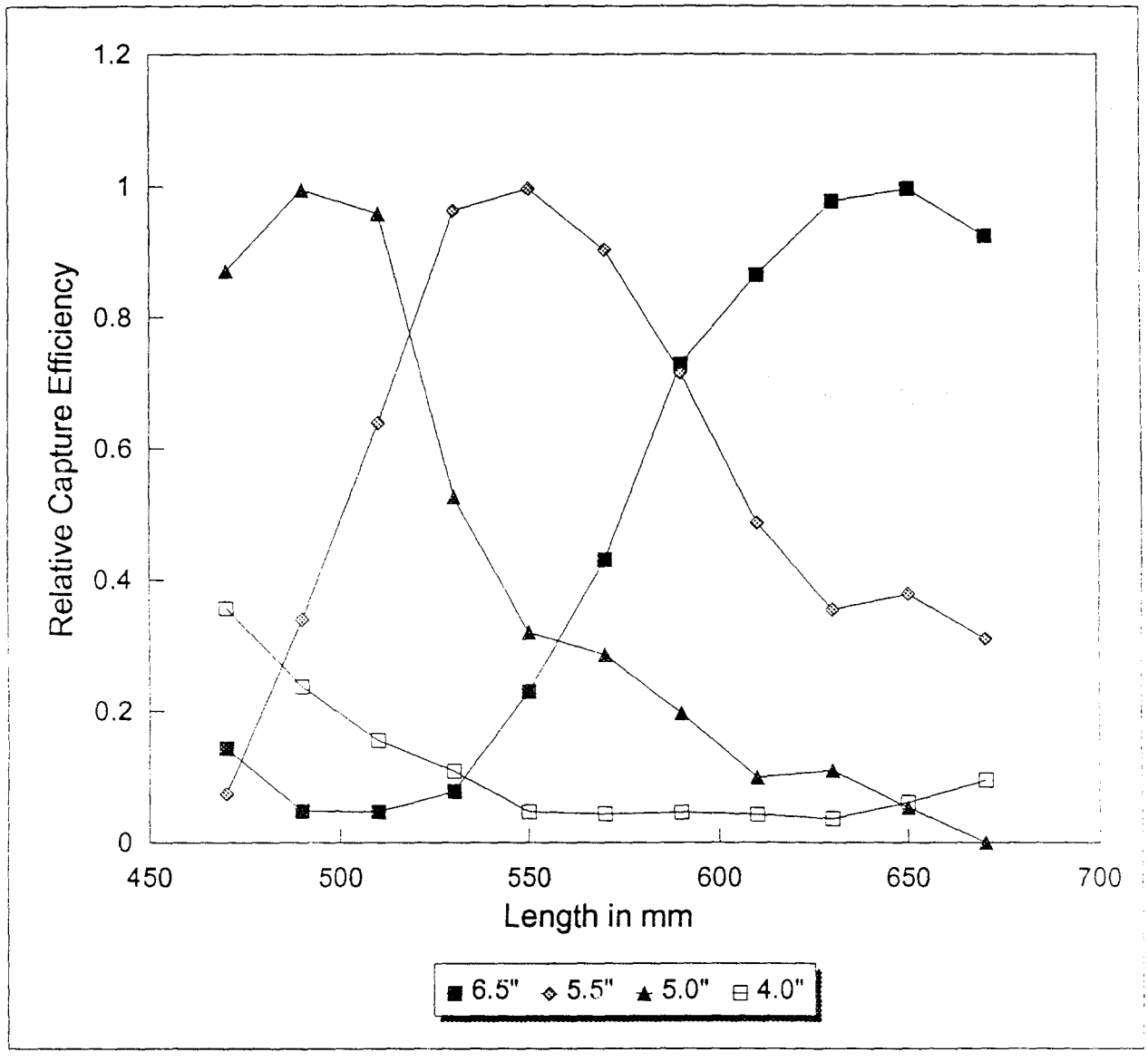

Figure A1. An example of mesh-specific ("Type A") selectivity curves.

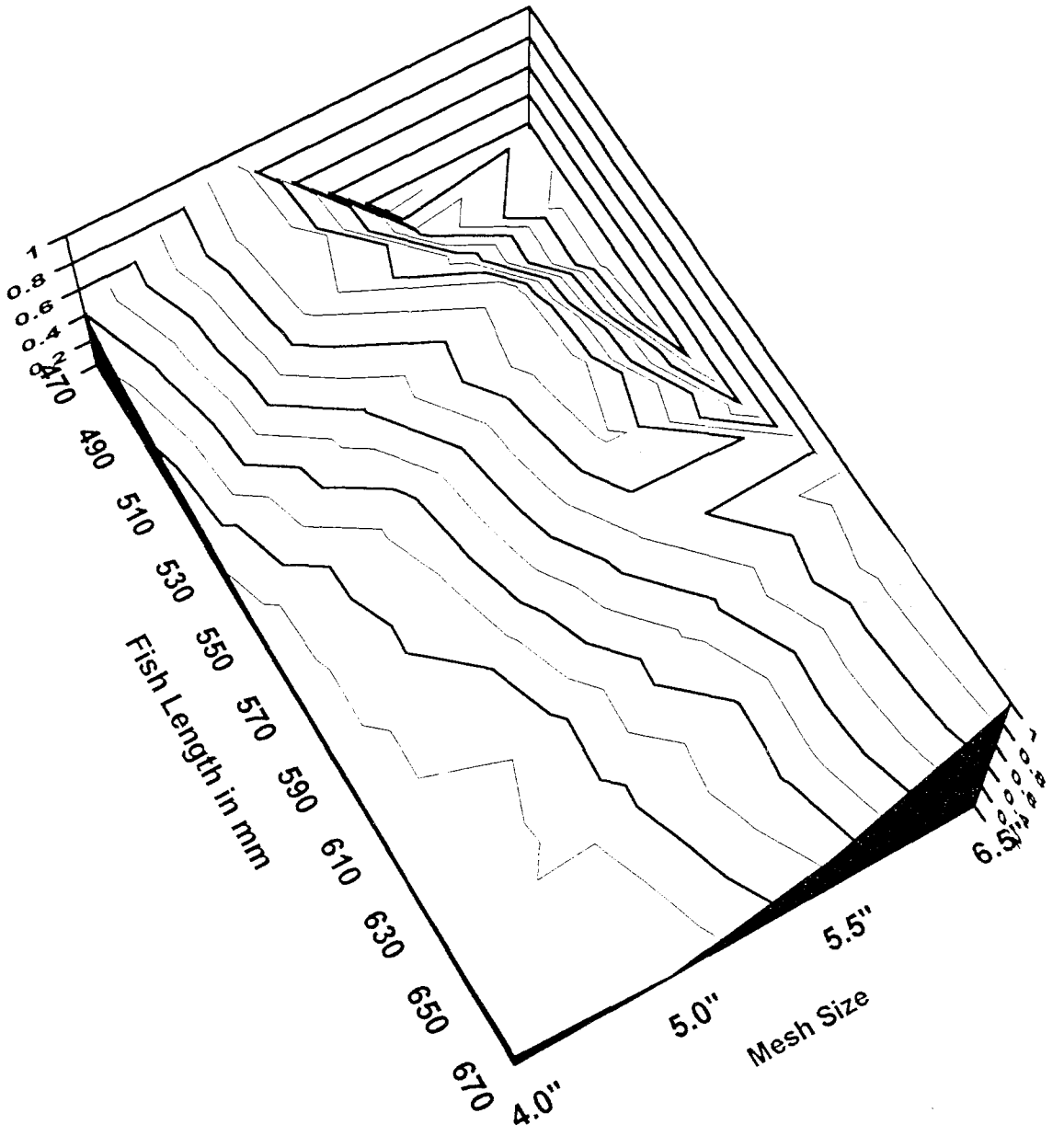

Figure A2. Estimates of gillnet selectivity (relative efficiency of capture) calculated from the CPUE matrix in Table A1, represented as a continuous function of fish length and mesh size. See also Table A2.

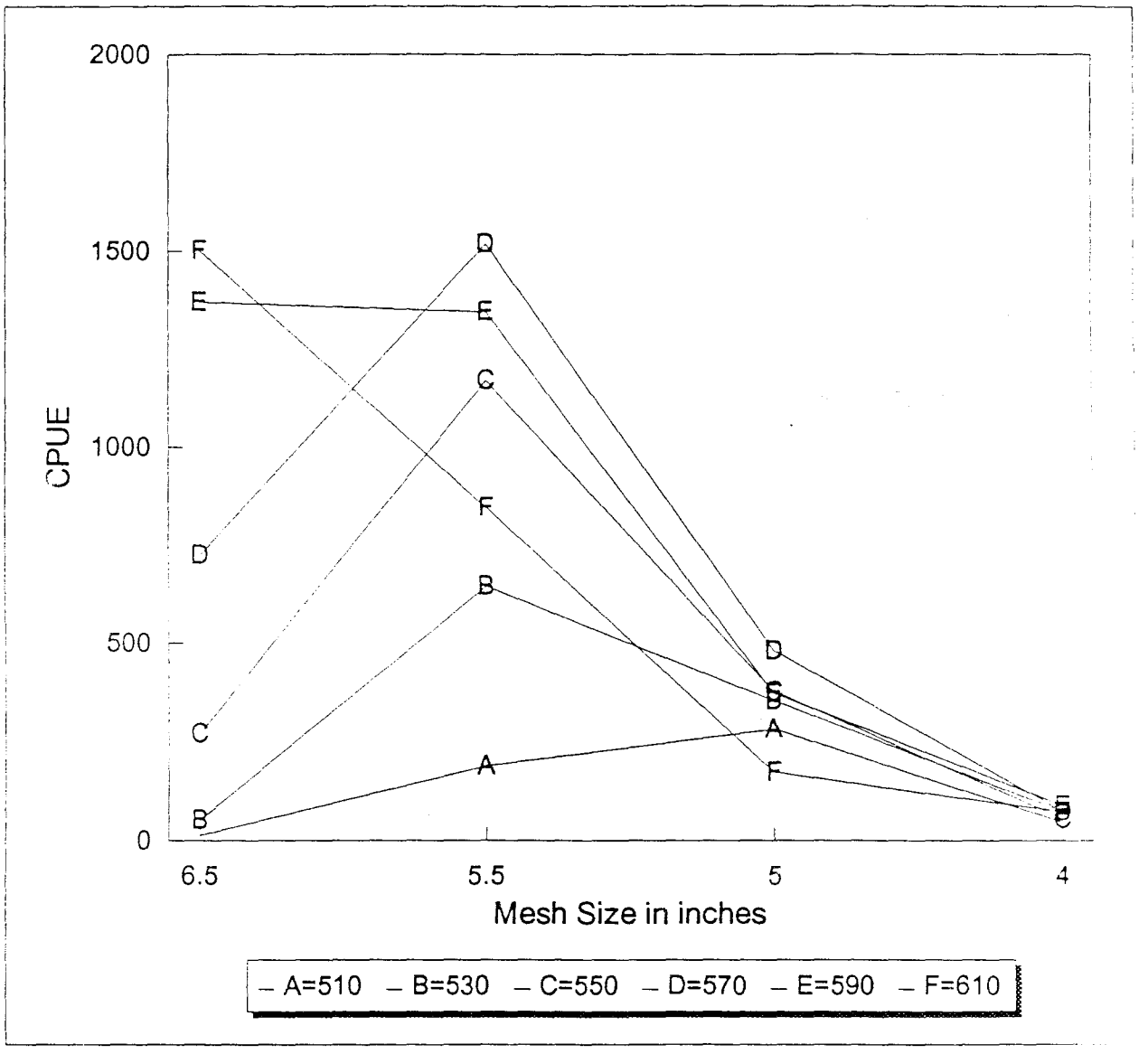

Figure A3. Some plots of CPUE versus mesh size for several length classes from Table A1. Each curve is an estimate of the shape of the corresponding Type B selectivity curve.

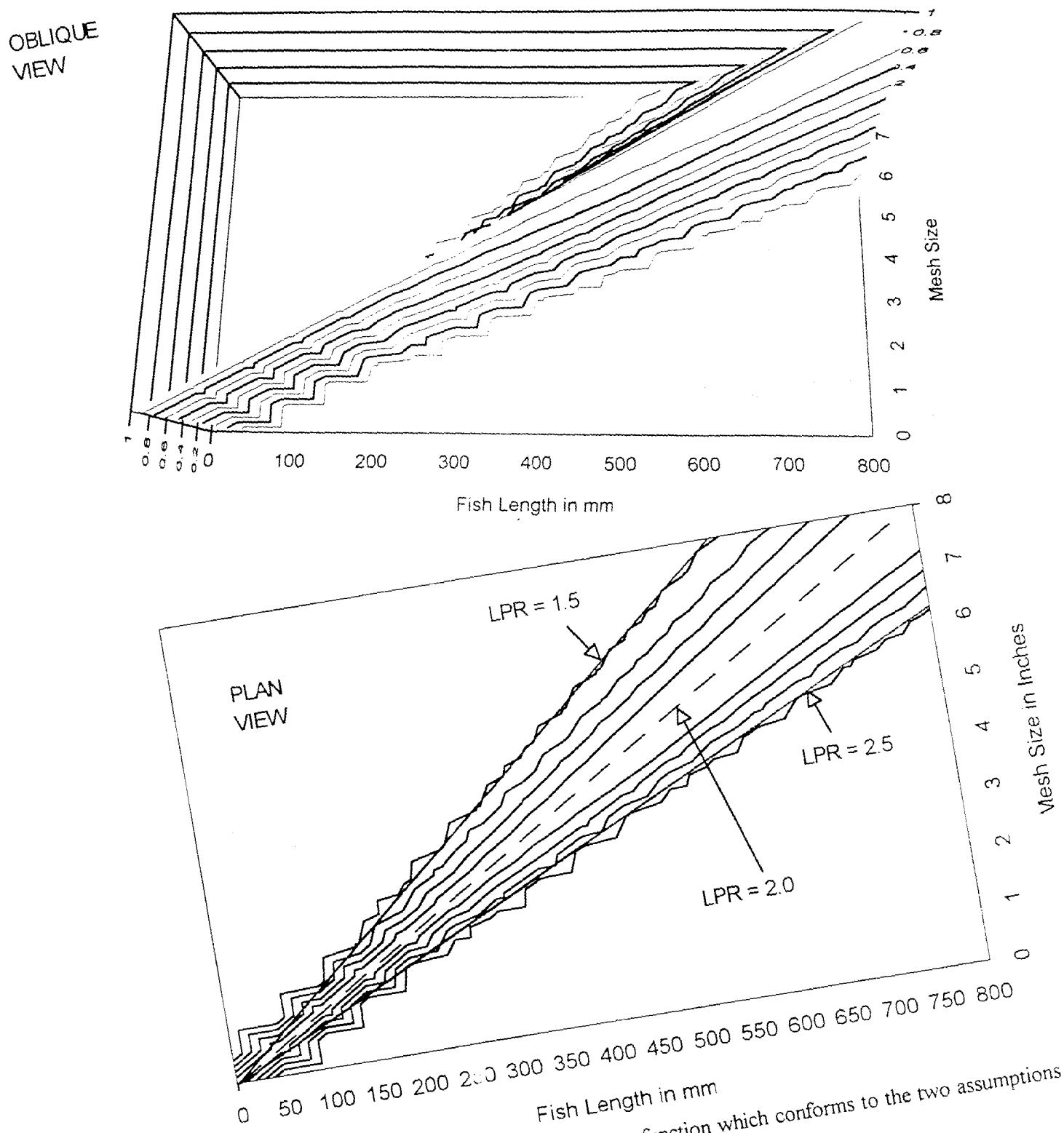

Figure A4. An example of a net selectivity function which conforms to the two assumptions required by the estimation procedure described in the text.

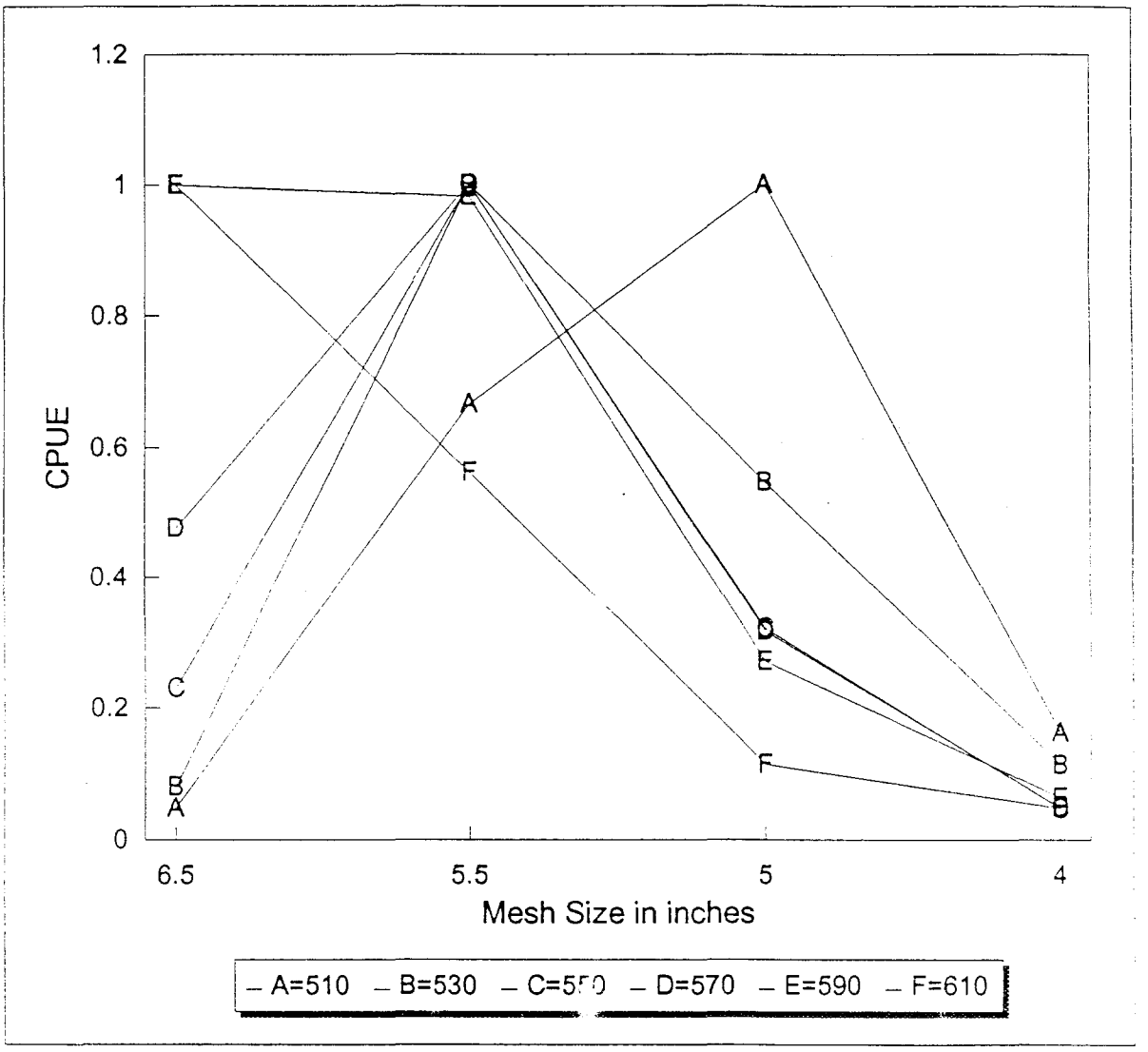

Figure A5. Relative CPUE versus mesh-size for each of several length classes. CPUE has been divided by the maximum CPUE for each length class.

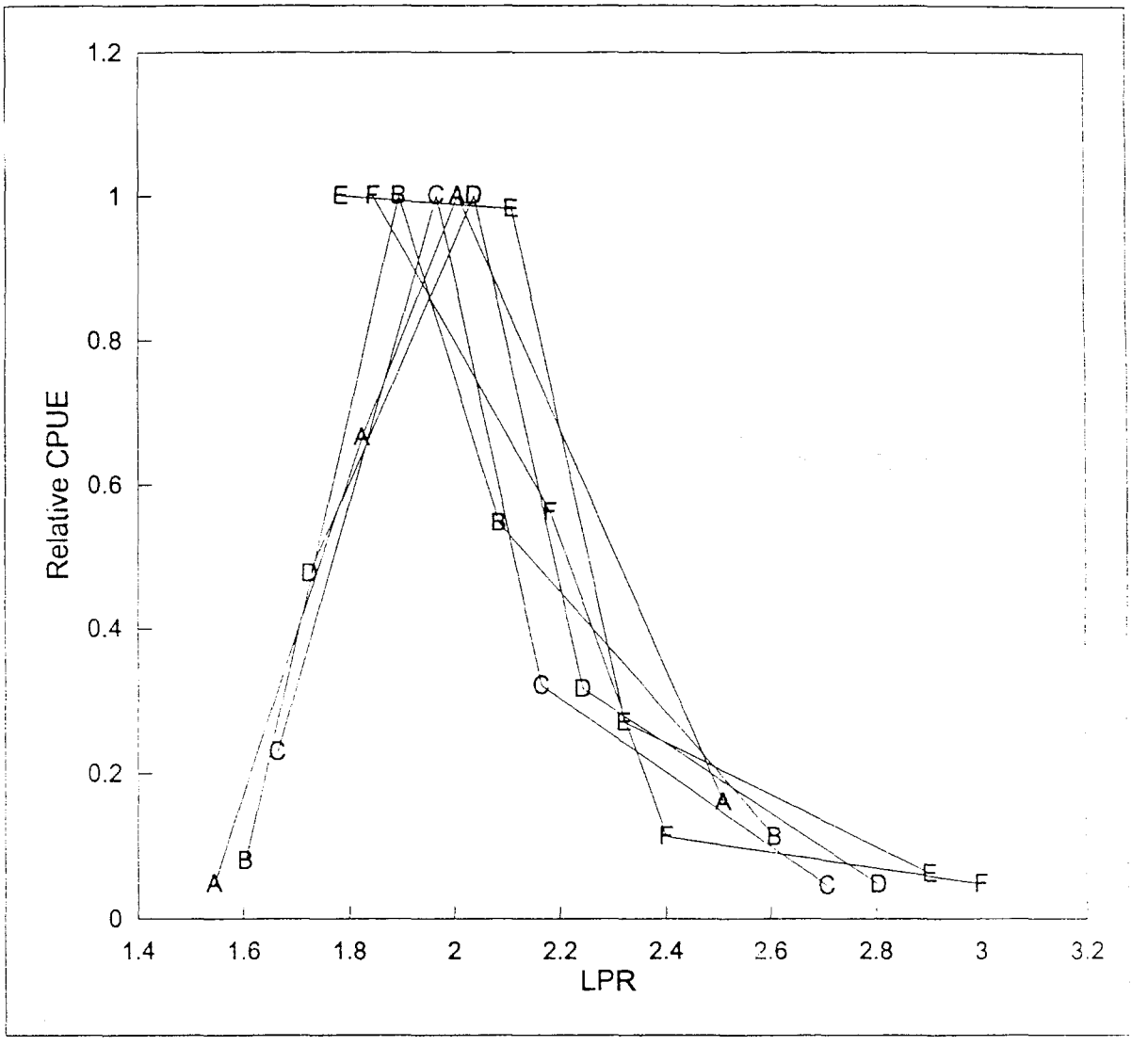

Figure A6. Relative CPUE versus LPR (length-to-perimeter ratio) for each of several length classes. LPR = fish fork length in mm / (2 * stretch mesh size in mm).

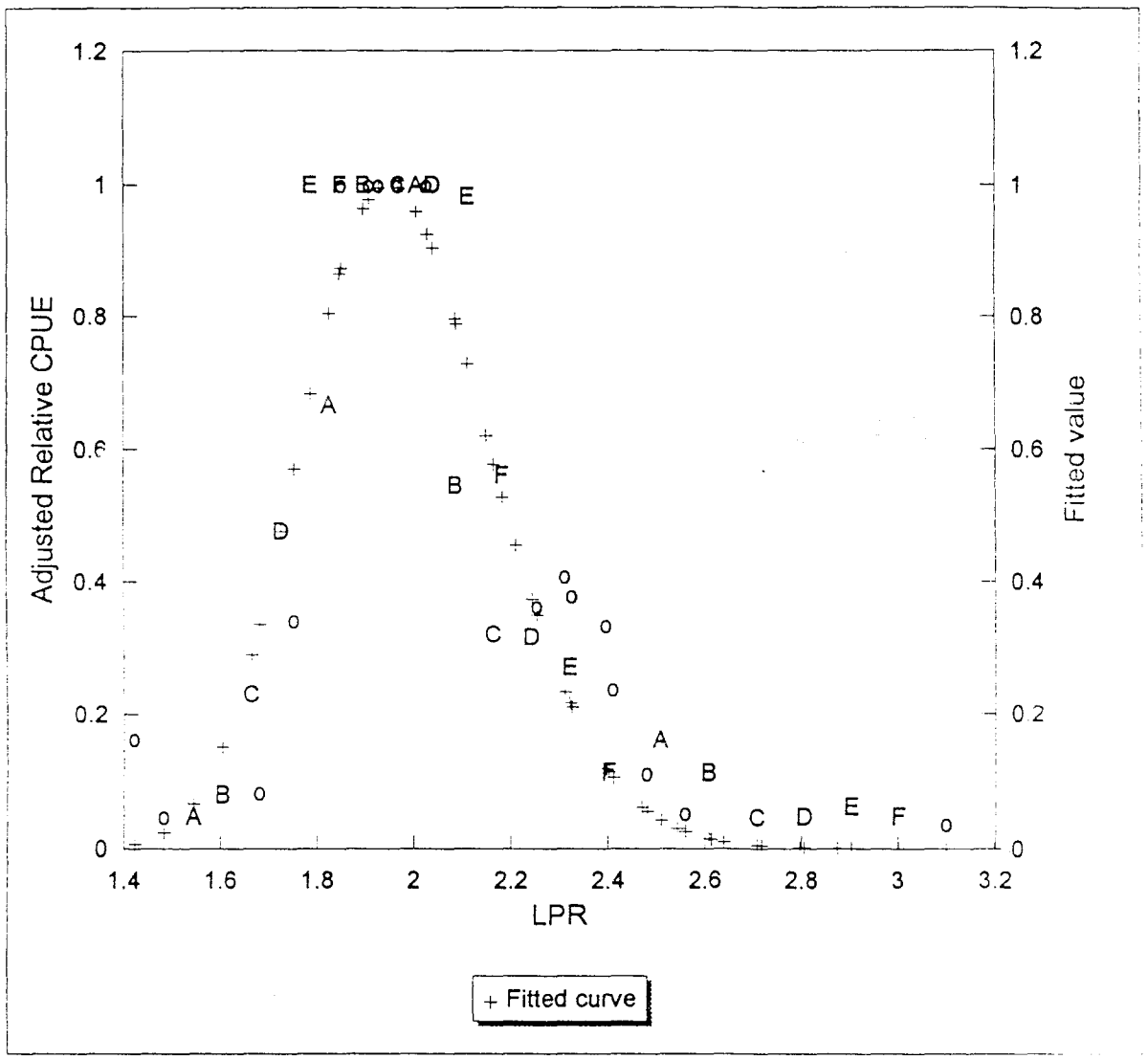

Figure A7. Lognormal curve with mean 1.95 and standard deviation 0.10 fitted to the relative CPUE values in a Figure A6.

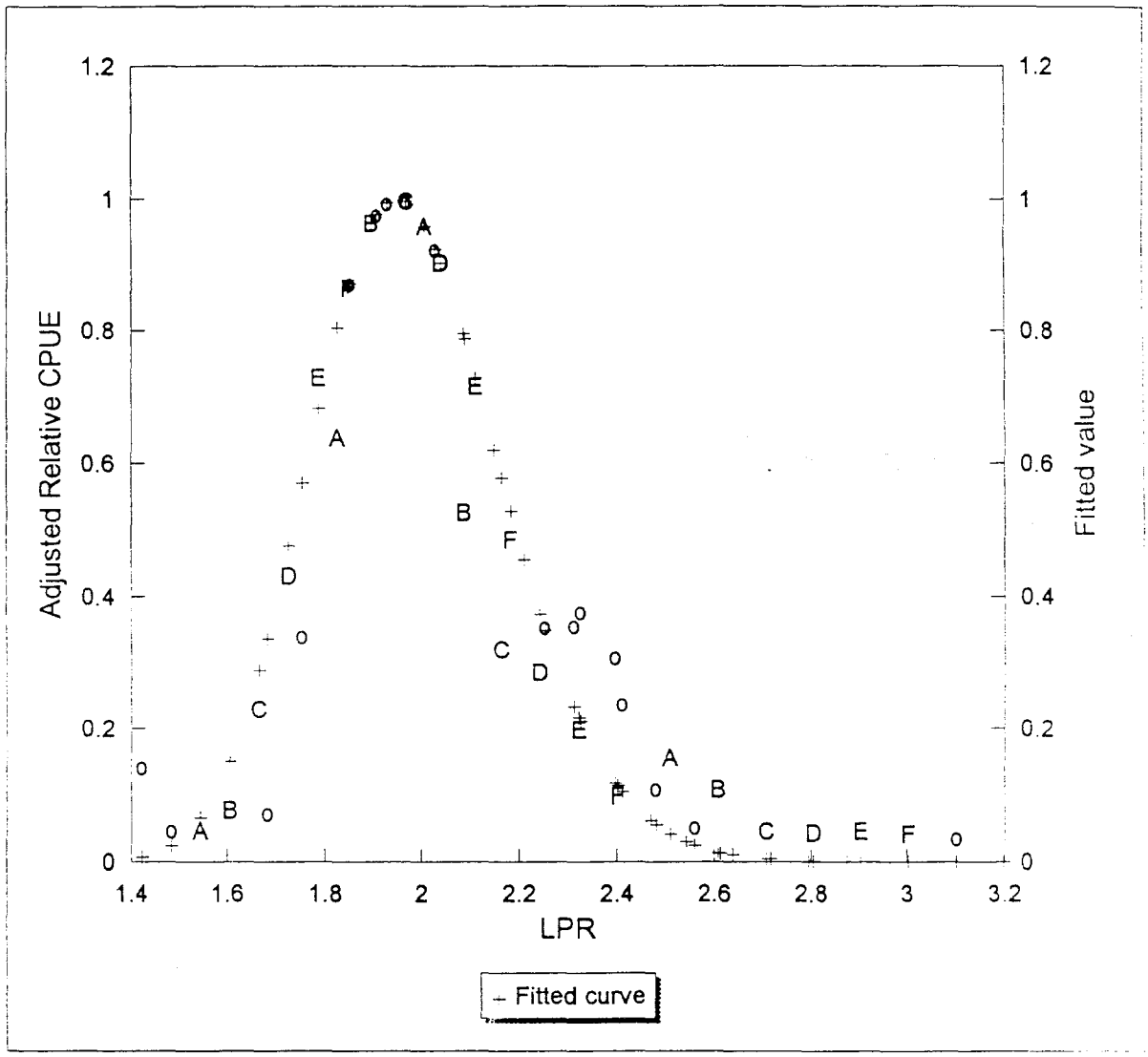

Figure A8. Relative CPUE, after having been adjusted from the results of steps 4 and 5, versus length-to-perimeter ratio.

