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SONAR ENUMERATION OF PACIFIC SALMON ESCAPEMENT INTO NUSHAGAK RIVER, 1999

by

James D. Miller

Regional Information Report[1] No. 2A00-19

Alaska Department of Fish and Game
Division of Commercial Fisheries
Regional Office
333 Raspberry Road
Anchorage, Alaska 99518-1599

March 2000

[1]Contribution 00-19 from the Anchorage regional office. The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports.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 accommodate needs for up-to-date information, reports in this series may contain preliminary data.

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ABSTRACT

Estimates of Pacific salmon *Oncorhynchus* escapement for the Nushagak River in Bristol Bay, Alaska, were determined by hydroacoustic techniques from June 9 through August 25, 1999. Drift gillnets and beach seines were used to estimate species composition of the sonar counts as well as estimate salmon age, sex, and size composition. An additional drift gillnet study, designed to evaluate chinook and coho salmon migration upriver outside the range of the sonar gear, was conducted in predetermined stations in the center of the river. Total adjusted chinook and coho salmon CPUE by sampling station was calculated and compared. Final escapement estimates by species through August 25 were 311,899 sockeye salmon *O. nerka*, 62,331 chinook salmon *O. tshawytscha*, 242,312 chum salmon *O. keta*, and 34,853 coho salmon *O. kisutch*.

KEY WORDS: Pacific salmon, sonar, Nushagak River, Bristol Bay, escapement, estimation, fisheries management, *Oncorhynchus*

INTRODUCTION

The Nushagak River is located in southwestern Alaska (Figure 1) and flows approximately 390 km from its headwaters into Nushagak Bay in Bristol Bay, Alaska. Two main tributaries, the Nuyakuk and Mulchatna Rivers, converge to form the Nushagak River. These rivers support large populations of five species of Pacific salmon *Oncorhynchus* which are harvested in commercial, sport, and subsistence fisheries. Accurate and timely salmon escapement estimates into this system are essential to management of local fisheries.

In 1979, the Alaska Department of Fish and Game (ADF&G) examined the feasibility of using hydroacoustic (sonar) equipment and began developing procedures to count adult salmon in Nushagak River (McBride 1981). During subsequent years, the Nushagak River sonar project has evolved to provide escapement information important to the management of commercial salmon fishing in Nushagak District.

Estimating numbers of salmon migrating into Nushagak River with sonar involves (1) estimating the number of hydroacoustic targets passing through sonar beams, (2) estimating the species composition of those targets, and (3) combining estimates of hydroacoustic targets and species composition to estimate numbers of passing salmon by species. During the initial years of the project, many changes were incorporated into the sonar and escapement sampling methods (McBride and Mesiar 1981, 1982; Minard 1983, 1985; Minard and Frederickson 1983). Few changes have been made in sonar operations since 1985, but changes have been made in the methods used to sample and estimate species composition (Morstad and Minard 1986, 1988; Bue 1988a, 1988b; Woolington and Bue 1989; Woolington and Miller 1992). Brannian et al. (1995) evaluated escapement sampling and the associated species apportionment methods used on Nushagak River during 1991 and compared them with methods used on the Lower Yukon River. Based on their project review, new methods of estimating Nushagak River salmon passage by species were incorporated in 1992 (Miller et al. 1994a).

Project operation dates have varied over the years. For most years, the project operated from early June to the third or fourth week of August. From 1993 to 1996, project operations occurred between June 9 and August 25 (Miller et al. 1994b; Miller 1995, 1996, 1997). In 1996, funding became available to operate the project through mid-September for three years to determine the magnitude and variability of coho salmon escapement after August 25 (Miller 1998). The study was discontinued after the first year (1997) because the accuracy of late season estimates was questionable (Miller 1998) and the need to address the lateral distribution of chinook and coho salmon at the sonar site became a higher priority.

When using sonar to estimate escapement, it is assumed that the majority of the upstream migration is passing within the counting range of the sonar. A drastic deviation from this assumption would call into question the accuracy of total escapement estimates. This assumption is of major concern for the sonar project on the Nushagak River since only 20-30% of the approximate 300-m width of the river is examined by sonar. In 1995 and 1996, gillnets were fished just beyond the end of the sonar counting range (far-offshore) to determine the presence of coho salmon in the area (Miller 1996, 1997). The

1995 study showed that 7% of the total catch-per-unit-effort (CPUE) on each riverbank was found just beyond the reach of the sonar gear. In 1996, this percentage was 23%.

In 1997, limited sampling for chinook salmon took place at the sonar site just offshore of the sonar beams from July 1-11 (Miller 1998). This work was initiated because (1) water levels were low throughout June; (2) chinook salmon escapement estimates were low in late June based on sonar counts and escapement sampling data; (3) sport anglers reported good chinook salmon angling success; and (4) sport anglers were observed catching chinook salmon in the middle of the river beyond the range of the sonar equipment. Far-offshore sampling in 1997 indicated that 69% of the total adjusted chinook salmon CPUE was obtained beyond the sonar counting range and that 31% was within the range of the sonar gear.

Results of the chinook salmon distribution sampling in 1997 and the coho salmon distribution sampling in 1995 and 1996 prompted a more extensive coho salmon distribution study in 1997 (Miller 1998). In the 1997 study, five sampling stations were established across the portion of the river not covered by the sonar equipment. Sampling occurred from July 31 through September 10, 1997. Results indicated that stations offshore of the sonar coverage accounted for a higher percentage of the total adjusted coho salmon CPUE (69%) than did stations covered by the sonar (31%).

Significant questions exist as to whether the proportion of total adjusted CPUE in the far-offshore stations accurately represents the proportion of the escapement that migrates offshore of the sonar coverage. Catchability for a given size of salmon is suspected to be different for the various sampling stations. For example, a gillnet approximately 6 m in depth will most likely fish differently in 1 m of water than when it is fished in 4 m of water. Also, net avoidance may be different between stations due to differences in river current, fish density, and possibly water clarity. The possible differences in catchability between stations make it difficult to quantify the relative passage of salmon outside the range of the sonar. However, catch-per-unit-effort information can be used to derive the approximate magnitude of this offshore passage.

In an attempt to better understand the extent of upstream migration outside the range of the sonar equipment, funding was made available in 1998 to conduct an expanded chinook and coho salmon distribution study using drift gillnets over a two-year period. Studies the first year, 1998, were conducted during periods of peak chinook (June 19 – July 14) and coho (July 29 – August 18) salmon passage (Miller 1999). Methods used in 1998 were similar to those used in the 1997 coho salmon study (Miller 1998). Results in 1998 indicated that a substantial number of chinook, coho, and chum salmon migrate upstream offshore of the sonar range (Miller 1999).

Project objectives in 1999 were to: 1) provide daily estimates of spawning escapements for chinook, sockeye, chum, pink, and coho salmon from June 9 through August 25; 2) determine the age, sex, and size composition of these escapements; 3) estimate the proportion of chinook and coho salmon catch-per-unit-effort in the portion of the river not monitored by sonar equipment; 4) estimate the within-year and among-year variability of the proportion of chinook and coho salmon catch-per-unit-effort outside the area monitored by sonar; and 5) estimate the within-year and among-year correlation between the proportion of chinook and coho salmon catch-per-unit-effort outside the area monitored by sonar and river flow.

METHODS

Study Site

The sonar enumeration site was located on Nushagak River, approximately 40 km upstream from the terminus of the Nushagak commercial fishing district and 4 km downstream from the village of Portage Creek (Figure 1). This area was chosen because it is the only place in the lower Nushagak River where the entire river is contained within one channel approximately 300 m wide. Although the site is located within tidal influence and a reduction in flow occurs at high tide, there is rarely a reversal of flow and there appears to be very few fish milling in the area. Stock identification studies based on scale pattern analysis (Robertson 1984) indicated that the majority (93%) of the fish migrating past Portage Creek were destined for the Nushagak, Mulchatna, or Nuyakuk Rivers. Therefore it is assumed that very few fish migrating through the sonar would be stray fish from other rivers which might migrate downstream at a later date.

Climatological Data

Weather data were collected at approximately 0800 and 2000 hours each day. Precipitation was measured to the nearest millimeter using a Taylor Clear View[2] rain gauge; air temperatures were measured to the nearest 0.1° C using an Oregon Scientific[2] digital thermometer; water temperatures were measured to the nearest 0.5° C using mercury thermometers; and wind direction and velocity (km/h) were measured using a Weathertronics[2] anemometer.

Average monthly Nushagak River discharge data for the years 1978-1999 were determined using a combination of discharge information measured by the United States Geological Survey (USGS 1979-94) and average monthly Lake Nerka water levels collected by the University of Washington Fisheries Research Institute (R Steen, Fisheries Research Institute, University of Washington, Seattle, Washington, personal communication). Average monthly discharge for the years 1978-1993 were collected at Ekwok by USGS. The Ekwok program was discontinued following the 1993 season. A regression of the Lake Nerka average monthly water level against the Nushagak River monthly discharge for the years 1978-1993 showed a significant relationship for the months June ($r^2 = 0.77$, $\rho = 0.000$), July ($r^2 = 0.73$, $\rho = 0.000$), and August ($r^2 = 0.53$, $\rho = 0.001$). These relationships were used to predict the monthly Nushagak River discharge for June through August for the years 1994-1999.

[2] Mention of product name does not constitute endorsement.

Average monthly discharge for June through August was then compared graphically for all years (1978-1999).

Hydroacoustic Counting

Sonar equipment used on Nushagak River included four Bendix Corporation[3] side-scanning salmon counters. Design characteristics of Bendix counters were described in King and Tarbox (1989). Gaudet (1983) provided a detailed description of sonar equipment use and procedures for counting salmon. Inshore and offshore counters were installed on the right and left (looking downstream) river banks. Inshore counters divided the counting range into 12 sectors; offshore counters divided the counting range into 16 sectors. All counters operated at 515 kHz with a pulse width of 100 µs. Counting range, pulse repetition rate, and sensitivity were adjustable.

Counting ranges of the equipment and placement and number of transducers were determined by the river bottom contour (Figure 2). Slope changes in the bottom contour required the deployment of two transducers (inshore and offshore) on each side of the river. Offshore transducers, located where the bottom contour changed, were aimed toward the center of the river. Inshore transducers were deployed within 10 m of shore in water of sufficient depth for fish passage and counted out to the offshore transducer.

Transducers were mounted on metal tripods and oriented to count the lower portion of the water column. Minard (1985) determined that over 88% of the fish occupied the lower two-fifths of the water column at the Nushagak River sonar site. With the aid of an oscilloscope, all transducers were aimed with the sonar beam tangent to the river bottom, maximizing ensonification of passing fish. Offshore transducers were aimed with remote-controlled pan and tilt rotators, whereas inshore transducers were aimed by manually adjusting the angle of the transducer mounts on the tripods. A picket weir was constructed from the shore to just beyond the inshore transducer on both riverbanks to prevent fish from passing behind the transducers or within approximately 1 m of the transducer face, an area in which the system may not detect fish.

Pulse repetition rate was adjusted on each counter to maintain counting precision at ±90% using calibration procedures described by Minard and Frederickson (1983). Counters were calibrated by comparing counts recorded by a sonar counter to those recorded by a trained technician observing an oscilloscope pattern of the signal generated by that counter. Counts from the oscilloscope were hand tallied for either a 10-min period or 100 counts, whichever came first. At the end of the counting interval, the machine count was divided into the oscilloscope count to yield a percent agreement between the two. If the percent agreement was less than 90% or greater than 110%, the pulse repetition rate was adjusted until an acceptable percent agreement was achieved. Counters were calibrated throughout the day between 0600 and 2400 hours. Frequency of calibrations was somewhat

[3] Mention of a product name does not constitute endorsement.

dependent upon fish passage rates and the variability of fish swimming speeds; there was at least one calibration per hour during periods of peak fish passage.

Sonar count data were summarized by sector, counter location (inshore, offshore, left or right bank), hour, and day to evaluate spatial and temporal distributions of sonar counts.

Escapement Sampling

Species Composition Sampling

Daily sonar counts were apportioned among salmon species based on species proportions in samples collected with a 45.7-m (25 fathom) beach seine and 18.3-m (10 fathom) drift gillnets with mesh sizes of 20.6 cm (8.125 in), 15.2 cm (6.0 in), and 13.0 cm (5.125 in). All gillnets were composed of mono twist filament webbing dyed either Momoi shade #3 or Tairyo shade #T-14 (both are translucent light green). Twine size was dependent upon mesh size with 13.0- and 15.2-cm mesh gillnets having a Momoi #63 twine size, and 20.6-cm mesh gillnets having a Momoi #93 or equivalent twine size. Gillnet depth was 45 and 60 mesh (approximately 4-5 m deep) for the 13.0-cm mesh gillnets, 45 and 60 mesh for the 15.2-cm mesh gillnets, and 29 and 45 mesh (approximately 5-6 m deep) for the 20.6-cm mesh gillnets. Each gillnet was assumed to be of sufficient depth to fully sample the entire water column. Exceptions to this may have occurred in early June during periods of high water.

Sampling with beach seines occurred just upstream and sampling with gillnets occurred just downstream of the transducers so catches would represent the relative abundance of fish passing through the sonar beams. If time allowed, each gillnet drift started just below the sonar transducers. However, when time constraints occurred, the second drift in a sequence was started just downriver of the point where the previous drift ended. Because of the possibility that species composition was different between the inshore and offshore counting ranges, separate samples were taken: beach seines and gillnets for inshore and gillnets only for offshore strata. Inshore drifts with gillnets were started with one end on the bank, while offshore drifts were started with the near shore end of the net approximately the same distance from shore as the offshore transducer. For the purpose of estimating species composition, four area strata were defined (1 = left inshore, 2 = left offshore, 3 = right inshore, 4 = right offshore).

The 13.0- and 15.2-cm mesh gillnets were fished for the entire season (June 11 – August 19), while the 20.6-cm mesh was fished only during the period of major chinook salmon passage (June 11 - July 24). Each gillnet mesh was fished for a minimum of two drifts inshore and two drifts offshore on each bank during each set of drifts. During the period of peak sockeye salmon passage (June 23 - July 14), drift sessions were conducted three times daily: morning (0700 - 1100 hours), mid-day (1300 - 1700 hours), and evening (1800 - 2200 hours). Prior to June 23 and after July 14, drift sessions were conducted twice daily: mid-morning (0800 - 1000 hours) and early evening (1600 - 1800 hours). Drifts were not conducted at night because poor light conditions would make it impossible to maintain

a drift within assigned strata. The maximum number of drifts conducted for each mesh size along each bank's inshore and offshore strata was six per day.

Data recorded for each gillnet drift included (1) date, (2) drift session number (1 = morning, 2 = afternoon, 3 = evening), (3) boat operator, (4) drift number sequentially ordered through the season, (5) mesh size, (6) right or left river bank, (7) inshore or offshore counting ranges, (8) net length in fathoms, (9) fishing time, (10) number and species of catch, (11) length of each fish caught, mid-eye to fork-of-tail to nearest millimeter, and (12) sex as determined from external characteristics. Fishing time was recorded using a stopwatch.

Gillnet sampling data were entered into a Rbase[4] database.

When the fish passage rate on the right or left bank equaled or exceeded 1,000 fish/h, beach seines were used to sample inshore strata, whereas gillnets were used to sample offshore strata. For these days of high fish passage, at least three beach seine hauls per bank were conducted. The duration of a haul was not recorded because a unit of effort has not been defined for beach seining.

Lateral Distribution Sampling

To determine lateral distribution of chinook and coho salmon, gillnet drifts were conducted beyond the range of the sonar from June 21 through July 14 and from July 28 through August 18. Historically, 77% of chinook salmon passage occurs between June 19 and July 14, and 75% of coho salmon passage occurs between July 29 and August 18 (Miller 1999). Five additional sampling stations were established across the portion of the river not covered by the sonar equipment. Stations were marked using lighted buoys and were numbered consecutively starting with number 5 on the left side of the river and ending with number 9 on the right side of the river. These far-offshore stations ranged from 32 to 51 meters in width (Figure 3).

Drift sessions in the far-offshore stations were conducted concurrently with morning (0800 - 1000 hours) and evening (1600 - 1800 hours) species apportionment drift sessions. Drift gillnets with mesh sizes of 13.0, 15.2, and 20.6 cm were fished from June 21 through July 14, while only 13.0- and 15.2-cm mesh gillnets were fished from July 28 through August 18. Each gillnet mesh was fished twice per station per drift session. Far-offshore sampling was conducted regardless of the occurrence of beach seine sampling in the inshore stations. The deeper gillnets (60 mesh for the 13.0- and 15.2-cm and 45 mesh for the 20.6-cm) were used for far-offshore sampling.

The type of drift gillnet data collected in far-offshore stations (stations #5-9) was similar to that collected in the species apportionment stations (stations #1-4), so identical forms were used for recording data.

[4] Mention of product name does not constitute endorsement.

Species Composition Estimation

Daily estimates of escapement by species were based on escapement samples and sonar count data. A program written in SAS[5] (1988) for use on the Yukon River (Fleischman et al. 1992) was modified to analyze Nushagak River data. Daily sonar counts were apportioned to species by bank and counting range. Catch per unit of effort (CPUE) from the four ensonified escapement sampling stations (#1-4) was used to calculate species proportions. Catch per fathom-hour was estimated for all species of salmon (chinook (1), sockeye (2), coho (3), pink (4), and chum (5) salmon), humpback whitefish *Coregonus pidschian* (6), and a category for "other" (7; includes Arctic char *Salvelinus alpinus,* Arctic grayling *Thymallus arcticus,* and rainbow trout *Oncorhynchus mykiss*).

No adjustments for net selectivity among species were made. Brannian et al. (1995) and Miller et al. (1994a) concluded that in order to adjust for selectivity, selectivity curves must be estimated using fish length or girth data obtained from escapement samples on the Nushagak River. Funding is not currently available to analyze selectivity of gillnets used at the Nushagak River sonar project.

To estimate fishing effort, fishing time (*FT*) was measured in minutes and seconds and calculated for each drift by,

$$FT = RI - FD \ , \qquad \textbf{(1)}$$

where *FD* was the point in time when the net was fully deployed and *RI* was the point in time when net retrieval was initiated.

The number of fathom-hours (*FH*) was then calculated by,

$$FH = \frac{fFT}{60} \ , \qquad \textbf{(2)}$$

where *f* was net length in fathoms (generally 10).

CPUE for each salmon species (group) was based on a subset of gillnet meshes fished. The combination of mesh sizes used to estimate the proportion of each species group was specified. CPUE for each species (*i*) on day *j* in strata *k* was calculated by summing across the number caught (C_{ijkmn}) with mesh size (*m*) and drift (*n*):

[5] Mention of product name does not constitute endorsement.

$$CPUE_{ijk} = \frac{\sum_{m=1}^{3}\sum_{n=1}^{6} u_{im}\ C_{ijkmn}}{\sum_{m=1}^{3}\sum_{n=1}^{6} u_{im}\ FH_{jkmn}}, \quad (3)$$

where u_{im} equals 1 if species i from mesh m is used to estimate species composition, and u_{im} equals 0 otherwise.

CPUE were cumulated across days to create a time (t) and area stratified estimate of species composition (Appendix A.1.). The duration of a time stratum (report period) varied by range and bank and was specified as an input file. The desired sample size for each time-area strata was 100 salmon. Based on Thompson's (1987) "worst case" parameter value for a multinomial distribution, a sample size of 100 salmon would result in simultaneously estimating the proportion for each species within 10% of the true proportion 90% of the time. Even if (1) there was a departure from the assumption underlying a multinomial distribution or (2) our use of raw catches, instead of CPUE data, decreased the likelihood of reaching the desired level of precision and accuracy, we felt that the 100-fish minimum sample size struck a balance between making strata too short to provide meaningful estimates of species composition and making strata so long that they failed to reflect seasonal changes in species composition. If <100 salmon were captured during a day in an area strata, catches from the same gear type from subsequent days were accumulated until 100 salmon were obtained to define a reporting period. CPUE was used to estimate the proportion of species i in report period t and area strata k:

$$CPUE_{itk} = \sum_{j \in t} CPUE_{ijk} \ . \quad (4)$$

Estimates of the proportion (S_{itk}) of species i for report period t and area strata k became

$$\hat{S}_{itk} = \frac{CPUE_{itk}}{\sum_{i=1}^{7} CPUE_{itk}} \ . \quad (5)$$

In order to estimate the variance of the $\hat{S}_{itk}$, we generated replicate species proportion estimates ($\hat{S}_{ijk}$) for each day j within report period t, $\hat{S}_{itk}$ then became a weighted mean of the $\hat{S}_{ijk}$, where the weights are the total (all species) CPUE during day j of report period t. Variance of the $\hat{S}_{itk}$ were calculated after Cochran (1977) as

$$V(\hat{S}_{itk}) = \frac{1}{j}\sum_{j \in t}\left(\frac{\sum_{i=1}^{7} CPUE_{ijk}}{\frac{1}{j}\sum_{j=1}^{j}\sum_{i=1}^{7} CPUE_{ijk}}\right)^2 \left(\frac{(\hat{S}_{ijk} - \hat{S}_{itk})^2}{(j-1)}\right). \quad (6)$$

This variance estimator treats daily catches as clusters of fish (adjusted for unequal effort) sampled randomly from all fish passing by the site during report period *t*. The estimator accounts for the unequal size of the clusters by the weighting factor. Ideally, the fish caught during each drift *session* (two or three sessions per day) should have been treated as clusters, thus generating replicate species proportions for each session. Unfortunately, sample sizes were too small to allow each session to be treated as a cluster.