APPENDIX B: SAS CODE USED TO GENERATE PASSAGE ESTIMATES AND VARIANCES, LOWER YUKON RIVER SONAR 1993.

```
title1 'Yukon Sonar Post-Season Data Processing Program 1993, FINAL ESTIMATES';

*SET PAGE LENGTH AND WIDTH FOR OUTPUT;
options linesize=120 pagesize=54;

*READ IN RAW DATA FROM FILE UNLOADED BY RBASE;
*ALLOCATE A PROPORTION OF TARGETS WITH UNKNOWN DIRECTION OF PASSAGE TO UPSTREAM;
*CALCULATE DURATION OF COUNTS IN HOURS, ADJUSTING FOR COUNTS WHICH SPAN MIDNIGHT;
*DELETE LEFT-BANK NEARSHORE COUNTS >= 14 JUL (BEACHWALKS SHOWED NO CHUM OR COHO);
data sonarct;
  infile 'c:\rbfiles\sonardat.ear' delimiter=',';
  informat date mmddyy8. startime endtime time8.;
  input date speriod stratum SUBSTRAT $ startime endtime sector secwidth
    upcount dwncount unkcount;
  knownct=upcount+dwncount;
  if knownct gt 0 then upestim = upcount + (upcount/knownct)*unkcount;
  else upestim=0;
  counthrs=(endtime-startime)/3600;
  if counthrs<0 then counthrs=counthrs + 24;
  IF DATE GE '14JUL93'd AND STRATUM EQ 3 AND SECTOR EQ 1 THEN DELETE;
  IF DATE GE '14JUL93'd AND STRATUM EQ 3 AND SECTOR EQ 2 THEN DELETE;
  drop upcount dwncount unkcount knownct secwidth;
  format startime endtime time5.;
  run;

*SUM UPSTREAM COUNTS ACROSS SECTORS;
proc sort data=sonarct; by date; run;
proc summary data=sonarct nway;
  by date; class speriod stratum startime;
  id endtime COUNTHRS;
  var UPESTIM;
  output out=allsctrs sum=;
  run;

*SUM UPCOUNTS AND SAMPLE TIMES ACROSS ALL SUBSAMPLES ON A STRATUM
 WITHIN A SONAR PERIOD;
proc summary data=allsctrs;
  by date speriod stratum;
  var upestim counthrs startime endtime;
  output out=stratmns n(upestim)=ncounts
    sum(upestim)= sum(counthrs)= min(startime)=firston max(endtime)=lastoff;
  run;

*CALCULATE HOURLY PASSAGE ESTIMATE BY DIVIDING BY COUNT DURATION IN HOURS;
data stratmns; set stratmns;
  stratmn=upestim/counthrs;
  run;

*READ REPORTING PERIODS FROM AN EXTERNAL FILE, ONE LINE PER DAY;
data dailyk;
  infile 'dailyk2.y93' firstobs=8;
  informat date mmddyy8.;  format date date7.;
  input report date plotchar $;
  retain _type_ 0;
  label report='REPORT PERIOD' plotchar='PLOTTING CHARACTER';
  run;

*ASSIGN REPORT PERIOD NUMBERS TO DATES IN SONAR DATA, CREATE BANK VARIABLE;
data stratmns; merge stratmns(in=a) dailyk(keep=report date); by date;
  if a;
  if stratum=1 or stratum=2 then bank='R';
  if stratum=3 or stratum=4 then bank='L';
  format date date7. firston lastoff time5. stratmn 7.1;
  run;
```

```
*(OPTIONAL) TRANSPOSE AND PRINT STRATUM MEANS DATA IN A FORMAT WHICH
  FACILITATES INTERPOLATION;
proc sort data=stratmns;
  by report date speriod stratum; run;
proc transpose data=stratmns out=stratwid;
  by report date speriod;
  var stratmn; id stratum;  run;
data stratwid; set stratwid;
  format _1-_4 8.1 date date7.;
  label _1='1: RIGHT LOWER' _2='2: RIGHT UPPER' _3='3: LEFT INSHORE'        _4='4: LEFT OFFSHORE';  run;
title2 'DATASET WORK.STRATWID:  MEAN HOURLY COUNTS BY STRATUM';
proc print data=stratwid label noobs;
  var report date speriod _1 _2 _3 _4;  run;

*SUM STRATUM ESTIMATES BY BANK FOR EACH PERIOD;
proc summary data=stratmns nway;
  class bank report date speriod;
  var stratmn firston lastoff;
  output out=permns sum(stratmn)=periodmn min(firston)= max(lastoff)=;
  run;

*PLOT SONAR COUNTS OVER TIME;
data cntplot; set permns;
  datetime=dhms(date, hour(firston), minute(firston), second(firston));
  label datetime='STARTING TIME OF SONAR PERIOD'
        periodmn='MEAN HOURLY FISH PASSAGE';
  format datetime datetime10.;
proc plot data=cntplot;
  plot periodmn*datetime=bank;
  title2 'SONAR COUNTS BY BANK OVER TIME';
  run;

*CALCULATE SQUARED DIFFERENCES IN CONSECUTIVE COUNTS WITHIN THE REPORTING PERIOD;
data varcount;
  set permns (drop = _type_ _freq_);
  hoursdur=(lastoff-firston)/3600;
  if hoursdur lt 0 or hoursdur gt 8 then hoursdur=.;
  lagbank=lag(bank);
  lagrno=lag(report);
  lagpmn=lag(periodmn);
  if report=lagrno and bank=lagbank then cntdiff2=(periodmn-lagpmn)**2;
  format firston lastoff time5. date date7.;
  label lagrno='LAGGED REPORT NUMBER' lagbank='LAGGED BANK'
        lagpmn='LAGGED SPERIOD MEAN' periodmn='SPERIOD MEAN PASSAGE'
        cntdiff2='SQUARED DIFFERENCE' hoursdur='DURATION OF PERIOD (HOURS)';
  run;
/*
*OPTIONAL PRINTOUT: SHOWS HOW VARIANCE OF PASSAGE ESTIMATE IS CALCULATED;
title2 'DATA SET WORK.VARCOUNT:  THIS PRINTOUT SHOWS THE INTERMEDIATE STEPS';
title3 'USED TO CALCULATE ESTIMATED VARIANCE OF THE SONAR COUNTS';
title4 'Reference is K. Wolter 1985, Introduction to Variance Estimation, p.251';
proc print data=varcount label;
  var bank lagbank report lagrno date speriod firston lastoff hoursdur
      periodmn lagpmn cntdiff2;
  run;
*/
*BY REPORT PERIOD AND BY BANK, AND ACROSS 8-HOUR PERIODS, CALCULATE
 AVERAGE HOURLY COUNT, SUM THE SQUARED DIFFERENCES, AND COUNT THE NUMBER OF
 PERIODS AND THE DEGREES OF FREEDOM;
proc summary data=varcount nway;
  class report bank;
  id date;
  var periodmn cntdiff2 hoursdur;
  output out=varcnt2 mean(periodmn)=repbnkmn sum(cntdiff2)=sumsquar n=n ndf
    mean(hoursdur)=meandur;
  run;

*CALCULATE (BY RN, BANK) ESTIMATED VARIANCE AND C.V. OF THE MEAN HOURLY COUNT,
 (WOLTER 1985).  NOTE THAT FPCF ASSUMES 3 SONAR PERIODS PER DAY;
*CALCULATE VARIANCE OF SEASONAL TOTAL PASSAGE BY BANK;
proc summary data=dailyk nway;
```

```
  class report; var date;
  output out=rptdays n=rptdays;
  run;

data varcnt2; MERGE varcnt2 RPTDAYS; BY REPORT;
  IF DATE LT '10JUN93'D THEN varbnkmn=(1-meandur/12)*sumsquar/(2*n*ndf);
  IF DATE GE '10JUN93'D THEN varbnkmn=(1-meandur/8)*sumsquar/(2*n*ndf);
  cvbnkps=sqrt(varbnkmn)/repbnkmn;
  VARBNKPS=((24*RPTDAYS)**2)*VARBNKMN;
  run;

title2 'VARIANCE OF SEASONAL TOTAL PASSAGE BY BANK';
proc summary print sum data=varcnt2;
  var varbnkPS;
  class bank;
  run;

*CALCULATE VARIANCE OF SEASONAL PASSAGE TOTAL FOR BOTH BANKS;
title2 'VARIANCE OF SEASONAL TOTAL PASSAGE WITHOUT ASSUMING INDEPENDENCE BETWEEN BANKS';
proc summary data=stratmns nway;
  class report date speriod;
  var stratmn firston lastoff;
  output out=one sum(stratmn)=periodmn min(firston)= max(lastoff)=;
  run;
data two;
  set one (drop = _type_ _freq_);
  hoursdur=(lastoff-firston)/3600;
  if hoursdur lt 0 or hoursdur gt 8 then hoursdur=.;
  lagrno=lag(report);
  lagpmn=lag(periodmn);
  if report=lagrno then cntdiff2=(periodmn-lagpmn)**2;
  run;
proc summary data=two nway;
  class report;
  id date;
  var periodmn cntdiff2 hoursdur;
  output out=three mean(periodmn)=repmn sum(cntdiff2)=sumsquar n=n ndf
    mean(hoursdur)=meandur;
  run;
data THREE; MERGE THREE RPTDAYS; BY REPORT;
  IF DATE LT '10JUN93'D THEN varmn=(1-meandur/12)*sumsquar/(2*n*ndf);
  IF DATE GE '10JUN93'D THEN varmn=(1-meandur/8)*sumsquar/(2*n*ndf);
  VARPASG=((24*RPTDAYS)**2)*VARMN;
  run;
proc summary print sum data=THREE;
  var varPASG;
  run;

*BY DATE AND BY BANK, AND ACROSS 8-HOUR PERIODS, CALCULATE AVERAGE HOURLY COUNT;
proc summary data=varcount nway;
  class date bank;
  id report;
  var periodmn;
  output out=daycnt mean=daybnkmn;
  run;

*MERGE MEAN HOURLY COUNT DATA (BY DAY) WITH CV DATA (BY REPORT PERIOD);
*CALCULATE DAILY PASSAGE ESTIMATE AND VARIANCE;
proc sort data=daycnt; by report bank; run;
data daycntvr; merge daycnt varcnt2(drop=date); by report bank;
  daypasg=24*daybnkmn;
  vardayps=(cvbnkps*daypasg)**2;
  run;

*MANIPULATE AND PRINT DAILY SONAR ESTIMATES;
proc sort data=daycntvr; by report date; run;
proc transpose data=daycntvr out=daycnt1;  by report date;
  id bank; var daypasg;
  run;
proc transpose data=daycntvr out=daycnt2; by report date;
  id bank; var vardayps;
  run;
```

```
data daycnt2; set daycnt2(rename=(L=varleft R=varright)); run;

data daycnts; merge daycnt1 daycnt2 dailyk; by report date;
  stdleft=sqrt(varleft);
  stdright=sqrt(varright);
  total=L+R;
  stdtotal=sqrt(varleft+varright);
  cvtotal=stdtotal/total;
  format l r total stdleft stdright stdtotal comma7.0 cvtotal 5.2
         varleft varright 10.;
  label l='LEFT BANK PASSAGE' r='RIGHT BANK PASSAGE' stdleft='STD ERROR'
        stdright='STD ERROR' stdtotal='STD ERROR'
        cvtotal='COEFFICIENT OF VARIATION';
  run;
title2 'DAILY ESTIMATED FISH PASSAGE WITHIN SONAR BEAMS, BY BANK';
footnote1 'Sum of variances underestimates seasonal variance';
footnote2 'if any report periods last more than 1 day.';
proc print data=daycnts noobs label;
  var report date plotchar l stdleft r stdright total stdtotal cvtotal VARLEFT VARRIGHT;
  sum l r total VARLEFT VARRIGHT;
  run;
footnote1;

title2 'LEFT VERSUS RIGHT BANK DAILY SONAR PASSAGE';
proc plot data=daycnts;
  plot l*r=plotchar;
  run;
*
*
*
*THIS CONCLUDES CALCULATIONS FOR THE SONAR DATA, NOW BEGIN TESTFISH DATA
 PROCESSING;
*
*
*

*READ DATA FROM RBASE EXPORT FILE, ONE LINE FOR EACH FISH, PLUS ONE LINE FOR
 ANY DRIFTS DURING WHICH NO FISH WERE CAUGHT;
*CALCULATE EFFORT IN FATHOM HOURS, ADJUSTING FOR DRIFTS SPANNING MIDNIGHT;
data testfish;
  length species $ 8 bank $ 1;
  infile 'c:\rbfiles\tfishdat.ear' delimiter=',';
  informat date mmddyy. startout fullout startin fullin time8.;
  format date date7. startout time5.;
  input date tfperiod qSTRAT $ qsubstrt $ mesh qmethod $ spcode length
    fathoms startout fullout startin fullin;
  stratum=upcase(substr(qstrat,2,1));
  substrat=upcase(substr(qsubstrt,2,1));
  IF stratum EQ '1' THEN BANK ='R';
  ELSE IF stratum EQ '3' THEN BANK = 'L';
  ELSE IF stratum EQ '4' THEN BANK = 'L';
  ELSE BANK = STRATUM;
  method=upcase(substr(qmethod,2,1));
  if month(date)=6 or (month(date)=7 and day(date)<=18) then season='EARLY';
  else season='LATE';
  drifmins= (startin-fullout + (fullout-startout)/2 + (fullin-startin)/2)/60;
  if season='EARLY' and spcode=3 then spcode=2;
  if season='LATE' and spcode=2 then spcode=3;
  if spcode = 1 then do;
    if length lt 700 then species = 'JACK';
    if length ge 700 then species = 'CHINOOK ';
    lclassmp=round(length,40); end;
  if spcode = 2 then do;
    species = 'SCHUM';
    lclassmp=round(length+10,20)-10; end;
  if spcode = 3 then do;
    species = 'FCHUM';
    lclassmp=round(length+10,20)-10; end;
  if spcode = 4 then do;
    species = 'COHO';
    lclassmp=round(length+20,40)-20; end;
  if spcode = 5 then  species = 'PINK';
```

```
  if spcode = 6 then  species = 'SHEEFISH';
  if spcode = 7 then do;
     species = 'WHITE';
     lclassmp=round(length,100); end;
  if spcode = 8 then  spcode = 9;
  if spcode = 9 then  species = 'OTHER';
  if spcode = 10 then do;
     species = 'CISCO';
     lclassmp = round(length,40); end;
  if spcode = 0 or spcode = . then species = 'NONE';
  if species = 'JACK' then spcode = 8;
  if mesh=2.75 then meshcode=1;
  if mesh=4.0 then meshcode=2;
  if mesh=5.0 then meshcode=3;
  if mesh=5.5 then meshcode=4;
  if mesh=6.5 then meshcode=5;
  if mesh=7.5 then meshcode=6;
  if mesh=8.5 then meshcode=7;
  drop qstrat qsubstrt qmethod fullout startin fullin length;
  run;

*COUNT THE NUMBER OF FISH OF EACH SPECIES IN EACH DRIFT;
proc sort data=testfish;
  by date bank;
  run;
proc summary data=testfish nway;
  by date bank;
  class tfperiod mesh method startout species;
  var spcode;  id stratum substrat fathoms drifmins;
  output out=sppcatch n=sppcatch;
  run;

*LIST CATCHES OF ALL SPECIES ON ONE LINE FOR EACH DRIFT;
proc transpose data=sppcatch out=tfsummar;
  var sppcatch; id species;
  by date bank tfperiod mesh method startout stratum substrat fathoms drifmins;
  run;

*FORMAT AND PRINT;
data spplist;
  chinook=0; jack=0; schum=0; fchum=0; coho=0;
  pink=0; sheefish=0; white=0; cisco=0;
  run;
data tfsummar; set tfsummar(in=a) spplist;
  if a;
  fathhrs= fathoms*drifmins/60;
  format drifmins 5.1;
  label drifmins='MINUTES FISHING TIME' substrat='ZONE'
  tfperiod='TESTFISH PERIOD';
  drop fathoms;
  run;

/*proc sort data=tfsummar out=print; by date startout; run;
title2 'SUMMARY OF TESTFISH RESULTS, BY DRIFT';
proc print data=print noobs label;
  var date tfperiod startout mesh bank stratum substrat method;
  sum drifmins chinook jack schum fchum coho pink sheefish white cisco;
  run;
*/
*DELETE DATA FROM LEFT-BANK BEACHWALKS ON OR AFTER 14 JULY;
data tfsummar; set tfsummar;
 IF METHOD = 'B' AND STRATUM EQ '3' AND DATE GE '14JUL93'D THEN DELETE;
 run;

*SUM EFFORT FOR ALL DRIFTS WITH EACH MESH BY TFPERIOD;
proc summary data=tfsummar nway;
  by date bank tfperiod mesh;
  var fathhrs;
  output out=effort1 sum=meffort;
  run;

*REARRANGE DATA TO PUT EFFORTS FOR ALL MESHES ON A SINGLE LINE;
```

```
proc transpose data=effort1 out=effort2;
  var meffort; id mesh;
  by date bank tfperiod;
  run;
data effort2; set effort2(drop=_name_);
  rename _2d75 =effort1;
  rename _4    =effort2;
  rename _5    =effort3;
  rename _5d5  =effort4;
  rename _6d5  =effort5;
  rename _7d5  =effort6;
  rename _8d5  =effort7;
  format date date7.;
  run;
/*
*GENERATE CPUE DATA FOR FISHERY MANAGERS;
data tfrpt1; set tfsummar(drop= tfperiod startout);
  if mesh lt 5.5 then delete;
  if mesh le 6.5 then meshpair=1;
  if mesh ge 7.5 then meshpair=2;
  if schum=. then schum=0; if fchum=. then fchum=0;
  if chinook=. then chinook=0; if coho=. then coho=0;
  chum=schum+fchum;  keep date bank meshpair fathhrs chum chinook coho;
  run;

proc sort data=tfrpt1; by date bank meshpair; run;
proc means noprint sum data=tfrpt1;
  by date bank meshpair;
  output out=tfrpt2 sum=;
  run;

data tfrpt2; set tfrpt2(drop=_type_ _freq_);
proc transpose data=tfrpt2 out=tfishrpt;
  by date bank meshpair fathhrs;
  run;

data tfishrpt; set tfishrpt;
  if col1=. then delete;
  if meshpair=1 and _name_='CHINOOK' then delete;
  else if meshpair=2 and (_name_='CHUM' or _name_='COHO') then delete;
  else cpue=col1/fathhrs;
  label _name_='SPECIES' col1='CATCH';
  format fathhrs cpue 7.2;
  run;

proc sort data=tfishrpt; by date bank _name_; run;

title2 'TOTAL CATCH, EFFORT, AND CPUE BY DAY AND BANK';
title3 'Includes gilled and tangled fish, not adjusted for selectivity';
title4 'Meshes used:  5.5, 6.5 (chum, coho);  7.5, 8.5 (chinook)';
proc print data=tfishrpt label; by date bank;
  var date bank _name_ col1 fathhrs cpue;
  run;
*/
*READ IN AN EXTERNAL FILE WHICH SETS WHICH MESHES WILL BE USED TO ESTIMATE
 CPUE FOR EACH SPECIES, AND WHICH SPECIES CATCHES WILL BE ADJUSTED FOR NET
 SELECTIVITY;
data specmesh;
  infile 'specmesh.y93' firstobs=14;
  length species $ 8;
  length adjust $ 3;
  input species usemesh1-usemesh7 adjust;
  run;

*DELETE DATA FROM LEFT-BANK BEACHWALKS ON OR AFTER 14 JULY;
data testfish; set testfish;
 IF METHOD = 'B' AND STRATUM EQ '3' AND DATE GE '14JUL93'D THEN DELETE;
 run;

*MERGE SPECIES-MESH PAIRING DATA INTO TESTFISH DATA SET;
*DELETE FISH WHICH WERE NOT CAUGHT IN MESHES TARGETING THAT SPECIES;
proc sort data=testfish; by species; run;
```

```
proc sort data=specmesh; by species; run;
data tfsm;
  merge testfish(in=a drop=fathoms drifmins) specmesh;
  by species;
  if a;
  array usemesh{7} usemesh1-usemesh7;
  if usemesh{meshcode}=0 then delete;
  run;

*MERGE NET SELECTIVITY CURVE DATA INTO TESTFISH (+SM) DATA SET;
data netselec;
  infile 'netselec.y93' firstobs=6 missover;
  length species $ 7;
  input species 5-11 lclassmp 18-21 prob1 23-27 prob2 29-33 prob3 35-39
                        prob4 41-45 prob5 47-51 prob6 53-57 prob7 59-63;
  run;
proc sort data=netselec; by species lclassmp; run;
proc sort data=tfsm; by species lclassmp; run;
data tfsmns; merge tfsm(in=a) netselec; by species lclassmp;
  if a;
  run;

*MERGE EFFORT DATA INTO TESTFISH (+SM+NS) DATA SET;
*FOR MAJOR SPECIES, ADJUST CATCH (I.E., 1 FISH) FOR NET SELECTIVITY;
*THEN SUM EFFORT FOR ALL MESHES TARGETING THIS SPECIES DURING THIS TF PERIOD;
*IF SPECIES IS ADJUSTED FOR NET SELECTIVITY, THEN DO NOT CONSIDER THOSE
 MESHES IN WHICH THIS LENGTH FISH IS EXTREMELY UNLIKELY TO HAVE BEEN
 CAUGHT;
*FINALLY, CALCULATE ADJUSTED CPUE FOR EACH FISH;
proc sort data=tfsmns; by date bank tfperiod; run;
data tfsmnsef; merge tfsmns(in=c) effort2; by date bank tfperiod;
  if c;
  array usemesh{7} usemesh1-usemesh7;
  array prob{7} prob1-prob7;
  array effort{7} effort1-effort7;
  meanprob=0.694;     ***(EQUIVALENT TO ADJUSTMENT FACTOR OF 1.44);
  if adjust='N' then adjcatch=1/meanprob;
  if adjust='Y' then do;
    if prob{meshcode} ne . then adjcatch=1/prob{meshcode};
    else if prob{meshcode} eq . then adjcatch=0;
    end;
  sumeff=0;
  do imesh=1 to 7;
    if (adjust='Y' and prob{imesh} = .) then usemesh{imesh}=0;
    if effort{imesh}=. then effort{imesh}=0;
    sumeff=sumeff+effort{imesh}*usemesh{imesh};
    end;
  adjcpue=adjcatch/sumeff;
  format date date7. startout time5. prob1-prob7 3.2 adjcpue 4.3
    effort1-effort7 sumeff 4.1 adjcatch 5.2;
  run;
/*
*OPTIONAL PRINTOUT: SHOWS INTERMEDIARY CALCULATIONS ON TESTFISH DATA;
title2 'PART OF DATA SET WORK.TFSMNSEF';
title3 'ONE LINE PER FISH, EACH LINE ALSO HAS INFORMATION ON NET SELECTIVITY';
title4 'CURVE PARAMETERS AND EFFORT FOR EACH MESH DRIFTED DURING THAT PERIOD';
  proc print data=tfsmnsef;
  var date tfperiod startout bank mesh species spcode lclassmp
      adjcatch usemesh1-usemesh7 effort1-effort7 sumeff adjcpue;
  run;
*/
*SUM ADJUSTED CPUE FOR EACH SPECIES DURING EACH TESTFISH PERIOD;
proc sort data=tfsmnsef;  by date; run;
proc summary data=tfsmnsef nway;
  var adjcpue adjcatch; id startout species;
  output out=spcpue sum=spcpue spcatch;
  by date; class tfperiod bank spcode;
  run;

*TRANSPOSE BY ALL BUT SPECIES (CODE), CREATING A SEPARATE VARIABLE FOR CPUE OF
 EACH SPECIES;
proc transpose data=spcpue out=spcpwide;
```

```
  by date tfperiod bank;
  var spcpue;
  id spcode;
  run;

proc summary data=spcpue;
  by date tfperiod bank;
  var spcatch startout;
  output out=catch sum(spcatch)=adjcatch mean(startout)=avestart;
  run;

*SUM CPUE VALUES FOR ALL SPECIES DURING A GIVEN TESTFISH PERIOD;
data spcpwide; merge spcpwide catch; by date tfperiod bank;
  array cpue{10} _1-_10;
  sumcpue=0;
  do i=1 to 10;
    if cpue{i} = . then cpue{i} = 0;
    sumcpue= sumcpue + cpue{i};
    end;
  format date date7. avestart time5. _1-_10 adjcatch sumcpue 6.2;
  run;

*CREATE OPTIONAL BAR CHART OF SPECIES CPUE BY TESTFISH PERIOD;
data chartcp; merge spcpue catch; by date tfperiod bank;
  datetime=dhms(date,hour(avestart),minute(avestart),second(avestart));
  format datetime datetime10.;
  label datetime='DATE AND HOUR';
  if spcode=0 then delete;
  run;
proc sort data=chartcp; by bank; run;
title2 'TESTFISH CPUE, BY SPECIES, IN ALL TESTFISH PERIODS';
proc chart data=chartcp;
  vbar datetime / sumvar=spcpue subgroup=species discrete;
  by bank;
  run;

*ASSIGN REPORT PERIOD NUMBERS TO TESTFISH DATA;
data spcpwide; merge spcpwide(in=a) dailyk(keep=report date); by date;
  if a;
  run;

*SUM CPUE, FOR EACH SPECIES AND FOR ALL SPECIES, ACROSS ALL TESTFISH PERIODS
 WITHIN EACH REPORTING PERIOD;
*CALCULATE THE AVERAGE TOTAL (ALL SPECIES) CPUE IN EACH REPORT PERIOD;
*COUNT THE NUMBER OF TESTFISH PERIODS IN EACH REPORT PERIOD;
proc sort data=spcpwide; by report bank; run;
proc summary data=spcpwide;
  var _1-_10 sumcpue;
  output out=rnbkcpue sum=rnspcp1-rnspcp10 rnsmcp
                      mean(sumcpue)=rnmncp
                      n=n;
  by report bank;
  run;

*MERGE THE ORIGINAL DATA SET WITH THE SUMMARIZED DATA SET, THEN CALCULATE:
 ESTIMATED PROPORTION OF EACH SPECIES DURING EACH TESTFISH PERIOD,
 ESTIMATED PROPORTION OF EACH SPECIES DURING EACH REPORT PERIOD,
 AND A WEIGHTED SQUARED DEVIATION OF THE TESTFISH PERIOD PROPORTION FROM
 THE REPORT PERIOD PROPORTION;
data varcalc;
  merge spcpwide rnbkcpue;
  by report bank;
  array cpue{10} _1-_10;
  array rnspcp{10} rnspcp1-rnspcp10;
  array phatpr{10} phatpr1-phatpr10;
  array phatrp{10} phatrp1-phatrp10;
  array sqrdev{10} sqrdev1-sqrdev10;
  weight=sumcpue/rnmncp;
  do i=1 to 10;
    phatpr{i}=cpue{i}/sumcpue;
    phatrp{i}=rnspcp{i}/rnsmcp;
    sqrdev{i}=(weight**2)*(phatpr{i}-phatrp{i})**2;
```

```
    end;
  label phatpr1='CHINOOK' phatpr2='SCHUM' phatpr3='FCHUM' phatpr4='COHO'
  phatpr5='PINK' phatpr6='SHEEFISH' phatpr7='WHITE' phatpr8='JACK'
  phatpr9='OTHER' phatpr10='CISCO';
  format phatpr1-phatpr10 4.3;
  format adjcatch 5.1;
  format date date7. avestart time5.;
  run;

*OPTIONAL PRINTOUT OF SPECIES PROPORTIONS BY TESTFISH PERIOD;
proc sort data=varcalc out=print; by bank report date tfperiod; run;
title2 'ESTIMATED SPECIES PROPORTIONS AND TOTAL ADJUSTED CATCH BY TESTFISH
PERIOD';
proc print noobs label data=print; by bank;
  var bank report date tfperiod adjcatch
      phatpr1 phatpr8 phatpr2 phatpr6 phatpr3
      phatpr4 phatpr5 phatpr7 phatpr10 phatpr9;
  run;

*SUM THE SQUARED DEVIATIONS BY REPORT PERIOD;
proc summary data=varcalc nway;
  var sqrdev1-sqrdev10 adjcatch;
  id phatrp1-phatrp10 n date;
  output out=varprop sum=smsqdv1-smsqdv10 adjcatch;
  by report bank;
  run;

*AND CALCULATE THE VARIANCE OF THE REPORT PERIOD PROPORTION (COCHRAN 1977:64);
data varprop; set varprop (drop = _type_ _freq_);
  format phatrp1-phatrp10 stdprp1-stdprp10 4.2;
  format adjcatch 5.1;
  label phatrp1='CHINOOK' phatrp2='SCHUM' phatrp3='FCHUM' phatrp4='COHO'
      phatrp5='PINK' phatrp6='SHEEFISH' phatrp7='WHITE' phatrp8='JACK'
      phatrp9='OTHER' phatrp10='CISCO';
  label stdprp1='(se)' stdprp2='(se)' stdprp3='(se)' stdprp4='(se)'
        stdprp5='(se)' stdprp6='(se)' stdprp7='(se)' stdprp8='(se)';
  array varprp{10} varprp1-varprp10;
  array smsqdv{10} smsqdv1-smsqdv10;
  array stdprp{10} stdprp1-stdprp10;
  array phatrp{10} phatrp1-phatrp10;
  do i = 1 to 10;
    varprp{i}=smsqdv{i}/(n*(n-1));
    stdprp{i}=sqrt(varprp{i});
    end;
  run;

title2 'ESTIMATED SPECIES PROPORTIONS AND STANDARD ERRORS';
title3 'BY REPORT PERIOD AND BANK';
proc print label data=varprop noobs;
  var report date bank adjcatch phatrp1 stdprp1 phatrp8 stdprp8 phatrp2 stdprp2;
  run;
/*proc print label data=varprop noobs;
  var report date bank adjcatch phatrp6 stdprp6 phatrp7 stdprp7 phatrp10 stdprp10
    phatrp9 stdprp9;
  run;
proc print label data=varprop noobs;
  var report date bank adjcatch phatrp3 stdprp3 phatrp4 stdprp4 phatrp10 stdprp10;
  run;
*/

*PLOT SONAR COUNTS VS CPUE BY BANK FOR THE ENTIRE SEASON;
proc summary data=dayCNTvr nway;
  class report bank;
  var daypasg; id date;  output out=reptpasg sum=rptpasg;
  run;

data plot; merge rnbkcpue(drop=rnspcp1-rnspcp10) reptpasg; by report bank;
  label rnsmcp='TESTFISH CPUE' rptpasg='SONAR PASSAGE';
  format rnsmcp 5.1 rptpasg comma7.;
  run;
data plot; merge plot dailyk(keep=report plotchar); by report; run;
```

```
proc sort data=plot; by bank date; run;
title2 'SONAR PASSAGE VERSUS TESTFISH CPUE BY BANK';
proc print label data=plot;
  var report date bank plotchar; sum rnsmcp rptpasg;
 run;
proc plot data=plot;
  plot rptpasg*rnsmcp=plotchar;
  by bank;
  run;

*NOW MERGE COUNT DATA SET WITH SPECIES PROPORTIONS DATA SET, AND
 CALCULATE SPECIES PASSAGE ESTIMATES AND VARIANCES;
*
*;
proc sort data=daycntvr; by report bank; run;
data daybnkvr;
  merge daycntvr varprop(drop=date);
  by report bank;
  array phatrp{10} pnatrp1-phatrp10;
  array varprp{10} varprp1-varprp10;
  array daybnk{10} daybnk1-daybnk10;
  array vrdybk{10} vrdybk1-vrdybk10;
  array sedybk{10} sedybk1-sedybk10;
  do i=1 to 10;
    daybnk{i}=phatrp{i}*daypasg;
    vrdybk{i}=(daypasg**2)*varprp{i} + (phatrp{i}**2)*vardayps -
              vardayps*varprp{i};
    sedybk{i}=sqrt(vrdybk{i});
    end;
  format daypasg daybnk1-daybnk10 sedybk1-sedybk10 8.
         vardayps varprp1-varprp10 vrdybk1-vrdybk10 e9. phatrp1-phatrp10 5.3;
  keep daybnk1-daybnk10 vrdybk1-vrdybk10 sedybk1-sedybk10 report date bank;
  run;

*SUM THE PASSAGE ESTIMATES AND THE VARIANCES FOR BOTH BANKS IN EACH
 REPORTING PERIOD, PRINT THE RESULTS;
proc summary data=daybnkvr nway;
  var daybnk1-daybnk10 vrdybk1-vrdybk10;
  class date;
  output out=daystat sum= daypsg1-daypsg10 vrdyps1-vrdyps10;
  id report;
  run;

data daystat; set daystat (drop = _type_ _freq_);
  total=sum(of daypsg1-daypsg10);
  nonsalm=daypsg6+daypsg7+daypsg9+daypsg10;
  label report='REPORTING PERIOD' date='ENDING ON' nonsalm='TOTAL NON-SALMON'
        daypsg1='CHINOOK' daypsg2='SCHUM' daypsg3='FCHUM' daypsg4='COHO'
        daypsg5='PINK' daypsg6='SHEEFISH' daypsg7='WHITE' daypsg8='JACK'
        daypsg9='OTHER' daypsg10='CISCO' total='TOTAL ALL SPECIES';
  format daypsg1-daypsg10 nonsalm total comma7. vrdyps1-vrdyps10 e9.;
  run;

title2 'ESTIMATED DAILY FISH SPECIES PASSAGE';
proc print label noobs data=daystat;
  var report date;
  sum total daypsg1 daypsg8 daypsg2 daypsg6 daypsg3 daypsg4 daypsg5 daypsg7 daypsg10 daypsg9 nonsalm;
  run;

/*
data indices;
  infile 'indices.y93' firstobs=7 missover;
  informat date date7.;
  input date emochin 11-13 emochum 23-25 emojack 35-37 anvik 45-49;
  emochin=100*emochin; emochum=100*emochum; emojack=100*emojack;
  elagdate=date+3;
  alagdate=date-10;
  run;

data plot; merge daystat indices; by date;
  run;
```

```
proc plot data=plot;
  format date date5.;
  plot daypsg2*date='s' emochum*elagdate='t' /overlay;
  plot daypsg1*date='s' emochin*elagdate='t' /overlay;
  plot daypsg8*date='s' emojack*elagdate='t' /overlay;
  plot daypsg2*date='p' anvik*alagdate='a'   /overlay;
  run;
*/

*SUM BY-BANK PASSAGE ESTIMATES AND STD ERRORS OVER ALL DAYS WITHIN REPORT
 PERIODS, CALCULATE VARIANCE;
proc summary data=daybnkvr nway;
  class report bank;  id date;
  var daybnk1-daybnk10 sedybk1-sedybk10;
  output out=reptbank sum(daybnk1-daybnk10)=rptbnk1-rptbnk10
                      sum(sedybk1-sedybk10)=serpbk1-serpbk10;
  run;

data reptbank; set reptbank (drop = _type_ _freq_);
  array serpbk{10} serpbk1-serpbk10;
  array vrrpbk{10} vrrpbk1-vrrpbk10;
  do i = 1 to 10;
    vrrpbk{i}=serpbk{i}**2;
    end;
  run;

proc summary data=reptbank nway;
  class report; id date;
  var rptbnk1-rptbnk10 vrrpbk1-vrrpbk10;
  output out=reptstat sum=rptpsg1-rptpsg10 vrrpps1-vrrpps10;
  run;

data reptstat; set reptstat(drop=_type_ _freq_);
*  file 'reptshrt.y93';
  array serpps{10} serpps1-serpps10;
  array vrrpps{10} vrrpps1-vrrpps10;
  do i = 1 to 10;
    serpps{i}=sqrt(vrrpps{i});
    end;
  total=sum(of rptpsg1-rptpsg10);
  nonsalm=rptpsg6+rptpsg7+rptpsg9+rptpsg10;
  label report='REPORTING PERIOD' date='ENDING ON' nonsalm='TOTAL NON-SALMON'
     rptpsg1='CHINOOK' rptpsg2='SCHUM' rptpsg3='FCHUM' rptpsg4='COHO' rptpsg5='PINK'
        rptpsg6='SHEEFISH' rptpsg7='WHITE' rptpsg8='JACK' rptpsg9='OTHER' rptpsg10='CISCO'
        total='TOTAL ALL SPECIES';
  label serpps1='(se)' serpps2='(se)' serpps3='(se)' serpps4='(se)'
        serpps5='(se)' serpps6='(se)' serpps7='(se)' serpps8='(se)';
  format rptpsg1-rptpsg10 serpps1-serpps10 nonsalm total comma7.
         vrrpps1-vrrpps10 10.;
*  put report date rptpsg1-rptpsg10 / vrrpps1-vrrpps10;
  run;

title2 'ESTIMATED FISH SPECIES PASSAGE BY REPORTING PERIOD';
proc print label noobs data=reptstat;
  var report date;
  var rptpsg1 serpps1 vrrpps1 rptpsg8 serpps8 vrrpps8 rptpsg2 serpps2 total;
  *rptpsg6 rptpsg3 rptpsg4 rptpsg5 rptpsg7 rptpsg10 rptpsg9 nonsalm;
  sum rptpsg1 vrrpps1 rptpsg8 vrrpps8 rptpsg2 serpps2 total;
  run;

proc summary data=reptstat;
  var rptpsg1-rptpsg10 vrrpps1-vrrpps10 date;
  output out=cumstat sum(rptpsg1-rptpsg10)=cumpsg1-cumpsg10
                     sum(vrrpps1-vrrpps10)=varcp1-varcp10
                     max(date)=enddate;
  run;

proc transpose data=cumstat out=cs1;
  by enddate;
  var cumpsg1-cumpsg10; run;
data cs1; set cs1;
  label col1='PASSAGE TO DATE' enddate='ENDING DATE';
```

```
  rename col1=cumulpsg;
  length species $ 8;
  if _name_ = 'CUMPSG1 ' then  species = 'CHINOOK ';
  if _name_ = 'CUMPSG2 ' then  species = 'SCHUM';
  if _name_ = 'CUMPSG3 ' then  species = 'FCHUM';
  if _name_ = 'CUMPSG4 ' then  species = 'COHO';
  if _name_ = 'CUMPSG5 ' then  species = 'PINK';
  if _name_ = 'CUMPSG6 ' then  species = 'SHEEFISH';
  if _name_ = 'CUMPSG7 ' then  species = 'WHITE';
  if _name_ = 'CUMPSG8 ' then  species = 'JACK';
  if _name_ = 'CUMPSG9 ' then  species = 'OTHER';
  if _name_ = 'CUMPSG10' then  species = 'CISCO';
  drop _name_;
  run;

proc transpose data=cumstat out=cs2;
  var varcp1-varcp10; run;
data cs2; set cs2;
  rename col1=variance;
  run;

data cumstat2; merge cs1 cs2;
  stderr=sqrt(variance);
  cv=stderr/cumulpsg;
  format cumulpsg comma8. variance e10. stderr comma7. cv 4.3
         enddate date7.;
  label stderr='ESTIMATED STANDARD ERROR' cv='COEFFICIENT OF VARIATION';
  run;

title2 'CUMULATIVE STATISTICS BY SPECIES';
proc print noobs label;
  var enddate species cumulpsg stderr cv;
run;
```