If beach seining occurred on a particular day and at least 100 salmon were caught, it would supersede any gillnet data for that area strata. Otherwise, catch data were pooled across several days of beach seining to obtain at least 100 salmon or were just ignored, in which case gillnet data were used. Species proportion estimates for the beach seine were based on the ratio of the number of species *i* caught (C_{itk}) to total catch for report period *t* and area strata *k*:

$$\hat{S}_{itk} = \frac{C_{itk}}{\sum_{i=1}^{7} C_{itk}}. \quad (7)$$

The variance was estimated using equation (6) through substituting C_{ijk} for $CPUE_{ijk}$.

Salmon Escapement Estimation

Sonar counts for each area strata (right and left bank, inshore and offshore) were apportioned to species on a daily basis. Daily estimates for each salmon species and area strata (N_{ijk}) were based on estimates of species proportions (S_{itk}) from escapement sampling and daily sonar counts (n_{jk}):

$$\hat{N}_{ijk} = \hat{S}_{ijk}\, n_{jk} \quad where\ j \in t. \quad (8)$$

Daily escapement by species was estimated by summing area strata estimates:

$$\hat{N}_{ij} = \sum_{k=1}^{4} \hat{N}_{ijk} \quad . \tag{9}$$

The variance of the daily estimate became

$$V(\hat{N}_{ij}) = \sum_{k=1}^{4} n_{jk}^2 V(\hat{S}_{itk}) \quad where\ j \in t \quad . \tag{10}$$

Cumulative numbers of salmon were estimated by summing daily estimates, and the variance was a sum of daily variances. This variance is conservative because beach seine catches produce single day periods that have variances of zero.

Mesh Size Selection

Escapement estimates are affected to some degree by the combination of mesh sizes used in apportioning sonar counts. Miller et al. (1994b) and Miller (1995) found that 13.0- and 15.2-cm mesh gillnets were not significantly (nonstatistical comparison - NSC) size selective for sockeye, chum, coho, or chinook salmon. The 20.6-cm mesh gillnet, however, tended to select for large sockeye and chum salmon. Therefore, only 13.0- and 15.2-cm mesh data were used to apportion sockeye and chum salmon, while data from all three mesh sizes (13.0-, 15.2-, and 20.6-cm) were used to apportion chinook salmon. Coho salmon were apportioned using 13.0- and 15.2-cm mesh data, as Miller et al. (1994b) found that data from these mesh sizes produced similar coho salmon length frequency distributions (LFD).

Age, Sex, and Size Sampling

Age, sex, and size (AWL) data were collected from chinook, sockeye, chum, and coho salmon migrating past the sonar site. Prior to 1995, only sockeye and chum salmon captured with beach seines were sampled for AWL data to avoid size selectivity associated with gillnets (Miller et al. 1994a, 1994b; Miller 1995). Because beach seine sets were only conducted during periods of peak fish passage, few to no sockeye salmon AWL samples were collected in early June and late July. In 1992, Miller (1994a) found that of the suite of mesh sizes fished, the 13.0- and 15.2-cm mesh gillnets both had LFD's similar to the beach seine LFD, and that the 13.0-cm mesh gillnet sockeye salmon LFD most closely resembled that of the beach seine. In 1995, based on this information, sockeye salmon AWL data were collected from 13.0- and 15.2-cm mesh gillnets in addition to beach seines (Miller

1996). Beginning in 1996 and continuing through 1999, sockeye salmon AWL information was collected from 13.0-cm mesh gillnets and beach seines. As in the past, only chum salmon captured with beach seines and only sockeye and chum salmon caught in the apportionment strata (stations #1-4) were sampled for AWL data. All chinook and coho salmon captured, regardless of gear type, gillnet mesh size, or catch location, were sampled to increase the sample sizes for these species.

Age was determined by examining scales (Mosher 1968). Scales were collected from the left side of the fish approximately two rows above the lateral line in an area crossed by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Because of the high rate of scale regeneration among chinook and coho salmon, three scales were collected from each fish. Only one scale per fish was collected from sockeye and chum salmon. Scales were mounted on gummed cards and impressions were made in cellulose acetate (Clutter and Whitesel 1956). European notation (Koo 1962) was used to record ages: numerals preceding the decimal refer to the number of freshwater annuli and numerals following the decimal refer to the number of marine annuli. Total age from time of egg deposition, or brood year, is the sum of these two numbers plus one to account for incubation time.

Sampling goals by species for the entire season were 1,200 sockeye, 500 chinook, 500 chum, and 250 coho salmon. The desired level of accuracy was 0.10, and 0.05 was the desired level of precision. Based on Thompson's (1987) work, a sample size of 363 readable sockeye, chinook, and chum scales and 180 readable coho scales would simultaneously estimate the major age class within 5% of the true percentage 90% of the time. Sample sizes of 400 per strata for sockeye salmon, 500 per strata for chinook and chum salmon, and 250 per strata for coho salmon were set to account for regenerated and unageable scales. Three time strata were desired for sockeye salmon, therefore the goal for the season was set at 1,200.

Salmon were measured from the middle-of-the-eye to the fork-of-the-tail and lengths were recorded to the nearest millimeter. Sex was determined from external characteristics for sockeye, chum, and coho salmon. The sex of young chinook salmon (age-1.1 and -1.2) was very difficult to determine from external morphometric characteristics. Because sex determination for many young chinook was subjective, we decided not to use the sex information collected.

Migratory Timing

Average proportions of passage by day for sockeye, chinook, chum, and pink salmon were calculated using all years that sonar data were available. Average proportions for coho salmon were calculated using only years that the project was operated through at least August 21. Average daily proportions ($\bar{p}_j$) were calculated by summing daily proportions (p_{ji}) for all years used and dividing by total number of years used (Y):

$$\bar{p}_j = \frac{\sum_{i=1}^{Y} p_{ji}}{Y} \quad . \tag{11}$$

Average cumulative proportions by day were calculated by summing the average daily proportions through time.

The 1999 runs by species were compared to their desired goals at the sonar site through time by applying historic migratory timing to the goals. The average daily cumulative proportions for each species were multiplied by their respective escapement goals (550,000 for sockeye salmon, 75,000 for chinook salmon, 900,000 for pink salmon, and 100,000 for coho salmon) or their historical escapement objectives (350,000 for chum salmon).

Lateral Distribution Comparisons

CPUE Proportion by Sampling Station

Total CPUE (*TCPUE*) by species and sampling station was obtained by summing daily CPUE by species and sampling station for the days that far-offshore sampling occurred. Total CPUE was then further adjusted to account for differences in the width of the sampling station (Figure 3) by,

$$ACPUE_{ik} = w_k TCPUE_{ik} \quad , \tag{12}$$

where $ACPUE_{ik}$ is the adjusted total CPUE for species i in sampling station k, and w_k is the width of sampling station k. The proportion of the total ACPUE attributed to each sampling station was then calculated by species and sampling station and compared among the nine stations.

Far-offshore CPUE Proportion vs. River Flow

Correlation analysis was used to assess the relationship between river flow and the daily adjusted proportion of far-offshore CPUE for chinook and coho salmon. River flow was indirectly measured using water level (water depth). Water level was measured using staff gages placed in the river near the right bank weir. Water level was measured in feet and converted to centimeters for reporting purposes. Measurements were recorded daily every two hours between 0800 and 2000, and daily average water level was determined by averaging the individual measurements for that day. Correlation coefficients (Neter et al. 1989) were calculated by species (chinook and coho salmon) for daily average

water level versus daily far-offshore proportion. Correlation coefficients of $\rho \leq 0.10$ were considered significant.

Average Fish Length by Sampling Station

Significantly higher proportions of large fish in the center of the river beyond the range of the sonar would result in an underestimate of the large-fish component of the escapement. To test the assumption that the far-offshore migration is composed of larger fish, chinook and coho salmon mean length (middle-of-eye to fork-of-tail) by mesh size and sampling station was compared graphically.

Among-Year Comparisons

Statistical comparisons of lateral distribution data to determine year-to-year variability were difficult because only three years of coho salmon data were available and only two years of chinook, sockeye, and chum salmon data were available. However, general graphical comparisons were made among years by species to assess the year-to-year variability of the proportion of CPUE outside the area monitored by sonar. Data from 1997 and 1998 were taken from Miller (1998, 1999).

The among-year correlation between proportion of chinook and coho salmon CPUE outside the area monitored by sonar and river flow was assessed by comparing by temporal strata (June 21 – July 14 and July 29 – August 18), the average daily water level and the total adjusted far-offshore CPUE percentages. Water levels were based on staff gage measurements taken at the sonar site. Staff gage measurements were not collected in 1997, so this year was not included in the comparison.

RESULTS

Climatological Data

Sonar operations were not greatly affected by climatic conditions in 1999. A comparison of 1999 water temperatures with historic water temperatures collected at the site indicates that temperatures in 1999 were cool at the beginning of the season, but quickly warmed and remained near average throughout the remainder of the summer (Table 1; Appendix B.1.). Air temperature was also near average throughout the season (Table 1; Appendix B.1.). The estimated 1999 Nushagak River average monthly discharge for June was slightly higher than the 1978-93 mean, while July's average discharge was slightly lower than the historic mean. Average monthly discharge for August was very similar to the historic mean for that month (Table 2; Figure 4).

Hydroacoustic Counting

Acoustic counting began in all strata on June 9 and ended August 24 in the right and left bank offshore strata and August 25 in the right and left bank inshore strata.

Count Adjustments

An adjustment of sonar counts derived from the right bank offshore stratum was required in 1999. On June 24, a measurable increase in sonar counts occurred in all strata except the right bank offshore stratum. Re-aiming of the right bank offshore transducer on July 5 and re-positioning of the transducer on July 6 resulted in a substantial increase in sonar counts for that stratum, thus indicating sonar counts in the days prior may have been artificially low. A linear regression between 24-hour counts of the right bank inshore and offshore counting ranges was used postseason to adjust for the apparent undercounting. The right bank inshore to offshore relationship was used for the adjustment rather than the left bank inshore to offshore or left bank offshore to right bank offshore relationships because of the difference in species composition between the right and left bank strata during the time period in question (Table 3). In particular, the chinook salmon proportion was smaller in the right bank offshore stratum than in the left bank offshore stratum.

The right bank inshore to offshore regression indicated a significant relationship for the dates July 6-27 (Figure 5; $r^2 = 0.84$; $\rho = 0.000$). Right bank offshore sonar count estimates based on the regression equaled 18,631 from June 24 – July 5 (Table 4). After adjustments were made, total counts for all strata in 1999 equaled 655,225 (Table 5).

Gear Placement

Changes in river level during the project necessitated occasional repositioning of transducer tripods and adjustments of counting ranges (Table 6). The left bank inshore transducer counting range varied between 4.3 and 9.1 m, and the left bank offshore transducer counting range varied between 14.3 and 29.3 m (Figure 2). Combined left bank counting range fluctuated between 22.6 and 36.9 m. The right bank inshore transducer ensonified between 7.6 and 10.1 m of river, and the right bank offshore counting range ensonified between 19.8 and 48.8 m of river (Figure 2). Combined right bank counting range varied between 27.4 and 57.9 m. Total ensonification for the left and right banks combined ranged from 53.0 to 89.3 m, or approximately 19% to 33% of the total river width.

Spatial Distribution of Sonar Counts

Sonar count distribution by bank varied throughout the season with counts at the end of the season totaling 222,155 on the left bank and 433,070 on the right bank (Table 5). The inshore strata accounted for the majority of all sonar counts; the left bank inshore stratum accounted for 80% of all left bank sonar counts, while the right bank inshore stratum accounted for 88% of all right bank sonar counts (Appendices C.1 through C.4).

Differences in run timing among species allowed examination of sonar count spatial distribution during two separate time periods. Sockeye, chinook, and chum salmon were present primarily from the beginning of project operation (June 9) through July 30. Coho salmon were the primary species present after July 30.

June 9 - July 30. During the period of sockeye, chinook, and chum salmon passage, count distribution in the right bank inshore stratum varied through time, with 78% of the counts occurring in the center of the counting range approximately 3.5 to 6.5 m from the transducer face. (Figure 6; Appendix C.1.). Similarly, most counts (77%) in the left bank inshore stratum occurred in the center of the counting range approximately 3.2 to 5.9 meters from the transducer face (Figure 7; Appendix C.3.). Peak passage in the right bank inshore stratum occurred July 2-5, while peak passage in the left bank inshore stratum occurred July 2-3.

Most counts during this time period in both right and left bank offshore strata were observed in the first half of the offshore counting ranges with 82% of the right bank offshore sonar counts occurring within 8.7 m of the transducer face and 82% of the left bank offshore sonar counts occurring within 6.0 m of the transducer face (Figures 6, 7; Appendices C.2., C.4.). Both banks experienced few counts at the end of the offshore counting ranges. The last four sectors of the right bank offshore area accounted for 3.5% of the right bank offshore counts, while the last four sectors of the left bank offshore area accounted for 5.1% of the left bank offshore counts. Peak passage in the right bank offshore stratum occurred July 6 (Figure 6; Appendix C.2.), while peak passage in the left bank offshore stratum occurred June 24 (Figure 7; Appendix C.4.).

July 31 - August 25. During the period of coho salmon passage, the right bank inshore stratum experienced most sonar counts (73%) in the first half of the counting range within 5.0 m of the transducer face (Figure 8; Appendix C.1.). Count distribution for the left bank inshore stratum was more varied in August than in June and July with peak counts by sector occurring throughout the range (Figure 9; Appendix C.3.). Several daily peaks in sonar counts occurred in the right bank inshore stratum with the largest peak of 3,946 counts occurring on August 5 (Figure 8; Appendix C.1). Peak passage in the left bank inshore counting range occurred on August 1 and 5 (Figure 9; Appendix C.3.).

Count distribution during this time period in the offshore strata indicates that most counts (77% on the right bank and 73% on the left bank) occurred within the inshore half of the counting ranges, or within approximately 13 m of the transducer face (Figures 8, 9; Appendices C.2., C.4.). Peak daily count

occurred on August 5 in the right bank offshore stratum and August 4 in the left bank offshore stratum. The last four sectors of the right bank offshore area accounted for 5.2% of the right bank offshore counts, while the last four sectors of the left bank offshore area accounted for 8.1% of the left bank offshore counts (Figures 8, 9; Appendices C.2., C.4.).

Temporal Distribution of Sonar Counts

Information on patterns of hourly fish passage are of interest to determine optimal times for test fishing and equipment calibration. Any or all of a combination of variables such as tide, weather (winds, rainfall, etc.), and hours of daylight, as well as the time, date, and duration of commercial fishing periods might influence when migrating fish would pass the sonar site. Again, differences in run timing among species allowed examination of the temporal distribution of sonar counts during two time periods: June 9 - July 30 and July 31 - August 25.

June 9 - July 30. Hourly fish passage varied within and among strata during this time period. No significant temporal trends were apparent in the right and left bank inshore strata (Figure 10). Peak counts varied in the right bank offshore stratum, with the largest peaks in sonar counts occurring between 0800 and 1400. Peak passage in the left bank offshore stratum occurred around 0600 and 2300, with lowest passage occurring between 1400 and 2200 (Figure 10).

July 31 – August 25. Hourly fish passage during this time period varied among strata (Figure 11). All strata, however, appeared to experience peak passage during daylight hours. In addition, the right and left bank inshore strata experienced lowest passage from 0100 to 0500 hours. Low passage in the right and left bank offshore strata was more variable throughout the day and night (Figure 11).

Escapement Sampling for Species Composition

A total of 3,824 gillnet drifts were completed in 1999 (Appendix D.1). The 20.6-, 15.2-, and 13.0-cm mesh gillnets caught 384, 1,066, and 1,092 salmon, respectively. The total gillnet catch of 2,555 fish was composed of 656 chinook salmon, 812 sockeye salmon, 885 chum salmon, 190 coho salmon, 2 whitefish, and 10 "other" fish (Arctic char, Arctic grayling, and rainbow trout). Most salmon were caught in the right bank inshore stratum (704), followed by the left offshore (625), left inshore (609), and right offshore (605) strata. The spatial distribution of sonar counts differed from that of gillnet catches of salmon, indicating that fish catchability or sonar detectability may have been different among inshore and offshore strata and river banks. Successful beach seine sets were conducted July 1-5 (Appendix D.2.). A total of 851 salmon were caught in 31 beach seine sets. The beach seine catch included mostly chum (416) and sockeye (406) salmon followed by chinook (29) salmon.

The beach seine caught the greatest number of sockeye salmon (406), followed by the 13.0-cm (375), 15.2-cm (336), and 20.6-cm (103) mesh gillnets. Chum salmon were caught predominantly in the 15.2-cm mesh gillnet (446), followed by the beach seine (416), 13.0-cm mesh gillnet (365), and 20.6-cm mesh gillnet (75). Chinook salmon were captured predominantly in gillnets, with the 15.2-cm mesh catching the most chinook (226), followed by the 13.0-cm mesh (224), and the 20.6-cm mesh (206). Only 29 chinook salmon were caught using beach seines. Of the two mesh sizes used to capture coho salmon, the 13.0-cm mesh captured the most coho salmon (128) followed by the 15.2-cm mesh (62).

Duration of gillnet drifts ranged from 0.5 to 3.1 min. The average drift duration was 2.2 min (SE = 0.25).

Report Periods for Species Composition Estimation

In general, the occurrence of beach seines and/or the achievement of the 100-fish minimum sample size determined length of report periods. An exception to this occurred in late July when coho salmon began appearing in the drift gillnets. Sockeye, chum, and chinook salmon dominated the drift gillnet escapement sampling catch throughout most of July, while coho salmon was the predominate species caught during August (Table 7; Appendix D.1.). Due to low overall catch in late July and early August, temporal report periods that began in mid July would have extended through the end of August resulting in an unrealistic number of August sonar counts being apportioned to species other than coho salmon. To make the apportionment of sonar counts in August more representative of species present, I began a new report period in the right bank inshore stratum on July 26 and in the right bank offshore and left bank inshore and offshore strata on July 31. These dates corresponded with increases in coho salmon catch proportions in the escapement sampling and increases in sonar counts (Table 5; Table 7).

Estimates of Escapement

The overall salmon escapement estimate for Nushagak River in 1999 was 651,395 fish. This included 311,899 sockeye, 62,331 chinook, 242,312 chum, and 34,853 coho salmon (Table 8). In addition, an estimated 252 humpback whitefish and 3,578 "other" fish (Arctic char, Arctic grayling, and rainbow trout) were counted passing the sonar site in 1999.

Sockeye Salmon

Sockeye salmon were estimated passing the sonar site from June 9 through August 25 (Table 8). The 1999 escapement estimate of 311,899 sockeye salmon (S.E. = 7,268) was 57% of the 550,000

biological escapement goal and was within the escapement goal range of 235,000 to 760,000 sockeye salmon.

Peak sockeye salmon escapement timing in 1999 was similar to the 1980 - 1998 average peak escapement timing (Table 9; Figure 12). Peak sockeye salmon passage occurred July 2-7 with the largest daily passage of 44,770 occurring on July 3.

Age and sex were determined for 656 sockeye salmon, 653 of which were also measured for length (Table 10). The most prominent age class was age-1.3 (65%; 1994 brood year), followed by age-1.4 (16%; 1993 brood year), age-1.2 (15%; 1995 brood year), and age-0.3 (1.9%; 1995 brood year). The male to female ratio was 53:47. Mean length by age ranged from 448 to 598 mm (Table 10).

Chinook Salmon

Chinook salmon were counted passing the sonar site immediately following installation of the sonar equipment on June 9 (Table 8). The 1999 escapement estimate of 62,331 chinook salmon (S.E. = 2,804) was 83% of the inriver escapement goal of 75,000 fish.

Peak chinook salmon escapement timing in 1999 was late compared to the 1986 – 1998 average escapement timing (Table 11; Figure 13). Chinook salmon passage first peaked on June 24 with an estimated 8,063 chinook salmon passing the sonar site. A second larger peak occurred on July 2 with an estimated daily passage of 10,203 chinook salmon.

Age was determined for 1,312 chinook salmon, 1,277 of which were measured for length (Table 12). Three major age classes were present: age-1.4 (52%; 1993 brood year); -1.3 (32%; 1994 brood year); and -1.2 (15%; 1995 brood year). Mean length by age ranged from 442 mm for age-1.1 to 898 mm for age-1.5 chinook salmon (Table 12).

Chum Salmon

As with sockeye and chinook salmon, chum salmon were counted migrating past the sonar site the same day the sonar equipment was installed, June 9 (Table 8). There is no formal biological escapement goal for chum salmon in the Nushagak River, but the 1999 escapement estimate of 242,312 (S.E. = 6,892) was 69% of the historical escapement objective of 350,000.

Peak chum salmon passage in 1999 was similar to the 19-year (1980-1998) average peak escapement timing (Table 13; Figure 14). Peak chum salmon passage occurred July 1-5, with the largest daily passage estimate of 58,420 occurring on July 3. A smaller peak of 14,887 chum salmon also occurred on June 24.

Age was determined for 310 chum salmon, 309 of which were measured for length (Table 14). Age-0.3 (61%; 1995 brood year) and -0.4 (38%; 1994 brood year) chum salmon predominated. The male to female ratio was 42:58. Mean length by age ranged from 577 to 611 mm (Table 14).

Pink Salmon

Pink salmon normally return to the Nushagak River during even-numbered years (Table 15). No pink salmon were caught at the sonar site in 1999.

Coho Salmon

Coho salmon were estimated passing the sonar site beginning July 10 (Table 8). The 1999 escapement estimate of 34,853 coho salmon (S.E. = 2,089) was only 35% of the inriver escapement goal of 100,000 fish.

Although the low coho salmon escapement in 1999 gave the appearance of late escapement timing, peak timing was actually early compared to the 11-year (1984-85, 1988-91, 1993-97) average (Table 16; Figure 15). Peak daily coho salmon passage in 1999 (4,945) occurred August 5.

Age, sex, and length were determined for 187 coho salmon (Table 17). Age-2.1 (81%; 1995 brood year) coho salmon were the predominant age class, followed by age-3.1 (11%; 1994 brood year) and age-1.1 (8.0%; 1996 brood year). The ratio of males to females was 58:42. Mean length by age ranged from 520 to 547 mm (Table 17).

Lateral Distribution Sampling

June 21 – July 14. During the period of peak chinook salmon passage, a total of 1,440 drifts were conducted beyond the range of the sonar gear (stations 5-9). The 13.0-, 15.2-, and 20.6-cm mesh gillnets caught 441, 356, and 368 salmon, respectively, in far-offshore stations (Table 18). The total far-offshore gillnet catch of 1,165 salmon was composed of 915 chinook, 194 chum, and 56 sockeye.

Most chinook salmon caught by gillnets during this time period were captured beyond the range of the sonar gear. Station 9 experienced the largest chinook salmon catch (483), followed by station 2 (309), 4 (187), 5 (172), 6 (149), 8 (82), 7 (29), 3 (27), and 1 (18; Table 19; Figure 3). Station 9 also experienced the highest percentage of total adjusted chinook salmon CPUE (43%) followed by station 5 (13%), 6 (13%), 2 (10%), 8 (9%), 4 (6%), 7 (4%), 3 (1%), and 1 (<1%; Table 19). Overall, 17% of the total adjusted chinook salmon CPUE was estimated to occur within the ensonified area, while 83% occurred beyond the sonar range. The proportion of the daily chinook salmon CPUE found outside

the ensonified area for June 21 through July 14 ranged from 0.00 to 1.00 and averaged 0.78 (SE = 0.20; Figure 16).

Most sockeye and chum salmon caught by gillnets during this time period were captured within the sonar range (Table 20). Of the 812 sockeye salmon caught in the 13.0- and 15.2-cm mesh gillnets, 756 were captured within the ensonified stations (stations 1-4). Of the 930 chum salmon caught in the 13.0- and 15.2-cm mesh gillnets, 736 were captured within the four ensonified stations. An estimated 21% of the total adjusted sockeye salmon CPUE occurred beyond the ensonified range, while 55% of the total adjusted chum salmon CPUE occurred beyond the range (Table 20).

July 28 – August 18. During the period of peak coho salmon passage, a total of 840 gillnet drifts were conducted beyond the range of the sonar. The 13.0- and 15.2-cm mesh gillnets caught 28 and 18 coho salmon, respectively, in far-offshore stations (Table 21). The total far-offshore gillnet catch of 63 salmon was composed of 46 coho, 10 chinook, 4 chum, and 3 sockeye.

Most coho salmon caught by gillnets were captured within the range of the sonar gear (stations 1-4). Station 2 experienced the largest coho salmon catch (59), followed by station 3 (55), 4 (38), 1 (18), 5 (12), 6 (12), 9 (9), 8 (8), and 7 (5; Table 22; Figure 3). The highest percentage of total adjusted coho salmon CPUE occurred in stations 2 (14%), 3 (14%), and 9 (14%), followed by stations 5 (13%), 4 (11%), 7 (11%), 8 (10%), 6 (9%), and 1 (4%; Table 22). An estimated 43% of the total adjusted coho salmon CPUE occurred within range of the sonar, while 57% occurred beyond the sonar range. The proportion of the daily coho salmon CPUE found outside the ensonified area for July 28 through August 18 ranged from 0.00 to 0.85 and averaged 0.30 (SE = 0.33; Figure 16).

Far-offshore CPUE Proportion vs. Water Level

While the estimated Nushagak River discharge based on Lake Nerka water levels showed a decline throughout the summer, water levels based on staff gage measurement collected at the sonar site in 1999 showed a decreasing trend in June and July and an increasing trend in August (Figure 17). During the period of chinook salmon lateral distribution sampling, no significant correlation (r = -0.21; ρ = 0.38) was found between water level and the chinook salmon daily adjusted far-offshore CPUE proportion. Lateral distribution sampling during coho salmon passage also found no significant correlation (r = -0.28; ρ = 0.20) between river flow and the coho salmon daily adjusted far-offshore CPUE proportion.

Mean Fish Length by Sampling Station

Mean length of chinook salmon varied among mesh sizes and sampling stations (Figure 18). On average, all mesh sizes caught smaller fish in the ensonified stations (stations 1-4) than in the far-offshore stations (stations 5-9). The 13.0- and 20.6-cm mesh gillnets caught considerably smaller

chinook salmon in the two inshore ensonified stations (stations 1 and 3). Average chinook salmon length from all mesh sizes combined indicates that, overall, the far-offshore stations produced slightly larger chinook salmon than did the ensonified stations (NSC; Figure 18).

Coho salmon sample size was smaller than that of chinook salmon, with only 213 length samples collected. Like chinook salmon, coho salmon mean length varied among mesh sizes and sampling stations (Figure 19). The 15.2-cm mesh gillnet caught slightly larger coho salmon than did the 13.0-cm mesh gillnet. Neither mesh size showed a significant difference in coho salmon average length between far-offshore sampling stations (stations 5-9) and the ensonified sampling stations (stations 1-4).

Among-Year Comparisons

The proportion of total adjusted CPUE by sampling station and species showed similar trends between years (Table 23; Figure 20). In both 1998 and 1999 the highest percentage of total adjusted chinook salmon CPUE occurred in far-offshore station 9 (>40% for each year), while less than 20% occurred within the ensonified sonar range (stations 1-4). On the contrary, almost 80% or more of total adjusted sockeye salmon CPUE occurred within the sonar range in both years. Chum and coho salmon distribution appeared to be more variable, with a more random distribution across the river and no distinct trends from year to year. The percent of total adjusted chum salmon CPUE within the sonar range dropped from 51% in 1998 to 45% in 1999. The percent of total adjusted coho salmon CPUE for the years 1997-1999 ranged from 31% to 62% (Table 23; Figure 20). No graphical comparisons were made for pink salmon as this species was not present in 1999.

Based on just two years of data, water level appears to have no effect on the offshore distribution of chinook salmon, while lower water levels may increase the proportion of coho salmon found beyond the reach of sonar. The average daily water level for the time period June 21 through July 14 was lower in 1999 (40.0 cm) than in 1998 (66.4 cm), while the percent of total adjusted chinook salmon CPUE occurring beyond the sonar range was similar for the two years (83% in 1999 and 82% 1998). Therefore, although there was a decrease in overall water levels from 1998 to 1999, there was not a significant change in the percent of total adjusted chinook salmon CPUE occurring beyond the range of the sonar. The average daily water level during the coho migration (July 28 through August 18) was slightly lower in 1999 (-7.1 cm) than in 1998 (-0.6 cm), while the percent of total adjusted coho salmon occurring beyond the sonar range was lower in 1998 (38%) than in 1999 (57%).

DISCUSSION

Effect of Undercounting from June 24 to July 5

The apparent undercounting in the right bank offshore stratum between June 24 and July 5 would lead one to question whether the restrictive management actions taken on July 2 would have been necessary had the undercounting not occurred. Low cumulative chinook salmon escapement through June 30 resulted in closure of the Nushagak-Mulchatna chinook salmon sport fishery and restrictions placed on the subsistence fishery beginning July 2 (as mandated by regulation, Nushagak-Mulchatna Chinook Salmon Management Plan). A subsequent increase in cumulative chinook salmon escapement by July 6 allowed managers to reopen the sport fishery and remove restrictions on the subsistence fishery. Adjustments to the right bank offshore counts increase the cumulative chinook salmon escapement estimate by only 750 fish through June 30, clearly not enough to alter the decision to take management action to restrict sport and subsistence fishing. However, adjustments to the early July counts affected the cumulative escapement to the point where the decision to reopen the sport fishery and remove restrictions to the subsistence fishery may have occurred one day earlier (July 5).

Salmon Passage Outside Ensonified Range

Results from the lateral distribution study in 1998 and 1999 suggest that as much as 80% of the chinook salmon passage at the sonar site may have occurred beyond the range of the sonar. This figure seems unlikely given that the sonar-based estimate of chinook salmon escapement was 117,495 in 1998 and 62,331 in 1999. Had these estimates represented only 20% of the fish passing the site, the total chinook salmon escapement for these years would have been five times higher, or approximately 600,000 in 1998 and 300,000 in 1999. This is clearly an implausible scenario given that aerial surveys on the spawning grounds in 1998 and 1999 suggest chinook salmon escapement to the Nushagak to be commensurate with sonar estimates (J. Browning, ADF&G, Dillingham, personal communication). Chinook salmon apparently are more vulnerable to the gillnet sampling technique in deep water than in shallow water, thereby artificially inflating the proportion of the fish offshore when measured with relative gillnet CPUE.

Results from the lateral distribution study also indicate that coho and chum salmon are present in all stations, with as much as 50% of the CPUE of each species occurring beyond the sonar range. However, as with chinook salmon, quantifying the proportion with the gillnet sampling is difficult.

In contrast to other species, a high proportion of sockeye and pink salmon appear to move through the ensonified area as they pass the Nushagak River sonar site. The percentage of total adjusted sockeye salmon CPUE that occurred within range of the sonar was 89% in 1998 and

79% in 1999. Eighty-two percent of the total adjusted pink salmon CPUE occurred within the ensonified range in 1998. Given that the CPUE data may overestimate the offshore component of the run (see above), the current sonar system counts a substantial proportion of the sockeye and pink salmon escapement (possibly greater than 90%). Therefore, the results from the lateral distribution study support the use of the current sonar configuration to estimate the escapement of sockeye and pink salmon.

RECOMMENDATIONS

Results from sampling the lateral distribution of salmon at the sonar site using gillnets in 1997, 1998, and 1999 suggest that significant numbers of chinook, chum, and coho salmon migrate upstream offshore of the ensonified area. This would result in underestimates of the true escapement of these species using the current sonar system on the Nushagak River. If the magnitude of this bias were consistent among years, then the historical sonar estimates may have accurately indexed the escapement for these species. The data from three years of gillnet sampling are equivocal as to the consistency of the distribution among years. Differences in vulnerability of fish to the gillnet gear among range strata make interpretation of the data difficult (Table 23). The gillnet data do suggest that a significant portion of the fish traveling beyond the sonar array may be traveling just beyond the reach of the current system. Although the gillnet method of sampling these offshore areas can give information on the presence or absence of fish, it clearly has limitations for quantitatively measuring the abundance of fish beyond the sonar.

Therefore, I recommend that we explore a more powerful and more sophisticated (i.e., ability to log the number of targets at range) acoustic system for use in the Nushagak River. A modern, state-of-the-art acoustic system should be capable of ensonifying more of the river at the current sonar site. An escapement monitoring program with a new acoustic system will still require interpretation of gillnet data to apportion acoustic targets to species, but the problem of extrapolating total targets from inshore areas to account for the entire river will hopefully be reduced or eliminated.

We have recently initiated a 3-year project to develop a new sonar system for the Nushagak River using state-of-the-art scientific acoustic equipment. This project is funded by the federal government through the Western Alaska Disaster Research Grant Package (National Atmospheric and Oceanic Administration, Grant #NA96FW0196).

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Table 1. Average air and water temperatures at the Nushagak River sonar project during June, July, and August, 1986-1999.

	Average Air Temperature (°C)			Average Water Temperature (°C)		
Year	June	July	August	June	July	August
1986	11.4	12.7	11.0	14.3	12.5	10.0
1987	10.5	14.2	13.1	9.5	12.1	13.1
1988	12.5	14.7	12.6	11.1	14.8	13.7
1989	11.5	14.0	14.8	10.4	14.9	15.6
1990	12.1	13.7	12.3	11.7	14.8	14.1
1991	12.1	14.1	13.1	11.6	14.7	14.3
1992	12.3	12.8	[a]	10.7	11.7	[a]
1993	11.7	14.0	11.9	12.5	15.4	14.3
1994	11.3	11.8	11.7	12.8	12.8	14.6
1995	12.3	13.3	11.0	10.5	14.5	13.0
1996	11.2	12.8	11.5	12.0	14.3	13.2
1997	13.6	15.0	12.5	14.3	16.6	14.6
1998	10.7	12.9	11.4	9.1	13.2	13.2
1986-98 Min	10.5	11.8	11.0	9.1	11.7	10.0
1986-98 Max	13.6	15.0	14.8	14.3	16.6	15.6
1986-98 Average	11.8	13.5	12.2	11.6	14.0	13.6
1999	11.6	14.1	11.3	11.1	13.6	13.1

[a] Project not operated in August, 1992.

Table 2. Nushagak River discharge (ft^3/s) by month and year, 1978 - 1999.

	Total Monthly Discharge (ft^3/s)		
Year	June	July	August
1978	34,350	32,980	23,150
1979	41,520	30,920	30,280
1980	58,840	52,710	37,450
1981	37,890	30,440	30,270
1982	51,380	38,960	25,950
1983	36,710	24,440	20,200
1984	24,290	22,430	17,620
1985	57,460	37,580	36,160
1986	30,340	28,810	30,410
1987	45,020	51,460	37,240
1988	52,920	36,890	27,780
1989	56,630	32,650	39,240
1990	39,350	21,780	19,870
1991	48,490	40,330	27,870
1992	33,940	28,520	32,920
1993	36,800	25,760	23,060
1978-98 Avg	42,871	33,541	28,717
Estimated 1994-1998[a]			
1994	48,270	35,385	33,071
1995	43,071	26,406	25,330
1996	24,671	21,596	21,593
1997	24,271	14,221	19,457
1998	68,670	37,950	26,131
1978-98 Avg	42,613	32,010	27,860
Estimated 1999[a]	45,871	30,254	27,733

[a] Estimates based on regression of Lake Nerka average monthly water level against Nushagak River monthly discharge for years 1978 - 1993 (see text for regression results).

Table 3. Escapement sampling catch proportions by counting range, date, and species, Nushagak River sonar project, June 24 - July 5, 1999.

			Proportion of Catch			
Range	Date	Catch [a]	Chinook	Sockeye	Chum	Total
Left Bank Inshore	6/24	21	0.10	0.00	0.90	1.00
	6/25	12	0.19	0.26	0.55	1.00
	6/26	4	0.25	0.75	0.00	1.00
	6/27	4	0.00	0.25	0.75	1.00
	6/28	48	0.03	0.30	0.67	1.00
	6/29	13	0.00	0.46	0.54	1.00
	6/30	32	0.00	0.09	0.91	1.00
	7/01	64	0.04	0.38	0.58	1.00
	7/02	126 [b]	0.06	0.53	0.41	1.00
	7/03	102 [b]	0.01	0.79	0.20	1.00
	7/04	92	0.02	0.63	0.35	1.00
	7/05	82	0.01	0.83	0.16	1.00
	6/24-7/05	600	0.04	0.55	0.42	1.00
Left Bank Offshore	6/24	30	0.77	0.05	0.18	1.00
	6/25	16	0.62	0.00	0.38	1.00
	6/26	8	0.47	0.13	0.41	1.00
	6/27	18	0.49	0.12	0.40	1.00
	6/28	16	0.63	0.00	0.38	1.00
	6/29	10	0.87	0.00	0.13	1.00
	6/30	13	0.45	0.00	0.55	1.00
	7/01	27	0.48	0.05	0.47	1.00
	7/02	38	0.87	0.00	0.13	1.00
	7/03	46	0.36	0.10	0.54	1.00
	7/04	25	0.51	0.10	0.40	1.00
	7/05	23	0.82	0.12	0.06	1.00
	6/24-7/05	270	0.61	0.06	0.33	1.00
Right Bank Inshore	6/24	65	0.05	0.14	0.81	1.00
	6/25	31	0.11	0.10	0.79	1.00
	6/26	35	0.16	0.15	0.70	1.00
	6/27	17	0.08	0.43	0.49	1.00
	6/28	50	0.01	0.32	0.66	1.00
	6/29	26	0.03	0.59	0.39	1.00
	6/30	8	0.00	0.50	0.50	1.00
	7/01	206 [b]	0.02	0.20	0.78	1.00
	7/02	126 [b]	0.05	0.36	0.60	1.00
	7/03	70	0.00	0.89	0.11	1.00
	7/04	98 [b]	0.02	0.66	0.32	1.00
	7/05	193 [b]	0.04	0.55	0.41	1.00
	6/24-7/05	917	0.04	0.41	0.55	1.00

Table 3. Escapement sampling catch proportions by counting range, date, and species, Nushagak River sonar project, June 24 - July 5, 1999.

Range	Date	Catch [a]	Proportion of Catch			
			Chinook	Sockeye	Chum	Total
Right Bank Offshore	6/24	53	0.22	0.00	0.79	1.00
	6/25	25	0.39	0.00	0.61	1.00
	6/26	6	0.67	0.17	0.17	1.00
	6/27	6	0.58	0.00	0.42	1.00
	6/28	14	0.23	0.00	0.77	1.00
	6/29	12	0.49	0.21	0.31	1.00
	6/30	21	0.21	0.00	0.79	1.00
	7/01	50	0.14	0.13	0.73	1.00
	7/02	24	0.56	0.13	0.32	1.00
	7/03	29	0.45	0.13	0.42	1.00
	7/04	55	0.26	0.25	0.49	1.00
	7/05	54	0.25	0.27	0.48	1.00
	6/24-7/05		0.30	0.13	0.58	1.00

[a] Drift gillnet catch unless noted otherwise.

[b] Beach seine catch.

Table 4. Right bank inshore sonar counts, original offshore sonar counts, adjusted offshore sonar counts, and difference between original and adjusted offshore counts, Nushagak River sonar project, June 24 - July 5, 1999.

Date	Right Bank Inshore Counts	Original Right Bank Offshore Counts	Adjusted Right Bank Offshore Counts	Difference Between Adjusted and Original Offshore Counts
6/24	7,333	690	1,110	420
6/25	6,422	512	983	471
6/26	1,294	250	516	266
6/27	649	206	453	247
6/28	4,051	278	787	509
6/29	2,380	193	623	430
6/30	4,471	259	828	569
7/01	23,980	944	2,746	1,802
7/02	69,504	946	7,221	6,275
7/03	19,482	720	2,304	1,584
7/04	32,577	878	3,591	2,713
7/05	50,374	1,998	5,341	3,343
Total Counts	222,517	7,874	26,505	18,631

Table 5. Daily inshore and offshore sonar counts by bank, Nushagak River sonar project, 1999.