APPENDIX C: TESTFISHING RESULTS, LOWER YUKON RIVER SONAR 1993, ONE LINE PER DRIFT

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
04JUN93	1	13:08	7.50	L	D	6.7	1	.	1	.	.	.	.	.	.
04JUN93	1	13:22	7.50	R	D	8.9	2	.	.	.	.	.	.	.	.
04JUN93	1	13:55	6.50	L	D	6.2	.	.	.	.	.	.	.	.	.
04JUN93	1	14:06	6.50	R	D	6.2	1	.	.	.	.	.	.	.	.
04JUN93	1	14:41	5.50	L	D	6.0	2	.	.	.	.	.	.	.	.
04JUN93	1	14:52	5.50	R	D	7.1	.	.	.	.	.	.	1	.	.
04JUN93	1	15:18	5.00	L	D	6.6	1	1	1	.	.	.	.	.	.
04JUN93	1	15:33	5.00	R	D	4.9	1	.	.	.	.	.	.	.	.
04JUN93	1	16:01	2.75	L	D	7.4	.	.	.	.	.	.	.	.	.
04JUN93	1	16:13	2.75	R	D	6.1	.	.	.	.	.	.	.	.	.
05JUN93	1	12:48	2.75	L	D	6.5	.	.	.	.	.	.	.	.	.
05JUN93	1	12:58	2.75	R	D	5.2	.	.	.	.	.	.	.	.	1
05JUN93	1	13:24	4.00	L	D	6.5	.	1	.	.	.	.	.	1	.
05JUN93	1	13:37	4.00	R	D	7.0	.	.	.	.	.	.	.	.	2
05JUN93	1	14:07	5.00	L	D	6.5	.	.	.	.	.	.	.	.	.
05JUN93	1	14:17	5.00	R	D	8.1	.	.	.	.	.	.	.	.	.
05JUN93	1	14:40	5.50	L	D	8.9	.	1	.	.	.	.	.	.	.
05JUN93	1	14:55	5.50	R	D	8.1	.	.	.	.	.	.	1	.	.
05JUN93	1	15:17	6.50	L	D	7.5	.	.	.	.	.	.	.	.	.
05JUN93	1	15:28	6.50	R	D	5.0	.	.	.	.	.	.	.	.	.
05JUN93	1	15:49	8.50	L	D	7.3	.	.	.	.	.	.	.	.	.
05JUN93	1	16:00	8.50	R	D	7.5	.	.	.	.	.	.	.	.	.
06JUN93	1	12:48	2.75	L	D	6.7	.	.	.	.	.	.	.	1	.
06JUN93	1	12:59	2.75	R	D	7.7	.	.	.	.	.	.	.	.	2
06JUN93	1	13:31	4.00	L	D	7.4	.	.	.	.	.	.	1	.	.
06JUN93	1	13:43	4.00	R	D	5.4	.	.	.	.	.	.	.	.	.
06JUN93	1	14:05	5.00	L	D	8.3	.	.	.	.	.	.	.	1	.
06JUN93	1	14:17	5.00	R	D	4.1	.	.	.	.	.	.	.	.	.
06JUN93	1	14:37	6.50	L	D	7.1	.	.	1	.	.	.	.	.	.
06JUN93	1	14:49	6.50	R	D	7.7	.	.	.	.	.	.	.	.	.
06JUN93	1	15:12	7.50	L	D	7.4	.	.	.	.	.	.	.	.	.
06JUN93	1	15:23	7.50	R	D	6.4	1	.	.	.	.	.	.	.	.
07JUN93	1	13:49	2.75	L	D	7.8	.	.	.	.	.	.	.	.	.
07JUN93	1	14:00	2.75	R	D	6.3	.	.	.	.	.	.	.	.	2
07JUN93	1	14:37	4.00	L	D	6.4	.	.	.	.	.	.	.	.	.
07JUN93	1	14:47	4.00	R	D	5.1	.	.	.	.	.	.	.	1	.
07JUN93	1	15:05	5.50	L	D	6.5	.	.	2	.	.	.	.	.	.
07JUN93	1	15:16	5.50	R	D	9.8	.	.	.	.	.	.	.	.	.
07JUN93	1	15:55	6.50	R	D	5.2	.	.	.	.	.	.	.	.	.
07JUN93	1	16:04	6.50	L	D	6.9	.	.	.	.	.	.	.	.	.
07JUN93	1	16:30	8.50	L	D	6.1	.	.	.	.	.	.	.	.	.
07JUN93	1	16:42	8.50	R	D	11.2	.	.	.	.	.	.	.	.	.
08JUN93	1	12:39	8.50	L	D	9.8	.	.	.	.	.	.	.	.	.
08JUN93	1	12:53	8.50	R	D	3.9	.	.	.	.	.	.	.	.	.
08JUN93	1	13:34	7.50	L	D	8.9	2	.	.	.	.	.	.	.	.
08JUN93	1	13:51	7.50	R	D	5.5	.	.	.	.	.	.	.	.	.
08JUN93	1	14:17	5.50	L	D	11.3	1	.	.	.	.	.	.	.	.
08JUN93	1	14:35	5.50	R	D	3.6	.	.	.	.	.	.	.	.	.
08JUN93	1	14:44	5.00	L	D	7.7	.	.	.	.	.	.	.	1	.
08JUN93	1	14:56	5.00	R	D	7.5	.	.	.	.	.	.	.	.	.
08JUN93	1	15:25	2.75	L	D	8.5	.	.	.	.	.	.	.	.	.
08JUN93	1	15:44	2.75	R	D	6.4	.	.	.	.	.	.	.	.	.
09JUN93	1	13:13	2.75	L	D	7.7	.	.	.	.	.	.	.	.	.
09JUN93	1	13:25	2.75	R	D	5.2	.	.	.	.	.	.	.	.	.
09JUN93	1	13:35	2.75	L	D	8.3	.	.	1	.	.	.	.	1	.
09JUN93	1	13:53	5.00	L	D	8.2	1	1	1	.	.	.	.	.	.
09JUN93	1	14:11	5.00	R	D	3.5	.	.	.	.	.	.	.	.	.
09JUN93	1	14:21	5.00	L	D	8.5	.	1	1	.	.	.	.	.	.
09JUN93	1	15:13	8.50	L	D	11.6	3	.	2	.	.	.	.	.	.
09JUN93	1	15:44	8.50	R	D	7.8	.	.	.	.	.	.	.	.	.
09JUN93	1	16:09	8.50	L	D	7.8	2	.	.	.	.	.	.	.	.
09JUN93	1	16:40	6.50	L	D	10.0	.	.	.	.	.	.	.	.	.
09JUN93	1	16:55	6.50	L	D	3.3	.	.	1	.	.	.	.	.	.
09JUN93	1	17:07	6.50	R	D	10.0	1	.	.	.	.	.	.	.	.
10JUN93	1	10:20	7.50	L	D	7.0	8	.	.	.	.	.	1	.	.
10JUN93	1	10:42	7.50	R	D	5.6	.	.	.	.	.	.	1	.	.
10JUN93	1	10:53	7.50	L	D	7.5	.	.	1	.	.	.	.	.	.
10JUN93	1	11:09	5.50	L	D	8.5	1	3	4	.	.	.	.	.	.
10JUN93	1	11:35	5.50	R	D	3.2	.	.	.	.	.	.	.	.	.
10JUN93	1	11:43	5.50	L	D	7.1	.	1	9	.	.	.	.	.	.
10JUN93	1	12:49	4.00	L	D	7.0	.	.	.	.	.	.	.	.	.
10JUN93	1	12:59	4.00	R	D	6.0	.	.	.	.	.	.	.	.	.
10JUN93	1	13:09	4.00	L	D	7.0	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
10JUN93	1	13:18	2.75	L	D	6.1	.	.	.	.	.	.	.	.	.
10JUN93	1	13:28	2.75	R	D	8.5	.	.	.	.	.	.	.	.	1
10JUN93	1	13:41	2.75	L	D	7.7	.	1	.	.	.	.	.	.	.
10JUN93	2	17 27	2.75	L	D	8.1	1	.	1	.	.	.	.	.	1
10JUN93	2	17:42	2.75	R	D	6.9	.	.	.	.	.	.	.	.	2
10JUN93	2	17:53	2.75	L	D	9.0	.	1	.	.	.	.	.	.	.
10JUN93	2	18:17	5.00	L	D	8.8	1	1	3	.	.	.	.	.	.
10JUN93	2	18:33	5.00	R	D	9.7	1	1	.	.	.	.	.	.	.
10JUN93	2	18:47	5.00	L	D	8.4	3	.	.	.	.	.	.	.	.
10JUN93	2	19:12	6.50	L	D	6.9	1	1	8	.	.	.	.	.	.
10JUN93	2	19:29	6.50	R	D	4.8	.	.	2	.	.	.	.	.	.
10JUN93	2	19:39	6.50	L	D	6.4	4	1	6	.	.	.	.	.	.
10JUN93	2	20:08	8.50	L	D	8.1	.	.	1	.	.	.	.	.	.
10JUN93	2	20:20	8.50	R	D	4.4	1	.	.	.	.	.	.	.	.
10JUN93	2	20:29	8.50	L	D	8.0	2	.	.	.	.	.	.	.	.
11JUN93	1	10:15	7.50	L	D	8.8	1	2	1	.	.	.	.	.	.
11JUN93	1	10:30	7.50	R	D	7.0	.	1	.	.	.	.	.	.	.
11JUN93	1	10:41	7.50	L	D	9.0	1	.	.	.	.	.	.	.	.
11JUN93	1	11:08	5.50	L	D	8.8	.	2	7	.	.	.	.	.	.
11JUN93	1	11:26	5.50	R	D	6.8	.	.	9	.	.	.	1	.	.
11JUN93	1	11:43	5.50	L	D	9.7	.	.	2	.	.	.	.	.	.
11JUN93	1	12:11	4.00	L	D	8.5	.	1	1	.	.	.	.	.	.
11JUN93	1	12:25	4.00	R	D	7.2	.	.	.	.	.	.	.	.	.
11JUN93	1	12:35	4.00	L	D	9.6	.	.	.	.	.	.	.	.	.
11JUN93	1	12:56	2.75	L	D	9.5	.	.	.	.	.	.	.	.	.
11JUN93	1	13:09	2.75	R	D	8.5	.	.	.	.	.	.	.	.	1
11JUN93	1	13:23	2.75	L	D	9.0	.	.	.	.	.	.	.	.	.
11JUN93	2	17:10	2.75	L	D	9.1	.	.	.	.	.	.	.	.	.
11JUN93	2	17:24	2.75	R	D	4.1	.	.	.	.	.	.	.	.	.
11JUN93	2	17:31	2.75	L	D	7.2	.	.	.	.	.	.	.	.	.
11JUN93	2	17:42	5.00	L	D	8.4	.	.	1	.	.	.	.	.	.
11JUN93	2	17:56	5.00	R	D	5.5	.	.	.	.	.	.	.	.	.
11JUN93	2	18:06	5.00	L	D	6.8	.	.	.	.	.	.	.	.	.
11JUN93	2	18:32	6.50	L	D	7.2	2	2	.	.	.	.	.	.	.
11JUN93	2	18:48	6.50	R	D	7.6	2	.	.	.	.	.	.	.	.
11JUN93	2	19:03	6.50	L	D	7.8	2	.	3	.	.	.	.	.	.
11JUN93	2	19:19	8.50	L	D	7.6	.	.	.	.	.	.	.	.	.
11JUN93	2	19:31	8.50	R	D	5.8	.	.	.	.	.	.	.	.	.
11JUN93	2	19:40	8.50	L	D	8.6	1	3	.	.	.	.	.	.	.
12JUN93	1	9:28	4.00	L	D	7.6	.	.	.	.	.	.	.	.	1
12JUN93	1	9:39	4.00	R	D	5.6	.	1	1	.	.	.	.	.	.
12JUN93	1	9:50	4.00	L	D	7.0	.	1	.	.	.	.	.	.	.
12JUN93	1	10:06	2.75	L	D	7.4	.	.	.	.	.	.	.	.	.
12JUN93	1	10:16	2.75	R	D	7.2	.	.	.	.	.	.	.	.	.
12JUN93	1	10:28	2.75	L	D	6.6	.	.	.	.	.	.	.	.	.
12JUN93	1	11:18	5.50	L	D	7.8	3	1	3	.	.	.	1	.	.
12JUN93	1	11:35	5.50	R	D	4.4	1	2	.	.	.	.	.	.	.
12JUN93	1	11:44	5.50	L	D	6.5	.	1	2	.	.	.	.	.	.
12JUN93	1	12:01	7.50	L	D	6.8	1	1	.	.	.	.	.	.	.
12JUN93	1	12:12	7.50	R	D	5.1	1	.	1	.	.	.	.	.	.
12JUN93	1	12:23	7.50	L	D	9.0	.	.	.	.	2	.	.	.	.
12JUN93	2	17:19	8.50	L	D	7.3	1	.	.	.	.	.	.	.	.
12JUN93	2	17:30	8.50	R	D	7.2	.	.	.	.	.	.	.	.	.
12JUN93	2	17:41	8.50	L	D	7.2	.	.	.	.	.	.	.	.	.
12JUN93	2	18:05	6.50	L	D	7.5	1	.	1	.	.	.	.	.	.
12JUN93	2	18:19	6.50	R	D	6.0	.	.	1	.	.	.	1	.	.
12JUN93	2	18:30	6.50	L	D	7.5	.	1	1	.	.	.	.	.	.
12JUN93	2	18:55	5.00	L	D	7.4	.	.	5	.	.	.	.	.	.
12JUN93	2	19:10	5.00	R	D	5.9	1	.	1	.	.	.	.	.	.
12JUN93	2	19:21	5.00	L	D	7.6	.	.	.	.	.	.	.	.	.
12JUN93	2	19:44	2.75	L	D	9.1	.	.	.	.	.	.	.	.	.
12JUN93	2	19:56	2.75	R	D	5.3	.	.	.	.	.	.	.	.	.
12JUN93	2	20:06	2.75	L	D	7.2	.	.	.	.	.	.	.	.	.
13JUN93	1	9:46	2.75	L	D	6.5	.	.	.	.	.	.	.	.	.
13JUN93	1	9:56	2.75	R	D	8.3	.	.	.	.	.	.	.	.	.
13JUN93	1	10:10	2.75	L	D	8.3	.	.	.	.	.	.	.	.	.
13JUN93	1	10:32	5.50	L	D	6.5	.	.	2	.	.	.	.	.	.
13JUN93	1	10:43	5.50	R	D	9.0	.	.	.	.	.	.	.	.	.
13JUN93	1	10:56	5.50	L	D	8.6	1	.	1	.	.	.	.	.	.
13JUN93	1	11:30	7.50	L	D	7.1	2	.	.	.	.	.	.	.	.
13JUN93	1	11:42	7.50	R	D	9.2	.	.	.	.	.	.	.	.	.
13JUN93	1	11:55	7.50	L	D	7.5	.	2	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
13JUN93	2	17:27	2.75	L	D	13.7	.	.	.	.	.	.	.	.	4
13JUN93	2	17:51	2.75	R	D	11.2	.	.	.	.	.	.	.	.	3
13JUN93	2	18:08	2.75	L	D	6.0	.	.	1	.	.	.	.	.	.
13JUN93	2	18:20	8.50	L	D	8.9	.	.	.	.	.	.	1	.	.
13JUN93	2	18:34	8.50	R	D	2.9	.	.	.	.	.	.	.	.	.
13JUN93	2	18:42	8.50	L	D	7.4	.	.	.	.	.	.	.	.	.
13JUN93	2	19:13	6.50	L	D	6.8	.	.	.	.	.	.	.	.	.
13JUN93	2	19:24	6.50	R	D	5.1	.	1	.	.	.	.	.	.	.
13JUN93	2	19:33	6.50	L	D	7.1	1	2	.	.	.	.	.	.	.
13JUN93	2	19:49	5.00	L	D	6.0	1	2	1	.	.	.	.	.	.
13JUN93	2	20:00	5.00	R	D	8.5	.	.	.	.	.	.	.	.	.
13JUN93	2	20:18	5.00	L	D	8.0	.	.	1	.	.	.	.	.	.
14JUN93	1	9:39	5.50	L	D	6.0	1	2	1	.	.	.	.	.	.
14JUN93	1	9:52	5.50	R	D	7.7	.	.	.	.	.	.	.	.	.
14JUN93	1	10:03	5.50	L	D	7.9	.	.	.	.	.	.	.	.	.
14JUN93	1	17:26	7.50	L	D	7.5	6	2	.	.	.	.	.	.	.
14JUN93	1	17:49	7.50	R	D	5.5	2	.	.	.	.	.	.	.	.
14JUN93	1	18:03	7.50	L	D	7.7	2	.	.	.	.	.	.	.	.
14JUN93	1	18:25	4.00	L	D	7.4	.	.	1	.	.	.	.	.	.
14JUN93	1	18:36	4.00	R	D	7.8	.	.	.	.	.	.	.	.	.
14JUN93	1	18:49	4.00	L	D	7.8	.	1	.	.	.	.	.	.	.
14JUN93	1	19:10	2.75	L	D	6.2	.	.	.	.	.	.	.	.	.
14JUN93	1	19:21	2.75	R	D	5.8	.	.	.	.	.	.	.	.	1
14JUN93	1	19:35	2.75	L	D	6.4	.	.	.	.	.	.	.	.	.
15JUN93	1	9:20	2.75	L	D	7.6	1	.	.	.	.	.	.	.	.
15JUN93	1	9:31	2.75	R	D	7.6	.	.	.	.	.	.	.	.	.
15JUN93	1	10:21	4.00	R	D	11.7	.	.	.	.	.	.	.	.	.
15JUN93	1	10:30	4.00	L	D	6.2	2	2	.	.	.	.	.	.	.
15JUN93	1	11:12	5.50	L	D	6.7	5	5	4	.	.	.	.	.	.
15JUN93	1	11:39	5.50	R	D	6.3	.	1	3	.	.	.	.	.	.
15JUN93	1	12:17	7.50	R	D	4.0	.	1	.	.	.	.	.	.	.
15JUN93	1	12:43	7.50	L	D	6.1	7	.	1	.	.	.	.	.	.
15JUN93	2	17:22	8.50	L	D	6.4	7	1	1	.	.	.	.	.	.
15JUN93	2	17:37	8.50	R	D	4.7	3	.	.	.	.	.	.	.	.
15JUN93	2	17:46	8.50	L	D	6.7	8	1	2	.	.	.	.	.	.
15JUN93	2	18:16	6.50	L	D	6.9	3	1	6	.	.	.	1	.	.
15JUN93	2	18:33	6.50	R	D	5.2	1	.	7	.	.	.	.	.	.
15JUN93	2	18:46	6.50	L	D	7.2	11	2	6	.	.	.	1	.	.
15JUN93	2	19:17	5.00	L	D	5.9	1	1	2	.	.	.	.	.	.
15JUN93	2	19:28	5.00	R	D	5.1	1	.	2	.	.	.	.	.	.
15JUN93	2	19:44	2.75	L	D	6.4	.	.	.	.	.	.	.	.	.
15JUN93	2	19:54	2.75	R	D	4.7	.	.	.	.	.	.	.	.	.
16JUN93	1	9:24	2.75	L	D	5.3	.	.	.	.	.	.	.	.	.
16JUN93	1	9:36	2.75	R	D	5.2	.	.	.	.	.	.	.	.	.
16JUN93	1	9:47	2.75	L	D	5.2	.	.	1	.	.	.	.	.	.
16JUN93	1	10:12	5.50	L	D	5.2	.	9	12	.	.	.	1	.	.
16JUN93	1	10:49	5.50	R	D	5.2	.	1	1	.	.	.	.	.	.
16JUN93	1	11:01	5.50	L	D	5.4	.	.	.	.	.	.	.	.	.
16JUN93	1	11:23	7.50	L	D	5.2	6	3	1	.	.	.	.	.	.
16JUN93	1	11:51	7.50	R	D	5.3	1	.	.	.	.	.	.	.	.
16JUN93	1	12:05	7.50	L	D	5.5	6	.	4	.	.	.	1	.	.
16JUN93	1	12:56	5.00	L	D	5.0	1	4	14	.	.	.	.	.	.
16JUN93	1	13:16	5.00	R	D	5.4	.	1	3	.	.	.	.	.	.
16JUN93	1	13:39	6.50	L	D	5.0	1	1	8	.	.	.	.	.	.
16JUN93	1	13:59	6.50	R	D	5.9	.	1	1	.	.	.	.	.	.
16JUN93	1	14:51	8.50	L	D	4.1	6	2	3	.	.	.	.	.	.
16JUN93	1	15:08	8.50	R	D	5.7	1	1	.	.	.	.	.	.	.
17JUN93	1	9:23	7.50	L	D	6.4	2	1	2	.	.	.	.	1	.
17JUN93	1	9:38	7.50	R	D	5.3	1	.	.	.	.	.	.	.	.
17JUN93	1	9:49	7.50	L	D	7.0	2	.	1	.	.	.	.	.	.
17JUN93	1	10:10	5.50	L	D	65.6	.	2	7	.	.	.	.	1	.
17JUN93	1	10:23	5.50	R	D	6.8	1	1	3	.	.	.	.	2	.
17JUN93	1	10:38	5.50	L	D	6.8	.	.	3	.	.	.	.	.	.
17JUN93	1	10:59	4.00	L	D	7.4	.	.	1	.	.	.	.	.	3
17JUN93	1	11:12	4.00	R	D	4.0	.	.	1	.	.	.	.	.	2
17JUN93	1	11:26	2.75	L	D	6.0	.	1	.	.	.	.	.	.	1
17JUN93	1	11:38	2.75	R	D	7.5	.	.	.	.	.	.	.	.	.
17JUN93	2	17:12	2.75	L	D	9.2	.	.	.	.	.	.	.	.	1
17JUN93	2	17:26	2.75	R	D	2.4	.	.	.	.	.	.	.	.	.
17JUN93	2	17:43	5.00	L	D	5.5	.	.	1	.	.	.	.	.	.
17JUN93	2	17:54	5.00	R	D	8.3	.	.	1	.	.	.	.	.	.
17JUN93	2	18:18	6.50	L	D	7.1	1	3	7	.	.	.	1	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
17JUN93	2	18:38	6.50	R	D	3.4	1	.	2	.	.	.	.	.	.
17JUN93	2	18:48	6.50	L	D	5.9	.	.	4	.	.	.	.	.	.
17JUN93	2	19:11	8.50	L	D	8.6	.	.	.	.	.	.	.	.	.
17JUN93	2	19:24	8.50	R	D	3.2	.	.	.	.	.	.	.	.	.
17JUN93	2	19:32	8.50	L	D	6.0	2	1	2	.	.	.	.	.	.
18JUN93	1	9:20	7.50	L	D	7.3	1	1	1	.	.	.	.	.	.
18JUN93	1	9:32	7.50	R	D	7.6	.	.	2	.	.	.	.	.	.
18JUN93	1	9:45	7.50	L	D	6.4	.	.	2	.	.	.	.	.	.
18JUN93	1	10:04	5.50	L	D	6.8	2	.	12	.	.	.	.	.	.
18JUN93	1	10:20	5.50	R	D	4.9	.	.	3	.	.	.	.	.	.
18JUN93	1	10:30	5.50	L	D	5.5	.	3	4	.	.	.	.	.	.
18JUN93	1	10:50	4.00	L	D	6.1	.	.	.	.	.	.	.	.	.
18JUN93	1	11:00	4.00	R	D	4.9	.	.	.	.	.	.	.	.	.
18JUN93	1	11:22	2.75	L	D	6.5	1	.	.	.	.	.	.	.	1
18JUN93	1	11:31	2.75	R	D	5.0	.	.	.	.	.	.	.	.	.
18JUN93	2	17:16	2.75	L	D	7.8	.	.	.	.	.	.	.	.	.
18JUN93	2	17:27	2.75	R	D	5.8	.	.	.	.	.	.	.	.	.
18JUN93	2	17:45	5.00	L	D	6.6	.	.	1	.	.	.	.	.	.
18JUN93	2	17:56	5.00	R	D	6.2	.	.	.	.	.	.	.	.	.
18JUN93	2	18:15	6.50	L	D	9.7	.	1	2	.	.	.	.	.	.
18JUN93	2	18:30	6.50	R	D	4.9	.	.	.	.	.	.	.	.	.
18JUN93	2	18:39	6.50	L	D	8.0	.	.	1	.	.	.	.	.	.
18JUN93	2	19:05	8.50	L	D	7.7	.	1	.	.	.	.	.	.	.
18JUN93	2	19:17	8.50	R	D	5.8	.	.	.	.	.	.	.	.	.
18JUN93	2	19:27	8.50	L	D	7.6	.	.	.	.	.	.	.	.	.
19JUN93	1	9:21	7.50	L	D	6.8	5	1	.	.	.	.	.	.	.
19JUN93	1	9:35	7.50	R	D	8.7	.	.	.	.	.	.	.	.	.
19JUN93	1	9:46	7.50	L	D	7.9	.	.	2	.	.	.	.	.	.
19JUN93	1	10:10	5.50	L	D	6.8	1	1	9	.	.	.	.	.	.
19JUN93	1	10:26	5.50	R	D	8.2	.	4	5	.	.	.	.	.	.
19JUN93	1	10:46	5.50	L	D	8.6	.	1	2	.	.	.	.	.	.
19JUN93	1	11:12	4.00	L	D	5.8	2	.	1	.	.	.	.	.	.
19JUN93	1	11:24	4.00	R	D	5.8	.	1	.	.	.	.	.	.	.
19JUN93	1	11:44	2.75	L	D	9.4	.	.	.	.	.	.	.	.	.
19JUN93	1	11:57	2.75	R	D	4.0	.	1	1	.	.	.	.	.	.
19JUN93	2	17:17	2.75	L	D	6.6	.	.	.	.	.	.	.	.	.
19JUN93	2	17:27	2.75	R	D	8.0	.	.	.	.	.	.	.	.	.
19JUN93	2	17:47	5.00	L	D	7.6	.	.	1	.	.	.	.	.	.
19JUN93	2	18:00	5.00	R	D	4.0	.	1	.	.	.	.	.	.	.
19JUN93	2	18:16	6.50	L	D	6.8	1	2	1	.	.	.	.	.	.
19JUN93	2	18:30	6.50	R	D	6.3	.	.	1	.	.	.	.	.	.
19JUN93	2	18:41	6.50	L	D	6.1	.	.	2	.	.	.	.	.	.
19JUN93	2	19:03	8.50	L	D	6.8	.	.	.	.	.	.	.	.	.
19JUN93	2	19:14	8.50	R	D	5.8	.	.	.	.	.	.	.	.	.
19JUN93	2	19:24	8.50	L	D	6.5	1	1	.	.	.	.	.	.	.
20JUN93	1	9:20	7.50	L	D	5.2	6	1	8	.	.	.	.	.	.
20JUN93	1	9:33	7.50	R	D	8.3	5	1	1	.	.	.	.	.	.
20JUN93	1	9:48	7.50	L	D	5.9	1	.	1	.	.	.	.	.	.
20JUN93	1	10:07	2.75	L	D	5.1	1	.	1	.	.	.	.	.	.
20JUN93	1	10:16	2.75	R	D	2.9	.	.	1	.	.	.	.	.	.
20JUN93	1	10:23	2.75	L	D	6.2	1	2	.	.	.	.	.	.	.
20JUN93	1	10:42	5.50	L	D	5.6	1	.	7	.	.	.	.	.	.
20JUN93	1	10:53	5.50	R	D	7.9	1	.	9	.	.	.	.	.	.
20JUN93	1	11:11	5.50	L	D	5.1	1	1	2	.	.	.	.	.	.
20JUN93	1	11:51	5.00	L	D	7.3	2	3	29	.	.	.	.	.	.
20JUN93	1	12:08	5.00	R	D	3.1	.	1	6	.	.	.	.	.	.
20JUN93	1	12:20	5.00	L	D	6.2	1	1	16	.	.	.	.	.	.
20JUN93	1	12:45	6.50	L	D	5.1	.	4	5	.	.	.	.	.	.
20JUN93	1	12:57	6.50	R	D	2.9	1	1	.	.	.	.	.	.	.
20JUN93	1	13:05	6.50	L	D	4.7	3	3	6	.	.	.	.	.	.
20JUN93	1	13:30	8.50	L	D	5.9	1	.	.	.	.	.	.	.	.
20JUN93	1	13:40	8.50	R	D	5.9	.	.	2	.	.	.	.	.	.
20JUN93	1	13:50	8.50	L	D	5.7	.	2	.	.	.	.	.	.	.
21JUN93	1	9:28	7.50	L	D	7.8	7	.	2	.	.	.	.	.	.
21JUN93	1	9:44	7.50	R	D	4.7	4	3	1	.	.	.	.	.	.
21JUN93	1	9:58	7.50	L	D	7.3	2	.	.	.	.	.	.	.	.
21JUN93	1	10:23	5.50	L	D	7.6	1	2	20	.	.	.	.	.	.
21JUN93	1	10:44	5.50	R	D	4.2	.	2	14	.	.	.	.	.	.
21JUN93	1	11:03	5.50	L	D	6.7	.	3	14	.	.	.	.	.	.
21JUN93	1	11:33	4.00	L	D	6.8	.	1	1	.	.	.	.	.	.
21JUN93	1	11:44	4.00	R	D	3.9	.	.	.	.	.	.	.	.	.
21JUN93	1	12:01	2.75	L	D	6.3	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
21JUN93	1	12:11	2.75	L	D	4.7	.	.	.	.	.	.	.	.	.
21JUN93	2	17:07	2.75	L	D	6.5	.	.	.	.	.	.	.	.	.
21JUN93	2	17:18	2.75	R	D	7.7	.	.	.	.	.	.	.	.	1
21JUN93	2	17:40	5.00	L	D	6.7	.	.	.	.	.	.	.	.	.
21JUN93	2	17:50	5.00	R	D	10.0	1	.	1	.	.	.	.	.	.
21JUN93	2	18:14	6.50	L	D	4.2	2	1	20	.	.	.	.	.	.
21JUN93	2	18:34	6.50	R	D	4.8	1	.	4	.	.	.	.	.	.
21JUN93	2	18:50	6.50	L	D	6.8	.	.	8	.	.	.	.	.	.
21JUN93	2	19:14	8.50	L	D	9.4	.	.	2	.	.	.	.	.	.
21JUN93	2	19:30	8.50	R	D	8.5	.	.	.	.	.	.	.	.	.
21JUN93	2	19:43	8.50	L	D	7.4	.	2	.	.	.	.	.	.	.
22JUN93	1	9:13	8.50	L	D	6.0	3	1	1	.	.	.	.	.	.
22JUN93	1	9:29	8.50	R	D	5.1	1	1	1	.	.	.	.	.	.
22JUN93	1	9:39	8.50	L	D	5.2	3	.	3	.	.	.	.	.	.
22JUN93	1	10:03	6.50	L	D	3.2	2	.	10	.	.	.	.	.	.
22JUN93	1	10:20	6.50	R	D	4.7	1	.	6	.	.	.	.	.	.
22JUN93	1	10:38	6.50	L	D	6.3	1	.	2	.	.	.	.	.	.
22JUN93	1	11:05	5.00	L	D	6.6	.	1	2	.	.	.	1	.	.
22JUN93	1	11:19	5.00	R	D	3.7	.	1	2	.	.	.	.	.	.
22JUN93	1	11:35	2.75	L	D	7.3	.	.	1	.	.	.	.	.	.
22JUN93	1	11:47	2.75	R	D	4.3	.	.	.	.	.	.	.	.	1
22JUN93	2	17:21	2.75	L	D	8.3	1	.	.	.	.	.	.	.	.
22JUN93	2	17:35	2.75	R	D	4.3	.	.	.	.	.	.	.	.	.