Date	Left Bank		Right Bank	
	Inshore	Offshore	Inshore	Offshore
6/09	29 [a]	2 [b]	8 [a]	3 [b]
6/10	32	1	34	16
6/11	60	10	95	79
6/12	34	13	116	24
6/13	47	42	100	10
6/14	32	36	65	5
6/15	60	69	161	29
6/16	443	874	1,477	81
6/17	371	488	1,378	129
6/18	165	204	742	66
6/19	99	154	208	31
6/20	81	133	106	16
6/21	91	69	175	20
6/22	68	82	176	2
6/23	83	313	93	51
6/24	6,365	10,680	7,333	1,110 [c]
6/25	2,166	4,061	6,422	983 [c]
6/26	825	1,833	1,294	516 [c]
6/27	1,496	1,175	649	453 [c]
6/28	6,730	403	4,051	787 [c]
6/29	2,683	247	2,380	623 [c]
6/30	4,571	159	4,471	828 [c]
7/01	13,500	1,026	23,980	2,746 [c]
7/02	31,244	3,545	69,504	7,221 [c]
7/03	33,702	2,046	19,482	2,304 [c]
7/04	14,976	1,037	32,577	3,591 [c]
7/05	8,942	817	50,374	5,341 [c]
7/06	9,668	1,602	28,906	3,335
7/07	10,868	1,671	20,172	2,088
7/08	3,855	730	8,367	1,361
7/09	3,352	692	5,106	1,615
7/10	622	354	6,284	1,033
7/11	1,043	426	6,813	983
7/12	425	345	6,640	744
7/13	448	615	2,243	482
7/14	833	544	3,106	573
7/15	2,187	549	4,700	808
7/16	1,161	734	3,738	505
7/17	1,052	458	2,584	722
7/18	755	555	3,728	1,218
7/19	466	560	2,847	694
7/20	217	693	3,139	697
7/21	126	439	3,693	1,177
7/22	1,462	490	2,605	889
7/23	932	361	2,417	621

Table 5. Daily inshore and offshore sonar counts by bank, Nushagak River sonar project, 1999.

	Left Bank		Right Bank	
Date	Inshore	Offshore	Inshore	Offshore
7/24	171	394	2,679	548
7/25	206	362	2,019	228
7/26	628	386	2,793	425
7/27	567	46	1,753	244
7/28	465	86	1,251	246
7/29	357	52	484	128
7/30	418	42	383	36
7/31	801	42	415	82
8/01	1,157	74	2,245	248
8/02	245	59	393	105
8/03	245	205	308	54
8/04	926	540	2,540	299
8/05	1,159	412	3,946	402
8/06	310	122	2,061	135
8/07	125	30	845	49
8/08	84	16	504	41
8/09	74	3	264	32
8/10	126	6	359	20
8/11	242	45	1,802	65
8/12	126	11	1,215	39
8/13	95	58	344	79
8/14	100	13	252	16
8/15	43	11	372	5
8/16	59	44	271	8
8/17	63	7	179	1
8/18	78	16	276	14
8/19	68	10	582	56
8/20	75	3	2,720	52
8/21	57	3	2,526	49
8/22	47	21	899	35
8/23	95	24	691	13
8/24	42	34 [d]	604	2 [d]
8/25	20 [e]		190 [e]	
Total	177,641	44,514	382,704	50,366

[a] Counting began at 1200 in the left and right bank inshore counting ranges.

[b] Counting began at 1700 in the left and right bank offshore counting ranges.

[c] Estimated counts from linear regression model.

[d] Counting ended at 1800 in the left and right bank offshore counting ranges.

[e] Counting ended at 1200 in the left and right bank inshore counting ranges.

Table 6. Counting ranges for sonar counters on left and right banks, Nushagak River sonar project, 1999.

Left Bank				Right Bank			
Inshore		Offshore		Inshore		Offshore	
Date	Distance[a] (m)	Date	Distance[a] (m)	Date	Distance[a] (m)	Date	Distance[a] (m)
6/09	6.1	6/09 - 6/11	19.8	6/09 - 6/17	7.3	6/09	21.3
6/10	5.8	6/12 - 6/15	22.9	6/18 - 6/21	7.9	6/10 - 7/04	19.8
6/11	5.9	6/16 - 6/18	19.5	6/22 - 7/04	8.2	7/05	21.3
6/12	4.3	6/19	19.4	7/05	7.9	7/06	48.8
6/13 - 6/14	4.9	6/20 - 6/24	19.2	7/06 - 7/11	9.1	7/07 - 7/12	30.5
6/15	5.7	6/25	19.1	7/12 - 7/13	9.8	7/13 - 7/24	23.8
6/16 - 6/26	7.0	6/26	18.9	7/14 - 7/15	9.1	7/25 - 8/13	26.2
6/27 - 7/10	8.8	6/27 - 7/07	22.6	7/16	9.8	8/14 - 8/24	27.4
7/11	8.5	7/08 - 7/12	21.3	7/17 - 7/19	10.1		
7/12 - 7/13	9.1	7/13	21.0	7/20	9.4		
7/14 - 7/16	8.8	7/14 - 7/16	14.3	7/21 - 7/23	9.1		
7/17 - 7/19	9.1	7/17 - 7/18	14.8	7/24	9.8		
7/20 - 7/23	8.0	7/19 - 7/20	14.6	7/25 - 7/29	8.8		
7/24	8.5	7/21	18.3	7/30 - 7/31	9.1		
7/25	9.1	7/22 - 8/05	15.2	8/01 - 8/04	8.8		
7/26	7.0	8/06 - 8/12	29.0	8/05	9.1		
7/27 - 7/29	8.1	8/13	29.3	8/06 - 8/11	8.8		
7/30 - 7/31	8.8	8/14	20.7	8/12	9.1		
8/01	8.1	8/15 - 8/20	23.5	8/13	8.8		
8/02 - 8/04	8.0	8/21 - 8/23	22.9	8/14 - 8/16	8.5		
8/05	8.8	8/24	15.2	8/17	9.1		
8/06 - 8/16	7.6			8/18 - 8/25	8.2		
8/17	8.2						
8/18 - 8/22	7.6						
8/23 - 8/25	8.4						

[a] Total distance from transducer that sonar beam was set to count fish.

Table 7. Escapement sampling catch proportions by counting range, report period, date, drift session, and species, Nushagak River sonar project, July 16 - August 20, 1999.

Counting Range[a]	Temporal Report Period	Date[b]	Drift Session Number[c]	Catch[d]	Proportion of Catch					
					Chinook	Sockeye	Chum	Coho	Other[e]	Total
1	6	7/16	3	1	0.00	1.00	0.00	0.00	0.00	1.00
1	6	7/17	1	1	0.00	1.00	0.00	0.00	0.00	1.00
1	6	7/17	3	1	1.00	0.00	0.00	0.00	0.00	1.00
1	6	7/18	1	1	0.00	1.00	0.00	0.00	0.00	1.00
1	6	7/19	1	2	0.00	0.00	1.00	0.00	0.00	1.00
1	6	7/20	1	1	0.00	0.00	1.00	0.00	0.00	1.00
1	6	7/20	3	1	0.00	0.00	1.00	0.00	0.00	1.00
1	6	7/21	1	1	0.00	0.00	1.00	0.00	0.00	1.00
1	6	7/21	3	1	0.00	0.00	1.00	0.00	0.00	1.00
1	6	7/25	3	1	0.00	0.00	1.00	0.00	0.00	1.00
1	7	7/26	3	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	7/27	1	1	0.00	0.00	1.00	0.00	0.00	1.00
1	7	8/01	1	1	0.00	0.00	0.00	0.00	1.00	1.00
1	7	8/03	1	1	1.00	0.00	0.00	0.00	0.00	1.00
1	7	8/04	1	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/05	1	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/07	3	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/09	3	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/10	3	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/11	1	3	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/12	1	2	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/12	3	2	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/14	1	4	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/15	1	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/16	1	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/19	3	1	0.00	0.00	0.00	1.00	0.00	1.00
1	7	8/20	1	2	0.00	0.00	0.00	1.00	0.00	1.00
2	5	7/16	1	4	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/16	3	4	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/17	1	4	0.18	0.27	0.55	0.00	0.00	1.00
2	5	7/17	3	4	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/18	1	2	0.40	0.00	0.60	0.00	0.00	1.00
2	5	7/18	3	5	0.50	0.25	0.25	0.00	0.00	1.00
2	5	7/19	1	3	0.00	0.33	0.67	0.00	0.00	1.00
2	5	7/19	3	2	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/20	1	9	0.08	0.35	0.58	0.00	0.00	1.00
2	5	7/20	3	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/21	1	3	0.00	0.33	0.67	0.00	0.00	1.00
2	5	7/21	3	4	0.18	0.00	0.82	0.00	0.00	1.00
2	5	7/22	3	5	0.14	0.21	0.64	0.00	0.00	1.00

Table 7. Escapement sampling catch proportions by counting range, report period, date, drift session, and species, Nushagak River sonar project, July 16 - August 20, 1999.

Counting Range[a]	Temporal Report Period	Date[b]	Drift Session Number[c]	Catch[d]	Proportion of Catch					
					Chinook	Sockeye	Chum	Coho	Other[e]	Total
2	5	7/23	1	3	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/24	1	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/24	3	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/25	1	5	0.80	0.00	0.20	0.00	0.00	1.00
2	5	7/26	1	4	0.75	0.00	0.25	0.00	0.00	1.00
2	5	7/26	3	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/27	1	3	0.67	0.00	0.33	0.00	0.00	1.00
2	5	7/27	3	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/28	3	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/29	1	1	1.00	0.00	0.00	0.00	0.00	1.00
2	5	7/30	1	1	1.00	0.00	0.00	0.00	0.00	1.00
2	6	7/31	3	3	0.33	0.00	0.00	0.67	0.00	1.00
2	6	8/01	3	2	0.50	0.00	0.00	0.50	0.00	1.00
2	6	8/03	1	2	0.50	0.00	0.00	0.50	0.00	1.00
2	6	8/04	3	6	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/05	1	3	0.00	0.00	0.33	0.67	0.00	1.00
2	6	8/05	3	25	0.04	0.00	0.00	0.96	0.00	1.00
2	6	8/06	1	8	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/06	3	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/08	3	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/09	1	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/10	3	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/12	3	4	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/13	3	3	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/15	1	2	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/16	1	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/18	3	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/19	1	1	0.00	0.00	0.00	1.00	0.00	1.00
2	6	8/20	1	2	0.00	0.00	0.00	1.00	0.00	1.00
3	10	7/17	1	1	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/17	3	5	0.14	0.64	0.21	0.00	0.00	1.00
3	10	7/18	1	2	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/18	3	3	0.00	0.00	1.00	0.00	0.00	1.00
3	10	7/19	1	3	0.00	0.67	0.33	0.00	0.00	1.00
3	10	7/19	3	3	0.00	0.67	0.33	0.00	0.00	1.00
3	10	7/20	1	7	0.10	0.15	0.75	0.00	0.00	1.00
3	10	7/20	3	2	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/21	1	1	0.00	0.00	1.00	0.00	0.00	1.00
3	10	7/21	3	1	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/22	1	2	0.00	0.50	0.50	0.00	0.00	1.00

Table 7. Escapement sampling catch proportions by counting range, report period, date, drift session, and species, Nushagak River sonar project, July 16 - August 20, 1999.

Counting Range[a]	Temporal Report Period	Date[b]	Drift Session Number[c]	Catch[d]	Proportion of Catch					
					Chinook	Sockeye	Chum	Coho	Other[e]	Total
3	10	7/22	3	6	0.00	0.33	0.67	0.00	0.00	1.00
3	10	7/23	1	3	0.25	0.38	0.38	0.00	0.00	1.00
3	10	7/23	3	1	0.00	0.00	1.00	0.00	0.00	1.00
3	10	7/24	1	1	0.00	0.00	1.00	0.00	0.00	1.00
3	10	7/24	3	2	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/25	3	1	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/26	3	4	0.00	0.25	0.00	0.75	0.00	1.00
3	10	7/27	3	2	0.00	0.00	0.00	1.00	0.00	1.00
3	10	7/28	1	3	0.00	0.33	0.33	0.33	0.00	1.00
3	10	7/28	3	3	0.00	0.33	0.33	0.00	0.33	1.00
3	10	7/29	3	1	0.00	1.00	0.00	0.00	0.00	1.00
3	10	7/30	1	4	0.00	0.00	0.50	0.25	0.25	1.00
3	11	8/01	1	5	0.00	0.20	0.00	0.80	0.00	1.00
3	11	8/01	3	2	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/04	1	6	0.00	0.17	0.00	0.83	0.00	1.00
3	11	8/04	3	2	0.00	0.00	0.00	0.50	0.50	1.00
3	11	8/05	1	4	0.00	0.50	0.00	0.50	0.00	1.00
3	11	8/05	3	1	0.00	0.00	0.00	0.00	1.00	1.00
3	11	8/06	1	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/06	3	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/07	1	1	0.00	0.00	0.00	0.00	1.00	1.00
3	11	8/07	3	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/08	3	1	0.00	0.00	1.00	0.00	0.00	1.00
3	11	8/09	1	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/09	3	3	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/10	3	2	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/11	1	4	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/12	1	2	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/12	3	15	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/13	1	2	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/13	3	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/14	3	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/15	3	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/17	1	1	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/18	3	3	0.00	0.00	0.00	1.00	0.00	1.00
3	11	8/19	1	2	0.00	0.00	0.00	0.50	0.50	1.00
3	11	8/19	3	1	0.00	0.00	0.00	0.00	1.00	1.00
4	5	7/16	3	1	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/17	3	2	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/18	1	2	1.00	0.00	0.00	0.00	0.00	1.00

Table 7. Escapement sampling catch proportions by counting range, report period, date, drift session, and species, Nushagak River sonar project, July 16 - August 20, 1999.

Counting Range[a]	Temporal Report Period	Date[b]	Drift Session Number[c]	Catch[d]	Proportion of Catch					
					Chinook	Sockeye	Chum	Coho	Other[e]	Total
4	5	7/18	3	2	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/19	1	1	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/19	3	2	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/20	3	5	0.50	0.25	0.25	0.00	0.00	1.00
4	5	7/21	1	1	0.00	0.00	1.00	0.00	0.00	1.00
4	5	7/22	1	1	0.00	0.00	1.00	0.00	0.00	1.00
4	5	7/22	3	2	0.40	0.60	0.00	0.00	0.00	1.00
4	5	7/23	1	1	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/24	1	1	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/25	1	3	0.67	0.00	0.33	0.00	0.00	1.00
4	5	7/26	3	4	0.50	0.00	0.25	0.25	0.00	1.00
4	5	7/27	1	3	0.33	0.00	0.67	0.00	0.00	1.00
4	5	7/27	3	1	1.00	0.00	0.00	0.00	0.00	1.00
4	5	7/30	1	1	0.00	0.00	0.00	0.00	1.00	1.00
4	6	7/31	1	1	0.00	1.00	0.00	0.00	0.00	1.00
4	6	7/31	3	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/01	3	8	0.00	0.00	0.13	0.88	0.00	1.00
4	6	8/02	1	4	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/02	3	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/04	1	2	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/04	3	3	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/05	1	5	0.00	0.00	0.20	0.80	0.00	1.00
4	6	8/05	3	5	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/06	1	2	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/06	3	1	0.00	0.00	1.00	0.00	0.00	1.00
4	6	8/08	3	3	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/11	1	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/13	1	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/14	1	2	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/15	1	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/16	1	1	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/19	1	3	0.00	0.00	0.00	1.00	0.00	1.00
4	6	8/20	1	3	0.00	0.00	0.00	1.00	0.00	1.00

[a] Counting Range: 1 = left inshore, 2 = left offshore, 3 = right inshore, 4 = right offshore

[b] Data are omitted for dates on which no fish were caught in that counting range.

[c] 1 = 0800-1000 hrs, 3 = 1600-1800 hrs. Blanks indicate beach seine sets were conducted.

[d] Beach seine catches are in parentheses. All other catches are from drift gillnets.

[e] Includes Arctic char, Arctic grayling, and rainbow trout.

Table 8. Final daily and cumulative escapement estimates by species, Nushagak River sonar project, 1999.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/09	5	5	8	8	29	29	0	0	0	0	42	42
6/10	8	13	14	22	61	90	0	0	0	0	83	125
6/11	19	32	48	70	177	267	0	0	0	0	244	369
6/12	17	49	30	100	139	406	0	0	0	0	186	555
6/13	20	69	43	143	136	542	0	0	0	0	199	754
6/14	14	83	33	176	91	633	0	0	0	0	138	892
6/15	29	112	72	248	217	850	0	0	0	0	318	1,210
6/16	268	380	720	968	1,876	2,726	0	0	0	0	2,864	4,074
6/17	221	601	496	1,464	1,642	4,368	0	0	0	0	2,359	6,433
6/18	110	711	227	1,691	838	5,206	0	0	0	0	1,175	7,608
6/19	45	756	131	1,822	314	5,520	0	0	0	0	490	8,098
6/20	32	788	103	1,925	200	5,720	0	0	0	0	335	8,433
6/21	35	823	75	2,000	243	5,963	0	0	0	0	353	8,786
6/22	33	856	74	2,074	221	6,184	0	0	0	0	328	9,114
6/23	43	899	214	2,288	279	6,463	0	0	0	0	536	9,650
6/24	2,405	3,304	8,063	10,351	14,887	21,350	0	0	0	0	25,355	35,005
6/25	2,431	5,735	3,384	13,735	7,766	29,116	0	0	0	0	13,581	48,586
6/26	666	6,401	1,383	15,118	2,396	31,512	0	0	0	0	4,445	53,031
6/27	539	6,940	1,065	16,183	2,154	33,666	0	0	0	0	3,758	56,789
6/28	3,309	10,249	896	17,079	7,766	41,432	0	0	0	0	11,971	68,760
6/29	2,233	12,482	425	17,504	3,275	44,707	0	0	0	0	5,933	74,693
6/30	4,014	16,496	507	18,011	5,508	50,215	0	0	0	0	10,029	84,722
7/01	9,217	25,713	2,251	20,262	29,784	79,999	0	0	0	0	41,252	125,974
7/02	42,891	68,604	10,203	30,465	58,420	138,419	0	0	0	0	111,514	237,488
7/03	44,770	113,374	2,137	32,602	10,626	149,045	0	0	0	0	57,533	295,021
7/04	33,122	146,496	2,689	35,291	16,369	165,414	0	0	0	0	52,180	347,201
7/05	35,790	182,286	4,344	39,635	25,340	190,754	0	0	0	0	65,474	412,675
7/06	29,267	211,553	3,161	42,796	11,083	201,837	0	0	0	0	43,511	456,186
7/07	24,132	235,685	2,663	45,459	8,004	209,841	0	0	0	0	34,799	490,985

Table 8. Final daily and cumulative escapement estimates by species, Nushagak River sonar project, 1999.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/09	6,973	252,230	1,252	48,015	2,541	215,819	0	0	0	0	10,766	516,064
7/10	5,081	257,311	948	48,963	2,244	218,063	0	0	10	10	8,283	524,347
7/11	5,816	263,127	992	49,955	2,437	220,500	0	0	10	20	9,255	533,602
7/12	4,873	268,000	818	50,773	2,084	222,584	0	0	291	311	8,066	541,668
7/13	2,011	270,011	675	51,448	969	223,553	0	0	101	412	3,756	545,424
7/14	2,914	272,925	713	52,161	1,247	224,800	0	0	138	550	5,012	550,436
7/15	5,174	278,099	903	53,064	1,892	226,692	0	0	209	759	8,178	558,614
7/16	3,622	281,721	818	53,882	1,483	228,175	0	0	165	924	6,088	564,702
7/17	2,784	284,505	719	54,601	1,157	229,332	0	0	118	1,042	4,778	569,480
7/18	3,367	287,872	1,051	55,652	1,609	230,941	0	0	171	1,213	6,198	575,678
7/19	2,449	290,321	767	56,419	1,181	232,122	0	0	128	1,341	4,525	580,203
7/20	2,437	292,758	853	57,272	1,270	233,392	0	0	141	1,482	4,701	584,904
7/21	2,770	295,528	956	58,228	1,483	234,875	0	0	169	1,651	5,378	590,282
7/22	3,193	298,721	823	59,051	1,270	236,145	0	0	120	1,771	5,406	595,688
7/23	2,540	301,261	606	59,657	1,039	237,184	0	0	109	1,880	4,294	599,982
7/24	2,033	303,294	591	60,248	1,010	238,194	0	0	120	2,000	3,754	603,736
7/25	1,574	304,868	395	60,643	730	238,924	0	0	88	2,088	2,787	606,523
7/26	1,933	306,801	561	61,204	1,011	239,935	0	0	659	2,747	4,164	610,687
7/27	1,183	307,984	236	61,440	579	240,514	0	0	561	3,308	2,559	613,246
7/28	864	308,848	237	61,677	454	240,968	0	0	452	3,760	2,007	615,253
7/29	343	309,191	127	61,804	200	241,168	0	0	326	4,086	996	616,249
7/30	260	309,451	76	61,880	145	241,313	0	0	373	4,459	854	617,103
7/31	270	309,721	57	61,937	154	241,467	0	0	814	5,273	1,295	618,398
8/01	187	309,908	62	61,999	110	241,577	0	0	3,108	8,381	3,467	621,865
8/02	34	309,942	16	62,015	26	241,603	0	0	679	9,060	755	622,620
8/03	26	309,968	25	62,040	24	241,627	0	0	697	9,757	772	623,392
8/04	212	310,180	80	62,120	114	241,741	0	0	3,626	13,383	4,032	627,424
8/05	328	310,508	84	62,204	152	241,893	0	0	4,945	18,328	5,509	632,933
8/06	170	310,678	23	62,227	59	241,952	0	0	2,176	20,504	2,428	635,361
8/07	70	310,748	8	62,235	23	241,975	0	0	866	21,370	967	636,328

Table 8. Final daily and cumulative escapement estimates by species, Nushagak River sonar project, 1999.

	Sockeye		Chinook		Chum		Pink		Coho		Total	
Date	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/08	42	310,790	5	62,240	15	241,990	0	0	534	21,904	596	636,924
8/09	22	310,812	4	62,244	10	242,000	0	0	310	22,214	346	637,270
8/10	30	310,842	7	62,251	13	242,013	0	0	423	22,637	473	637,743
8/11	147	310,989	15	62,266	46	242,059	0	0	1,773	24,410	1,981	639,724
8/12	99	311,088	7	62,273	28	242,087	0	0	1,141	25,551	1,275	640,999
8/13	30	311,118	8	62,281	16	242,103	0	0	487	26,038	541	641,540
8/14	21	311,139	6	62,287	10	242,113	0	0	317	26,355	354	641,894
8/15	30	311,169	3	62,290	9	242,122	0	0	354	26,709	396	642,290
8/16	22	311,191	6	62,296	8	242,130	0	0	318	27,027	354	642,644
8/17	15	311,206	4	62,300	6	242,136	0	0	207	27,234	232	642,876
8/18	23	311,229	5	62,305	9	242,145	0	0	318	27,552	355	643,231
8/19	48	311,277	4	62,309	16	242,161	0	0	592	28,144	660	643,891
8/20	222	311,499	4	62,313	51	242,212	0	0	2,326	30,470	2,603	646,494
8/21	206	311,705	3	62,316	47	242,259	0	0	2,151	32,621	2,407	648,901
8/22	74	311,779	4	62,320	19	242,278	0	0	823	33,444	920	649,821
8/23	56	311,835	6	62,326	17	242,295	0	0	677	34,121	756	650,577
8/24	49	311,884	4	62,330	13	242,308	0	0	560	34,681	626	651,203
8/25	15	311,899	1	62,331	4	242,312	0	0	172	34,853	192	651,395
Total	311,899		62,331		242,312		0		34,853		651,395 [a]	

[a] An additional 252 whitefish and 3,578 other fish (Arctic char, Arctic grayling, and rainbow trout) were estimated passing the sonar site in 1999.

Table 9. Sockeye salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

Date	Year																				Average Percent[a]	
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
06/04					149									0							0.0	0.0
06/05					457		0					74		0							0.0	0.0
06/06					574		0	0		2	11	126		0							0.0	0.1
06/07					591		3	0	2	4	11	94		0							0.0	0.1
06/08					622		2	0	3	3	32	80		0		36					0.0	0.1
06/09					624		3	0	11	14	145	74	0	0	5	96	110	395	222	5	0.0	0.1
06/10					450		15	0	25	19	33	114	0	0	6	140	199	440	553	8	0.0	0.1
06/11			0	253	385	18	6	0	18	9	23	79	0	0	7	64	117	319	261	19	0.0	0.2
06/12		243	0	335	433	5	15	0	5	23	15	87	0	0	5	68	142	278	165	17	0.0	0.2
06/13		457	0	454	493	42	71	0	6	25	52	75	0	0	4	104	153	516	127	20	0.0	0.2
06/14		420	120	282	787	48	76	0	4	23	37	71	0	0	12	202	165	521	108	14	0.0	0.3
06/15		323	252	437	1,440	7	32	0	106	25	149	866	0	125	10	995	172	589	115	29	0.1	0.3
06/16		573	239	297	1,528	6	37	0	185	24	117	2,360	0	1,902	442	606	79	1,384	128	268	0.1	0.5
06/17		1,514	614	282	3,478	4	16	332	71	78	51	836	0	3,260	951	522	239	1,300	60	221	0.1	0.6
06/18		972	678	306	1,380	8	14	540	50	114	43	770	0	1,119	1,239	729	3,639	910	152	110	0.1	0.7
06/19		893	481	292	2,519	82	112	301	41	21	47	443	915	491	2,661	798	901	1,866	330	45	0.2	0.9
06/20		1,247	338	790	1,544	3,124	141	217	65	64	0	677	1,132	456	1,218	437	1,078	1,962	6,384	32	0.3	1.2
06/21		5,134	0	606	1,019	2,616	88	115	27	361	0	860	1,811	300	647	377	3,912	1,001	3,190	35	0.3	1.4
06/22	352	3,426	7,133	3,385	3,030	915	119	145	28	1,082	995	1,457	1,594	224	1,830	301	5,798	2,631	3,751	33	0.5	1.9
06/23	476	2,490	23,182	1,653	3,475	1,698	229	154	50	1,372	5,297	3,088	951	16,939	1,415	443	8,927	2,645	2,625	43	0.8	2.6
06/24	528	239	39,230	5,455	11,295	369	270	740	54	3,460	1,960	10,144	999	66,906	2,703	1,430	9,896	3,759	3,976	2,405	1.6	4.2
06/25	737	0	7,133	2,890	83,644	229	1,091	3,275	8,697	15,260	1,009	11,286	1,379	24,187	2,625	9,495	18,041	7,204	8,092	2,431	2.1	6.3
06/26	1,339	0	0	3,749	54,222	419	3,392	4,456	19,752	36,432	320	10,463	20,836	20,082	2,768	24,849	22,147	16,643	6,141	666	2.7	9.0
06/27	1,670	195	8,916	4,125	48,318	421	4,282	2,145	15,167	24,731	355	8,926	35,478	71,399	3,354	36,906	16,513	16,883	6,956	539	3.2	12.3
06/28	268	1,701	21,398	9,926	14,201	305	1,583	4,039	16,237	14,893	1,540	11,075	32,522	82,675	2,779	9,701	21,166	8,316	7,854	3,309	2.7	14.9
06/29	111	3,287	14,266	4,826	18,904	908	853	16,046	5,819	3,495	1,935	29,203	14,576	36,278	1,976	8,465	9,786	10,127	7,793	2,233	2.0	16.9
06/30	3,688	6,143	16,049	7,235	44,465	1,400	946	47,423	2,392	37,613	1,604	15,961	18,597	50,751	2,089	12,221	14,900	13,695	10,455	4,014	3.3	20.2
07/01	25,625	76,193	41,014	9,534	31,261	53,282	5,874	66,559	1,466	34,028	9,858	62,496	12,759	37,845	3,143	16,971	19,093	25,312	6,262	9,217	5.8	26.1
07/02	104,306	41,641	37,447	9,224	58,296	35,792	9,468	84,275	1,708	57,488	85,624	30,292	5,701	21,457	12,185	8,510	21,304	24,776	10,675	42,891	6.4	32.5
07/03	240,530	52,501	35,664	4,781	22,133	18,234	5,414	39,477	4,345	55,416	55,341	88,577	3,239	76,757	41,736	10,376	40,175	13,902	37,050	44,770	7.2	39.7
07/04	294,491	82,221	32,098	8,079	8,840	13,382	18,067	19,411	45,767	106,391	23,207	100,822	19,927	66,723	51,759	7,911	27,231	17,175	52,668	33,122	8.4	48.1
07/05	222,282	223,247	30,314	28,917	37,884	13,210	34,648	9,143	42,967	15,922	8,977	35,766	22,121	44,078	23,759	3,097	29,537	6,006	116,872	35,790	8.1	56.2
07/06	97,701	150,089	37,447	10,492	55,571	16,440	44,969	5,523	10,097	14,731	34,852	4,094	63,871	25,266	22,208	6,548	19,431	14,090	72,184	29,267	6.0	62.3
07/07	54,034	25,267	23,182	7,959	15,876	12,124	57,760	5,930	11,032	19,106	314,041	2,228	71,122	14,559	22,030	12,049	24,920	14,301	20,985	24,132	6.2	68.5
07/08	23,484	22,271	24,965	8,792	14,680	21,881	46,419	18,647	11,348	12,635	56,812	1,641	36,090	12,452	18,918	48,281	17,535	12,874	25,902	9,572	4.6	73.1
07/09	9,973	22,068	5,350	6,926	14,618	19,258	41,217	22,710	52,969	5,812	10,124	1,306	12,242	6,289	30,097	24,353	14,260	14,221	12,095	6,973	3.6	76.7
07/10	9,223	42,360	7,133	5,818	15,366	10,439	104,907	2,918	57,393	9,242	4,864	1,809	9,580	4,837	128,121	5,606	11,098	12,039	4,647	5,081	4.2	80.9
07/11	4,603	22,629	14,266	3,063	5,264	6,703	144,139	1,025	57,062	3,442	2,752	3,342	89,913	2,764	22,288	8,590	9,794	6,161	7,003	5,816	3.6	84.5
07/12	4,355	12,296	8,916	3,059	3,175	8,538	125,352	1,370	85,645	12,543	7,528	4,810	173,110	2,678	11,051	3,930	11,307	20,575	3,664	4,873	4.4	88.9
07/13	4,519	6,774	12,482	2,338	1,465	5,459	68,323	1,095	11,291	4,313	6,579	2,073	17,703	2,725	8,748	1,780	14,442	26,312	1,317	2,011	1.9	90.8
07/14	5,539	3,517	5,350	3,055	909	11,785	20,310	899	2,097	4,903	3,799	2,984	8,591	3,239	6,121	1,231	10,546	15,542	1,114	2,914	1.2	92.0
07/15	3,121	1,213	5,350	3,180	691	22,640	7,280	2,286	857	2,713	3,165	2,185	4,679	2,161	2,858	1,088	7,112	9,620	834	5,174	1.0	93.0
07/16	2,891	343	7,133	3,018	803	12,476	17,099	2,044	888	1,946	2,129	3,716	3,525	2,436	3,451	1,453	7,542	4,630	898	3,622	0.9	93.9
07/17	9,681		10,699	1,546	1,912	8,491	8,942	1,932	1,891	2,692	1,953	6,206	2,895	3,824	14,088	1,230	3,874	9,264	435	2,784	1.0	94.9
07/18	7,883		7,133	1,739	532	7,469	3,798	2,316	1,877	4,090	1,319	7,250	1,559	1,891	11,342	656	14,891	6,472	275	3,367	0.9	95.8
07/19	920		16,049	1,688	393	2,708	4,005	2,121	816	1,477	845	7,552	1,417	1,803	5,247	632	18,421	4,085	309	2,449	0.8	96.6

Table 9. Sockeye salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

	Year																				Average Percent[a]	
Date	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
07/20	1,031		5,350	1,823	671	928	2,255	2,920	1,532	1,223	883	3,914	1,433	908	4,015	607	7,282	2,419	577	2,437	0.5	97.1
07/21	1,084		7,133	271	966	1,616	1,820	5,435	2,286	1,294	1,206	2,408	2,016	776	3,419	443	3,877	2,515	758	2,770	0.4	97.5
07/22	0		5,350	280	733	1,484	878	2,197	2,219	376	2,785	3,854	825	554	2,741	753	7,491	2,303	1,143	3,193	0.4	98.0
07/23	0		7,133	326	124	1,226	2,273	1,082	442	387	3,579	2,516		501	3,081	522	7,905	4,245	412	2,540	0.4	98.4
07/24	0		7,133	343	368	395	3,589	1,312	639	413	3,278	575		455	2,797	869	7,182	3,084	260	2,033	0.4	98.7
07/25	0		1,783	424	338	1,402	2,015	886	911	277	483	16		363	6,579	1,579	534	1,861	289	1,574	0.2	99.0
07/26	0		1,783	398	286	898	1,370	896	275	148	572	15		44	6,159	1,201	485	1,895	616	1,933	0.2	99.2
07/27	0		0	395	0	658	2,557	832	254	75	600	16		35	6,420	197	861	1,157	429	1,183	0.2	99.3
07/28	0		0	422	0	258	329	530	208	90	788	62		23	2,058	360	348	1,340	855	864	0.1	99.4
07/29	0		0	429	0	42	847	400	163	84	1,204	224		27	2,440	56	454	1,126	829	343	0.1	99.5
07/30	0		0	275	0	36	182	462	343	177	1,220	102		28	186	70	1,024	4	536	260	0.1	99.6
07/31	0		0	0	0	47	60	289	645	502	763	33		21	286	53	259	6	631	270	0.0	99.6
08/01	0		0	0	0	37	205	276	410	128	130	32		45	226	34	317	5	866	187	0.0	99.7
08/02	0		0	0	0	36	248	311	0	38	138	61		35	112	62	868	4	911	34	0.0	99.7
08/03	0		0	0	0	42	0	248	0	45	735	25		18	77	46	38	10	730	26	0.0	99.7
08/04	0		0	0	0	142	663	23	0	29	188	21		33	71	30	695	8	2,009	212	0.0	99.8
08/05	0		0	0	0	0	322	61	285	25	1,175	13		45	121	315	1,317	4	774	328	0.0	99.8
08/06	0		0	0	0	0	178	103	294	35	2,993	26		23	83	253	720	5	1,052	170	0.1	99.9
08/07			0	0	0	0	69	50	355	38	1,788	13		181	106	78	386	5	558	70	0.0	99.9
08/08			0	0	0	0	58	20	476	0	5,030	7		82	99	29	197	6	8	42	0.1	100.0
08/09			0	0	0	18	52	8	279	0	867	9		24	40	31	223	9	4	22	0.0	100.0
08/10			0	341	0	11	98	13	140	0	0	14		0	180	43	232	25	0	30	0.0	100.0
08/11			0	152	0	6	193	8	132	0	0	17		0	121	70	139	30	0	147		
08/12			0	125	0	26	224	11	211	0	0	22		0	0	33	83	20	0	99		
08/13			0	94	0	21	123	14	71	0	236	18		0	0	114	18	19	0	30		
08/14			0	73	0	37	195	7	79	0	177	24		0	0	54	16	20	0	21		
08/15			0	76	0	10	67	12	43	0	0	25		0	0	23	3	9	0	30		
08/16			0	66	0	5	31	9	36	0	0	8		0	0	25	7	4	0	22		
08/17			0	42	0	2	38	10	62	0	0	3		0	0	20	8	6	0	15		
08/18			0		0	2			31	0	0	5		0	0	36	17	4	0	23		
08/19					0	2			13	0	0	2		0	3	24	12	5	0	48		
08/20					0	3			9	0	0	3		0	2	0	9	7	0	222		
08/21					0	1			15	0	0	1		0	2	0	1	10	0	206		
08/22					0				6	0	0			0	3	0	5	33	0	74		
08/23					0				5	0	0			0	2	0	5	14	0	56		
08/24					0					0	0			0	1	0	2	7	0	49		
08/25					0					0	0			0	0	0	3	9	0	15		
08/26										0	0						15	5				
08/27											0						18	3				
08/28											0						2	5				
08/29																		4				
08/30																		6				
08/31																		24				
09/01																		14				
Total	1,135,525	813,887	521,637	175,453	592,789	319,618	798,321	385,913	482,384	511,944	679,523	484,970	693,691	713,296	504,079	280,675	485,230	368,950	458,565	311,899		

[a] Average percentage of total annual escapement for 1980 - 1999, June 4 through August 10.

Table 10. Age, sex, and size composition of sockeye salmon escapement, Nushagak River sonar project, 1999.

	Age Group							
	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
Sample Period: June 9 - July 4								
Males	3,028	14,385		43,533		8,706	757	70,409
Percent	2.07	9.82		29.72		5.94	0.52	48.06
Sample Size	8	38		115		23	2	186
Mean Length	555	453		575		623	616	556
Std. Error	22	8		4		6	2	3
Sample Size	8	37		115		23	2	185
Females	3,028	2,650	379	62,459		6,814	757	76,087
Percent	2.07	1.81	0.26	42.64		4.65	0.52	51.94
Sample Size	8	7	1	165		18	2	201
Mean Length	550	493	554	552		594	552	554
Std. Error	7	18		2		6	7	2
Sample Size	8	7	1	165		18	2	201
Both Sexes	6,056	17,035	379	105,992		15,520	1,514	146,496
Percent	4.13	11.63	0.26	72.35		10.59	1.03	100.00
Sample Size	16	45	1	280		41	4	387
Mean Length	552	459	554	562		610	584	555
Std. Error	11	8		2		4	4	2
Sample Size	16	44	1	280		41	4	386
Sample Period: July 5 - August 25								
Males		23,365	1,230	48,576		20,906		94,077
Percent		14.13	0.74	29.37		12.64		56.88
Sample Size		38	2	79		34		153
Mean Length		432	589	585		611		553
Std. Error		7	8	3		13		4
Sample Size		38	2	79		34		153
Females		6,764		47,960	1,230	13,527	1,845	71,326
Percent		4.09		29.00	0.74	8.18	1.12	43.12
Sample Size		11		78	2	22	3	116
Mean Length		479		546	523	563	552	542
Std. Error		17		3	39	6	22	3
Sample Size		11		76	2	22	3	114
Both Sexes		30,129	1,230	96,536	1,230	34,433	1,845	165,403
Percent		18.22	0.74	58.36	0.74	20.82	1.12	100.00
Sample Size		49	2	157	2	56	3	269
Mean Length		442	589	566	523	592	552	548
Std. Error		7	8	2	39	8	22	2
Sample Size		49	2	155	2	56	3	267

Table 10. Age, sex, and size composition of sockeye salmon escapement, Nushagak River sonar project, 1999.