22JUN93	2	17:52	4.00	L	D	6.7	1	1	.	.	.	.	.	.	.
22JUN93	2	18:03	4.00	R	D	8.6	.	1	.	.	.	.	.	.	.
22JUN93	2	18:25	5.50	L	D	7.7	1	.	9	.	.	.	.	.	.
22JUN93	2	18:42	5.50	R	D	7.2	1	3	16	.	.	.	.	.	.
22JUN93	2	19:08	5.50	L	D	4.8	1	2	17	.	.	.	.	.	.
22JUN93	2	19:36	7.50	L	D	4.8	4	.	3	.	.	.	.	.	.
22JUN93	2	19:51	7.50	R	D	3.6	3	.	2	.	.	.	.	.	.
22JUN93	2	20:01	7.50	L	D	6.3	7	.	2	.	.	.	.	.	.
23JUN93	1	9:11	7.50	L	D	6.3	3	1	6	.	.	.	.	.	.
23JUN93	1	9:29	7.50	R	D	5.3	7	.	5	.	.	.	.	.	.
23JUN93	1	9:52	7.50	L	D	6.4	4	.	2	.	.	.	.	.	.
23JUN93	1	10:20	5.50	L	D	7.3	.	1	15	.	.	.	.	.	.
23JUN93	1	10:42	5.50	R	D	4.0	1	1	22	.	.	.	.	.	.
23JUN93	1	11:18	5.50	L	D	7.4	.	.	1	.	.	.	.	.	.
23JUN93	1	11:39	4.00	L	D	6.4	2	.	7	.	.	.	.	.	.
23JUN93	1	11:55	4.00	R	D	8.5	5	.	1	.	.	.	.	.	.
23JUN93	1	12:23	2.75	L	D	7.2	.	.	1	.	.	.	.	.	.
23JUN93	1	12:34	2.75	R	D	2.5	.	.	.	.	.	.	.	.	1
23JUN93	2	17:09	2.75	L	D	6.7	.	.	.	.	.	.	.	.	.
23JUN93	2	17:20	2.75	R	D	4.4	.	1	.	.	.	.	.	.	.
23JUN93	2	17:35	8.50	L	D	6.3	6	1	4	.	.	.	.	.	.
23JUN93	2	17:50	8.50	R	D	4.3	.	.	1	.	.	.	.	.	.
23JUN93	2	17:59	8.50	L	D	6.3	4	.	4	.	.	.	.	.	.
23JUN93	2	18:31	6.50	L	D	6.5	1	2	17	.	.	.	.	.	.
23JUN93	2	18:48	6.50	R	D	4.8	1	.	13	.	.	.	.	.	.
23JUN93	2	19:06	6.50	L	D	5.2	2	3	12	.	.	.	.	.	.
23JUN93	2	19:40	5.00	L	D	7.9	.	1	22	.	.	.	.	.	.
23JUN93	2	20:06	5.00	R	D	4.7	1	4	19	.	.	.	.	.	.
24JUN93	1	9:24	5.00	L	D	4.5	1	.	32	.	.	.	.	.	.
24JUN93	1	9:50	5.00	R	D	3.0	1	.	2	.	.	.	.	.	.
24JUN93	1	10:06	6.50	L	D	3.9	1	.	14	.	.	.	.	.	.
24JUN93	1	10:20	6.50	R	D	4.0	1	.	.	.	.	.	.	.	.
24JUN93	1	10:30	6.50	L	D	7.0	.	.	.	.	.	.	.	.	.
24JUN93	1	10:50	8.50	L	D	4.6	5	.	4	.	.	.	.	.	.
24JUN93	1	11:09	8.50	R	D	3.6	1	.	.	.	.	.	.	.	.
24JUN93	1	11:18	8.50	L	D	6.0	.	1	.	.	.	.	.	.	.
24JUN93	1	11:38	2.75	L	D	5.2	.	.	1	.	.	.	.	.	.
24JUN93	1	11:46	2.75	R	D	4.1	.	.	.	.	.	.	.	.	1
24JUN93	2	17:13	2.75	L	D	5.5	.	.	.	.	.	.	.	.	.
24JUN93	2	17:22	2.75	R	D	3.8	1	.	.	.	.	.	.	.	1
24JUN93	2	17:37	4.00	L	D	4.7	.	.	.	.	.	.	.	.	.
24JUN93	2	17:44	4.00	R	D	6.5	.	.	1	.	.	.	2	.	.
24JUN93	2	18:10	5.50	L	D	5.7	.	4	47	.	.	.	1	.	.
24JUN93	2	18:54	5.50	R	D	3.0	.	.	5	.	.	.	.	.	.
24JUN93	2	19:18	5.50	L	D	3.5	.	2	12	.	.	.	.	.	.
24JUN93	2	19:44	7.50	L	D	7.8	5	1	7	.	.	.	.	.	.
24JUN93	2	20:04	7.50	R	D	3.7	1	3	7	.	.	.	2	.	.
24JUN93	2	20:26	7.50	L	D	4.1	.	1	1	.	.	.	.	.	.
25JUN93	1	15:46	7.50	L	D	5.4	2	1	1	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
25JUN93	1	15:57	7.50	R	D	4.7	2	1	1	.	.	.	.	.	.
25JUN93	1	16:07	7.50	L	D	5.4	2	.	1	.	.	.	.	.	.
25JUN93	1	16:27	5.50	L	D	4.1	1	1	32	.	.	.	.	.	.
25JUN93	1	16:52	5.50	R	D	3.7	.	2	21	.	.	.	.	.	.
25JUN93	1	17:16	5.50	L	D	2.7	1	2	6	.	.	.	.	.	.
25JUN93	1	17:35	4.00	L	D	3.5	1	.	3	.	.	.	.	.	.
25JUN93	1	17:45	4.00	R	D	4.5	.	.	3	.	.	.	.	.	.
25JUN93	1	17:55	4.00	L	D	6.6	.	1	.	.	.	.	.	.	1
25JUN93	1	18:17	6.50	L	D	3.3	.	.	3	.	.	.	.	.	.
25JUN93	1	18:27	6.50	R	D	5.8	.	.	.	.	.	.	.	.	.
25JUN93	1	18:36	6.50	L	D	6.1	.	.	5	.	.	.	.	.	.
25JUN93	1	18:56	5.00	L	D	4.3	.	.	15	.	.	.	.	.	.
25JUN93	1	19:11	5.00	R	D	4.8	.	1	5	.	.	.	.	.	.
25JUN93	1	19:24	5.00	L	D	5.2	.	.	2	.	.	.	.	.	.
25JUN93	1	19:42	2.75	L	D	3.8	.	.	3	.	.	.	.	.	.
25JUN93	1	19:50	2.75	R	D	4.8	.	.	1	.	.	.	.	.	1
25JUN93	1	20:01	2.75	L	D	6.9	.	.	1	.	.	.	.	.	.
26JUN93	1	9:21	2.75	L	D	3.9	.	1	2	.	.	.	.	.	.
26JUN93	1	9:29	2.75	R	D	5.3	.	1	1	.	.	.	.	.	3
26JUN93	1	9:44	4.00	L	D	2.9	.	.	2	.	.	.	.	.	.
26JUN93	1	9:51	4.00	R	D	4.4	2	.	3	.	.	.	.	.	.
26JUN93	1	10:07	5.50	L	D	2.1	.	.	7	.	.	.	.	.	.
26JUN93	1	10:17	5.50	R	D	2.5	.	1	4	.	.	.	.	.	.
26JUN93	1	10:25	5.50	L	D	6.0	.	1	1	.	.	.	.	.	.
26JUN93	1	10:42	7.50	L	D	3.7	3	2	3	.	.	.	1	.	.
26JUN93	1	10:53	7.50	R	D	7.0	1	.	.	.	.	.	.	.	.
26JUN93	1	11:06	7.50	L	D	5.6	3	3	3	.	.	.	.	.	.
26JUN93	2	17:28	8.50	L	D	3.1	1	1	8	.	.	.	1	.	.
26JUN93	2	17:38	8.50	R	D	5.7	.	.	.	.	.	.	.	.	.
26JUN93	2	17:48	8.50	L	D	6.7	.	1	2	.	.	.	.	.	.
26JUN93	2	18:06	6.50	L	D	3.8	1	1	8	.	.	.	.	.	.
26JUN93	2	18:17	6.50	R	D	7.6	1	1	.	.	.	.	.	.	.
26JUN93	2	18:30	6.50	L	D	6.1	.	.	2	.	.	.	.	.	.
26JUN93	2	18:47	5.00	L	D	6.1	.	1	8	.	.	.	.	.	.
26JUN93	2	19:00	5.00	R	D	8.6	1	1	3	.	.	.	.	.	.
26JUN93	2	19:19	2.75	L	D	7.3	.	.	.	.	.	.	.	.	1
26JUN93	2	19:31	2.75	R	D	3.6	.	.	.	.	.	.	.	.	4
27JUN93	1	9:23	2.75	L	D	5.5	.	.	1	.	.	.	.	.	4
27JUN93	1	9:33	2.75	R	D	3.4	.	.	.	.	.	.	.	.	1
27JUN93	1	9:41	2.75	L	D	5.3	.	.	.	.	.	.	.	.	.
27JUN93	1	9:57	5.00	L	D	3.5	.	.	40	.	.	.	.	.	.
27JUN93	1	10:14	5.00	R	D	6.3	.	1	23	.	.	.	.	.	.
27JUN93	1	10:34	5.00	L	D	3.9	1	.	5	.	.	.	.	.	.
27JUN93	1	10:50	6.50	L	D	3.9	1	.	5	.	.	.	.	.	.
27JUN93	1	11:00	6.50	R	D	4.5	1	.	2	.	.	.	.	.	.
27JUN93	1	11:11	6.50	L	D	3.5	.	.	.	.	.	.	.	.	.
27JUN93	1	12:08	4.00	L	D	4.7	.	.	2	.	.	.	.	.	2
27JUN93	1	12:17	4.00	R	D	3.7	.	2	.	.	.	.	.	.	6
27JUN93	1	12:26	4.00	L	D	4.5	.	.	.	.	.	.	.	.	.
27JUN93	1	12:40	5.50	L	D	2.8	.	1	8	.	.	.	.	.	.
27JUN93	1	12:51	5.50	R	D	4.0	.	2	16	.	.	.	.	.	.
27JUN93	1	13:07	5.50	L	D	4.3	.	.	5	.	.	.	.	.	.
27JUN93	1	13:26	7.50	L	D	3.5	1	.	9	.	.	.	.	.	.
27JUN93	1	13:36	7.50	R	D	4.2	.	.	.	.	.	.	.	.	.
27JUN93	1	13:44	7.50	L	D	5.4	3	.	2	.	.	.	.	.	.
28JUN93	1	9:34	8.50	L	D	5.4	.	.	2	.	.	.	.	.	.
28JUN93	1	9:43	8.50	R	D	4.2	.	.	1	.	.	.	.	.	.
28JUN93	1	9:52	8.50	L	D	4.7	1	.	2	.	.	.	.	.	.
28JUN93	1	10:11	6.50	L	D	3.6	.	1	3	.	.	.	.	.	.
28JUN93	1	10:19	6.50	R	D	5.4	.	.	1	.	.	.	.	.	.
28JUN93	1	10:31	6.50	L	D	4.8	.	.	1	.	.	.	.	.	.
28JUN93	1	10:48	5.00	L	D	6.0	.	.	5	.	.	.	.	.	.
28JUN93	1	11:02	5.00	R	D	4.9	.	1	4	.	.	.	.	.	.
28JUN93	1	11:20	2.75	L	D	5.2	.	.	.	.	.	.	.	.	.
28JUN93	1	11:28	2.75	R	D	4.4	.	.	.	.	.	.	.	.	.
28JUN93	2	17:23	2.75	L	D	4.8	.	.	1	.	.	.	.	.	3
28JUN93	2	17:34	2.75	R	D	5.6	.	.	1	.	.	.	.	.	2
28JUN93	2	18:01	4.00	L	D	3.8	.	.	3	.	.	.	.	.	1
28JUN93	2	18:12	4.00	R	D	5.4	.	.	.	.	.	.	.	.	.
28JUN93	2	18:28	5.50	L	D	5.7	.	.	8	.	.	.	.	.	.
28JUN93	2	18:43	5.50	R	D	4.7	.	.	5	.	.	.	.	.	.
28JUN93	2	18:55	5.50	L	D	6.1	.	.	3	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
28JUN93	2	19:15	7.50	L	D	4.6	.	.	1	.	.	.	.	.	.
28JUN93	2	19:24	7.50	R	D	5.6	.	.	1	.	.	.	1	.	.
28JUN93	2	19:34	7.50	L	D	6.2	1	.	1	.	.	.	.	.	.
29JUN93	1	9:13	7.50	L	D	5.2	2	2	1	.	.	.	.	.	.
29JUN93	1	9:24	7.50	R	D	4.4	.	.	1	.	.	.	.	.	.
29JUN93	1	9:35	7.50	L	D	5.7	.	.	3	.	.	.	.	.	.
29JUN93	1	9:55	5.50	L	D	3.4	1	1	33	.	.	.	.	.	.
29JUN93	1	10:27	5.50	R	D	4.0	.	.	19	.	.	.	.	.	.
29JUN93	1	10:47	5.50	L	D	6.4	.	1	2	.	.	.	.	.	.
29JUN93	1	11:08	4.00	L	D	3.8	1	.	2	.	.	.	.	.	.
29JUN93	1	11:18	4.00	R	D	4.5	.	.	1	.	.	.	.	.	.
29JUN93	1	11:33	2.75	L	D	3.7	.	.	2	.	.	.	.	.	1
29JUN93	1	11:43	2.75	R	D	6.9	.	.	.	.	.	.	.	.	4
29JUN93	2	17:13	2.75	L	D	6.0	.	.	2	.	.	.	.	.	.
29JUN93	2	17:22	2.75	R	D	7.2	.	.	.	.	.	.	.	.	1
29JUN93	2	17:42	5.00	L	D	6.1	.	.	1	.	.	.	.	.	.
29JUN93	2	17:56	5.00	R	D	3.5	.	.	2	.	.	.	.	.	.
29JUN93	2	18:11	6.50	L	D	4.6	.	.	11	.	.	.	.	.	.
29JUN93	2	18:23	6.50	R	D	4.2	.	.	.	.	.	.	.	.	.
29JUN93	2	18:31	6.50	L	D	6.1	.	1	1	.	.	.	.	.	.
29JUN93	2	19:02	8.50	L	D	4.0	2	1	3	.	.	.	.	.	.
29JUN93	2	19:12	8.50	R	D	4.6	1	.	.	.	.	.	.	.	.
29JUN93	2	19:23	8.50	L	D	5.4	.	.	.	.	.	.	.	.	.
30JUN93	1	9:20	8.50	L	D	4.6	3	.	6	.	.	.	.	.	.
30JUN93	1	9:34	8.50	R	D	4.7	.	.	4	.	.	.	.	.	.
30JUN93	1	9:45	8.50	L	D	6.1	4	.	3	.	.	.	.	.	.
30JUN93	1	10:09	6.50	L	D	5.5	.	.	10	.	.	.	.	.	.
30JUN93	1	10:24	6.50	R	D	3.9	1	1	4	.	.	.	.	.	.
30JUN93	1	10:35	6.50	L	D	5.7	.	2	2	.	.	.	.	.	.
30JUN93	1	10:54	5.00	L	D	3.5	.	.	21	.	.	.	.	.	.
30JUN93	1	11:09	5.00	R	D	4.5	1	1	30	.	1	.	.	.	.
30JUN93	1	11:36	5.00	L	D	5.4	.	.	10	.	.	.	.	.	.
30JUN93	1	12:01	5.50	L	D	1.7	1	1	23	.	.	.	.	.	.
30JUN93	1	12:19	5.50	R	D	3.1	.	2	15	.	.	.	.	.	.
30JUN93	1	12:35	5.50	L	D	4.6	.	.	10	.	.	.	.	.	.
30JUN93	1	13:07	4.00	L	D	4.1	.	1	1	.	.	.	.	.	.
30JUN93	1	13:15	4.00	R	D	5.2	1	.	.	.	.	.	.	.	.
30JUN93	1	13:23	4.00	L	D	8.2	.	1	.	.	.	.	.	.	.
30JUN93	1	13:46	2.75	L	D	5.1	.	1	4	.	.	.	.	.	.
30JUN93	1	13:57	2.75	R	D	4.1	.	.	.	.	.	.	.	.	1
30JUN93	1	14:07	2.75	L	D	3.8	.	.	.	.	.	.	.	.	5
01JUL93	1	9:27	2.75	L	D	5.7	.	.	.	.	.	.	.	.	.
01JUL93	1	9:36	2.75	R	D	6.2	.	.	3	.	.	.	.	.	3
01JUL93	1	9:55	5.00	L	D	5.5	1	.	23	.	.	.	.	.	.
01JUL93	1	10:23	5.00	R	D	5.0	.	1	5	.	.	.	.	1	.
01JUL93	1	10:41	6.50	L	D	2.8	1	.	5	.	.	.	.	.	.
01JUL93	1	10:52	6.50	R	D	5.1	.	.	6	.	.	.	.	.	.
01JUL93	1	11:05	6.50	L	D	4.8	1	1	4	.	.	.	.	.	.
01JUL93	1	11:28	8.50	L	D	5.7	.	.	1	.	.	.	.	.	.
01JUL93	1	11:37	8.50	R	D	4.3	.	.	.	.	.	.	.	.	.
01JUL93	1	11:45	8.50	L	D	5.1	1	.	.	.	.	.	.	.	.
01JUL93	2	17:11	2.75	L	D	5.2	.	.	.	.	.	.	.	.	3
01JUL93	2	17:21	2.75	R	D	3.6	.	.	.	.	.	.	.	.	1
01JUL93	2	17:38	4.00	L	D	4.8	.	.	.	.	.	.	.	.	.
01JUL93	2	17:46	4.00	R	D	5.5	.	.	.	.	.	.	.	.	1
01JUL93	2	18:03	7.50	L	D	5.6	.	1	2	.	.	.	.	.	.
01JUL93	2	18:14	7.50	R	D	3.6	.	.	.	.	.	.	.	.	.
01JUL93	2	18:23	7.50	L	D	5.4	.	.	3	.	.	.	.	.	.
01JUL93	2	18:43	5.50	L	D	4.8	.	.	4	.	.	.	.	.	.
01JUL93	2	18:54	5.50	R	D	5.4	.	1	5	.	.	.	.	.	.
01JUL93	2	19:07	5.50	L	D	7.7	.	.	15	.	.	.	.	.	.
02JUL93	1	9:24	5.50	L	D	5.1	.	.	8	.	.	.	.	.	.
02JUL93	1	9:35	5.50	R	D	5.1	.	.	14	.	.	.	.	.	.
02JUL93	1	9:51	5.50	L	D	6.7	.	1	11	.	.	.	.	.	.
02JUL93	1	10:17	7.50	L	D	5.5	.	1	1	.	.	.	.	.	.
02JUL93	1	10:27	7.50	R	D	7.4	.	1	3	.	.	.	.	.	.
02JUL93	1	10:42	7.50	L	D	6.2	.	.	1	.	.	.	.	.	.
02JUL93	1	11:00	4.00	L	D	6.1	.	.	1	.	.	.	.	.	.
02JUL93	1	11:10	4.00	R	D	4.6	.	1	.	.	.	.	.	1	.
02JUL93	1	11:27	2.75	L	D	5.0	.	.	.	.	.	.	.	.	.
02JUL93	1	11:36	2.75	R	D	5.5	.	.	2	.	.	.	.	.	.
02JUL93	2	17:11	2.75	L	D	4.8	.	.	2	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
02JUL93	2	17:20	2.75	R	D	4.6	.	.	.	.	.	.	.	.	2
02JUL93	2	17:38	5.00	L	D	6.0	.	.	2	.	.	.	.	.	.
02JUL93	2	17:48	5.00	R	D	5.0	.	.	9	.	.	.	.	1	.
02JUL93	2	18:08	6.50	L	D	4.6	1	.	2	.	.	.	1	.	.
02JUL93	2	18:18	6.50	R	D	5.3	.	.	2	.	.	.	.	.	.
02JUL93	2	18:30	6.50	L	D	7.1	.	.	1	.	.	.	.	.	.
02JUL93	2	18:49	8.50	L	D	4.5	1	.	.	.	.	.	.	.	.
02JUL93	2	18:58	8.50	R	D	6.8	1	.	.	.	.	.	.	.	.
02JUL93	2	19:10	8.50	L	D	6.1	.	.	.	.	.	.	.	.	.
03JUL93	1	9:23	8.50	L	D	4.9	.	.	.	.	.	.	.	.	.
03JUL93	1	9:31	8.50	R	D	3.5	.	.	.	.	.	.	.	.	.
03JUL93	1	9:38	8.50	L	D	7.3	.	.	1	.	.	.	.	.	.
03JUL93	1	9:57	6.50	L	D	3.9	.	.	1	.	.	.	.	.	.
03JUL93	1	10:07	6.50	R	D	3.3	.	.	2	.	.	.	.	.	.
03JUL93	1	10:16	6.50	L	D	6.7	.	.	.	.	.	.	.	.	.
03JUL93	1	10:34	5.00	L	D	4.2	1	.	9	.	.	.	.	.	.
03JUL93	1	10:46	5.00	R	D	4.3	.	.	1	.	.	.	.	.	.
03JUL93	1	11:12	2.75	L	D	4.5	.	.	.	.	.	.	.	.	.
03JUL93	1	11:23	2.75	R	D	4.6	.	.	.	.	.	.	.	.	.
03JUL93	2	17:08	2.75	L	D	5.9	.	.	.	.	.	.	.	.	1
03JUL93	2	17:18	2.75	R	D	3.6	.	.	.	.	.	.	.	.	1
03JUL93	2	17:33	4.00	L	D	5.0	.	.	.	.	.	.	.	.	.
03JUL93	2	17:41	4.00	R	D	6.9	.	1	.	.	.	.	.	.	.
03JUL93	2	18:00	5.50	L	D	5.6	.	.	3	.	.	.	.	.	.
03JUL93	2	18:15	5.50	R	D	3.9	1	.	4	.	.	.	.	.	.
03JUL93	2	18:29	5.50	L	D	6.6	.	.	2	.	.	.	.	.	.
03JUL93	2	18:48	7.50	L	D	4.8	3	.	[illegible]	.	.	.	.	.	.
03JUL93	2	18:58	7.50	R	D	5.2	.	.	.	.	.	.	.	.	.
03JUL93	2	19:07	7.50	L	D	7.5	.	.	.	.	.	.	.	.	.
04JUL93	1	9:19	7.50	L	D	4.9	.	.	2	.	.	.	.	.	.
04JUL93	1	9:27	7.50	R	D	4.1	.	.	.	.	.	.	.	.	.
04JUL93	1	9:36	7.50	L	D	5.7	.	.	.	.	.	.	.	.	.
04JUL93	1	9:56	5.50	L	D	4.2	1	.	19	.	.	.	.	.	.
04JUL93	1	10:12	5.50	R	D	4.4	.	.	.	.	.	.	.	.	.
04JUL93	1	10:20	5.50	L	D	3.4	.	.	.	.	.	.	1	.	.
04JUL93	1	10:38	4.00	L	D	5.7	.	.	.	.	.	.	.	.	.
04JUL93	1	10:47	4.00	R	D	5.3	.	.	.	.	.	.	.	.	.
04JUL93	1	11:02	2.75	L	D	6.2	.	.	.	.	.	.	.	.	.
04JUL93	1	11:11	2.75	R	D	5.9	.	.	.	.	.	.	.	.	.
04JUL93	2	17:15	2.75	L	D	4.8	.	.	6	.	.	.	.	.	.
04JUL93	2	17:27	2.75	R	D	5.7	.	.	.	.	.	.	.	.	1
04JUL93	2	17:43	5.00	L	D	4.8	.	.	23	.	.	.	.	.	.
04JUL93	2	18:01	5.00	R	D	7.3	.	.	4	.	.	.	.	.	.
04JUL93	2	18:24	6.50	L	D	5.8	1	.	1	.	.	.	.	.	.
04JUL93	2	18:35	6.50	R	D	4.1	.	.	8	.	.	.	.	.	.
04JUL93	2	18:48	6.50	L	D	4.4	.	1	1	.	.	.	.	.	.
04JUL93	2	19:06	8.50	L	D	4.6	.	.	4	.	.	.	.	.	.
04JUL93	2	19:16	8.50	R	D	4.8	.	5	.	.	.	.	.	.	.
04JUL93	2	19:26	8.50	L	D	5.3	.	.	.	.	.	.	.	.	.
05JUL93	1	9:22	8.50	L	D	4.3	3	1	8	.	.	.	.	.	.
05JUL93	1	9:35	8.50	R	D	4.1	.	.	2	.	.	.	.	.	.
05JUL93	1	9:43	8.50	L	D	6.2	.	.	2	.	.	.	.	.	.
05JUL93	1	10:01	6.50	L	D	5.6	.	.	7	.	.	.	.	.	.
05JUL93	1	10:13	6.50	R	D	4.0	.	.	8	.	.	.	.	.	.
05JUL93	1	10:23	6.50	L	D	7.0	.	.	6	.	.	.	.	.	.
05JUL93	1	10:43	5.00	L	D	5.1	.	.	55	.	.	.	.	.	.
05JUL93	1	11:05	5.00	R	D	4.7	.	.	39	.	.	.	.	.	.
05JUL93	1	11:33	2.75	L	D	4.8	.	.	.	.	.	.	.	.	.
05JUL93	1	11:41	2.75	R	D	5.3	.	.	2	.	.	.	.	.	.
05JUL93	2	17:08	2.75	L	D	4.2	.		4	.	.	.	.	.	.
05JUL93	2	17:19	2.75	R	D	3.9	.	.	1	.	.	.	.	1	5
05JUL93	2	17:37	4.00	L	D	3.8	.	.	1	.	.	.	.	.	.
05JUL93	2	17:44	4.00	R	D	3.2	.	.	3	.	.	.	.	.	.
05JUL93	2	18:06	5.50	L	D	3.8	.	.	55	.	.	.	.	.	.
05JUL93	2	18:33	5.50	R	D	4.1	.	.	26	.	.	.	.	.	.
05JUL93	2	18:51	5.50	L	D	3.8	.	.	[illegible]	.	.	.	.	.	.
05JUL93	2	19:16	7.50	L	D	7.0	.	1	[illegible]	.	.	.	.	.	.
05JUL93	2	19:36	7.50	R	D	5.3	.	.	.	.	.	.	.	.	.
05JUL93	2	19:45	7.50	L	D	5.3	3	.	5	.	.	.	.	.	.
06JUL93	1	9:20	7.50	L	D	7.7	1	1	3	.	.	.	.	.	.
06JUL93	1	9:32	7.50	R	D	4.1	1	.	5	.	.	.	.	.	.
06JUL93	1	9:43	7.50	L	D	6.6	4	.	2	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
06JUL93	1	10:06	5.50	L	D	3.7	1	1	3	.	.	.	.	.	.
06JUL93	1	10:16	5.50	R	D	4.7	.	1	42	.	.	.	1	.	.
06JUL93	1	10:46	5.50	L	D	3.8	1	.	22	.	.	.	.	.	.
06JUL93	1	11:12	4.00	L	D	3.9	.	.	.	.	.	.	.	.	.
06JUL9[illegible]	1	11:19	4.00	R	D	5.3	.	.	2	.	.	.	.	.	.
06JUL9[illegible]	1	11:37	2.75	L	D	4.7	.	.	.	.	.	.	.	.	.
06JUL93	1	11:45	2.75	R	D	4.0	.	.	.	.	.	.	.	.	1
06JUL93	2	17:26	2.75	L	D	5.9	.	.	.	.	.	.	.	.	2
06JUL93	2	17:35	2.75	R	D	5.2	.	.	1	.	.	.	.	.	4
06JUL93	2	17:52	5.00	L	D	4.3	.	.	1	.	.	.	.	.	.
06JUL93	2	18:01	5.00	R	D	4.8	1	.	13	.	.	.	.	.	.
06JUL93	2	18:23	6.50	L	D	6.0	.	.	3	.	.	.	.	.	.
06JUL93	2	18:36	6.50	R	D	5.8	.	.	2	.	.	.	.	.	.
06JUL93	2	18:46	6.50	L	D	7.1	1	1	9	.	.	.	.	.	.
06JUL93	2	19:11	8.50	L	D	5.0	.	.	1	.	.	.	.	.	.
06JUL93	2	19:19	8.50	R	D	6.6	.	.	1	.	.	.	.	.	.
06JUL93	2	19:30	8.50	L	D	8.4	.	.	.	.	.	.	.	.	.
07JUL93	1	9:13	8.50	L	D	6.7	.	.	2	.	.	.	.	.	.
07JUL93	1	9:23	8.50	R	D	6.2	1	.	.	.	.	.	.	.	.
07JUL93	1	9:34	8.50	L	D	8.0	5	.	2	.	.	.	.	.	.
07JUL93	1	10:00	6.50	L	D	8.0	.	.	1	.	.	.	.	.	.
07JUL93	1	10:12	6.50	R	D	4.5	.	.	.	.	.	.	.	.	.
07JUL93	1	10:20	6.50	L	D	8.7	2	.	4	.	.	.	.	.	.
07JUL93	1	10:45	5.00	L	D	6.9	.	.	6	.	.	.	.	.	.
07JUL93	1	10:57	5.00	R	D	4.7	.	.	26	.	.	.	.	.	.
07JUL93	1	11:23	2.75	L	D	6.6	.	.	.	.	.	.	.	.	2
07JUL93	1	11:34	2.75	R	D	5.6	1	.	.	.	.	.	.	1	.
07JUL93	2	16:51	2.75	L	D	9.0	.	.	3	.	.	.	.	.	.
07JUL93	2	17:03	2.75	R	D	4.4	.	.	1	.	.	.	.	.	1
07JUL93	2	17:20	5.50	L	D	6.5	.	1	12	.	.	.	.	.	.
07JUL93	2	17:36	5.50	R	D	4.6	.	1	45	.	.	.	.	.	.
07JUL93	2	18:11	5.50	L	D	6.4	.	1	66	.	.	.	.	.	.
07JUL93	2	18:59	7.50	L	D	6.1	.	.	1	.	.	.	.	.	.
07JUL93	2	19:08	7.50	R	D	5.6	.	.	6	.	.	.	.	.	.
07JUL93	2	19:22	7.50	L	D	6.6	.	.	.	.	.	.	.	.	.
07JUL93	2	19:41	4.00	L	D	10.1	.	.	1	.	.	.	.	.	.
07JUL93	2	19:56	4.00	R	D	4.3	.	.	9	.	.	.	.	.	.
08JUL93	1	9:21	4.00	L	D	4.9	.	.	1	.	.	.	.	.	.
08JUL93	1	9:30	4.00	R	D	4.6	.	.	.	.	.	.	.	.	.
08JUL93	1	9:44	5.50	L	D	3.1	.	.	11	.	.	.	.	.	.
08JUL93	1	9:56	5.50	R	D	3.9	.	.	22	.	.	.	1	.	.
08JUL93	1	10:18	5.50	L	D	2.9	.	.	29	.	.	.	.	.	.
08JUL93	1	10:48	7.50	L	D	6.4	.	.	1	.	.	.	.	.	.
08JUL93	1	10:58	7.50	R	D	5.5	2	.	7	.	.	.	.	.	.
08JUL93	1	11:11	7.50	L	D	6.2	.	1	3	.	.	.	.	.	.
08JUL93	1	11:35	2.75	L	D	5.6	.	.	2	.	.	.	.	.	.
08JUL93	1	11:45	2.75	R	D	5.3	.	.	.	.	.	.	.	.	.
08JUL93	2	17:12	2.75	L	D	7.8	.	.	1	.	.	.	.	.	4
08JUL93	2	17:26	2.75	R	D	4.7	.	.	.	.	.	.	.	.	1
08JUL93	2	17:42	5.00	L	D	3.2	.	.	3	.	.	.	.	.	.
08JUL93	2	17:51	5.00	R	D	4.0	.	1	9	.	.	.	.	.	.
08JUL93	2	18:10	6.50	L	D	5.7	.	.	3	.	.	.	.	.	.
08JUL93	2	18:23	6.50	R	D	4.5	.	1	7	.	.	.	.	.	.
08JUL93	2	18:38	6.50	L	D	7.0	1	.	4	.	.	.	.	.	.
08JUL93	2	19:02	8.50	L	D	6.9	.	.	.	.	.	.	.	.	.
08JUL93	2	19:12	8.50	R	D	5.0	.	.	3	.	.	.	.	.	.
08JUL93	2	19:24	8.50	L	D	9.0	1	.	.	.	.	.	.	.	.
09JUL93	1	10:04	8.50	L	D	5.3	.	.	1	.	.	.	1	.	.
09JUL93	1	10:14	8.50	R	D	4.7	.	.	.	.	.	.	.	.	.
09JUL93	1	10:23	8.50	L	D	8.2	1	.	3	.	.	.	.	.	.
09JUL93	1	10:43	6.50	L	D	5.8	.	.	1	.	.	.	.	1	.
09JUL93	1	10:54	6.50	R	D	4.1	1	.	.	.	.	.	.	1	.
09JUL93	1	11:05	6.50	L	D	8.9	.	.	2	.	.	.	.	.	.
09JUL93	1	11:26	5.00	L	D	5.4	.	.	4	.	.	.	.	.	.
09JUL93	1	11:36	5.00	R	D	5.0	.	1	19	.	.	.	.	.	.
09JUL93	1	11:59	2.75	L	D	5.1	.	.	1	.	.	.	.	.	.
09JUL93	1	12:08	2.75	R	D	5.4	.	.	1	.	.	.	.	.	1
09JUL93	2	17:12	2.75	L	D	9.3	.	.	1	.	.	.	.	.	.
09JUL93	2	17:25	2.75	R	D	4.5	.	.	.	.	.	.	.	.	2
09JUL93	2	17:40	4.00	L	D	7.6	.	.	2	.	.	.	.	.	.
09JUL93	2	17:51	4.00	R	D	6.9	.	.	4	.	.	.	.	.	.
09JUL93	2	18:12	5.50	L	D	7.3	.	2	2	.	.	.	.	1	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
09JUL93	2	18:26	5.50	R	D	4.7	.	.	24	.	.	.	1	.	.
09JUL93	2	18:45	5.50	L	D	5.9	.	.	10	.	.	.	1	1	.
09JUL93	2	19:15	7.50	L	D	6.8	.	.	1	.	.	.	.	.	.
09JUL93	2	19:26	7.50	R	D	7.0	1	.	1	.	.	.	.	.	.
09JUL93	2	19:38	7.50	L	D	7.3	.	.	1	.	.	.	.	.	.
10JUL93	1	9:30	5.00	L	D	5.4	.	.	3	.	.	.	.	2	.
10JUL93	1	9:40	5.00	R	D	5.3	.	1	25	.	.	.	.	.	.
10JUL93	1	9:56	5.00	L	D	8.2	.	1	14	.	.	.	.	.	.
10JUL93	1	10:23	6.50	L	D	5.0	.	.	.	.	.	.	.	.	.
10JUL93	1	10:31	6.50	R	D	7.6	.	.	.	.	.	.	.	.	.
10JUL93	1	10:42	6.50	L	D	8.1	1	.	1	.	.	.	.	.	.
10JUL93	1	11:04	8.50	L	D	6.5	.	.	.	.	.	.	.	.	.
10JUL93	1	11:15	8.50	R	D	4.6	1	.	.	.	.	.	.	.	.
10JUL93	1	11:25	8.50	L	D	7.5	.	.	.	.	.	.	.	.	.
10JUL93	1	11:43	2.75	L	D	7.9	.	.	.	.	.	.	.	.	1
10JUL93	1	11:56	2.75	R	D	4.8	.	.	.	.	.	.	.	.	.
10JUL93	2	17:08	2.75	L	D	7.8	.	.	.	.	.	.	.	1	1
10JUL93	2	17:21	2.75	R	D	5.4	.	.	.	.	.	.	.	.	.
10JUL93	2	17:41	4.00	L	D	8.7	.	.	2	.	.	.	.	.	1
10JUL93	2	17:55	4.00	R	D	5.4	.	.	.	.	.	.	.	.	.
10JUL93	2	18:02	5.50	L	D	7.3	.	.	2	.	.	.	.	.	.
10JUL93	2	18:13	5.50	R	D	4.3	.	.	5	.	.	.	.	.	.
10JUL93	2	18:14	7.50	L	D	7.9	1	.	.	.	.	.	.	.	.
10JUL93	2	18:24	5.50	L	D	9.7	1	.	11	.	.	.	.	.	.
10JUL93	2	18:26	7.50	R	D	5.3	1	.	.	.	.	.	.	.	.
10JUL93	2	18:38	7.50	L	D	9.4	.	.	2	.	.	.	.	.	.
11JUL93	1	9:11	5.00	L	D	5.5	.	.	2	.	.	.	.	.	.
11JUL93	1	9:21	5.00	R	D	6.2	.	.	13	.	.	.	1	.	.
11JUL93	1	9:37	5.00	L	D	10.5	.	.	12	.	.	.	.	.	.
11JUL93	1	10:10	8.50	L	D	6.0	.	.	.	.	.	.	.	.	.
11JUL93	1	10:19	8.50	R	D	4.3	.	.	2	.	.	.	.	.	.
11JUL93	1	10:28	8.50	L	D	9.9	.	.	1	.	.	.	.	.	.
11JUL93	1	10:51	6.50	L	D	4.9	.	.	.	.	.	.	.	.	.
11JUL93	1	10:59	6.50	R	D	7.1	1	1	2	.	.	.	.	.	.
11JUL93	1	11:17	6.50	L	D	7.4	.	.	3	.	.	.	.	.	.
11JUL93	1	11:40	2.75	L	D	6.4	.	.	.	.	.	.	.	.	4
11JUL93	1	11:50	2.75	R	D	5.2	.	.	.	.	.	.	.	.	.
11JUL93	2	17:16	5.50	L	D	6.9	.	.	.	.	.	.	.	1	.
11JUL93	2	17:28	5.50	R	D	7.5	.	.	3	.	.	.	.	.	.
11JUL93	2	17:42	5.50	L	D	9.3	.	.	12	.	.	.	.	.	.
11JUL93	2	18:10	4.00	L	D	5.8	.	.	.	.	.	.	.	.	1
11JUL93	2	18:21	4.00	R	D	4.8	.	.	1	.	.	.	.	1	.
11JUL93	2	18:32	4.00	L	D	9.1	.	.	1	.	.	.	.	1	.
11JUL93	2	18:56	7.50	L	D	7.0	.	.	1	.	.	.	.	.	.
11JUL93	2	19:07	7.50	R	D	6.0	.	.	.	.	.	.	.	.	.
11JUL93	2	19:18	7.50	L	D	10.3	.	.	1	.	.	.	.	.	.
11JUL93	2	19:41	2.75	L	D	7.6	.	.	.	.	.	.	.	.	.
11JUL93	2	19:53	2.75	R	D	4.7	.	.	1	.	.	.	.	.	.
12JUL93	1	9:29	2.75	L	D	8.6	.	.	3	.	.	.	.	.	.
12JUL93	1	9:43	2.75	R	D	6.4	.	.	1	.	.	.	.	.	.
12JUL93	1	10:02	4.00	L	D	9.5	.	.	2	.	.	.	.	.	.
12JUL93	1	10:18	4.00	R	D	5.4	.	.	1	.	.	.	.	.	.
12JUL93	1	10:36	5.50	L	D	6.8	1	.	2	.	.	.	.	.	.
12JUL93	1	10:49	5.50	R	D	5.8	.	.	23	.	.	.	.	1	.
12JUL93	1	11:09	5.50	L	D	8.4	.	.	19	.	.	.	.	.	.
12JUL93	1	11:42	7.50	L	D	8.6	.	.	.	.	.	.	.	.	.
12JUL93	1	11:54	7.50	R	D	4.9	.	.	1	.	.	.	.	.	.
12JUL93	1	12:04	7.50	L	D	8.5	.	.	5	.	.	.	.	.	.
12JUL93	2	17:10	2.75	L	D	7.0	.	.	.	.	.	.	.	2	2
12JUL93	2	17:23	2.75	R	D	5.9	.	.	1	.	.	.	.	.	2
12JUL93	2	17:48	5.00	L	D	5.9	.	.	7	.	.	.	.	.	.
12JUL93	2	18:13	5.00	L	D	8.3	1	.	20	.	.	.	.	.	.
12JUL93	2	18:49	5.00	R	D	4.7	.	.	21	.	.	.	.	.	.
12JUL93	2	19:15	6.50	L	D	7.9	.	.	2	.	.	.	.	.	.
12JUL93	2	19:27	6.50	R	D	10.0	.	.	4	.	.	.	.	.	.
12JUL93	2	19:39	6.50	L	D	38.9	.	.	12	.	.	.	.	.	.
12JUL93	2	20:07	8.50	L	D	8.7	.	.	.	.	.	.	.	.	.
12JUL93	2	20:19	8.50	R	D	4.5	1	.	2	.	.	.	.	.	.
12JUL93	2	20:30	8.50	L	D	9.6	.	.	1	.	.	.	.	.	.
13JUL93	1	9:23	8.50	L	D	6.7	.	.	1	.	.	.	.	.	.
13JUL93	1	9:34	8.50	R	D	6.8	.	.	.	.	.	.	.	.	.
13JUL93	1	9:46	8.50	L	D	7.3	.	.	2	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
13JUL93	1	10:08	6.50	L	D	5.8	.	.	.	.	.	.	.	1	.
13JUL93	1	10:18	6.50	R	D	5.7	1	.	2	.	.	.	.	.	.
13JUL93	1	10:31	6.50	L	D	7.4	.	.	4	.	.	.	.	.	.
13JUL93	1	10:56	5.00	L	D	5.3	.	.	1	.	.	.	.	1	.
13JUL93	1	11:09	5.00	R	D	5.5	.	.	16	.	.	.	.	3	.
13JUL93	1	11:40	2.75	L	D	7.0	.	.	.	.	.	.	.	2	4
13JUL93	1	11:56	2.75	R	D	4.7	.	.	.	.	.	.	.	.	2
13JUL93	2	17:44	5.50	L	B	8.3	.	.	.	.	.	.	.	4	.
13JUL93	2	18:00	5.50	R	B	4.2	.	.	1	.	.	.	.	.	.
13JUL93	2	18:00	5.50	R	D	4.2	.	.	2	.	.	.	.	.	.
13JUL93	2	18:09	5.50	L	D	11.0	.	.	18	.	.	.	.	.	.
13JUL93	2	18:36	7.50	L	D	7.1	.	.	.	.	.	.	.	.	.
13JUL93	2	18:48	7.50	R	D	5.9	1	.	.	.	.	.	.	.	.
13JUL93	2	18:59	7.50	L	D	10.6	.	.	.	.	.	.	.	.	.
13JUL93	2	19:22	4.00	L	D	8.4	.	.	.	.	.	.	.	.	.
13JUL93	2	19:35	4.00	R	D	4.8	.	.	.	.	.	.	.	.	.
13JUL93	2	19:45	4.00	L	D	9.1	.	.	1	.	.	.	.	.	.
14JUL93	2	17:44	5.00	L	B	8.6	.	.	.	.	.	.	.	1	.
14JUL93	2	18:02	5.00	R	D	8.1	.	.	5	.	.	.	.	.	.
14JUL93	2	18:24	5.00	L	D	7.5	.	.	.	.	.	.	.	.	.
14JUL93	2	18:35	5.00	L	D	5.7	.	.	1	.	.	.	.	.	.
14JUL93	2	19:08	6.50	L	D	6.1	.	.	1	.	.	.	.	.	.
14JUL93	2	19:19	6.50	R	D	6.5	.	.	2	.	.	.	.	1	.
14JUL93	2	19:36	6.50	L	D	6.7	.	.	1	.	.	.	.	.	.
14JUL93	2	19:56	2.75	L	D	7.1	.	.	.	.	.	.	.	.	.
14JUL93	2	20:07	2.75	R	D	5.5	.	.	.	.	.	.	.	.	.
14JUL93	2	20:16	2.75	L	D	7.5	.	.	.	.	.	.	.	.	.
15JUL93	1	9:26	5.00	L	B	7.3	.	.	.	.	.	1	.	5	.
15JUL93	1	9:40	5.00	R	D	5.6	.	.	4	.	.	.	.	.	.
15JUL93	1	9:56	5.00	L	D	8.4	.	.	1	.	.	.	.	.	.
15JUL93	1	10:08	5.00	L	D	9.5	.	.	1	.	.	.	.	.	.
15JUL93	1	17:20	5.50	L	B	7.6	.	.	.	.	.	.	.	.	.
15JUL93	1	17:32	5.50	L	D	9.1	.	.	1	.	.	.	.	4	.
15JUL93	1	17:57	5.50	R	D	8.9	.	.	8	.	.	.	.	2	.
15JUL93	1	18:15	5.50	L	D	9.2	.	.	1	.	.	.	.	.	.
15JUL93	1	18:37	7.50	L	D	9.3	.	.	.	.	.	.	.	.	.
15JUL93	1	18:50	7.50	R	D	9.5	.	.	.	.	.	.	.	.	.
15JUL93	1	19:05	7.50	L	D	10.1	.	.	.	.	.	.	.	.	.
15JUL93	1	19:27	4.00	L	D	9.8	.	.	.	.	.	.	.	1	.
15JUL93	1	19:41	4.00	R	D	8.7	.	.	1	.	.	.	.	.	.
15JUL93	1	19:54	4.00	L	D	9.3	.	.	1	.	.	.	.	.	.
16JUL93	1	9:23	5.00	L	D	5.7	.	.	.	.	.	.	.	10	.
16JUL93	1	9:39	5.00	L	D	8.5	.	.	.	.	.	.	.	2	.
16JUL93	1	9:51	5.00	R	D	6.1	.	.	5	.	.	.	.	.	.
16JUL93	1	10:04	5.00	L	D	8.9	.	.	4	.	.	.	.	.	.
16JUL93	1	10:28	6.50	L	D	7.0	.	.	1	.	.	.	.	.	.
16JUL93	1	10:39	6.50	R	D	5.5	.	.	.	.	.	.	.	.	.
16JUL93	1	10:48	6.50	L	D	9.0	.	.	.	.	.	.	.	.	.
16JUL93	1	11:11	2.75	L	D	9.1	.	.	.	.	.	.	.	.	5
16JUL93	1	11:25	2.75	R	D	4.5	.	.	.	.	.	.	.	.	5
16JUL93	1	11:35	2.75	L	D	8.3	.	.	.	.	.	.	.	.	1
16JUL93	2	17:22	5.50	L	B	5.5	.	.	.	.	.	.	.	6	.
16JUL93	2	17:34	5.50	L	B	9.3	.	.	2	.	.	1	.	.	.
16JUL93	2	17:48	5.50	R	D	9.5	.	.	6	.	.	.	.	1	.
16JUL93	2	18:04	5.50	L	D	9.5	.	.	6	.	.	.	.	.	.
16JUL93	2	18:27	7.50	L	D	9.1	.	.	1	.	.	.	.	.	.
16JUL93	2	18:40	7.50	R	D	8.3	.	.	.	.	.	.	.	.	.
16JUL93	2	18:51	7.50	L	D	10.5	.	.	1	.	.	.	.	.	.
16JUL93	2	19:13	4.00	L	D	8.7	.	.	1	.	.	.	.	.	1
16JUL93	2	19:26	4.00	R	D	5.9	1	.	2	.	.	.	.	1	1
16JUL93	2	19:38	4.00	L	D	8.6	.	1	.	.	.	.	.	.	.
17JUL93	1	9:27	5.50	L	B	6.5	.	.	1	.	.	.	.	5	.
17JUL93	1	9:39	5.50	L	D	8.1	.	.	2	.	.	.	.	.	.
17JUL93	1	9:53	5.50	R	D	6.7	.	.	10	.	.	1	.	1	.
17JUL93	1	10:09	5.50	L	D	9.4	.	.	19	.	.	.	.	3	.
17JUL93	1	10:46	7.50	L	D	7.1	.	.	.	.	.	.	.	.	.
17JUL93	1	10:57	7.50	R	D	6.8	.	.	2	.	.	.	.	.	.
17JUL93	1	11:08	7.50	L	D	9.1	.	.	6	.	.	.	.	.	.
17JUL93	1	11:[illegible]4	4.00	L	D	7.9	.	.	.	.	.	.	.	.	3
17JUL93	1	11:47	4.00	R	D	5.1	.	.	.	.	.	.	.	.	1
17JUL93	1	11:56	4.00	L	D	8.2	.	.	.	.	.	.	.	.	1
17JUL93	2	17:21	5.00	L	B	6.6	.	.	.	.	.	.	.	12	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
17JUL93	2	17:40	5.00	L	D	10.0	.	2	6	.	.	.	.	1	.
17JUL93	2	17:58	5.00	R	D	8.3	.	.	13	.	.	.	.	2	.
17JUL93	2	18:21	5.00	L	D	9.5	.	.	7	.	.	.	.	.	.
17JUL93	2	18:48	6.50	L	D	9.3	.	.	.	.	.	.	.	.	.
17JUL93	2	19:01	6.50	R	D	5.2	.	.	12	.	.	1	.	.	.
17JUL93	2	19:17	6.50	L	D	9.2	.	.	8	.	.	.	.	.	.
17JUL93	2	19:47	2.75	L	D	9.3	.	.	.	.	.	.	.	1	6
17JUL93	2	20:04	2.75	R	D	7.0	.	.	.	.	.	.	.	.	4
17JUL93	2	20:17	2.75	L	D	10.0	.	.	.	.	.	.	.	.	2
18JUL93	1	9:22	5.50	L	B	5.9	.	.	.	.	.	.	.	4	.
18JUL93	1	9:35	5.50	L	D	7.1	.	.	2	.	.	.	.	1	.
18JUL93	1	9:47	5.50	R	D	8.0	.	.	14	.	.	.	.	.	.
18JUL93	1	10:05	5.50	L	D	8.4	.	.	8	.	.	.	.	.	.
18JUL93	1	10:31	7.50	L	D	8.1	.	.	2	.	.	.	1	.	.
18JUL93	1	10:43	7.50	R	D	4.9	.	.	1	.	.	.	.	.	.
18JUL93	1	10:52	7.50	L	D	9.0	.	.	1	.	.	.	1	.	.
18JUL93	1	11:13	4.00	L	D	7.1	.	.	.	.	.	.	.	2	.
18JUL93	1	11:26	4.00	R	D	7.0	.	.	1	.	.	1	.	.	.
18JUL93	1	11:40	4.00	L	D	8.9	.	.	3	.	.	.	.	.	.
18JUL93	1	17:04	5.00	L	B	4.6	.	.	1	.	.	1	.	10	.
18JUL93	1	17:19	5.00	L	D	9.4	.	.	2	.	.	.	.	.	.
18JUL93	1	17:33	5.00	R	D	6.8	.	.	4	.	.	.	.	.	.
18JUL93	1	17:47	5.00	L	D	9.2	.	.	2	.	.	.	.	.	.
18JUL93	1	18:12	6.50	L	B	5.3	.	.	.	.	.	.	.	.	.
18JUL93	1	18:21	6.50	R	D	8.0	.	.	.	.	.	.	.	1	.
18JUL93	1	18:33	6.50	L	D	9.0	.	.	2	.	.	.	.	.	.
18JUL93	1	18:50	2.75	L	B	8.2	.	.	.	.	.	.	.	2	15
18JUL93	1	19:11	2.75	R	D	5.1	.	.	.	.	.	.	.	.	15
18JUL93	1	19:22	2.75	L	D	9.3	.	.	.	.	.	.	.	.	3
19JUL93	1	9:21	5.00	L	B	6.8	.	.	.	.	.	.	.	6	.
19JUL93	1	9:34	5.00	L	D	8.0	.	.	.	.	.	.	.	.	.
19JUL93	1	9:46	5.00	R	D	8.5	.	.	.	8	.	.	.	2	.
19JUL93	1	10:03	5.00	L	D	9.6	.	.	.	.	.	.	.	.	.
19JUL93	1	10:26	6.50	L	D	9.8	.	.	.	.	.	.	.	.	.
19JUL93	1	10:40	6.50	R	D	6.5	.	.	.	.	.	.	.	.	.
19JUL93	1	10:50	6.50	L	D	8.1	.	.	.	.	.	.	.	.	.
19JUL93	1	11:10	2.75	L	D	9.4	.	.	.	.	.	.	.	.	3
19JUL93	1	11:24	2.75	R	D	9.1	.	.	.	.	.	.	.	.	14
19JUL93	1	11:41	2.75	L	D	9.1	.	.	.	.	.	.	.	.	2
19JUL93	2	17:25	5.50	L	D	6.0	.	.	.	.	.	.	.	7	.
19JUL93	2	17:37	5.50	L	D	9.0	.	.	.	.	.	.	.	1	.
19JUL93	2	17:52	5.50	R	D	7.5	.	.	.	3	.	1	.	.	.
19JUL93	2	18:09	5.50	L	D	10.0	.	.	.	1	.	.	.	1	.
19JUL93	2	18:34	7.50	L	D	9.8	.	.	.	.	.	.	.	.	.
19JUL93	2	18:47	7.50	R	D	5.9	.	.	.	.	.	.	.	.	.
19JUL93	2	18:57	7.50	L	D	9.3	.	.	.	.	.	.	.	.	.
19JUL93	2	19:22	4.00	L	D	9.3	.	.	.	.	.	.	.	2	.
19JUL93	2	19:36	4.00	R	D	5.6	.	.	.	.	.	.	.	.	.
19JUL93	2	19:45	4.00	L	D	9.5	.	.	.	.	.	.	.	3	.
20JUL93	1	9:22	5.00	L	B	6.5	.	.	.	.	.	.	.	2	1
20JUL93	1	9:34	5.00	L	D	8.1	.	.	.	1	.	.	.	1	.
20JUL93	1	9:48	5.00	R	D	7.2	.	.	.	7	.	1	.	.	.
20JUL93	1	10:03	5.00	L	D	10.6	.	.	.	2	.	.	.	.	.
20JUL93	1	10:26	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
20JUL93	1	10:39	6.50	R	D	4.9	.	.	.	.	.	.	.	.	.
20JUL93	1	10:48	6.50	L	D	9.4	.	.	.	.	.	.	.	.	.
20JUL93	1	11:11	2.75	L	D	9.6	.	.	.	1	.	.	.	.	.
20JUL93	1	11:25	2.75	L	D	6.0	.	.	.	.	.	.	.	.	3
20JUL93	1	11:36	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
20JUL93	2	17:12	5.50	L	B	6.5	.	.	.	.	.	.	.	4	.
20JUL93	2	17:24	5.50	L	D	9.5	.	.	.	1	.	.	.	.	.
20JUL93	2	17:37	5.50	R	D	5.8	.	.	.	7	.	.	.	.	.
20JUL93	2	18:10	7.50	L	D	9.5	.	.	.	.	.	.	.	.	.
20JUL93	2	18:22	7.50	L	D	12.5	.	.	.	.	.	.	.	.	.
20JUL93	2	18:43	7.50	L	D	9.9	.	.	.	.	.	.	.	.	.
20JUL93	2	19:06	4.00	L	D	8.3	.	.	.	1	.	.	.	.	.
20JUL93	2	19:19	4.00	L	D	6.7	.	.	.	1	.	.	.	.	3
20JUL93	2	19:36	4.00	L	D	9.5	.	.	.	.	.	.	.	1	.
21JUL93	1	9:23	5.50	L	B	6.0	.	.	.	.	.	.	.	2	.
21JUL93	1	9:23	5.50	L	D	6.0	.	.	.	4	.	1	.	.	.
21JUL93	1	9:53	5.50	R	D	7.7	.	.	.	9	.	.	.	.	.
21JUL93	1	10:10	5.50	L	D	10.4	.	.	.	2	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
21JUL93	1	10:41	7.50	L	D	9.4	.	.	.	.	.	.	.	.	.
21JUL93	1	10:55	7.50	L	D	7.6	.	.	.	.	.	.	1	.	.
21JUL93	1	11:09	7.50	L	D	9.3	.	.	.	.	.	.	.	.	.
21JUL93	1	11:31	4.00	L	D	9.1	.	.	.	.	.	.	.	4	2
21JUL93	1	11:48	4.00	L	D	8.3	.	.	.	.	.	.	.	1	1
21JUL93	1	12:02	4.00	L	D	9.5	.	.	.	.	.	.	.	.	.
22JUL93	1	17:10	5.00	L	B	8.5	.	.	.	.	.	1	.	5	.
22JUL93	1	17:26	5.00	L	D	7.6	.	.	.	2	.	.	.	1	.
22JUL93	1	17:43	5.00	R	D	4.7	.	.	.	.	.	.	.	2	.
22JUL93	1	17:55	5.00	L	D	7.4	.	.	.	1	.	.	.	1	.
22JUL93	1	18:19	6.50	L	D	10.1	.	.	.	.	.	.	.	.	.
22JUL93	1	18:31	6.50	R	D	5.5	.	.	.	.	.	.	.	.	.
22JUL93	1	18:41	6.50	L	D	11.9	.	.	.	.	.	.	.	.	.
22JUL93	1	19:13	2.75	L	D	9.6	.	.	.	.	.	.	.	.	3
22JUL93	1	19:28	2.75	R	D	5.3	.	.	.	.	.	.	.	.	7
22JUL93	1	19:51	2.75	L	D	9.6	.	.	.	.	.	.	.	.	1
23JUL93	1	9:20	5.50	L	B	7.2	.	.	.	.	.	.	1	2	.
23JUL93	1	9:31	5.50	L	D	8.0	.	.	.	.	.	.	.	.	.
23JUL93	1	9:43	5.50	R	D	6.0	.	.	.	4	.	.	.	.	.
23JUL93	1	9:55	5.50	L	D	7.6	.	.	.	.	.	.	.	2	.
23JUL93	1	10:14	5.50	L	D	7.4	.	.	.	.	.	.	.	.	.
23JUL93	1	10:27	5.50	R	D	6.9	.	.	.	.	.	.	.	1	.
23JUL93	1	10:38	5.50	L	D	8.2	.	.	.	1	.	.	.	1	.
23JUL93	1	10:59	7.50	L	D	8.1	.	.	.	.	.	.	.	.	.
23JUL93	1	11:10	7.50	R	D	7.4	.	.	.	.	.	.	.	.	.
23JUL93	1	11:21	7.50	L	D	7.4	.	.	.	.	.	.	.	.	.
23JUL93	2	17:24	5.00	L	B	5.4	.	.	.	.	.	.	.	8	.
23JUL93	2	17:35	5.00	L	D	9.5	.	.	.	1	.	.	.	1	.
23JUL93	2	17:50	5.00	R	D	6.0	.	.	.	2	.	.	.	1	.
23JUL93	2	18:02	5.00	L	D	10.0	.	.	.	.	.	.	.	.	.
23JUL93	2	18:24	6.50	L	D	9.0	.	.	.	.	.	.	1	.	.
23JUL93	2	18:38	6.50	R	D	7.2	.	.	.	1	.	.	.	.	.
23JUL93	2	18:51	6.50	L	D	8.9	.	.	.	.	.	.	.	.	.
23JUL93	2	19:14	2.75	L	D	9.5	.	.	.	.	.	.	.	.	9
23JUL93	2	19:30	2.75	R	D	3.6	.	.	.	.	.	.	.	.	.
23JUL93	2	19:39	2.75	L	D	8.8	.	.	.	.	.	.	.	.	3
24JUL93	1	9:35	5.50	L	B	10.0	.	.	.	.	.	.	.	1	.
24JUL93	1	9:50	5.50	L	D	9.1	.	1	.	2	.	.	.	1	.
24JUL93	1	10:06	5.50	R	D	5.8	.	.	.	2	.	.	.	.	.
24JUL93	1	10:19	5.50	L	D	10.5	.	.	.	.	.	.	.	1	.
24JUL93	1	10:46	4.00	L	D	9.7	.	.	.	.	.	.	.	4	1
24JUL93	1	11:05	4.00	R	D	6.4	.	.	.	.	.	.	.	2	.
24JUL93	1	11:16	4.00	L	D	8.6	.	.	.	.	.	.	.	1	.
24JUL93	1	11:41	7.50	L	D	9.4	.	.	.	.	.	.	.	.	.
24JUL93	1	11:54	7.50	R	D	7.0	.	.	.	.	.	.	.	.	1
24JUL93	1	12:05	7.50	L	D	9.6	.	.	.	.	.	.	.	.	.
25JUL93	2	17:37	5.00	L	B	8.6	.	.	.	.	.	1	.	1	.
25JUL93	2	17:50	5.00	L	D	9.5	.	.	.	.	.	.	.	3	.
25JUL93	2	18:06	5.00	R	D	6.2	.	.	.	3	.	.	.	1	.
25JUL93	2	18:19	5.00	L	D	8.8	.	.	.	.	.	.	.	1	.
25JUL93	2	18:43	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
25JUL93	2	18:55	6.50	R	D	8.5	.	.	.	1	.	.	.	.	.
25JUL93	2	19:08	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
25JUL93	2	19:32	2.75	L	D	9.5	.	.	.	.	.	.	.	2	4
25JUL93	2	19:47	2.75	R	D	5.7	.	.	.	.	.	.	.	.	16
25JUL93	2	20:03	2.75	L	D	9.5	.	.	.	.	.	.	.	2	7
26JUL93	1	9:26	6.50	L	B	7.7	.	.	.	.	.	.	.	1	.
26JUL93	1	9:37	6.50	L	D	7.1	.	.	.	.	.	.	.	.	.
26JUL93	1	9:50	6.50	R	D	8.0	.	.	.	.	.	.	.	.	.
26JUL93	1	10:02	6.50	L	D	9.1	.	.	.	.	.	.	.	.	.
26JUL93	1	10:24	5.00	L	D	7.9	.	.	.	.	.	.	.	2	.
26JUL93	1	10:38	5.00	R	D	5.7	.	.	.	4	.	.	.	2	.
26JUL93	1	10:51	5.00	L	D	9.4	.	.	.	.	.	.	.	.	.
26JUL93	1	11:14	2.75	L	D	8.0	.	.	.	.	.	.	.	.	11
26JUL93	1	11:30	2.75	R	D	6.6	.	.	.	.	.	.	.	1	15
26JUL93	1	11:45	2.75	L	D	9.7	.	.	.	.	.	.	.	.	6
26JUL93	2	17:19	5.50	L	B	7.8	.	.	.	.	.	1	.	2	.
26JUL93	2	17:32	5.50	L	D	8.8	.	.	.	.	.	1	.	.	.
26JUL93	2	17:48	5.50	R	D	5.5	.	.	.	2	.	1	.	1	.
26JUL93	2	18:01	5.50	L	D	9.6	.	.	.	4	.	.	.	.	.
26JUL93	2	18:34	2.75	L	D	7.8	.	.	.	.	.	.	.	.	1
26JUL93	2	18:47	2.75	R	D	7.1	.	.	.	.	.	.	.	3	25