	Age Group							
	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
All Periods Combined								
Males	3,028	37,750	1,230	92,109		29,612	757	164,486
Percent	0.97	12.1	0.39	29.53		9.49	0.24	52.74
Sample Size	8	76	2	194		57	2	339
Mean Length	555	440	589	581		615	616	554
Std. Error	22	5	8	3		9	2	3
Sample Size	8	75	2	194		57	2	338
Females	3,028	9,414	379	110,419	1,230	20,341	2,602	147,413
Percent	0.97	3.02	0.12	35.4	0.39	6.52	0.83	47.26
Sample Size	8	18	1	243	2	40	5	317
Mean Length	550	483	554	549	523	574	552	548
Std. Error	7	13		2	39	4	15	2
Sample Size	8	18	1	241	2	40	5	315
Both Sexes	6,056	47,164	1,609	202,528	1,230	49,953	3,359	311,899
Percent	1.94	15.12	0.52	64.93	0.39	16.02	1.08	100.00
Sample Size	16	94	3	437	2	97	7	656
Mean Length	552	448	581	564	523	598	566	551
Std. Error	11	5	8	2	39	6	12	2
Sample Size	16	93	3	435	2	97	7	653

Table 11. Chinook salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

Date	Year																			Average Percent[a]	
	1980	1981	1982	1983	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
06/04													443								
06/05											106		585								
06/06						1	45		2	63	164		1,116							0.2	0.2
06/07						9	153	115	4	64	118		3,486							0.6	0.8
06/08						6	158	165	3	136	119		2,000		40					0.4	1.2
06/09						11	1,676	336	14	386	121	124	846	374	172	962	111	368	8	0.5	1.8
06/10						51	1,441	916	19	151	159	105	700	351	161	1,242	160	1,053	14	0.6	2.4
06/11				118	44	41	640	873	9	108	139	110	854	375	125	690	62	543	48	0.4	2.8
06/12		1,128		156	9	82	760	186	23	94	164	140	767	413	125	765	57	355	30	0.4	3.2
06/13		2,124		212	112	318	446	205	25	241	138	1,567	484	248	193	1,242	74	296	43	0.6	3.7
06/14		1,951	281	131	148	297	507	143	23	166	120	1,138	442	126	409	995	137	238	33	0.5	4.2
06/15		1,500	589	204	33	101	657	1,875	25	2,468	1,214	715	215	86	3,896	663	2,034	261	72	1.3	5.5
06/16		2,660	557	139	24	148	366	5,078	24	1,953	4,751	1,177	3,490	6,597	2,029	390	5,023	234	720	2.7	8.2
06/17		909	1,432	132	14	43	2,048	1,359	138	844	2,332	2,841	4,805	13,555	1,329	2,129	2,140	122	496	2.5	10.6
06/18		584	1,583	143	20	72	2,943	874	188	712	2,008	3,607	2,170	2,687	1,143	8,621	1,735	257	227	2.3	13.0
06/19		568	1,123	136	371	424	1,407	570	64	788	1,201	852	1,284	4,565	1,444	4,947	1,893	628	131	1.7	14.7
06/20		14	790	368	2,627	789	883	1,084	109	542	923	967	1,014	2,807	1,291	2,751	2,367	11,914	103	2.1	16.8
06/21		56	7,836	570	3,886	525	678	613	450	1,374	1,166	1,765	568	1,475	1,190	2,807	520	5,968	75	1.9	18.7
06/22	3,975	2,056	5,746	3,180	1,755	521	724	449	1,746	10,709	1,888	1,388	433	7,989	636	2,831	709	7,159	74	3.4	22.2
06/23	5,377	3,556	6,791	1,553	3,557	188	611	781	2,712	4,692	4,199	895	10,830	5,402	976	1,331	565	6,620	214	3.5	25.7
06/24	1,463	7,500	17,239	5,124	888	274	14,082	1,279	5,876	1,729	19,352	959	8,307	3,233	1,701	1,399	490	5,835	8,063	5.9	31.6
06/25	2,040	11,472	4,179	2,715	380	516	10,196	6,334	2,561	890	10,207	1,047	3,964	3,377	12,525	3,282	1,633	5,902	3,384	5.3	36.8
06/26	3,707	7,049	2,612	4,388	645	643	2,340	4,292	5,973	285	7,721	8,043	3,282	4,082	16,726	1,776	3,545	3,672	1,383	5.2	42.0
06/27	4,623	5,592	1,567	4,828	1,761	999	1,296	2,481	1,257	313	3,502	4,726	5,403	1,861	6,242	1,010	1,604	4,163	1,065	3.4	45.4
06/28	3,661	1,625	1,567	11,618	1,716	750	2,215	1,980	838	264	4,555	4,428	6,410	1,315	3,175	1,411	770	1,426	896	3.1	48.5
06/29	1,524	3,140	3,134	5,649	604	405	5,444	2,486	2,167	332	10,129	5,354	2,879	1,045	2,630	225	615	1,610	425	2.9	51.4
06/30	1,553	3,909	5,224	8,468	907	443	2,179	1,007	1,521	283	5,290	7,036	3,499	957	3,195	297	1,091	1,631	507	2.8	54.2
07/01	1,875	2,432	5,746	5,742	9,184	128	7,369	536	395	1,428	1,884	5,534	4,790	974	3,110	325	1,732	738	2,251	3.3	57.5
07/02	4,688	21,917	5,746	5,556	15,016	181	1,612	700	417	5,317	1,081	1,704	2,845	4,378	1,888	1,222	1,642	1,014	10,203	5.1	62.6
07/03	2,702	14,789	5,224	2,880	6,527	187	3,448	1,612	6	2,350	1,326	1,207	3,370	3,319	2,117	616	1,230	3,806	2,137	3.3	65.9
07/04	2,777	10,517	1,045	4,866	4,291	82	1,581	3,519	1,386	1,857	2,517	2,254	2,607	2,016	1,281	371	630	4,218	2,689	3.0	68.9
07/05	2,850	5,773	4,179	4,876	4,074	782	781	3,339	2,614	724	1,431	2,563	1,772	2,319	839	294	258	4,327	4,344	2.9	71.8
07/06	2,252	3,400	4,179	1,769	5,850	1,249	399	625	2,812	1,171	1,316	3,300	1,573	2,153	762	195	364	3,588	3,161	2.4	74.2
07/07	2,052	2,214	3,657	1,342	4,023	2,256	565	684	3,861	2,579	664	1,683	1,228	1,758	1,845	401	387	4,762	2,663	2.5	76.6
07/08	602	1,028	1,567	1,482	3,217	1,990	1,922	705	2,817	10,211	518	1,482	1,530	1,463	3,337	719	285	5,712	1,304	2.8	79.4
07/09	285	1,720	2,090	1,168	2,752	2,192	1,508	0	1,104	2,301	379	1,538	1,054	1,519	1,869	513	630	2,739	1,252	1.7	81.1
07/10	784	1,880	3,134	981	2,886	1,843	235	0	1,905	1,636	398	1,243	1,037	3,061	1,096	547	526	3,579	948	1.7	82.9
07/11	1,284	1,880	1,567	2,351	2,192	1,111	462	0	1,059	433	791	2,568	739	1,496	1,444	563	226	5,359	992	1.6	84.4
07/12	917	2,049	2,612	2,347	1,222	3,891	641	2,663	6,996	643	1,397	2,774	683	1,026	962	439	462	2,787	818	2.4	86.8
07/13	1,010	1,103	2,090	1,794	829	1,247	502	509	2,408	619	390	1,823	555	932	516	477	921	1,624	675	1.3	88.1
07/14	1,108	959	2,090	2,345	1,880	1,447	407	724	1,591	447	468	1,074	627	764	261	325	1,099	1,292	713	1.3	89.5
07/15	624	934	4,702	2,440	4,016	3,045	1,074	296	2,527	179	386	725	392	411	223	415	629	844	903	1.6	91.1
07/16	662	264	1,567	755	2,000	1,166	937	307	2,070	157	543	698	455	461	332	333	260	555	818	0.9	92.0
07/17	2,689	0	2,090	387	1,718	3,097	890	653	2,186	281	838	512	533	1,016	255	141	606	427	719	1.4	93.4
07/18	5,101	0	2,090	435	1,631	1,146	1,069	648	3,628	243	953	431	321	693	154	254	413	256	1,051	1.5	94.9
07/19	595	0	522	422	2,389	1,176	947	282	1,420	25	1,117	317	311	295	162	510	197	275	767	0.8	95.7

Table 11. Chinook salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

	Year																			Average Percent[a]	
Date	1980	1981	1982	1983	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
07/20	0	0	1,045	456	951	936	743	529	1,828	30	637	211	208	365	135	306	126	429	853	0.7	96.4
07/21	0	0	522	361	493	738	1,399	788	1,619	51	531	177	141	303	122	262	124	731	956	0.6	97.0
07/22	0	0	1,567	373	477	398	509	766	795	114	1,245	46	73	401	228	83	98	1,115	823	0.6	97.6
07/23	0	0	522	435	371	288	224	89	728	127	580		106	370	134	83	148	357	606	0.3	97.9
07/24	0	0	1,045	458	119	808	269	102	1,106	131	177		99	242	225	34	135	200	591	0.4	98.3
07/25	0	0	1,500	566	522	463	168	229	748	364	19		94	403	196	35	56	147	395	0.4	98.7
07/26	0	0	2,090	597	319	618	157	91	452	208	20		27	351	155	40	67	310	561	0.4	99.1
07/27	0	0	0	592	234	1,168	158	78	317	94	18		21	317	23	116	31	242	236	0.3	99.4
07/28	0	0	0	633	104	120	90	111	372	531	62		19	74	24	122	46	342	237	0.2	99.5
07/29	0	0	0	644	29	0	68	79	327	37	244		16	47	31	133	42	386	127	0.1	99.7
07/30	0	0	0	413	17	182	77	142	517	22	207		20	29	33	173	0	254	76	0.1	99.8
07/31	0	0	0	957	27	60	51	87	1,098	12	47		9	16	28	70	0	275	57	0.2	100.0
08/01	0	0	0	660	26	50	44	95	474	0	34		11	18	15	31	0	368	62		
08/02	0	0	0	790	18	0	61	0	205	46	64		16	25	36	42	0	388	16		
08/03	0	0	0	734	24	0	47	436	362	0	31		17	9	20	36	0	1,365	25		
08/04	0	0	0	658	62	787	0	0	170	0	23		25	10	10	16	0	1,289	80		
08/05	0	0	0	55	0	381	0	0	59	0	18		33	0	96	28	0	297	84		
08/06	0	0	0	89	0	204	0	0	57	0	28		13	0	103	21	0	386	23		
08/07		0	0	83	0	87	0	0	95	0	12		101	0	43	18	0	276	8		
08/08		0	0	211	0	72	0	0	0	0	8		48	0	12	10	0	91	5		
08/09		0	0	232	0	66	0	0	0	0	11		17	0	14	16	0	48	4		
08/10		0	0	0	0	135	0	0	0	0	27		0	0	17	19	0	2	7		
08/11			0	0	0	0	0	0	0	0	28		0	0	25	3	0	1	15		
08/12			0	0	0	0	0	0	0	0	28		0	0	9	2	0	2	7		
08/13			0	0	0	0	0	0	0	0	14		0	0	29	1	0	2	8		
08/14			0	0	0	0	0	0	0	0	9		0	0	15	1	0	1	6		
08/15			0	0	0	0	0	0	0	0	8		0	0	6	0	0	1	3		
08/16			0	0	0	0	0	0	0	0	16		0	0	7	0	0	4	6		
08/17			0	0	0	0	0	0	0	0	7		0	0	7	0	0	17	4		
08/18			0		0	0	0	0	0	0	7		0	0	11	0	0	8	5		
08/19					0			0	0	0	3		0	0	7	0	0	2	4		
08/20					0			0	0	0	4		0	0	0	0	0	1	4		
08/21					0			0	0	0	1		0	0	0	0	0	1	3		
08/22								0	0	0			0	0	0	0	0	0	4		
08/23								0	0	0			0	0	0	0	0	0	6		
08/24									0	0			0	0	0	0	0	0	4		
08/25									0	0			0	0	0	0	0	0	1		
Total	62,780	130,252	126,438	103,767	98,991	43,434	84,309	56,905	78,302	63,955	104,351	82,848	97,812	95,954	85,622	52,127	40,705	117,495	62,331		

[a] Average percent of total annual escapement for 1986 - 1999, June 6 through July 31.

Table 12. Age and size composition of chinook salmon escapement, Nushagak River sonar project, 1999.

	Age Group						
	1.1	1.2	1.3	1.4	2.3	1.5	Total
Sample Period: June 9 - 30							
Both Sexes		2,690	6,566	8,390	46	319	18,011
Percent		14.94	36.46	46.58	0.26	1.77	100.00
Sample Size		59	144	184	1	7	395
Mean Length		551	742	821	625	878	753
Std. Error		7	6	5		31	3
Sample Size		53	142	175	1	7	378
Sample Period: July 1 - 4							
Both Sexes	276	2,626	4,747	9,585		46	17,280
Percent	1.60	15.20	27.47	55.47		0.27	100.00
Sample Size	6	57	103	208		1	375
Mean Length	450	535	758	851		810	771
Std. Error	11	8	7	4			3
Sample Size	6	57	100	204		1	368
Sample Period: July 5 - August 25							
Both Sexes	150	3,791	8,630	14,269		200	27,040
Percent	0.55	14.02	31.92	52.77		0.74	100.00
Sample Size	3	76	173	286		4	542
Mean Length	427	536	756	864		951	782
Std. Error	6	8	5	4		15	3
Sample Size	3	74	165	285		4	531
All Periods Combined							
Both Sexes	426	9,107	19,943	32,244	46	565	62,331
Percent	0.68	14.61	32.00	51.73	0.07	0.91	100.00
Sample Size	9	192	420	678	1	12	1,312
Mean Length	442	540	752	849	625	898	770
Std. Error	8	4	3	2		22	2
Sample Size	9	184	407	664	1	12	1,277

Table 13. Chum salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

	Year																			Average Percent[a]	
Date	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
06/04					100									187							0.1	0.1
06/05					305		0					110		195							0.1	0.1
06/06					383		1	9		2	35	183		664							0.1	0.2
06/07					394		8	19	65	128	36	144		937							0.1	0.3
06/08					415		5	22	94	149	88	124		627		88					0.1	0.3
06/09					416		6	152	205	103	322	119	253	477	362	258	1,547	68	139	29	0.1	0.5
06/10					300		37	150	545	112	94	170	275	304	255	324	2,312	74	345	61	0.2	0.6
06/11			0	0	257	3	8	63	501	11	66	124	178	393	367	175	1,333	45	197	177	0.1	0.7
06/12		364	0	0	289	0	25	127	112	31	51	135	245	281	442	186	1,589	39	130	139	0.1	0.8
06/13		686	0	0	328	9	139	68	123	44	149	117	2,377	170	318	293	1,992	74	112	136	0.2	1.0
06/14		630	100	0	524	17	166	53	85	106	104	112	1,719	176	183	595	1,958	88	84	91	0.2	1.1
06/15		485	210	0	960	6	79	57	2,650	71	2,191	1,211	993	170	213	3,125	2,023	412	88	217	0.4	1.5
06/16		859	199	0	1,018	4	80	37	5,774	127	1,691	3,354	2,308	1,878	5,901	1,884	968	1,034	107	1,876	0.7	2.1
06/17		330	512	0	331	2	40	786	1,839	127	747	1,169	6,097	2,786	20,237	1,472	3,508	587	46	1,642	0.8	2.9
06/18		212	565	0	1,380	1	25	1,313	1,241	180	618	1,024	7,379	1,213	6,514	1,757	21,909	426	134	838	1.0	3.9
06/19		162	401	0	504	66	245	751	924	48	665	627	2,014	659	15,354	1,967	12,684	609	388	314	0.8	4.7
06/20		95	282	0	309	6,283	220	553	1,579	103	1,627	941	2,552	605	7,312	1,275	10,515	713	8,457	200	0.9	5.6
06/21		391	3,895	487	29	3,209	126	274	764	1,377	4,766	1,190	4,256	422	4,009	1,111	11,063	222	3,504	243	0.9	6.5
06/22	704	3,084	3,895	2,718	19	1,414	235	357	666	4,053	61,168	2,159	3,587	336	27,174	818	14,955	597	12,299	221	2.4	8.9
06/23	953	2,845	1,948	1,327	2,824	2,846	509	394	1,181	5,035	13,549	4,678	2,177	8,003	18,933	1,168	7,758	501	12,064	279	1.6	10.6
06/24	2,072	239	7,790	4,380	7,530	703	757	8,520	1,549	12,896	5,180	37,121	2,302	21,400	16,333	3,151	8,448	508	9,284	14,887	3.3	13.8
06/25	2,890	1,275	5,194	2,321	13,207	310	6,649	24,484	37,375	13,309	2,668	13,765	2,926	7,538	15,897	22,478	22,596	1,401	15,723	7,766	4.9	18.7
06/26	5,252	2,106	14,282	2,939	26,651	531	7,461	9,730	24,871	37,152	787	12,980	70,205	5,265	17,462	50,089	7,325	3,059	12,443	2,396	6.2	25.0
06/27	6,550	715	12,335	3,235	23,750	1,354	9,871	4,533	6,206	19,834	942	10,142	30,632	23,140	9,175	18,394	13,954	2,381	14,011	2,154	4.3	29.2
06/28	5,001	454	10,387	7,783	67,031	1,306	12,630	8,737	6,181	11,501	152	12,072	16,697	23,874	7,725	7,509	15,147	1,335	5,526	7,766	4.6	33.8
06/29	2,081	876	1,948	3,784	89,225	347	6,843	2,225	1,784	12,653	190	20,662	12,895	5,421	5,530	6,426	2,515	1,254	5,588	3,275	3.2	37.1
06/30	1,229	1,117	7,790	5,673	17,242	541	7,480	16,250	750	14,558	137	11,025	15,892	9,468	5,566	8,561	4,155	4,876	7,341	5,508	3.4	40.4
07/01	3,750	2,432	9,738	1,733	10,212	18,749	2,843	26,278	551	17,800	37,878	5,882	11,160	10,034	7,442	10,535	7,901	10,755	3,962	29,784	5.3	45.8
07/02	8,204	9,497	7,141	1,677	8,093	27,024	4,135	12,608	556	23,527	28,403	4,831	9,766	7,751	46,488	6,408	8,992	8,532	6,624	58,420	6.1	51.8
07/03	27,026	6,655	21,424	869	17,438	9,186	2,117	5,688	1,607	25,766	23,937	20,793	5,105	16,516	16,785	7,832	9,843	3,064	27,448	10,626	4.9	56.7
07/04	60,317	2,868	6,492	1,469	6,965	6,889	2,568	2,335	8,898	35,698	6,148	57,022	3,530	19,039	11,018	4,351	5,053	1,249	21,653	16,369	5.0	61.8
07/05	59,845	4,556	5,194	8,238	11,430	6,848	7,630	1,246	7,069	11,076	2,364	17,481	3,769	6,358	16,547	1,910	1,256	413	24,007	25,340	4.2	66.0
07/06	36,136	4,642	2,597	2,989	4,015	8,293	3,154	472	2,746	9,763	19,729	1,546	6,620	4,392	8,063	3,392	1,759	1,084	21,323	11,083	2.9	68.9
07/07	12,312	32,159	3,246	2,267	9,355	6,201	1,128	440	2,981	12,403	19,224	936	13,819	2,819	7,176	7,703	1,674	642	18,917	8,004	3.5	72.3
07/08	6,021	10,964	9,089	2,505	7,234	7,338	4,644	1,311	3,053	7,878	28,154	739	5,901	2,712	5,729	18,750	2,366	201	23,583	3,437	3.0	75.4
07/09	3,989	4,872	3,895	1,973	3,765	6,601	5,551	2,532	1,135	7,435	6,448	559	3,023	4,578	14,793	5,325	1,909	1,336	11,201	2,541	1.9	77.3
07/10	2,755	11,948	7,141	1,657	2,561	5,348	11,008	574	6,152	11,640	10,333	780	2,362	3,690	22,801	2,097	1,430	665	5,645	2,244	2.4	79.7
07/11	4,817	6,383	8,440	3,205	2,507	4,401	8,089	301	6,382	6,060	3,337	1,366	19,174	2,098	6,060	2,989	855	308	8,801	2,437	2.1	81.7
07/12	6,189	6,149	8,440	3,201	0	1,178	27,386	333	24,133	16,412	2,854	1,706	14,505	1,612	3,270	1,639	898	1,207	4,537	2,084	3.0	84.7
07/13	4,895	7,877	9,089	2,447	932	746	7,314	295	5,310	5,646	2,472	1,580	6,202	1,600	2,667	819	1,068	3,580	1,588	969	1.7	86.5
07/14	4,431	6,180	2,597	3,198	578	1,596	2,138	258	840	5,343	1,035	2,223	3,027	2,696	2,369	507	803	2,042	1,165	1,247	1.1	87.6
07/15	2,496	7,187	2,597	3,327	440	18,524	4,709	540	368	6,137	564	1,646	1,603	1,995	1,117	449	654	1,204	647	1,892	1.5	89.1
07/16	3,572	2,030	2,597	2,910	511	10,549	5,500	552	379	4,551	436	2,752	1,351	2,263	1,340	638	669	611	597	1,483	1.1	90.1
07/17	14,521		3,895	1,491	1,217	4,898	2,933	509	756	5,902	612	4,559	1,225	3,409	5,197	523	242	1,321	343	1,157	1.2	91.3
07/18	31,534		7,141	1,677	5,322	4,215	1,223	606	667	9,144	496	5,325	614	1,719	2,675	283	817	748	209	1,609	1.4	92.7
07/19	3,680		5,843	1,628	4,716	20,261	1,284	650	296	3,366	651	5,615	550	1,644	900	282	1,072	376	228	1,181	1.2	93.9
07/20	4,122		8,440	1,758	1,343	5,744	1,481	1,037	531	4,094	702	2,938	548	878	750	253	490	228	415	1,270	0.8	94.8

Table 13. Chum salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1999.