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
26JUL93	2	19:06	2.75	L	D	7.3	.	.	.	.	.	.	.	.	2
26JUL93	2	19:28	4.00	L	D	7.3	.	.	.	.	.	.	.	.	1
26JUL93	2	19:39	4.00	R	D	7.6	.	.	.	.	.	.	.	2	1
27JUL93	1	9:24	5.50	L	B	9.3	.	.	.	.	.	.	.	1	.
27JUL93	1	9:38	5.50	L	D	9.8	.	.	.	7	.	.	.	3	.
27JUL93	1	9:58	5.50	R	D	6.8	.	5	.	.	.	.	.	.	.
27JUL93	1	10:15	5.50	L	D	9.5	.	.	.	4	.	.	.	.	.
27JUL93	1	10:42	5.50	5	D	8.4	.	.	.	.	.	.	.	4	.
27JUL93	1	11:05	4.00	L	D	8.3	.	.	.	.	.	.	.	1	.
27JUL93	1	11:17	4.00	R	D	6.8	.	.	.	.	.	1	.	1	.
27JUL93	1	11:30	4.00	L	D	7.4	.	.	.	1	.	.	.	1	.
27JUL93	1	11:50	4.00	L	D	7.9	.	.	.	.	.	.	.	.	2
27JUL93	1	12:02	4.00	R	D	6.5	.	.	.	.	.	.	.	.	12
27JUL93	2	17:18	6.50	L	D	9.0	.	.	.	.	.	.	.	.	.
27JUL93	2	17:30	6.50	L	D	8.8	.	.	.	.	.	.	.	1	.
27JUL93	2	17:45	6.50	R	D	5.4	.	.	.	3	.	.	.	.	.
27JUL93	2	17:57	6.50	L	D	9.4	.	.	.	1	.	.	.	.	.
27JUL93	2	18:18	5.00	L	D	10.2	.	.	.	.	.	.	.	1	.
27JUL93	2	18:32	5.00	R	D	6.2	.	.	.	3	.	.	.	1	.
27JUL93	2	18:44	5.00	L	D	9.4	.	.	.	3	.	.	.	2	.
27JUL93	2	19:10	2.75	L	D	11.0	.	.	.	.	.	.	.	.	6
27JUL93	2	19:27	2.75	R	D	6.5	.	.	.	.	.	.	.	.	2
27JUL93	2	19:39	2.75	L	D	9.7	.	.	.	.	.	.	.	1	3
28JUL93	1	9:17	6.50	L	B	9.2	.	.	.	.	.	.	.	.	.
28JUL93	1	9:29	6.50	L	D	13.4	.	.	.	1	.	1	.	.	.
28JUL93	1	9:46	6.50	R	D	6.7	.	.	.	.	.	.	.	.	.
28JUL93	1	9:56	6.50	L	D	9.6	.	.	.	1	.	.	.	.	.
28JUL93	1	10:20	5.00	L	D	9.9	.	.	.	.	.	.	.	2	.
28JUL93	1	10:34	5.00	R	D	7.1	.	.	.	5	.	.	.	.	.
28JUL93	1	10:48	5.00	L	D	9.4	.	.	.	1	.	.	.	.	.
28JUL93	1	11:12	2.75	L	D	9.5	.	.	.	.	.	.	.	5	4
28JUL93	1	11:29	2.75	R	D	7.9	.	.	.	.	.	.	.	.	30
28JUL93	1	11:55	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
28JUL93	2	17:00	5.50	L	B	8.0	.	.	.	.	.	.	.	.	.
28JUL93	2	17:30	4.00	L	D	8.0	.	.	.	.	.	.	.	.	1
28JUL93	2	17:40	4.00	L	D	6.0	.	.	.	.	.	.	.	.	3
28JUL93	2	17:50	4.00	L	D	8.0	.	.	.	.	.	.	.	.	1
28JUL93	2	17:50	5.50	R	D	6.5	.	.	.	8	.	1	.	1	.
28JUL93	2	18:00	5.50	L	D	8.5	.	.	.	.	.	.	.	2	.
28JUL93	2	18:06	5.50	L	D	11.6	.	.	.	4	.	.	.	1	.
28JUL93	2	19:34	2.75	L	D	9.5	.	.	.	.	.	.	.	.	2
28JUL93	2	19:49	2.75	L	D	5.5	.	.	.	.	.	.	.	.	10
28JUL93	2	20:00	2.75	L	D	10.5	.	.	.	.	.	.	.	.	2
29JUL93	1	9:26	5.50	L	B	8.1	.	.	.	.	.	.	.	.	.
29JUL93	1	9:37	5.50	L	D	9.2	.	1	.	1	.	.	.	.	.
29JUL93	1	9:54	5.50	R	D	6.6	.	.	.	4	.	.	.	.	.
29JUL93	1	10:03	4.00	L	D	9.4	.	.	.	1	.	.	.	.	1
29JUL93	1	10:11	5.50	L	D	9.5	.	.	.	7	.	.	.	1	.
29JUL93	1	10:36	4.00	L	D	9.3	.	.	.	1	.	.	.	2	1
29JUL93	1	10:54	4.00	R	D	6.8	.	.	.	2	.	.	.	.	.
29JUL93	1	11:31	2.75	L	D	9.4	.	.	.	.	.	.	.	.	2
29JUL93	1	11:46	2.75	R	D	7.6	.	.	.	.	.	.	.	.	16
29JUL93	1	12:02	2.75	L	D	9.2	.	.	.	1	.	.	.	.	.
29JUL93	2	17:19	6.50	L	B	8.8	.	.	.	.	.	.	.	.	.
29JUL93	2	17:31	6.50	L	D	9.1	.	.	.	3	.	.	.	.	.
29JUL93	2	17:48	6.50	R	D	6.4	.	.	.	.	.	.	.	.	.
29JUL93	2	17:58	6.50	L	D	9.5	.	.	.	3	.	.	.	.	.
29JUL93	2	18:21	5.00	L	D	9.3	.	.	.	.	.	.	.	1	.
29JUL93	2	18:35	5.00	R	D	7.7	.	.	.	2	.	.	.	.	.
29JUL93	2	18:49	5.00	L	D	11.5	.	.	.	1	.	.	.	.	.
29JUL93	2	19:14	2.75	L	D	9.5	.	.	.	.	.	.	.	.	3
29JUL93	2	19:30	2.75	R	D	7.8	.	.	.	.	.	1	.	1	8
29JUL93	2	19:43	2.75	L	D	9.6	.	.	.	.	.	.	.	.	.
30JUL93	1	9:28	6.50	L	D	9.2	.	.	.	.	.	1	.	.	.
30JUL93	1	9:41	6.50	L	D	9.5	.	.	.	6	.	.	.	.	.
30JUL93	1	9:59	6.50	R	D	6.9	.	.	.	1	.	.	.	.	.
30JUL93	1	10:12	6.50	L	D	10.1	.	.	.	.	.	.	.	.	.
30JUL93	1	10:35	5.00	L	D	9.3	.	.	.	.	.	.	.	.	.
30JUL93	1	10:49	5.00	R	D	7.3	.	.	.	2	.	.	.	.	.
30JUL93	1	11:08	5.00	L	D	9.7	.	.	.	1	.	.	.	.	.
30JUL93	1	11:32	2.75	L	D	8.5	.	.	.	.	.	.	.	.	2
30JUL93	1	12:04	2.75	R	D	6.2	.	.	.	.	.	.	.	.	7

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
30JUL93	1	12:18	2.75	L	D	9.7	.	.	.	.	.	.	.	.	.
30JUL93	1	18:17	5.50	L	D	10.1	.	.	.	1	.	.	.	.	.
30JUL93	1	18:31	5.50	R	D	8.1	.	.	.	2	.	.	.	.	.
30JUL93	1	18:49	5.50	L	D	9.2	.	.	.	.	.	.	.	.	.
30JUL93	1	19:21	4.00	L	D	8.2	.	.	.	.	.	.	.	.	.
30JUL93	1	19:33	4.00	R	D	6.3	.	.	.	.	.	.	.	1	.
30JUL93	1	19:46	4.00	L	D	8.5	.	.	.	.	.	.	.	.	.
31JUL93	1	9:32	5.50	L	B	9.6	.	.	.	.	.	.	.	.	.
31JUL93	1	9:48	5.50	L	D	8.9	.	.	.	2	.	.	.	.	.
31JUL93	1	10:03	5.50	R	D	7.9	.	.	.	2	.	.	.	.	.
31JUL93	1	10:17	5.50	L	D	9.7	.	.	.	.	.	.	.	.	.
31JUL93	1	10:40	4.00	L	D	9.4	.	.	.	.	.	.	.	1	.
31JUL93	1	10:53	4.00	R	D	7.4	.	.	.	.	.	.	.	.	.
31JUL93	1	11:05	4.00	L	D	10.7	.	.	.	.	.	.	.	.	.
31JUL93	1	11:28	2.75	L	D	9.8	.	.	.	.	.	.	.	.	.
31JUL93	1	11:41	2.75	R	D	7.3	.	.	.	.	.	.	.	1	4
31JUL93	1	11:55	2.75	L	D	9.9	.	.	.	.	.	.	.	.	.
31JUL93	2	17:26	6.50	L	B	9.1	.	.	.	.	.	.	.	.	.
31JUL93	2	17:38	6.50	L	D	9.8	.	.	.	.	.	.	.	.	.
31JUL93	2	17:51	6.50	R	D	6.1	.	.	.	2	.	.	.	.	.
31JUL93	2	18:05	6.50	L	D	8.5	.	.	.	.	.	.	.	.	.
31JUL93	2	18:25	5.00	L	D	9.2	.	.	.	.	.	.	.	1	.
31JUL93	2	18:39	5.00	R	D	7.3	.	.	.	.	.	.	.	.	.
31JUL93	2	18:51	5.00	L	D	9.1	.	.	.	.	.	.	.	.	.
31JUL93	2	19:11	2.75	L	D	10.2	.	.	.	.	.	.	.	.	2
31JUL93	2	19:25	2.75	R	D	7.1	.	.	.	.	.	.	.	.	6
31JUL93	2	19:38	2.75	L	D	9.6	.	.	.	.	.	.	.	.	.
01AUG93	1	9:25	6.50	L	B	9.2	.	.	.	.	.	.	.	.	.
01AUG93	1	9:38	6.50	L	D	9.2	.	.	.	1	.	.	.	.	.
01AUG93	1	9:53	6.50	R	D	6.5	.	.	.	.	.	.	.	.	.
01AUG93	1	10:06	6.50	L	D	9.4	.	.	.	1	.	.	.	.	.
01AUG93	1	10:29	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
01AUG93	1	10:42	5.00	R	D	6.5	.	.	.	.	.	.	.	.	.
01AUG93	1	10:53	5.00	L	D	9.1	.	.	.	.	.	.	.	.	.
01AUG93	1	11:13	2.75	L	D	10.5	.	.	.	.	.	.	.	.	2
01AUG93	1	11:28	2.75	R	D	6.3	.	.	.	.	.	.	.	.	3
01AUG93	1	11:38	2.75	L	D	9.9	.	.	.	.	.	.	.	.	.
01AUG93	2	17:20	5.50	L	B	4.9	.	.	.	.	.	.	.	.	.
01AUG93	2	17:35	5.50	L	D	9.1	.	.	.	1	.	.	.	.	.
01AUG93	2	17:50	5.50	R	D	6.1	.	.	.	1	.	.	.	.	.
01AUG93	2	18:01	5.50	L	D	9.6	.	.	.	1	.	.	.	.	.
01AUG93	2	18:21	4.00	L	D	10.5	.	.	.	.	.	.	.	1	.
01AUG93	2	18:37	4.00	R	D	5.7	.	.	.	.	.	.	.	.	.
01AUG93	2	18:47	4.00	L	D	9.2	.	.	.	.	.	.	.	.	.
01AUG93	2	19:15	2.75	L	D	9.8	.	.	.	.	.	.	.	.	1
01AUG93	2	19:30	2.75	R	D	5.4	.	.	.	.	.	.	.	.	.
01AUG93	2	19:40	2.75	L	D	8.6	.	.	.	.	.	.	.	.	.
02AUG93	1	9:33	5.50	L	D	9.4	.	.	.	1	.	.	.	.	.
02AUG93	1	9:46	5.50	R	D	9.4	.	.	.	5	.	.	.	.	.
02AUG93	1	10:03	5.50	L	D	9.3	.	.	.	1	.	.	.	.	.
02AUG93	1	10:41	4.00	L	D	9.6	.	.	.	.	.	.	.	.	.
02AUG93	1	10:55	4.00	R	D	7.5	.	.	.	.	.	1	.	.	1
02AUG93	1	11:09	4.00	L	D	9.3	.	.	.	.	.	.	.	.	.
02AUG93	1	11:29	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
02AUG93	1	11:43	2.75	R	D	8.7	.	.	.	.	.	.	.	.	8
02AUG93	1	11:58	2.75	L	D	8.8	.	.	.	.	.	.	.	.	.
02AUG93	2	17:06	6.50	L	D	9.4	.	.	.	3	.	.	.	.	.
02AUG93	2	17:23	6.50	R	D	6.3	.	.	.	1	.	.	.	.	.
02AUG93	2	17:34	6.50	L	D	9.2	.	.	.	6	.	.	.	.	.
02AUG93	2	17:57	6.50	S	D	9.6	.	.	.	7	.	.	.	.	.
02AUG93	2	18:31	5.00	L	D	9.5	.	.	.	3	.	1	.	.	.
02AUG93	2	18:50	5.00	R	D	5.3	.	.	.	1	.	.	.	.	.
02AUG93	2	19:01	5.00	L	D	9.0	.	.	.	1	.	.	.	.	.
02AUG93	2	19:23	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
02AUG93	2	19:37	2.75	R	D	6.5	.	.	.	.	.	.	.	.	.
02AUG93	2	19:48	2.75	L	D	9.6	.	.	.	.	.	.	.	.	.
03AUG93	1	9:34	6.50	L	D	9.9	.	.	.	2	.	.	.	.	.
03AUG93	1	9:50	6.50	R	D	7.0	.	.	.	2	.	.	.	.	.
03AUG93	1	10:07	6.50	L	D	9.1	.	.	.	.	.	.	.	.	.
03AUG93	1	10:21	6.50	S	D	9.1	.	.	.	17	.	.	.	.	.
03AUG93	1	10:54	5.00	L	D	9.8	.	.	.	3	.	.	.	.	.
03AUG93	1	11:09	5.00	R	D	6.0	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
03AUG93	1	11:20	5.00	L	D	10.4	.	.	.	5	.	.	.	.	.
03AUG93	1	11:47	2.75	L	D	9.6	.	.	.	1	.	.	.	.	.
03AUG93	1	12:02	2.75	R	D	6.1	.	.	.	.	.	.	.	.	5
03AUG93	1	12:13	2.75	L	D	9.7	.	.	.	.	.	.	.	.	.
03AUG93	1	17:32	5.50	S	D	7.5	.	.	.	22	.	.	.	.	.
03AUG93	1	18:21	5.50	L	D	9.8	.	.	.	4	.	.	.	.	.
03AUG93	1	18:39	5.50	R	D	5.4	.	.	.	1	.	.	.	.	.
03AUG93	1	18:49	5.50	L	D	9.9	.	.	.	1	.	.	.	.	.
03AUG93	1	19:19	4.00	L	D	9.5	.	.	.	.	.	.	.	.	.
03AUG93	1	19:33	4.00	R	D	5.6	.	.	.	.	.	.	.	.	.
03AUG93	1	19:44	4.00	L	D	9.7	.	.	.	.	.	.	.	.	.
04AUG93	1	9:43	5.50	L	D	8.9	.	.	.	3	.	.	.	.	.
04AUG93	1	9:58	5.50	R	D	8.0	.	.	.	1	.	1	.	.	.
04AUG93	1	10:13	5.50	L	D	8.1	.	.	.	9	.	.	.	1	.
04AUG93	1	10:31	5.50	S	D	9.3	.	.	.	9	.	.	.	.	.
04AUG93	1	11:01	4.00	L	D	8.4	.	.	.	1	.	.	.	.	.
04AUG93	1	11:13	4.00	R	D	6.8	.	.	.	1	.	.	.	.	.
04AUG93	1	11:25	4.00	L	D	7.6	.	.	.	.	.	.	.	.	.
04AUG93	1	11:45	2.75	L	D	8.6	.	.	.	.	.	.	.	.	2
04AUG93	1	11:59	2.75	R	D	8.0	.	.	.	.	.	.	.	.	11
04AUG93	1	12:17	2.75	L	D	8.3	.	.	.	.	.	.	.	.	.
04AUG93	2	17:25	6.50	L	D	9.4	.	.	.	4	1	.	.	.	.
04AUG93	2	17:42	6.50	R	D	7.8	.	.	.	2	.	.	.	.	.
04AUG93	2	17:56	6.50	L	D	9.2	.	.	.	1	.	.	.	.	.
04AUG93	2	18:11	6.50	S	D	9.3	.	.	.	2	.	.	.	.	.
04AUG93	2	18:37	5.00	L	D	9.6	.	.	.	1	.	.	.	.	.
04AUG93	2	18:54	5.00	R	D	5.9	.	.	.	3	.	.	.	.	.
04AUG93	2	19:05	5.00	L	D	9.3	.	.	.	5	.	.	.	.	.
04AUG93	2	19:33	2.75	L	D	9.4	.	.	.	.	.	.	.	.	4
04AUG93	2	19:42	2.75	R	D	10.7	.	.	.	1	.	.	.	.	2
04AUG93	2	19:58	2.75	L	D	9.2	.	.	.	.	.	.	.	.	.
05AUG93	1	9:29	6.50	L	D	9.4	.	.	.	.	.	.	.	.	.
05AUG93	1	9:43	6.50	L	D	9.4	.	.	.	5	.	.	.	.	.
05AUG93	1	9:58	6.50	R	D	6.2	.	.	.	.	.	.	.	.	.
05AUG93	1	10:09	6.50	L	D	8.5	.	.	.	6	.	.	.	.	.
05AUG93	1	10:43	5.00	L	D	8.3	.	.	.	5	.	.	.	.	.
05AUG93	1	10:59	5.00	R	D	6.2	.	.	.	.	.	.	.	.	.
05AUG93	1	11:10	5.00	L	D	7.3	.	.	.	1	.	.	.	.	.
05AUG93	1	11:34	2.75	L	D	7.3	.	.	.	.	.	.	.	.	.
05AUG93	1	11:44	2.75	R	D	7.0	.	.	.	1	.	.	.	.	9
05AUG93	1	11:58	2.75	L	D	9.8	.	.	.	.	.	.	.	.	1
05AUG93	2	17:29	5.50	L	D	8.9	.	.	.	4	1	.	.	.	.
05AUG93	2	17:44	5.50	R	D	7.7	.	.	.	1	.	.	.	.	.
05AUG93	2	17:58	5.50	L	D	9.3	.	.	.	13	.	.	.	.	.
05AUG93	2	18:21	5.50	S	D	9.3	.	.	.	20	.	.	.	.	.
05AUG93	2	18:56	4.00	L	D	9.2	.	.	.	1	.	.	.	.	.
05AUG93	2	19:10	4.00	R	D	7.6	.	.	.	.	.	1	.	1	.
05AUG93	2	19:23	4.00	L	D	9.4	.	.	.	.	.	.	.	.	.
05AUG93	2	19:43	2.75	L	D	9.6	.	.	.	.	.	.	.	.	1
05AUG93	2	19:57	2.75	R	D	7.2	.	.	.	1	.	.	.	1	2
05AUG93	2	20:09	2.75	L	D	9.2	.	.	.	.	.	.	.	.	.
06AUG93	1	9:27	5.50	L	D	9.4	.	.	.	2	.	.	.	.	.
06AUG93	1	9:41	5.50	R	D	8.3	.	.	.	3	.	.	1	.	.
06AUG93	1	9:56	5.50	L	D	9.0	.	.	.	4	.	.	.	.	.
06AUG93	1	10:11	5.50	S	D	9.3	.	.	.	10	.	.	.	.	.
06AUG93	1	10:39	4.00	L	D	9.3	.	.	.	.	.	.	.	.	.
06AUG93	1	10:52	4.00	R	D	8.6	.	.	.	.	.	.	.	1	.
06AUG93	1	11:05	4.00	L	D	9.3	.	.	.	1	.	.	.	.	.
06AUG93	1	11:27	2.75	L	D	9.0	.	.	.	.	.	.	.	.	.
06AUG93	1	11:40	2.75	R	D	8.4	.	.	.	.	.	.	.	.	3
06AUG93	1	11:53	2.75	L	D	9.5	.	.	.	.	.	.	.	.	.
06AUG93	2	17:22	6.50	L	B	10.1	.	.	.	.	.	.	.	.	.
06AUG93	2	17:35	6.50	L	D	9.1	.	.	.	1	.	.	.	.	.
06AUG93	2	17:50	6.50	R	D	8.4	.	.	.	.	.	.	.	.	.
06AUG93	2	18:03	6.50	L	D	9.0	.	.	.	.	.	.	.	.	.
06AUG93	2	18:25	5.00	L	D	8.9	.	.	.	2	.	.	.	.	.
06AUG93	2	18:39	5.00	R	D	6.6	.	.	.	1	.	.	.	1	.
06AUG93	2	18:50	5.00	L	D	8.9	.	.	.	.	.	.	.	.	.
06AUG93	2	19:09	2.75	L	D	9.4	.	.	.	.	.	.	.	.	.
06AUG93	2	19:22	2.75	R	D	6.4	.	.	.	.	.	.	.	1	1
06AUG93	2	19:34	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
07AUG93	1	9:21	6.50	L	B	9.2	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
07AUG93	1	9:35	6.50	L	D	9.3	.	.	.	.	.	.	.	.	.
07AUG93	1	9:48	6.50	R	D	8.8	.	.	.	.	.	.	.	.	.
07AUG93	1	10:04	6.50	L	D	9.1	.	.	.	.	.	.	.	.	.
07AUG93	1	10:23	5.00	L	D	9.7	.	.	.	2	.	.	.	.	.
07AUG93	1	10:37	5.00	R	D	7.9	.	.	.	3	.	.	.	.	.
07AUG93	1	10:50	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
07AUG93	1	11:16	2.75	L	D	10.6	.	.	.	.	.	.	.	.	2
07AUG93	1	11:31	2.75	R	D	8.5	.	.	.	.	.	.	.	.	8
07AUG93	1	11:45	2.75	L	D	9.7	.	.	.	.	.	.	.	.	.
07AUG93	2	17:23	5.50	L	D	10.8	.	.	.	1	.	.	.	.	.
07AUG93	2	17:37	5.50	R	D	7.0	.	.	.	1	.	.	.	.	.
07AUG93	2	17:49	5.50	L	D	9.9	.	.	.	2	.	.	.	.	.
07AUG93	2	18:02	5.50	5	D	10.0	.	.	.	5	.	.	.	.	.
07AUG93	2	18:27	4.00	L	D	10.2	.	.	.	.	.	.	.	.	.
07AUG93	2	18:40	4.00	R	D	6.7	.	.	.	.	.	.	.	.	.
07AUG93	2	18:51	4.00	L	D	9.7	.	.	.	.	.	.	.	.	.
07AUG93	2	19:15	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
07AUG93	2	19:29	2.75	R	D	6.5	.	.	.	.	.	.	.	.	3
07AUG93	2	19:42	2.75	L	D	10.0	.	.	.	.	.	.	.	.	.
08AUG93	1	9:25	5.50	L	B	8.5	.	.	.	.	.	.	.	.	.
08AUG93	1	9:37	5.50	L	D	8.6	.	.	.	.	.	.	.	.	.
08AUG93	1	9:51	5.50	R	D	8.9	.	.	.	1	1	.	.	.	.
08AUG93	1	10:06	5.50	L	D	9.4	.	.	.	.	.	.	.	.	.
08AUG93	1	10:29	4.00	L	D	9.4	1	.	.	.	1	.	.	.	.
08AUG93	1	10:44	4.00	R	D	8.4	.	.	.	.	.	.	.	2	.
08AUG93	1	11:00	4.00	L	D	9.2	.	.	.	.	.	.	.	.	.
08AUG93	1	11:21	2.75	L	D	9.9	.	.	.	.	.	.	.	.	1
08AUG93	1	11:35	2.75	R	D	6.4	.	.	.	.	1	.	.	2	12
08AUG93	1	11:54	2.75	L	D	9.7	.	.	.	.	.	.	.	.	.
08AUG93	2	17:34	6.50	L	D	9.6	.	.	.	2	.	.	.	.	.
08AUG93	2	17:48	6.50	R	D	6.4	.	.	.	.	.	.	.	.	.
08AUG93	2	17:59	6.50	L	D	9.0	.	.	.	.	.	.	.	.	.
08AUG93	2	18:11	6.50	5	D	9.3	.	.	.	1	.	.	.	.	.
08AUG93	2	18:36	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
08AUG93	2	18:49	5.00	R	D	7.0	.	.	.	.	.	.	.	.	.
08AUG93	2	18:59	5.00	L	D	9.6	.	.	.	.	.	.	.	.	.
08AUG93	2	19:18	2.75	L	D	11.6	.	.	.	.	.	.	.	1	.
08AUG93	2	19:34	2.75	R	D	6.8	.	.	.	.	.	.	.	.	1
08AUG93	2	19:45	2.75	L	D	9.9	.	.	.	.	.	.	.	.	.
09AUG93	1	9:30	6.50	L	B	10.3	.	.	.	.	.	.	.	.	.
09AUG93	1	9:48	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
09AUG93	1	10:02	6.50	R	D	9.1	.	.	.	1	.	.	.	.	.
09AUG93	1	10:16	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
09AUG93	1	10:37	5.00	L	D	9.8	.	.	.	.	1	.	.	.	.
09AUG93	1	10:52	5.00	R	D	8.5	.	.	.	.	.	.	.	.	.
09AUG93	1	11:04	5.00	L	D	9.3	.	.	.	.	.	.	.	.	.
09AUG93	1	11:25	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
09AUG93	1	11:37	2.75	R	D	7.3	.	.	.	.	.	.	.	.	6
09AUG93	1	11:51	2.75	L	D	9.4	.	.	.	.	.	.	.	.	1
09AUG93	2	17:18	5.50	L	D	9.1	.	.	.	.	.	.	.	.	.
09AUG93	2	17:30	5.50	R	D	7.3	.	.	.	.	.	.	.	.	.
09AUG93	2	17:42	5.50	L	D	9.0	.	.	.	.	.	.	.	.	.
09AUG93	2	17:54	5.50	5	D	9.4	.	.	.	.	.	.	1	.	.
09AUG93	2	18:16	4.00	L	D	9.3	.	.	.	.	.	.	.	.	.
09AUG93	2	18:29	4.00	R	D	6.5	.	.	.	.	.	.	.	.	.
09AUG93	2	18:40	4.00	L	D	9.1	.	.	.	.	.	.	.	.	.
09AUG93	2	18:59	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
09AUG93	2	19:14	2.75	R	D	7.6	.	.	.	.	.	.	.	.	1
09AUG93	2	19:26	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
10AUG93	1	9:21	5.50	L	B	9.2	.	.	.	.	.	.	.	.	.
10AUG93	1	9:37	5.50	L	D	9.6	.	.	.	.	.	.	.	.	.
10AUG93	1	9:54	5.50	R	D	9.6	.	.	.	.	1	.	.	.	.
10AUG93	1	10:08	5.50	L	D	9.3	.	.	.	.	.	.	.	.	.
10AUG93	1	10:29	4.00	L	D	9.0	.	.	.	.	.	.	.	.	.
10AUG93	1	10:41	4.00	R	D	9.9	.	.	.	.	.	.	.	.	.
10AUG93	1	10:55	4.00	L	D	9.2	.	.	.	.	.	.	.	.	.
10AUG93	1	11:16	2.75	L	D	9.4	.	.	.	.	.	.	.	.	5
10AUG93	1	11:30	2.75	R	D	8.1	.	.	.	.	1	.	.	.	10
10AUG93	1	11:46	2.75	L	D	10.2	.	.	.	.	.	.	.	.	.
10AUG93	2	17:21	6.50	L	D	10.7	.	.	.	1	.	.	.	.	.
10AUG93	2	17:37	6.50	R	D	7.1	.	.	.	.	.	.	.	.	.
10AUG93	2	17:50	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
10AUG93	2	18:03	6.50	5	D	7.3	.	.	.	1	.	.	.	.	.
10AUG93	2	18:33	5.00	L	D	8.6	.	.	.	.	1	.	.	.	.
10AUG93	2	18:46	5.00	R	D	6.5	.	.	.	.	.	.	.	.	.
10AUG93	2	18:56	5.00	L	D	9.1	.	.	.	.	.	.	.	.	.
10AUG93	2	19:26	2.75	L	D	9.4	.	.	.	.	.	.	.	.	2
10AUG93	2	19:40	2.75	R	D	6.0	.	.	.	.	.	.	.	2	3
10AUG93	2	19:52	2.75	L	D	9.4	.	.	.	.	.	.	.	.	1
11AUG93	1	9:20	6.50	L	B	9.0	.	.	.	.	.	.	.	.	.
11AUG93	1	9:38	6.50	L	D	9.7	.	.	.	2	.	.	.	.	.
11AUG93	1	9:54	6.50	R	D	6.0	.	.	.	.	.	.	.	.	.
11AUG93	1	10:06	6.50	L	D	9.8	.	.	.	.	.	.	.	.	.
11AUG93	1	10:26	5.00	L	D	9.5	.	.	.	.	.	.	.	.	.
11AUG93	1	10:40	5.00	R	D	7.1	.	.	.	1	.	.	.	.	.
11AUG93	1	10:52	5.00	L	D	9.7	.	.	.	2	.	.	.	.	.
11AUG93	1	11:15	2.75	L	D	10.3	.	.	.	.	.	.	.	.	1
11AUG93	1	11:29	2.75	R	D	7.3	.	.	.	1	.	.	.	.	3
11AUG93	1	11:46	2.75	L	D	10.6	.	.	.	.	.	.	.	.	.
11AUG93	2	17:09	2.75	L	D	9.2	.	.	.	.	.	.	.	.	.
11AUG93	2	17:22	2.75	R	D	6.8	.	.	.	.	.	.	.	1	2
11AUG93	2	17:35	2.75	L	D	9.0	.	.	.	.	.	.	.	.	1
11AUG93	2	17:55	4.00	L	D	8.8	.	.	.	.	.	.	.	.	.
11AUG93	2	18:07	4.00	R	D	6.2	.	.	.	.	.	.	.	.	.
11AUG93	2	18:17	4.00	L	D	9.0	.	.	.	.	.	.	.	.	.
11AUG93	2	18:35	5.50	L	D	8.8	.	.	.	.	.	.	.	.	.
11AUG93	2	18:47	5.50	R	D	6.4	.	.	.	1	.	.	.	.	.
11AUG93	2	18:57	5.50	L	D	9.0	.	.	.	1	.	.	.	.	.
11AUG93	2	19:10	5.50	5	D	9.0	.	.	.	2	.	.	.	.	.
12AUG93	1	9:24	5.50	L	B	9.2	.	.	.	.	.	.	.	.	.
12AUG93	1	9:40	5.50	L	D	9.8	.	.	.	1	1	.	.	.	.
12AUG93	1	9:56	5.50	R	D	7.9	.	.	.	1	3	.	.	.	.
12AUG93	1	10:12	5.50	L	D	10.1	.	.	.	2	1	.	.	.	.
12AUG93	1	10:39	4.00	L	D	9.8	.	.	.	.	.	.	.	1	.
12AUG93	1	10:53	4.00	R	D	7.1	.	.	.	.	1	.	.	.	.
12AUG93	1	11:05	4.00	L	D	9.4	.	.	.	.	.	.	.	.	.
12AUG93	1	11:18	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
12AUG93	1	11:30	2.75	R	D	6.1	.	.	.	.	.	.	.	.	1
12AUG93	1	11:41	2.75	L	D	8.7	.	.	.	.	.	.	.	.	.
12AUG93	2	17:17	2.75	L	D	9.8	.	.	.	.	1	.	.	.	.
12AUG93	2	17:31	2.75	R	D	6.3	.	.	.	.	.	.	.	.	2
12AUG93	2	17:42	2.75	L	D	9.7	.	.	.	.	.	.	.	.	.
12AUG93	2	18:07	5.00	L	D	9.8	.	.	.	.	.	.	.	.	.
12AUG93	2	18:27	5.00	R	D	4.1	.	.	.	.	1	.	.	.	.
12AUG93	2	18:34	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
12AUG93	2	18:54	6.50	L	D	10.3	.	.	.	.	.	.	.	.	.
12AUG93	2	19:07	6.50	R	D	6.6	.	.	.	.	1	.	.	.	.
12AUG93	2	19:19	6.50	L	D	8.7	.	.	.	.	.	.	.	.	.
12AUG93	2	19:30	6.50	5	D	9.2	.	.	.	1	1	.	.	.	.
13AUG93	1	9:16	6.50	L	B	8.3	.	.	.	.	.	.	.	.	.
13AUG93	1	9:30	6.50	L	D	8.8	.	.	.	.	.	.	.	.	.
13AUG93	1	9:45	6.50	R	D	7.8	.	.	.	.	.	.	.	.	.
13AUG93	1	9:57	6.50	L	D	8.3	.	.	.	.	.	.	.	.	.
13AUG93	1	10:25	5.00	L	D	8.1	.	.	.	.	1	.	.	.	.
13AUG93	1	10:42	5.00	R	D	8.1	.	.	.	.	.	.	.	.	.
13AUG93	1	10:53	5.00	L	D	7.6	.	.	.	.	1	.	.	.	.
13AUG93	1	11:05	2.75	L	D	7.6	.	.	.	.	1	.	.	.	1
13AUG93	1	11:21	2.75	R	D	8.2	.	.	.	.	.	.	.	.	12
13AUG93	1	11:41	2.75	L	D	9.2	.	.	.	.	.	.	.	.	1
13AUG93	2	17:24	2.75	L	D	12.5	.	.	.	.	.	.	.	.	1
13AUG93	2	17:40	2.75	R	D	9.0	.	.	.	.	.	.	.	.	5
13AUG93	2	17:53	2.75	L	D	9.2	.	.	.	.	.	.	.	.	1
13AUG93	2	18:16	4.00	L	D	9.4	.	.	.	.	1	.	.	.	.
13AUG93	2	18:30	4.00	R	D	7.6	.	.	.	.	.	1	.	1	.
13AUG93	2	18:47	4.00	L	D	9.3	.	.	.	.	.	.	.	.	.
13AUG93	2	18:59	5.50	L	D	9.4	.	.	.	1	.	.	.	.	.
13AUG93	2	19:10	5.50	R	D	7.8	.	.	.	2	.	.	.	.	.
13AUG93	2	19:24	5.50	L	D	8.7	.	.	.	.	.	.	.	.	.
13AUG93	2	19:36	5.50	5	D	8.9	.	.	.	2	.	.	.	.	.
14AUG93	1	9:22	5.50	5	D	10.7	.	.	.	1	.	.	.	.	.
14AUG93	1	10:20	5.50	L	D	8.6	.	.	.	2	.	.	.	.	.
14AUG93	1	10:34	5.50	R	D	6.8	.	.	.	1	1	.	.	.	.
14AUG93	1	10:45	5.50	L	D	8.6	.	.	.	.	.	.	.	.	.
14AUG93	1	11:14	4.00	L	D	8.4	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
14AUG93	1	11:26	4.00	R	D	6.6	.	.	.	.	.	.	.	.	.
14AUG93	1	11:37	4.00	L	D	8.4	.	.	.	.	.	.	.	.	.
14AUG93	1	11:49	2.75	L	D	8.7	.	.	.	.	.	.	.	.	1
14AUG93	1	12:02	2.75	R	D	6.6	.	.	.	.	.	.	.	.	2
14AUG93	1	12:13	2.75	L	D	8.7	.	.	.	.	.	.	.	.	.
14AUG93	2	17:17	2.75	L	D	10.1	.	.	.	.	.	.	.	1	1
14AUG93	2	17:31	2.75	R	D	4.9	.	.	.	.	.	.	.	.	3
14AUG93	2	17:44	2.75	L	D	9.7	.	.	.	.	.	.	.	.	1
14AUG93	2	18:09	5.00	L	D	9.8	.	.	.	1	.	.	.	.	.
14AUG93	2	18:23	5.00	R	D	6.8	.	.	.	1	.	.	.	.	.
14AUG93	2	18:34	5.00	L	D	11.8	.	.	.	.	.	.	.	.	.
14AUG93	2	18:54	6.50	L	D	11.1	.	.	.	.	.	.	.	.	.
14AUG93	2	19:16	6.50	R	D	5.8	.	.	.	.	.	.	.	.	.
14AUG93	2	19:26	6.50	L	D	9.3	.	.	.	.	.	.	.	.	.
14AUG93	2	19:48	6.50	5	D	8.0	.	.	.	1	.	.	.	.	.
15AUG93	1	9:45	6.50	L	B	7.3	.	.	.	.	.	.	.	.	.
15AUG93	1	10:01	6.50	L	D	9.0	.	.	.	1	.	.	.	.	.
15AUG93	1	10:16	6.50	R	D	6.2	.	.	.	.	.	.	.	.	.
15AUG93	1	10:27	6.50	L	D	9.2	.	.	.	1	.	.	.	.	.
15AUG93	1	10:42	5.00	L	D	9.7	.	.	.	.	.	.	.	.	.
15AUG93	1	10:55	5.00	R	D	6.3	.	.	.	.	3	.	.	1	.
15AUG93	1	11:10	5.00	L	D	9.4	.	.	.	.	.	.	.	.	.
15AUG93	1	11:39	2.75	L	D	9.5	.	.	.	.	.	.	.	.	1
15AUG93	1	11:53	2.75	R	D	7.2	.	.	.	.	.	.	.	.	9
15AUG93	1	12:07	2.75	L	D	8.9	.	.	.	.	.	.	.	.	1
15AUG93	2	17:19	2.75	L	D	9.8	.	.	.	.	.	.	.	.	.
15AUG93	2	17:33	2.75	R	D	9.1	.	.	.	.	.	.	.	.	6
15AUG93	2	17:50	2.75	L	D	9.5	.	.	.	.	.	.	.	.	.
15AUG93	2	18:14	4.00	L	D	9.6	.	.	.	.	.	.	.	.	.
15AUG93	2	18:29	4.00	R	D	9.4	.	.	.	.	1	.	.	.	1
15AUG93	2	18:44	4.00	L	D	9.3	.	.	.	.	1	.	.	.	.
15AUG93	2	18:58	5.50	L	D	10.0	.	.	.	1	1	.	.	.	.
15AUG93	2	19:14	5.50	R	D	9.4	.	.	.	1	.	.	.	.	.
15AUG93	2	19:30	5.50	L	D	9.3	.	.	.	3	.	.	.	.	.
15AUG93	2	19:46	5.50	5	D	9.4	.	.	.	.	.	.	.	.	.
16AUG93	1	9:21	5.50	L	B	9.5	.	.	.	.	.	.	.	.	.
16AUG93	1	9:34	5.50	L	D	9.6	.	.	.	3	.	.	.	.	.
16AUG93	1	9:50	5.50	R	D	8.1	.	.	.	1	3	.	.	.	.
16AUG93	1	10:07	5.50	L	D	9.6	.	.	.	9	.	.	.	.	.
16AUG93	1	10:20	4.00	L	D	9.6	.	.	.	.	.	.	.	.	.
16AUG93	1	10:34	4.00	R	D	7.9	.	.	.	.	1	.	.	.	2
16AUG93	1	10:49	4.00	L	D	9.5	.	.	.	1	1	.	.	.	.
16AUG93	1	11:12	2.75	L	D	9.7	.	.	.	.	.	.	.	.	3
16AUG93	1	11:26	2.75	R	D	8.6	.	.	.	.	.	.	.	.	9
16AUG93	1	11:41	2.75	L	D	10.2	.	.	.	.	.	.	.	.	.
16AUG93	2	17:23	2.75	L	D	9.5	.	.	.	.	.	.	.	.	1
16AUG93	2	17:35	2.75	R	D	7.8	.	.	.	.	.	.	.	1	2
16AUG93	2	17:50	2.75	L	D	9.5	.	.	.	.	.	.	.	.	.
16AUG93	2	18:13	6.50	L	D	8.7	.	.	.	4	.	.	.	.	.
16AUG93	2	18:29	6.50	R	D	6.0	.	.	.	2	.	.	.	.	.
16AUG93	2	18:42	6.50	L	D	8.7	.	.	.	3	.	.	.	.	.
16AUG93	2	18:58	6.50	5	D	9.9	.	.	.	15	2	.	.	.	.
16AUG93	2	19:29	5.00	L	D	9.7	.	.	.	2	.	.	.	.	.
16AUG93	2	19:42	5.00	R	D	8.4	.	.	.	1	1	.	.	.	.
16AUG93	2	19:52	5.00	L	D	14.2	.	.	.	.	.	.	.	.	.
17AUG93	1	9:21	5.00	L	D	9.2	.	.	.	5	1	.	.	.	.
17AUG93	1	9:37	5.00	R	D	6.9	.	.	.	3	2	.	.	.	.
17AUG93	1	9:51	5.00	L	D	9.1	.	.	.	3	2	.	.	.	.
17AUG93	1	10:14	6.50	L	B	9.1	.	.	.	.	.	.	.	.	.
17AUG93	1	10:28	6.50	L	D	9.0	.	.	.	11	.	.	.	.	.
17AUG93	1	10:45	6.50	R	D	8.1	.	.	.	2	.	.	.	.	.
17AUG93	1	11:02	6.50	L	D	8.7	.	.	.	5	.	.	.	.	.
17AUG93	1	11:22	2.75	L	D	9.1	.	.	.	.	.	.	.	.	.
17AUG93	1	11:34	2.75	R	D	8.4	.	.	.	1	.	.	.	2	4
17AUG93	1	11:50	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
17AUG93	2	17:14	2.75	L	D	9.1	.	.	.	.	.	.	.	.	1
17AUG93	2	17:26	2.75	R	D	8.9	.	.	.	.	.	.	.	.	5
17AUG93	2	17:40	2.75	L	D	9.2	.	.	.	2	.	.	.	.	.
17AUG93	2	17:54	4.00	L	D	8.9	.	.	.	.	.	.	.	.	.
17AUG93	2	18:06	4.00	R	D	6.2	.	.	.	.	.	.	.	1	.
17AUG93	2	18:16	4.00	L	D	9.1	.	.	.	1	1	.	.	.	.
17AUG93	2	18:39	5.50	L	D	9.4	.	.	.	2	1	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
17AUG93	2	18:54	5.50	R	D	5.1	.	.	.	1	.	.	.	.	.
17AUG93	2	19:20	5.50	L	D	9.1	.	.	.	15	2	.	.	.	.
18AUG93	1	9:19	5.50	L	D	8.1	.	.	.	19	2	.	.	.	.
18AUG93	1	9:44	5.50	R	D	6.3	.	.	.	.	4	.	.	.	.
18AUG93	1	9:58	5.50	L	D	8.0	.	.	.	7	.	.	.	.	.
18AUG93	1	10:25	4.00	L	D	7.9	.	.	.	1	.	.	.	.	.
18AUG93	1	10:38	4.00	R	D	6.9	.	.	.	.	3	.	.	1	.
18AUG93	1	10:52	4.00	L	D	7.1	.	.	.	.	.	.	.	.	.
18AUG93	1	11:14	2.75	L	D	7.7	.	.	.	.	.	.	.	3	.
18AUG93	1	11:27	2.75	R	D	8.9	.	.	.	.	.	.	.	3	9
18AUG93	1	11:43	2.75	L	D	7.8	.	.	.	.	.	.	.	.	1
18AUG93	2	17:28	2.75	L	D	9.1	.	.	.	.	.	.	.	.	1
18AUG93	2	17:50	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
18AUG93	2	18:05	5.00	L	D	7.7	.	.	.	.	.	.	.	.	.
18AUG93	2	18:17	5.00	L	D	8.9	.	.	.	1	1	.	.	.	.
18AUG93	2	18:31	5.00	5	D	9.6	.	.	.	9	12	.	.	.	.
18AUG93	2	19:27	6.50	L	D	9.4	.	.	.	1	.	.	.	.	.
18AUG93	2	19:41	6.50	L	D	8.1	.	.	.	.	.	.	.	.	.
19AUG93	2	17:28	6.50	L	D	9.2	.	.	.	2	.	.	.	.	.
19AUG93	2	17:42	6.50	R	D	6.1	.	.	.	.	.	.	.	.	.
19AUG93	2	17:52	6.50	L	D	12.4	.	.	.	8	.	.	.	.	.
19AUG93	2	18:15	6.50	5	D	7.4	.	.	.	8	.	.	.	.	.
19AUG93	2	18:49	5.00	L	D	11.7	.	.	.	3	2	.	.	.	.
19AUG93	2	19:09	5.00	R	D	6.6	.	.	.	.	4	.	.	.	.
19AUG93	2	19:26	5.00	L	D	9.5	.	.	.	5	2	.	.	.	.
19AUG93	2	19:45	2.75	L	D	9.7	.	.	.	.	.	.	.	.	2
19AUG93	2	19:59	2.75	R	D	7.3	.	.	.	.	3	.	.	.	10
19AUG93	2	20:15	2.75	L	D	9.4	.	.	.	.	.	.	.	.	.
20AUG93	1	9:21	2.75	L	D	8.2	.	.	.	.	.	.	.	.	3
20AUG93	1	9:37	2.75	R	D	6.9	.	.	.	.	2	.	.	.	6
20AUG93	1	9:52	4.00	L	D	8.6	.	.	.	.	.	.	.	.	.
20AUG93	1	10:06	4.00	L	D	8.2	.	.	.	.	.	.	.	.	.
20AUG93	1	10:18	4.00	R	D	5.3	.	.	.	.	1	.	.	1	.
20AUG93	1	10:29	4.00	L	D	8.8	.	.	.	.	.	.	.	.	.
20AUG93	1	10:53	5.50	L	D	8.7	.	.	.	3	.	.	.	.	.
20AUG93	1	11:08	5.50	R	D	7.6	.	.	.	2	6	.	.	.	.
20AUG93	1	11:24	5.50	L	D	8.5	.	.	.	.	.	.	.	.	.
20AUG93	1	11:38	5.50	5	D	8.0	.	.	.	15	4	.	.	.	.
20AUG93	2	17:13	5.00	L	D	9.6	.	.	.	.	4	.	.	.	.
20AUG93	2	17:28	5.00	R	D	7.1	.	.	.	.	1	.	.	.	.
20AUG93	2	17:41	5.00	L	D	9.2	.	.	.	.	.	.	.	.	.
20AUG93	2	17:54	5.00	5	D	9.6	.	.	.	3	3	.	.	.	.
20AUG93	2	18:22	6.50	L	D	14.6	.	.	.	1	.	.	.	.	.
20AUG93	2	18:46	6.50	R	D	7.4	.	.	.	1	3	.	.	.	.
20AUG93	2	19:00	6.50	L	D	9.3	.	.	.	2	.	.	.	.	.
20AUG93	2	19:15	2.75	L	D	10.5	.	.	.	.	.	.	.	.	1
20AUG93	2	19:28	2.75	R	D	6.3	.	.	.	.	.	.	.	.	.
20AUG93	2	19:38	2.75	L	D	9.6	.	.	.	.	.	.	.	.	1
21AUG93	1	9:23	2.75	L	D	9.6	.	.	.	.	.	.	.	.	.
21AUG93	1	10:02	2.75	R	D	6.3	.	.	.	.	1	.	.	.	.
21AUG93	1	10:13	2.75	L	D	9.4	.	.	.	.	.	.	.	.	.
21AUG93	1	10:26	6.50	L	D	8.2	.	.	.	.	.	.	.	.	.
21AUG93	1	10:38	6.50	R	D	6.4	.	.	.	.	.	.	.	.	.
21AUG93	1	10:48	6.50	L	D	9.2	.	.	.	.	.	.	.	.	.
21AUG93	1	11:10	5.00	L	D	8.7	.	.	.	.	.	.	.	.	.
21AUG93	1	11:27	5.00	L	D	9.0	.	.	.	.	.	.	.	.	.
21AUG93	1	11:35	5.00	R	D	6.0	.	.	.	.	.	.	.	.	.
21AUG93	1	11:44	5.00	5	D	8.7	.	.	.	4	5	.	.	2	.
21AUG93	2	17:24	2.75	L	D	9.3	.	.	.	.	.	.	.	.	2
21AUG93	2	17:38	2.75	R	D	6.6	.	.	.	.	1	.	.	.	3
21AUG93	2	17:51	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
21AUG93	2	18:20	5.50	L	D	9.8	.	.	.	1	.	.	.	.	.
21AUG93	2	18:34	5.50	R	D	7.3	.	.	.	1	7	.	.	.	.
21AUG93	2	18:52	5.50	L	D	9.2	.	.	.	.	.	.	.	.	.
21AUG93	2	19:04	5.50	5	D	9.5	.	.	.	8	.	.	.	.	.
22AUG93	1	9:21	4.00	L	D	9.2	.	.	.	.	1	.	.	.	.
22AUG93	1	9:34	4.00	R	D	7.5	.	.	.	.	.	.	.	.	1
22AUG93	1	9:50	4.00	L	D	9.3	.	.	.	.	1	.	.	.	.
22AUG93	1	10:16	5.50	L	D	9.4	.	.	.	2	.	.	.	.	.
22AUG93	1	10:36	5.50	R	D	6.9	.	.	.	1	1	.	.	.	.
22AUG93	1	10:49	5.50	L	D	9.4	.	.	.	3	1	.	.	.	.
22AUG93	1	11:03	5.50	5	D	8.0	.	.	.	3	3	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
22AUG93	1	11:29	2.75	L	D	9.2	.	.	.	.	.	.	.	.	.
22AUG93	1	11:41	2.75	R	D	6.6	.	.	.	.	.	.	.	.	.
22AUG93	1	11:54	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
22AUG93	2	17:18	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
22AUG93	2	17:31	2.75	R	D	6.6	.	.	.	.	.	.	.	1	.
22AUG93	2	17:43	2.75	L	D	9.3	.	.	.	.	.	.	.	.	1
22AUG93	2	18:04	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
22AUG93	2	18:18	5.00	R	D	6.9	.	.	.	.	2	.	.	.	.
22AUG93	2	18:31	5.00	L	D	9.3	.	.	.	1	.	.	.	.	.
22AUG93	2	18:44	5.00	5	D	9.1	.	.	.	.	1	.	.	.	.
22AUG93	2	19:07	6.50	L	D	8.7	.	.	.	.	.	.	.	.	.
22AUG93	2	19:19	6.50	R	D	6.4	.	.	.	.	1	.	.	.	.
22AUG93	2	19:30	6.50	L	D	9.0	.	.	.	.	.	.	.	.	.
23AUG93	1	9:19	6.50	L	D	9.3	.	.	.	2	.	.	.	.	.
23AUG93	1	9:33	6.50	R	D	8.7	.	.	.	1	.	.	.	.	.
23AUG93	1	9:47	6.50	L	D	8.9	.	.	.	1	.	.	.	.	.
23AUG93	1	10:07	5.00	L	D	8.9	.	.	.	.	.	.	.	.	.
23AUG93	1	10:20	5.00	R	D	8.1	.	.	.	.	1	.	.	1	.
23AUG93	1	10:34	5.00	L	D	9.2	.	.	.	1	.	.	.	.	.
23AUG93	1	10:47	5.00	5	D	9.1	.	.	.	3	1	.	.	.	.
23AUG93	1	11:11	2.75	L	D	9.2	.	.	.	.	.	.	.	.	1
23AUG93	1	11:24	2.75	R	D	7.7	.	.	.	.	.	.	.	.	4
23AUG93	1	11:37	2.75	L	D	9.4	.	.	.	.	.	.	.	.	.
23AUG93	2	17:19	2.75	L	D	9.5	.	.	.	.	.	.	.	.	1
23AUG93	2	17:33	2.75	R	D	5.6	.	.	.	.	.	.	.	.	1
23AUG93	2	17:43	2.75	L	D	9.3	.	.	.	2	.	.	.	.	.
23AUG93	2	17:58	4.00	L	D	9.2	.	.	.	.	1	.	.	.	.
23AUG93	2	18:13	4.00	R	D	10.7	.	.	.	.	.	.	.	.	.
23AUG93	2	18:22	4.00	L	D	9.2	.	.	.	.	.	.	.	.	1
23AUG93	2	18:45	5.50	L	D	9.1	.	.	.	2	.	.	.	.	.
23AUG93	2	18:53	5.50	R	D	10.2	.	.	.	.	1	.	.	.	.
23AUG93	2	19:09	5.50	L	D	9.2	.	.	.	.	.	.	.	.	.
23AUG93	2	19:21	5.50	5	D	9.2	.	.	.	10	1	.	.	.	.
24AUG93	1	9:38	5.50	L	D	9.6	.	.	.	2	3	.	.	.	.
24AUG93	1	9:56	5.50	R	D	9.6	.	.	.	.	.	.	.	.	.
24AUG93	1	10:11	5.50	L	D	9.5	.	.	.	1	.	.	.	.	.
24AUG93	1	10:25	5.50	5	D	9.8	.	.	.	9	5	.	.	.	.
24AUG93	1	11:00	4.00	L	D	10.3	.	.	.	.	1	.	.	.	.
24AUG93	1	11:15	4.00	R	D	9.7	.	.	.	.	2	.	1	.	1
24AUG93	1	11:31	4.00	L	D	9.5	.	.	.	.	.	.	.	.	.
24AUG93	1	11:44	2.75	L	D	9.6	.	.	.	.	.	.	.	.	3
24AUG93	1	11:58	2.75	R	D	7.8	.	.	.	.	.	.	.	.	6
24AUG93	1	12:13	2.75	L	D	8.6	.	.	.	.	.	.	.	.	.
24AUG93	2	17:22	2.75	L	D	9.7	.	.	.	.	1	.	.	.	2
24AUG93	2	17:37	2.75	R	D	6.2	.	.	.	.	.	.	.	.	6
24AUG93	2	17:53	2.75	L	D	9.6	.	.	.	.	.	.	.	.	.
24AUG93	2	18:07	6.50	L	D	10.1	.	.	.	.	.	.	.	.	.
24AUG93	2	18:21	6.50	R	D	7.0	.	.	.	1	4	.	.	.	.
24AUG93	2	18:36	6.50	L	D	9.1	.	.	.	.	1	.	.	.	.
24AUG93	2	19:06	5.00	L	D	9.5	.	.	.	.	2	.	.	.	.
24AUG93	2	19:20	5.00	R	D	8.8	.	.	.	.	2	.	.	.	.
24AUG93	2	19:35	5.00	L	D	9.2	.	.	.	1	1	.	.	.	.
24AUG93	2	19:48	5.00	[illegible]	D	9.6	.	.	.	2	1	.	.	.	.
25AUG93	1	9:25	5.00	[illegible]	D	10.2	.	.	.	.	1	.	.	.	.
25AUG93	1	9:40	5.00	R	D	7.8	.	.	.	.	1	.	.	.	.
25AUG93	1	9:53	5.00	L	D	9.3	.	.	.	.	.	.	.	.	.
25AUG93	1	10:06	5.00	5	D	9.4	.	.	.	4	3	.	.	.	.
25AUG93	1	10:35	2.75	L	D	10.9	.	.	.	.	.	.	.	.	2
25AUG93	1	10:51	2.75	R	D	6.4	.	.	.	.	.	.	.	.	4
25AUG93	1	11:05	2.75	L	D	10.4	.	.	.	.	.	.	.	.	2
25AUG93	1	11:21	6.50	L	D	9.7	.	.	.	.	.	.	.	.	.
25AUG93	1	11:35	6.50	R	D	6.4	.	.	.	.	.	.	.	.	.
25AUG93	1	11:46	6.50	L	D	9.5	.	.	.	.	.	.	.	.	.
25AUG93	2	17:23	2.75	L	D	9.8	.	.	.	.	.	.	.	.	1
25AUG93	2	17:36	2.75	R	D	9.2	.	.	.	.	.	.	.	.	1
25AUG93	2	17:49	2.75	L	D	9.3	.	.	.	1	.	.	.	.	.
25AUG93	2	17:49	4.00	L	D	9.3	.	.	.	.	1	.	.	.	1
25AUG93	2	18:14	4.00	R	D	6.9	.	.	.	.	.	.	.	.	.
25AUG93	2	18:25	4.00	L	D	9.1	.	.	.	.	.	.	.	.	.
25AUG93	2	18:46	5.50	L	D	9.0	.	.	.	.	1	.	.	.	.
25AUG93	2	18:59	5.50	R	D	8.4	.	.	.	.	.	.	.	.	.
25AUG93	2	19:17	5.50	L	D	9.0	.	.	.	1	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
25AUG93	2	19:30	5.50	5	D	9.1	.	.	.	2	2	.	.	.	.
26AUG93	1	9:16	5.50	L	D	9.1	.	.	.	2	3	.	.	.	.
26AUG93	1	9:32	5.50	R	D	6.7	.	.	.	.	2	.	.	.	.
26AUG93	1	9:46	5.50	L	D	9.4	.	.	.	1	.	.	.	.	.
26AUG93	1	10:00	5.50	5	D	9.0	.	.	.	1	2	.	1	.	.
26AUG93	1	10:27	4.00	L	D	9.1	.	.	.	.	.	.	.	.	.
26AUG93	1	10:40	4.00	R	D	4.4	.	.	.	.	.	.	.	.	.
26AUG93	1	10:48	4.00	L	D	9.0	.	.	.	.	.	.	.	.	.
26AUG93	1	11:01	2.75	L	D	8.7	.	.	.	.	.	.	.	.	4
26AUG93	1	11:14	2.75	R	D	5.3	.	.	.	.	.	.	.	1	4
26AUG93	1	11:24	2.75	L	D	8.5	.	.	.	.	.	.	.	.	.
26AUG93	1	17:51	5.00	L	D	9.2	.	.	.	.	.	.	.	.	.
26AUG93	1	18:04	6.50	L	D	9.0	.	.	.	1	.	.	.	.	.
26AUG93	1	18:04	5.00	R	D	7.0	.	.	.	1	.	.	.	.	.
26AUG93	1	18:15	5.00	5	D	9.4	.	.	.	.	.	.	.	.	.
26AUG93	1	18:38	6.50	L	D	9.5	.	.	.	.	.	.	.	.	.
26AUG93	1	18:51	6.50	R	D	4.9	.	.	.	.	.	.	.	.	.
26AUG93	1	19:23	5.00	L	D	9.5	.	.	.	.	.	.	.	.	.
27AUG93	1	9:23	5.00	L	D	8.6	.	.	.	.	.	.	.	.	.
27AUG93	1	9:35	5.00	R	D	7.0	.	.	.	.	3	.	.	.	.
27AUG93	1	9:48	5.00	5	D	8.7	.	.	.	.	.	.	.	.	.
27AUG93	1	10:03	5.00	L	D	8.5	.	.	.	.	1	.	.	.	.
27AUG93	1	10:15	6.50	L	D	8.4	.	.	.	1	.	.	.	.	.
27AUG93	1	10:26	6.50	R	D	6.7	.	.	.	.	2	.	.	.	.
27AUG93	1	10:38	6.50	L	D	7.9	.	.	.	1	.	.	.	.	.
27AUG93	1	11:05	2.75	L	D	8.5	.	.	.	.	.	.	.	.	.
27AUG93	1	11:17	2.75	R	D	8.0	.	.	.	.	.	.	.	.	4
27AUG93	1	11:30	2.75	L	D	8.4	.	.	.	.	.	.	.	.	.
27AUG93	2	17:22	2.75	L	D	10.2	.	.	.	.	.	.	.	.	.
27AUG93	2	17:35	2.75	R	D	6.1	.	.	.	.	.	.	.	.	3
27AUG93	2	17:46	2.75	L	D	9.5	.	.	.	.	.	.	.	.	.
27AUG93	2	18:06	4.00	L	D	9.0	.	.	.	.	.	.	.	1	.
27AUG93	2	18:29	4.00	R	D	5.5	.	.	.	.	.	.	.	.	.
27AUG93	2	18:39	4.00	L	D	9.0	.	.	.	.	.	.	.	.	.
27AUG93	2	18:55	5.50	L	D	9.5	.	.	.	1	.	.	.	.	.
27AUG93	2	19:11	5.50	R	D	7.9	.	.	.	.	1	.	1	.	.
27AUG93	2	19:31	5.50	L	D	9.2	.	.	.	.	.	.	.	.	.
27AUG93	2	19:44	5.50	5	D	9.1	.	.	.	1	2	.	.	.	.
28AUG93	1	9:22	5.50	L	D	8.4	.	.	.	.	2	.	.	.	.
28AUG93	1	9:34	5.50	R	D	6.8	.	.	.	.	.	.	.	.	.
28AUG93	1	9:45	5.50	L	D	8.8	.	.	.	.	.	.	.	.	.
28AUG93	1	9:57	5.50	5	D	9.5	.	.	.	3	1	.	.	.	.
28AUG93	1	10:17	4.00	L	D	8.3	.	.	.	.	.	.	.	.	.
28AUG93	1	10:28	4.00	R	D	6.5	.	.	.	.	.	.	.	.	.
28AUG93	1	10:38	4.00	L	D	8.0	.	.	.	.	.	.	.	.	.
28AUG93	1	11:02	2.75	L	D	8.6	.	.	.	.	.	.	.	.	.
28AUG93	1	11:13	2.75	R	D	6.2	.	.	.	.	.	.	.	.	3
28AUG93	1	11:26	2.75	L	D	8.8	.	.	.	.	.	.	.	.	.
28AUG93	2	17:09	2.75	L	D	9.0	.	.	.	.	.	.	.	.	.
28AUG93	2	17:22	2.75	R	D	6.2	.	.	.	.	.	.	.	.	.
28AUG93	2	17:32	2.75	L	D	9.1	.	.	.	.	.	.	.	.	.
28AUG93	2	17:44	6.50	L	D	9.1	.	.	.	.	.	.	.	.	.
28AUG93	2	17:56	6.50	R	D	7.2	.	.	.	1	1	.	.	.	.
28AUG93	2	18:09	6.50	L	D	9.0	.	.	.	1	.	.	.	.	.
28AUG93	2	18:29	5.00	L	D	9.0	.	.	.	1	.	.	.	.	.
28AUG93	2	18:42	5.00	R	D	8.5	.	.	.	1	1	.	.	.	.
28AUG93	2	18:57	5.00	L	D	9.4	.	.	.	1	1	.	.	.	.
28AUG93	2	19:11	5.00	5	D	9.3	.	.	.	.	2	.	.	.	.
29AUG93	1	9:30	5.00	L	D	9.5	.	.	.	2	1	.	.	.	.
29AUG93	1	9:47	5.00	R	D	7.5	.	.	.	.	1	.	.	.	.
29AUG93	1	10:00	5.00	L	D	9.4	.	.	.	.	1	.	.	.	.
29AUG93	1	10:13	5.00	5	D	9.4	.	.	.	1	1	.	.	.	.
29AUG93	1	10:39	2.75	L	D	10.2	.	.	.	.	.	.	.	.	2
29AUG93	1	10:52	2.75	R	D	6.5	.	.	.	.	.	.	.	.	3
29AUG93	1	11:04	2.75	L	D	9.5	.	.	.	.	.	.	.	1	.
29AUG93	1	11:17	6.50	L	D	9.7	.	.	.	.	.	.	.	.	.
29AUG93	1	11:30	6.50	R	D	5.8	.	.	.	.	1	.	.	.	.
29AUG93	1	11:41	6.50	L	D	9.3	.	.	.	.	.	.	.	.	.
29AUG93	2	17:10	2.75	L	D	9.9	.	.	.	.	1	.	.	.	.
29AUG93	2	17:23	2.75	R	D	6.9	.	.	.	.	1	.	.	.	2
29AUG93	2	17:36	2.75	L	D	10.2	.	.	.	.	.	.	.	.	.
29AUG93	2	17:50	4.00	L	D	9.9	.	.	.	.	.	.	.	.	.