	Year																				Average Percent[a]	
Date	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
07/21	4,334		2,597	1,174	3,381	5,687	1,136	1,876	742	4,173	1,011	1,876	755	720	606	204	286	230	590	1,483	0.7	95.5
07/22	0		1,948	1,214	2,565	5,002	695	954	728	1,375	2,313	3,217	290	494	679	365	334	179	870	1,270	0.6	96.0
07/23	0		1,298	1,413	62	4,338	752	561	913	1,371	2,872	1,973		475	769	245	352	330	302	1,039	0.5	96.5
07/24	0		2,597	1,488	184	1,403	1,178	690	1,258	1,322	2,703	471		433	688	384	325	291	171	1,010	0.4	97.0
07/25	0		2,597	1,839	169	358	661	513	1,985	891	2,641	67		359	1,652	428	240	140	169	730	0.4	97.4
07/26	0		2,597	1,989	143	219	161	564	797	510	2,495	68		13	1,759	337	227	156	343	1,011	0.4	97.7
07/27	0		2,597	1,974	117	160	354	480	723	317	2,265	73		15	1,828	35	440	76	245	579	0.3	98.1
07/28	0		1,948	2,109	74	71	120	341	691	375	4,130	256		13	642	68	263	95	436	454	0.3	98.4
07/29	0		649	2,146	159	20	0	259	525	249	601	978		8	114	27	350	90	418	200	0.2	98.6
07/30	0		649	1,377	239	11	922	303	1,054	483	525	376		9	173	35	633	0	272	145	0.2	98.8
07/31	0		649	957	663	18	305	180	1,602	1,279	318	153		10	196	26	199	0	313	154	0.2	99.0
08/01	0		0	660	0	18	0	190	1,102	375	447	161		29	218	10	35	0	377	110	0.1	99.1
08/02	0		3,246	790	0	12	0	174	489	126	46	334		10	102	23	398	0	438	26	0.2	99.3
08/03	0		0	734	0	16	0	142	436	0	269	149		11	44	11	170	0	1,099	24	0.1	99.4
08/04	0		0	658	258	43	641	161	156	0	557	123		12	40	16	126	0	1,398	114	0.1	99.5
08/05	0		0	73	0	122	310	478	205	0	828	79		15	38	197	285	0	257	152	0.1	99.6
08/06	0		0	118	0	174	155	686	170	0	3,290	159		10	40	133	126	0	343	59	0.1	99.7
08/07			0	110	0	110	80	260	248	0	1,863	92		126	123	36	67	0	212	23	0.1	99.7
08/08			0	281	0	472	65	101	945	62	5,102	48		60	53	8	40	0	39	15	0.2	99.9
08/09			0	309	0	445	62	45	175	568	896	61		16	2	8	47	0	20	10	0.1	100.0
08/10			0	0	0	172	141	47	0	549	0	70		0	13	27	50	0	0	13	0.0	100.0
08/11			0	0	0	206	58	31	0	136	0	82		0	473	46	19	0	0	46		
08/12			0	0	0	487	0	19	0	0	0	122		0	33	26	10	0	0	28		
08/13			0	0	0	260	0	21	0	0	297	114		0	16	62	1	0	0	16		
08/14			0	0	0	511	0	23	0	0	199	166		0	17	23	1	0	0	10		
08/15			0	0	0	231	0	38	0	0	47	177		0	14	11	0	0	0	9		
08/16			0	0	0	145	0	37	0	0	16	32		0	10	9	0	0	0	8		
08/17			0	0	0	71	0	30	0	0	97	13		0	11	8	0	0	0	6		
08/18			0		0	54			0	0	97	25		0	8	6	0	0	0	9		
08/19					0	54			0	0	68	12		0	21	9	0	0	0	16		
08/20					0	41			0	0	0	13		0	17	0	0	0	0	51		
08/21					0	9			0	0	0	4		0	26	0	0	0	0	47		
08/22					0				0	0	0			0	25	0	0	0	0	19		
08/23					0				0	0	0			0	16	0	0	0	0	17		
08/24					0					0	0			0	12	0	0	0	0	13		
08/25					0					0	0			0	1	0	0	0	0	4		
Total	331,678	143,324	230,141	106,279	362,369	214,481	168,276	147,433	186,418	377,512	329,793	287,281	302,858	217,230	378,928	212,612	225,029	61,456	299,215	242,312		

[a] Average percent of total annual escapement for 1980 - 1999, June 4 through August 10.

Table 14. Age, sex, and size composition of chum salmon escapement, Nushagak River sonar project, 1999.

	Age Group			
	0.3	0.4	0.5	Total
Sample Period: June 9 - August 25				
Males	57,842	41,428	1,563	100,833
Percent	23.87	17.10	0.65	41.61
Sample Size	74	53	2	129
Mean Length	592	613	587	600
Std. Error	3	4	7	3
Sample Size	74	53	2	129
Females	89,890	50,807	782	141,479
Percent	37.10	20.97	0.32	58.39
Sample Size	115	65	1	181
Mean Length	568	578	660	572
Std. Error	2	3		2
Sample Size	115	64	1	180
Both Sexes	147,732	92,235	2,345	242,312
Percent	60.97	38.06	0.97	100.00
Sample Size	189	118	3	310
Mean Length	577	594	611	584
Std. Error	2	3	7	2
Sample Size	189	117	3	309

Table 15. Pink salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1998.

	Year									Average Percent[a]	
Date	1980	1982	1984	1986	1988	1990	1994	1996	1998	Daily	Cum.
07/01	0	0	0	0	0	0	0	0	0	0.0	0.0
07/02	0	0	549	0	0	0	0	0	0	0.0	0.0
07/03	0	0	0	0	0	0	121	0	0	0.0	0.0
07/04	0	0	0	0	0	0	0	0	0	0.0	0.0
07/05	0	0	0	0	0	0	258	0	0	0.0	0.0
07/06	0	0	0	0	0	0	0	0	0	0.0	0.0
07/07	0	0	0	0	0	0	0	0	0	0.0	0.0
07/08	0	0	0	0	0	0	0	0	0	0.0	0.0
07/09	0	0	0	0	227	0	672	58	0	0.0	0.1
07/10	0	0	0	0	134	0	2,340	270	0	0.1	0.2
07/11	0	0	251	0	191	0	335	273	0	0.0	0.2
07/12	0	0	794	0	0	0	268	341	0	0.0	0.3
07/13	0	0	266	0	0	0	256	475	1,032	0.1	0.4
07/14	0	3,216	165	215	304	179	262	329	2,019	0.3	0.6
07/15	0	3,216	126	0	107	72	151	187	2,062	0.2	0.9
07/16	0	3,216	146	1,809	113	63	172	198	1,882	0.5	1.3
07/17	0	3,216	348	0	275	112	194	453	1,080	0.1	1.5
07/18	1,855	12,864	6,386	0	331	97	168	1,765	676	0.3	1.8
07/19	216	9,648	7,859	0	140	106	562	2,698	772	0.3	2.0
07/20	1,600	12,864	18,126	356	279	110	570	796	1,264	0.5	2.5
07/21	2,300	19,297	31,880	255	451	151	365	613	1,875	0.6	3.1
07/22	2,996	19,297	24,188	202	432	348	1,095	2,451	2,852	0.7	3.8
07/23	5,510	35,377	23,845	4,330	4,209	447	1,206	2,255	1,008	1.5	5.3
07/24	2,161	16,081	70,605	4,363	6,170	410	1,059	2,318	644	1.6	6.9
07/25	3,100	61,106	64,968	2,384	8,514	665	2,432	32,951	630	2.1	9.0
07/26	4,999	25,729	54,894	625	14,669	676	3,288	29,860	1,524	1.8	10.8
07/27	10,475	196,182	66,214	1,239	13,728	647	3,507	52,386	1,125	3.7	14.5
07/28	21,782	93,267	41,567	6,853	9,722	1,053	14,964	65,581	2,137	4.7	19.2
07/29	22,057	109,347	89,976	7,728	7,873	17,893	6,889	80,657	2,354	5.2	24.3
07/30	32,754	109,347	134,987	8,620	17,365	17,770	32,461	165,951	1,515	8.6	32.9
07/31	18,992	147,941	119,383	4,297	38,549	11,070	16,177	82,605	1,774	6.2	39.1
08/01	115,186	173,669	137,574	4,828	23,238	32,017	32,832	39,307	2,878	8.9	48.0
08/02	61,476	118,996	158,472	7,738	32,460	39,470	16,842	56,063	2,627	7.6	55.6
08/03	120,802	67,538	104,080	6,589	55,663	64,515	2,644	57,074	31,210	10.3	65.9
08/04	75,708	54,674	97,528	3,878	60,774	86,613	2,380	24,795	25,074	8.3	74.2
08/05	26,757	38,593	79,075	1,883	19,695	193,407	6,886	28,660	7,768	6.2	80.4
08/06	21,750	9,648	96,630	1,064	17,049	90,081	6,417	29,066	8,977	4.4	84.9
08/07		3,216	113,159	386	23,977	76,456	9,052	18,574	7,269	3.8	88.6
08/08		9,648	83,438	326	80,869	88,089	7,751	7,806	2,679	4.5	93.1
08/09		12,864	61,145	284	17,246	38,446	2,138	8,100	2,190	1.9	94.9
08/10		35,377	46,597	507	6,451	9,279	6,980	9,098	1,490	1.6	96.5
08/11		19,297	73,178	1,100	6,699	11,861	5,131	5,097	1,306	1.5	98.1
08/12			26,831	66	9,763	9,429	360	2,993	1,592	0.7	98.8

Table 15. Pink salmon escapement estimates and average escapement percentage by date, Nushagak River, 1980-1998.

	Year									Average Percent[a]	
Date	1980	1982	1984	1986	1988	1990	1994	1996	1998	Daily	Cum.
08/13			25,252	51	3,195	2,350	162	1,861	813	0.4	99.1
08/14			9,403	124	3,491	1,257	150	1,827	640	0.3	99.4
08/15			11,026	43	1,957	555	100	681	499	0.2	99.6
08/16			3,498	24	1,636	178	106	737	691	0.1	99.7
08/17			3,308	20	2,762	405	95	383	2,183	0.3	100.0
08/14			9,403	124	3,491	1,257	150	1,827	640	0.3	99.4
08/15			11,026	43	1,957	555	100	681	499	0.2	99.6
08/16			3,498	24	1,636	178	106	737	691	0.1	99.7
08/17			3,308	20	2,762	405	95	383	2,183	0.3	100.0
08/18			1,702		1,432	580	85	530	1,007		
08/19			1,809		706	232	360	555	456		
08/20			3,202		438	442	258	309	484		
08/21			2,731		718	353	441	155	551		
08/22			2,694		392	297	453	175	466		
08/23			2,340		216	1,137	251	163	735		
08/24			482			587	114	213	379		
08/25			2,217			462	12	251	213		
08/26						802		804			
08/27						289		358			
08/28						148		206			
08/29						119					
08/30						0					
08/31						0					
09/01						0					
09/02						0					
09/03						0					
09/04						0					
09/05						0					
09/06						0					
09/07						0					
09/08						0					
09/09						0					
09/10						0					
09/11						0					
09/12						0					
Total	552,476	1,424,731	1,904,894	72,187	494,610	801,725	191,772	821,312	132,402		

[a] Average percentage of total annual escapement for 1980 - 1998, July 1 through August 17.

Table 16. Coho salmon escapement estimates and average escapement percentage by date, Nushagak River, 1982-1999.

Date	Year																	Average Percent[a]	
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
06/29	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0.0	0.0
06/30	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0.0	0.0
07/01	0	0	0	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0.0	0.0
07/02	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0.0	0.0
07/03	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0.0	0.0
07/04	0	0	0	0	0	0	0	0	0	63	0	0	0	0	0	0	0	0.0	0.0
07/05	0	336	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0.0	0.0
07/06	0	122	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0.0	0.0
07/07	0	93	0	0	0	0	0	0	0	8	0	0	0	80	0	0	0	0.0	0.1
07/08	0	102	0	0	0	0	0	0	0	9	0	0	347	135	0	0	0	0.1	0.1
07/09	0	81	0	0	0	0	0	0	0	5	0	0	0	128	0	0	0	0.0	0.1
07/10	0	68	0	0	0	0	0	0	0	3	0	426	378	157	0	0	10	0.1	0.2
07/11	0	71	0	0	0	0	0	0	0	5	0	125	585	558	0	0	10	0.1	0.4
07/12	0	71	0	0	0	0	0	0	0	6	0	112	244	419	42	0	291	0.1	0.5
07/13	0	54	0	0	0	0	0	0	0	175	0	96	99	387	52	867	101	0.2	0.7
07/14	0	71	0	0	0	0	0	0	0	265	0	155	67	271	420	1,088	138	0.3	0.9
07/15	0	74	0	0	0	0	0	246	0	193	0	81	57	292	269	1,009	209	0.2	1.2
07/16	0	0	0	0	708	0	0	172	0	329	0	103	77	208	159	789	165	0.2	1.4
07/17	1,354	0	0	0	0	0	0	250	0	556	0	142	64	176	317	527	118	0.3	1.7
07/18	1,354	0	532	0	0	0	0	374	0	642	0	566	35	553	282	323	171	0.4	2.1
07/19	1,354	0	786	127	0	0	0	133	25	651	0	546	31	1,016	212	361	128	0.4	2.5
07/20	1,354	0	671	73	0	177	0	670	30	333	0	458	31	440	117	568	141	0.3	2.8
07/21	1,354	406	3,381	131	0	320	0	551	51	193	0	358	22	318	125	908	169	0.5	3.3
07/22	2,708	420	2,565	106	0	163	0	322	114	246	0	465	35	890	115	1,373	120	0.5	3.7
07/23	4,062	489	186	101	575	96	810	287	127	196	0	539	22	735	210	468	109	0.3	4.0
07/24	10,833	515	552	33	748	118	1,166	0	131	43	0	493	49	1,004	150	281	120	0.3	4.3
07/25	5,416	637	508	575	416	88	1,674	0	432	591	0	1,212	1,715	2,589	87	244	88	0.9	5.2
07/26	6,771	597	429	367	234	97	1,059	0	494	620	1,427	1,843	1,225	2,885	96	588	659	1.2	6.4
07/27	8,387	592	820	269	386	82	976	0	508	645	1,127	1,970	554	7,481	49	447	561	1.2	7.7
07/28	9,479	633	515	106	184	58	808	0	701	2,199	752	1,996	581	20,959	72	780	452	2.0	9.7
07/29	8,125	644	1,115	19	480	44	632	1,263	960	8,518	902	973	1,377	21,802	58	891	326	3.5	13.2
07/30	5,416	413	1,672	15	453	52	1,326	2,362	991	3,858	1,006	466	1,750	39,448	818	575	373	3.6	16.8
07/31	4,062	0	663	20	226	31	2,464	6,066	621	1,402	527	1,235	1,311	12,642	869	662	814	2.4	19.1
08/01	2,708	0	632	17	914	33	1,574	1,886	2,574	1,392	864	2,874	652	4,614	673	1,069	3,108	2.3	21.4
08/02	6,771	0	728	15	1,426	30	5,174	669	3,238	2,883	982	1,143	1,332	8,608	769	975	679	2.3	23.8
08/03	3,300	0	478	18	8,951	24	8,513	269	1,033	1,316	611	906	832	2,311	1,100	15,823	697	2.8	26.6
08/04	2,200	0	1,032	59	7,144	1,529	9,168	175	3,068	1,066	1,163	813	716	8,379	1,844	22,747	3,626	4.5	31.1
08/05	1,354	1,212	799	4,124	3,461	4,594	6,362	150	2,701	710	1,578	2,246	8,274	12,147	955	4,455	4,945	5.1	36.1
08/06	5,416	1,948	7,126	5,979	1,804	6,479	6,033	208	7,695	1,369	712	2,009	6,208	9,410	683	4,831	2,176	4.7	40.8
08/07	1,354	1,819	5,191	3,900	831	2,379	7,837	227	8,062	783	4,160	2,707	1,791	5,739	645	4,340	866	3.8	44.7
08/08	1,354	4,638	695	22,181	681	917	18,480	1,625	11,915	423	1,941	2,405	559	2,609	752	2,316	534	5.2	49.9

Table 16. Coho salmon escapement estimates and average escapement percentage by date, Nushagak River, 1982-1999.

	Year																	Average Percent[a]	
Date	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1993	1994	1995	1996	1997	1998	1999	Daily	Cum.
08/09	5,416	5,105	955	7,880	636	414	5,903	17,005	2,513	530	660	1,635	546	2,812	943	1,940	310	3.8	53.7
08/10	10,833	4,435	4,321	2,908	1,362	489	7,888	17,916	8,305	683	661	9,751	1,132	3,100	3,185	1,531	423	5.2	58.9
08/11	51,456	1,981	2,335	3,731	4,376	320	11,607	3,778	10,354	774	364	28,753	1,892	1,818	3,192	1,298	1,773	6.3	65.2
08/12	20,312	1,629	5,235	8,459	2,009	179	11,984	13,365	8,011	1,078	696	1,922	999	1,116	6,408	1,602	1,141	5.4	70.6
08/13	13,541	1,215	5,050	4,289	1,179	193	3,359	5,738	21,355	949	811	920	2,766	992	3,067	1,610	487	4.0	74.6
08/14	20,000	944	1,881	8,554	2,106	238	3,278	2,300	13,331	1,327	846	884	1,159	971	2,100	1,537	317	3.2	77.8
08/15	27,082	982	426	4,098	728	387	2,107	1,568	5,943	1,409	1,480	706	523	1,060	1,220	1,352	354	2.1	79.8
08/16	8,180	855	6,995	605	362	387	1,928	704	2,382	322	1,687	590	509	1,179	528	3,083	318	1.7	81.5
08/17	7,873	552	6,616	1,286	391	302	2,852	339	6,794	141	1,049	584	443	632	1,030	9,326	207	2.3	83.8
08/18	2,653		8,938	960			1,701	350	7,238	230	813	446	559	895	709	4,032	318	1.9	85.7
08/19			6,872	963			1,421	795	3,450	110	9,074	1,065	499	906	1,029	1,936	592	3.1	88.8
08/20			4,880	698			799	470	2,063	124	4,151	1,012	434	517	1,061	1,605	2,326	2.3	91.1
08/21			5,463	156			911	352	1,301	37	1,129	1,422	581	256	1,422	1,368	2,151	1.7	92.8
08/22			26,267				1,016	291	1,078		693	1,492	521	321	2,460	781	823	3.0	95.8
08/23			15,314				291	195	864		415	708	1,468	294	1,402	1,362	677	2.1	97.9
08/24			5,782					1,275	694		342	582	1,058	348	895	798	560	1.4	99.3
08/25			4,435					282	557		119	84	231	421	778	482	172	0.7	100.0
08/26								78	808					1,339	587				
08/27									2,801					643	755				
08/28									2,130					335	632				
08/29									1,662						500				
08/30									1,458						763				
08/31									848						1,170				
09/01									722						967				
09/02									484						649				
09/03									602						800				
09/04									1,011						781				
09/05									831						704				
09/06									1,064						734				
09/07									1,283						754				
09/08									984						795				
09/09									1,289						705				
09/10									1,373						678				
09/11									1,512						659				
09/12									287						608				
09/13															486				
Total	263,832	33,804	142,841	82,822	42,771	20,219	131,101	84,706	162,853	39,599	42,742	82,019	46,340	189,345	57,096	104,948	34,853		

[a] Average percentage of total annual escapement for 1984-85, 1988-91, and 1993-1999, June 29 through August 25.

Table 17. Age, sex, and size composition of coho salmon escapement, Nushagak River sonar project, 1999.

	Age Group			
	1.1	2.1	3.1	Total
Sample Period: July 10 - August 25				
Males	1,491	16,215	2,609	20,315
Percent	4.28	46.52	7.49	58.29
Sample Size	8	87	14	109
Mean Length	517	539	534	536
Std. Error	16	5	17	5
Sample Size	8	87	14	109
Females	1,305	11,928	1,305	14,538
Percent	3.74	34.22	3.74	41.71
Sample Size	7	64	7	78
Mean Length	524	559	571	557
Std. Error	16	4	10	4
Sample Size	7	64	7	78
Both Sexes	2,796	28,143	3,914	34,853
Percent	8.02	80.75	11.23	100.00
Sample Size	15	151	21	187
Mean Length	520	547	547	545
Std. Error	11	4	12	3
Sample Size	15	151	21	187

Table 18. Drift gillnet catch by mesh size and species, Nushagak River sonar project, June 21 - July 14, 1999.