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish

APPENDIX C: (cont.)

DATE	TESTFISH PERIOD	STARTING TIME	MESH (IN)	BANK	METHOD[1]	MINUTES FISHING TIME	CHINOOK	JACK[2]	SCHUM[3]	FCHUM[4]	COHO	PINK	SHEEFISH	WHITE[5]	CISCO
29AUG93	2	18:03	4.00	R	D	6.6	.	.	.	.	.	.	.	.	1
29AUG93	2	18:24	4.00	L	D	9.1	.	.	.	.	.	.	.	.	.
29AUG93	2	18:29	5.50	5	D	9.5	.	.	.	7	6	.	.	.	.
29AUG93	2	18:51	5.50	L	D	8.8	.	.	.	.	1	.	.	.	.
29AUG93	2	19:05	5.50	R	D	7.0	.	.	.	.	3	.	.	.	.
29AUG93	2	19:17	5.50	L	D	8.6	.	.	.	.	.	.	.	.	.
30AUG93	1	9:32	5.50	L	D	9.6	.	.	.	.	3	.	.	.	.
30AUG93	1	9:46	5.50	R	D	8.6	.	.	.	.	.	.	.	.	.
30AUG93	1	9:58	5.50	L	D	9.3	.	.	.	1	.	.	.	.	.
30AUG93	1	10:11	5.50	5	D	8.6	.	.	.	.	1	.	.	.	.
30AUG93	1	10:36	4.00	L	D	9.3	.	.	.	.	.	.	.	.	.
30AUG93	1	10:49	4.00	R	D	8.6	.	.	.	.	.	.	.	.	.
30AUG93	1	11:01	4.00	L	D	9.4	.	.	.	.	.	.	.	.	.
30AUG93	1	11:13	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
30AUG93	1	11:26	2.75	R	D	7.6	.	.	.	.	.	.	.	.	1
30AUG93	1	11:37	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
30AUG93	2	17:10	2.75	L	D	9.3	.	.	.	.	1	.	.	.	.
30AUG93	2	17:23	2.75	R	D	5.6	.	.	.	.	.	.	.	.	.
30AUG93	2	17:34	2.75	L	D	9.3	.	.	.	.	.	.	.	.	.
30AUG93	2	17:58	6.50	L	D	9.1	.	.	.	.	.	.	.	.	.
30AUG93	2	18:11	6.50	R	D	8.9	.	.	.	.	4	.	.	.	.
30AUG93	2	18:26	6.50	L	D	9.4	.	.	.	.	.	.	.	.	.
30AUG93	2	18:38	5.00	L	D	9.2	.	.	.	.	.	.	.	.	.
30AUG93	2	18:51	5.00	R	D	6.9	.	.	.	1	3	.	.	.	.
30AUG93	2	19:04	5.00	L	D	9.2	.	.	.	.	.	.	.	.	.
30AUG93	2	19:16	5.00	5	D	9.5	.	.	.	3	.	.	.	.	.
31AUG93	1	9:26	5.00	L	D	9.8	.	.	.	.	.	.	.	.	.
31AUG93	1	9:40	5.00	R	D	7.0	.	.	.	.	.	.	.	.	.
31AUG93	1	9:51	5.00	L	D	9.2	.	.	.	.	.	.	.	.	.
31AUG93	1	10:04	5.00	5	D	9.4	.	.	.	1	.	.	.	.	.
31AUG93	1	10:19	6.50	L	D	9.8	.	.	.	.	.	.	.	.	.
31AUG93	1	10:47	6.50	R	D	6.8	.	.	.	.	.	.	.	.	.
31AUG93	1	10:58	6.50	L	D	9.7	.	.	.	.	.	.	.	.	.
31AUG93	1	11:20	2.75	L	D	9.9	.	.	.	.	1	.	.	.	1
31AUG93	1	11:34	2.75	R	D	7.0	.	.	.	.	.	.	.	.	4
31AUG93	1	11:46	2.75	L	D	10.1	.	.	.	.	.	.	.	.	.
31AUG93	2	17:18	2.75	L	D	6.2	.	.	.	.	.	.	.	.	.
31AUG93	2	17:30	2.75	R	D	7.5	.	.	.	.	.	.	.	.	1
31AUG93	2	17:42	2.75	L	D	8.1	.	.	.	.	.	.	.	.	.
31AUG93	2	18:01	4.00	L	D	9.5	.	.	.	.	.	.	.	.	.
31AUG93	2	18:14	4.00	R	D	5.9	.	.	.	.	.	.	.	.	.
31AUG93	2	18:25	4.00	L	D	9.2	.	.	.	.	.	.	.	.	.
31AUG93	2	18:49	5.50	L	D	6.9	.	.	.	.	.	.	.	.	.
31AUG93	2	18:59	5.50	R	D	6.6	.	.	.	.	.	.	.	.	.
31AUG93	2	19:09	5.50	L	D	8.9	.	.	.	1	.	.	.	.	.
31AUG93	2	19:23	5.50	5	D	9.2	.	.	.	1	.	.	.	.	.
						12158	407	275	2795	731	223	24	41	289	787

[1] METHOD: D = drift B = beachwalk
[2] JACK = Chinook salmon < 700mm
[3] SCHUM = Summer chum salmon
[4] FCHUM = Fall chum salmon
[5] WHITE = Whitefish