		Drift Stratum Number[a]								
		Left Bank (Within Sonar Range)		Middle of River (Outside Sonar Range)					Right Bank (Within Sonar Range)	
Gillnet Mesh Size	Species	1	2	5	6	7	8	9	4	3
13.0-cm	Chinook	11	99	59	43	5	20	189	66	10
	Sockeye	148	34	5	11	2	4	4	25	135
	Chum	80	42	19	13	9	24	34	111	83
	Coho	0	0	0	0	0	0	0	0	0
15.2-cm	Chinook	4	102	37	37	12	23	143	62	12
	Sockeye	145	13	3	3	7	7	3	36	119
	Chum	105	57	19	16	11	15	20	97	102
	Coho	0	0	0	0	0	0	0	0	0
20.6-cm	Chinook	3	108	76	69	12	39	151	59	5
	Sockeye	53	4	2	2	0	2	1	12	32
	Chum	11	3	1	5	0	3	5	16	29
	Coho	0	0	0	0	0	0	0	0	0
All Meshes	Chinook	18	309	172	149	29	82	483	187	27
	Sockeye	346	51	10	16	9	13	8	73	286
	Chum	196	102	39	34	20	42	59	224	214
	Coho	0	0	0	0	0	0	0	0	0

[a] 1 = Left bank inshore

2 = Left bank offshore

3 = Right bank inshore

4 = Right bank offshore

5-9 = Far-offshore starta starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

Table 19. Percent of total adjusted chinook salmon CPUE by drift stratum using 13.0-, 15.2-, and 20.6-cm mesh gillnets, Nushagak River sonar project, June 21 - July 14, 1999.

	Drift Stratum Number[a]								
	Left Bank (Within Sonar Range)		Middle of River (Outside Sonar Range)					Right Bank (Within Sonar Range)	
	1	2	5	6	7	8	9	4	3
Appoximate Stratum Width (m)	13.7	19.8	33.8	31.1	49.4	51.2	48.5	21.3	18.3
Number of Drifts	330	330	228	228	228	228	228	330	330
Number of Chinook Salmon Caught	18	309	172	149	29	82	483	187	27
Adjusted CPUE	11.0	394.5	532.9	533.6	161.2	336.5	1,724.5	238.2	45.6
Percent of Total Adjusted CPUE	0.3	9.9	13.4	13.4	4.1	8.5	43.3	6.0	1.1

Percent of Adjusted CPUE Within Sonar Range (Strata 1-4) = 17
Percent of Adjusted CPUE Outside Sonar Range (Strata 5-9) = 83

[a] 1 = Left bank inshore
2 = Left bank offshore
3 = Right bank inshore
4 = Right bank offshore
5-9 = Far-offshore starta starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

Table 20. Percent of total adjusted sockeye and chum salmon CPUE by drift stratum using 13.0- and 15.2-cm mesh gillnets, Nushagak River sonar project, June 21 - July 14, 1999.

		Drift Stratum Number[a]								
		Left Bank (Within Sonar Range)		Middle of River Outside Sonar Range					Right Bank (Within Sonar Range)	
Species		1	2	5	6	7	8	9	4	3
Sockeye	Appoximate Stratum Width (m)	13.7	19.8	33.8	31.1	49.4	51.2	48.5	21.3	18.3
	Number of Drifts	220	220	152	152	152	152	152	220	220
	Number of Sockeye Salmon Caught	346	51	10	16	9	13	8	73	286
	Adjusted CPUE	163.9	74.5	47.3	17.4	43.2	9.5	42.4	80.1	290.6
	Percent of Total Adjusted CPUE	21.3	9.7	6.2	2.3	5.6	1.2	5.5	10.4	37.8
	Percent of Adjusted CPUE Within Sonar Range (Strata 1-4) =			79						
	Percent of Adjusted CPUE Outside Sonar Range (Strata 5-9) =			20						
Chum	Appoximate Stratum Width (m)	13.7	19.8	33.8	31.1	49.4	51.2	48.5	21.3	18.3
	Number of Drifts	220	220	152	152	152	152	152	220	220
	Number of Chum Salmon Caught	196	102	39	34	20	42	59	224	214
	Adjusted CPUE	98.5	126.6	170.8	66.0	136.8	247.6	182.8	228.9	205.0
	Percent of Total Adjusted CPUE	6.7	8.7	11.7	4.5	9.4	16.9	12.5	15.6	14.0
	Percent of Adjusted CPUE Within Sonar Range (Strata 1-4) =			45						
	Percent of Adjusted CPUE Outside Sonar Range (Strata 5-9) =			55						

[a] 1 = Left bank inshore
2 = Left bank offshore
3 = Right bank inshore
4 = Right bank offshore
5-9 = Far-offshore starta starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

Table 21. Drift gillnet catch by mesh size and species, Nushagak River sonar project, July 28 - August 18, 1999.

		Drift Stratum Number[a]								
		Left Bank (Within Sonar Range)		Middle of River (Outside Sonar Range)					Right Bank (Within Sonar Range)	
Gillnet Mesh Size	Species	1	2	5	6	7	8	9	4	3
13.0-cm	Chinook	0	5	0	0	0	0	4	0	0
	Sockeye	0	0	0	2	0	1	0	1	3
	Chum	0	0	0	0	0	1	0	2	3
	Coho	14	47	9	6	2	7	4	24	29
15.2-cm	Chinook	1	2	0	2	0	0	4	0	0
	Sockeye	0	0	0	0	0	0	0	0	4
	Chum	0	1	0	1	0	0	2	1	2
	Coho	4	12	3	6	3	1	5	14	26
Both Mesh	Chinook	1	7	0	2	0	0	8	0	0
	Sockeye	0	0	0	2	0	1	0	1	7
	Chum	0	1	0	1	0	1	2	3	5
	Coho	18	59	12	12	5	8	9	38	55

[a] 1 = Left bank inshore

2 = Left bank offshore

3 = Right bank inshore

4 = Right bank offshore

5-9 = Far-offshore starta starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

Table 22. Percent of total adjusted coho salmon CPUE by drift stratum using 13.0- and 15.2-cm mesh gillnets, Nushagak River sonar project, July 28 - August 18, 1999.

	Drift Stratum Number[a]								
	Left Bank Within Sonar Range		Middle of River Outside Sonar Range					Right Bank Within Sonar Range	
	1	2	5	6	7	8	9	4	3
Appoximate Stratum Width (m)	13.7	19.8	33.8	31.1	49.4	51.2	48.5	21.3	18.3
Number of Drifts	264	264	168	168	168	168	168	264	264
Number of Coho Salmon Caught	18	59	12	12	5	8	9	38	55
Adjusted CPUE	36.7	126.6	114.1	81.6	96.3	92.2	119.7	97.3	123.1
Percent of Total Adjusted CPUE	4.1	14.3	12.9	9.2	10.9	10.4	13.5	11.0	13.9

Percent of Adjusted CPUE Within Sonar Range (Strata 1-4) = 43
Percent of Adjusted CPUE Outside Sonar Range (Strata 5-9) = 56

[a] 1 = Left bank inshore
2 = Left bank offshore
3 = Right bank inshore
4 = Right bank offshore
5-9 = Far-offshore strata starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

Table 23. Percent of total adjusted CPUE by species, year, and drift stratum, Nushagak River sonar project, 1997-1999.

		Percent of Total Adjusted CPUE by Drift Stratum Number[a]											
		Left Bank (Within Sonar Range)			Middle of River (Outside Sonar Range)						Right Bank (Within Sonar Range)		
Species	Year	1	2	Total	5	6	7	8	9	Total	4	3	Total
Chinook	1998	4.9	4.2	**9.1**	9.4	9.0	4.0	11.5	47.6	**81.5**	5.4	4.0	**9.4**
	1999	0.3	9.9	**10.2**	13.4	13.4	4.1	8.5	43.3	**82.7**	6.0	1.1	**7.1**
Sockeye	1998	31.6	7.4	**39.0**	2.7	0.0	2.1	3.3	2.9	**11.0**	6.0	44.1	**50.1**
	1999	21.3	9.7	**31.0**	6.2	2.3	5.6	1.2	5.5	**20.8**	10.4	37.8	**48.2**
Chum	1998	15.4	3.7	**19.1**	3.4	4.9	6.1	11.5	22.9	**48.8**	8.7	23.5	**32.2**
	1999	6.7	8.7	**15.4**	11.7	4.5	9.4	16.9	12.5	**55.0**	15.6	14.0	**29.6**
Coho	1997	3.3	8.0	**11.3**	11.5	26.4	3.1	12.1	15.7	**68.8**	15.3	4.5	**19.8**
	1998	5.5	26.1	**31.6**	5.0	4.9	8.4	12.2	7.3	**37.8**	12.3	18.3	**30.6**
	1999	4.1	14.3	**18.4**	12.9	9.2	10.9	10.4	13.4	**56.8**	11.0	13.8	**24.8**
Pink	1998	28.3	35.5	**63.8**	8.5	6.6	0.0	3.1	0.0	**18.2**	6.8	11.2	**18.0**

[a] 1 = Left bank inshore
2 = Left bank offshore
3 = Right bank inshore
4 = Right bank offshore
5-9 = Far-offshore strata starting with Stratum 5 on left side of river and ending with Stratum 9 on right side of river

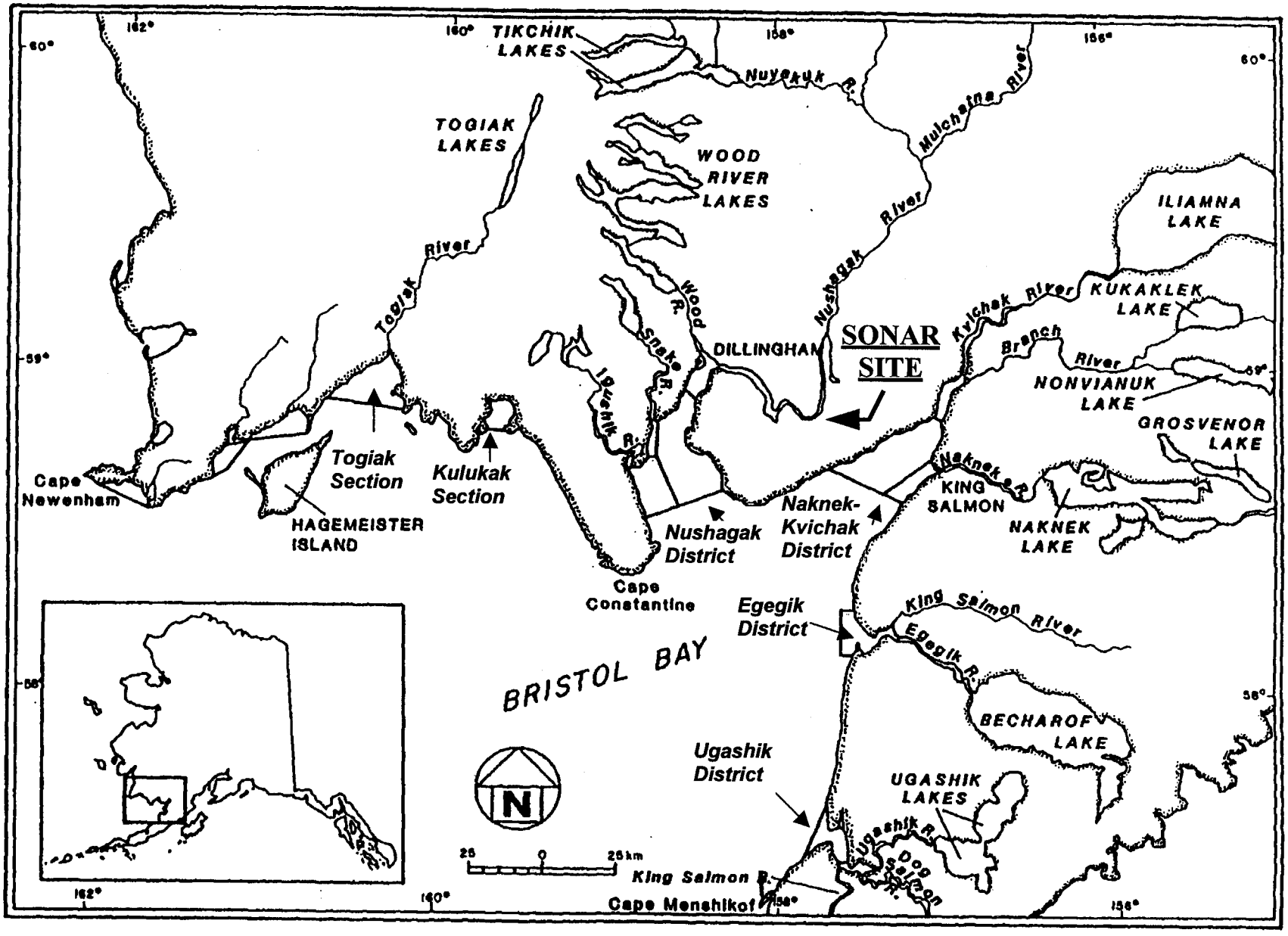


Figure 1. Bristol Bay area showing the location of the Nushagak River sonar site.

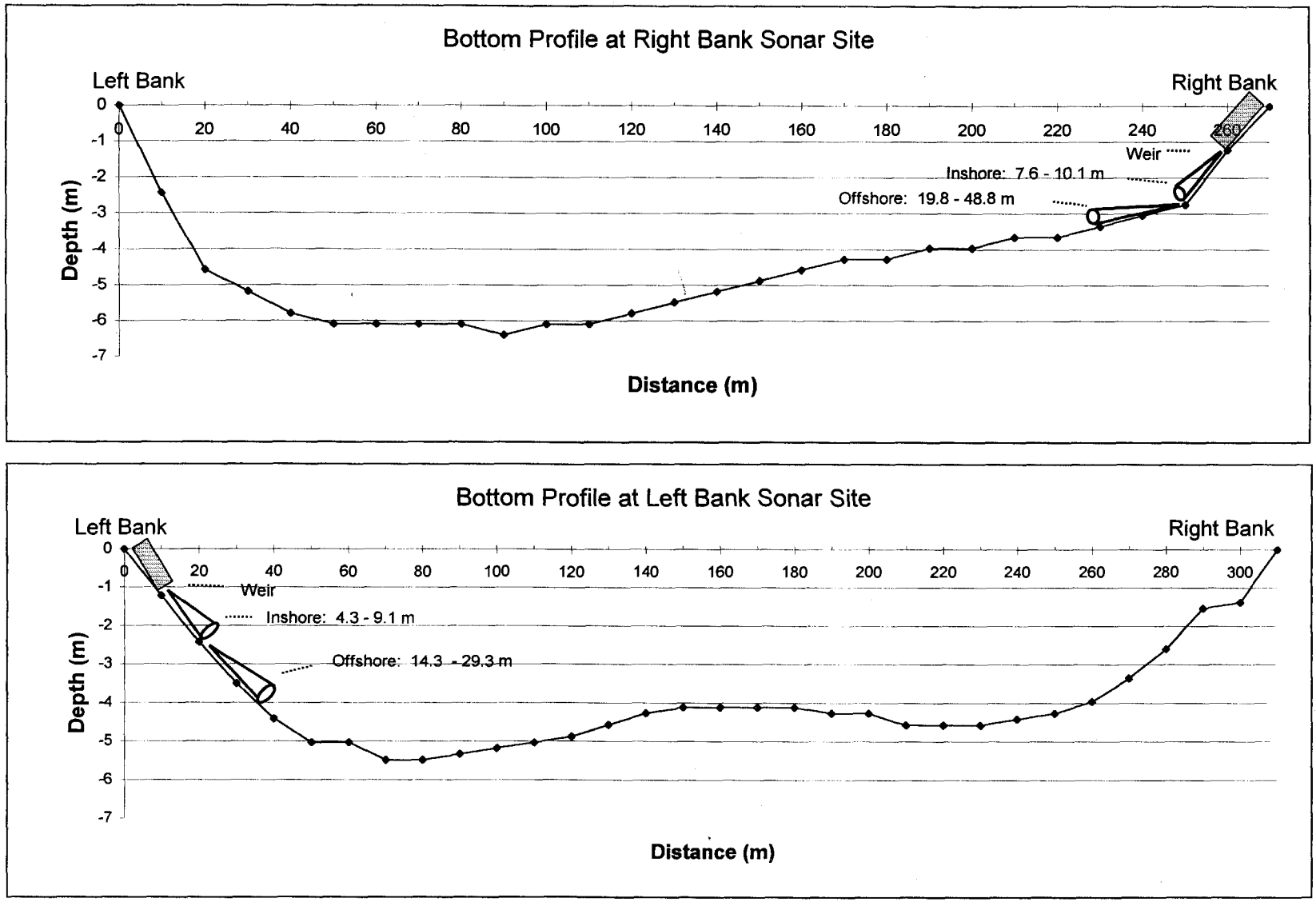


Figure 2. Right and left bank bottom profiles collected on June 10 showing approximate inshore and offshore sonar placement and minimum and maximum counting ranges, Nushagak River sonar project, 1999.

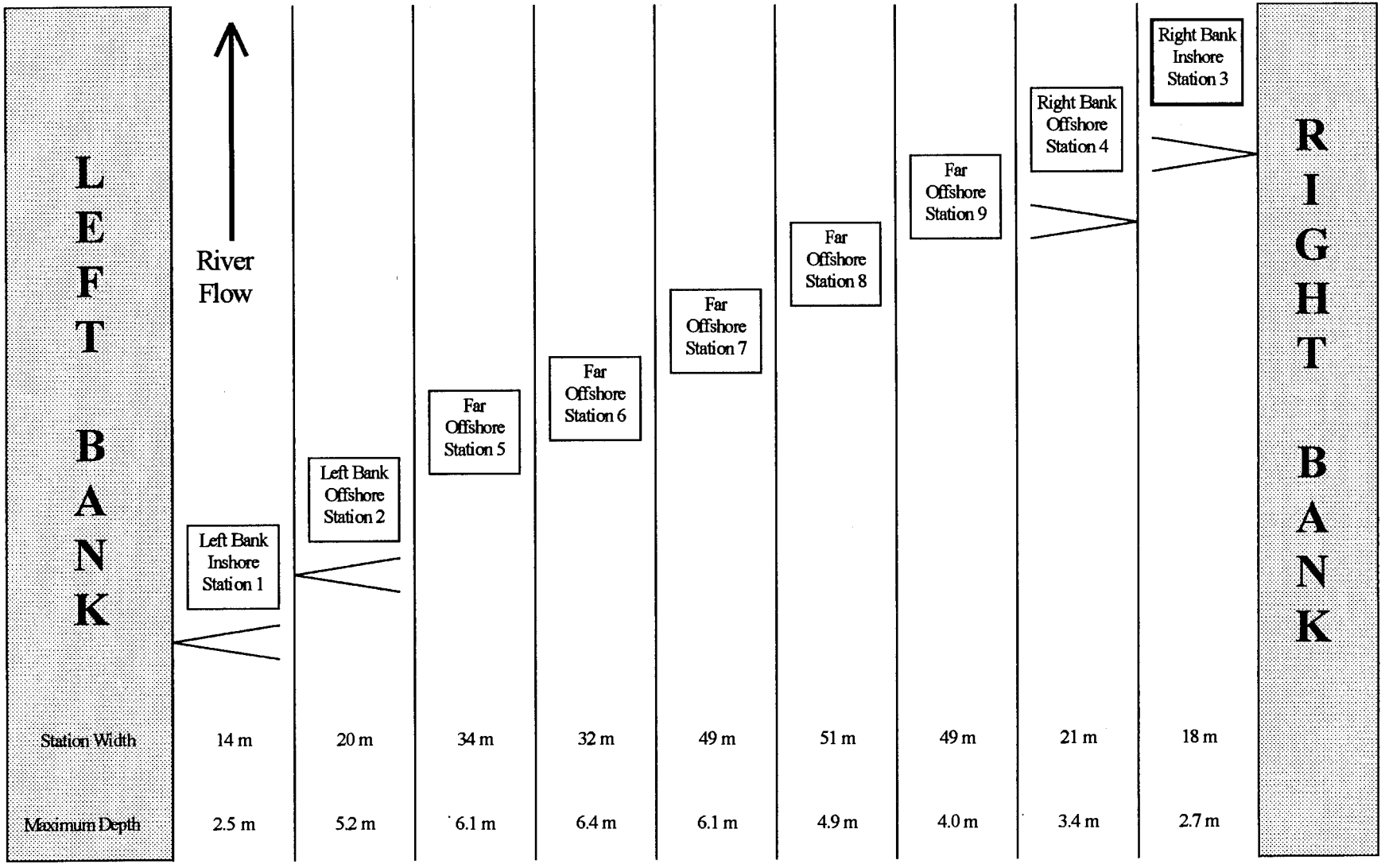


Figure 3. Diagram showing the location, approximate width, and maximum depth of escapement sampling stations used during lateral distribution sampling, Nushagak River sonar project, June 21 - July 14 and July 28 – August 18, 1999.

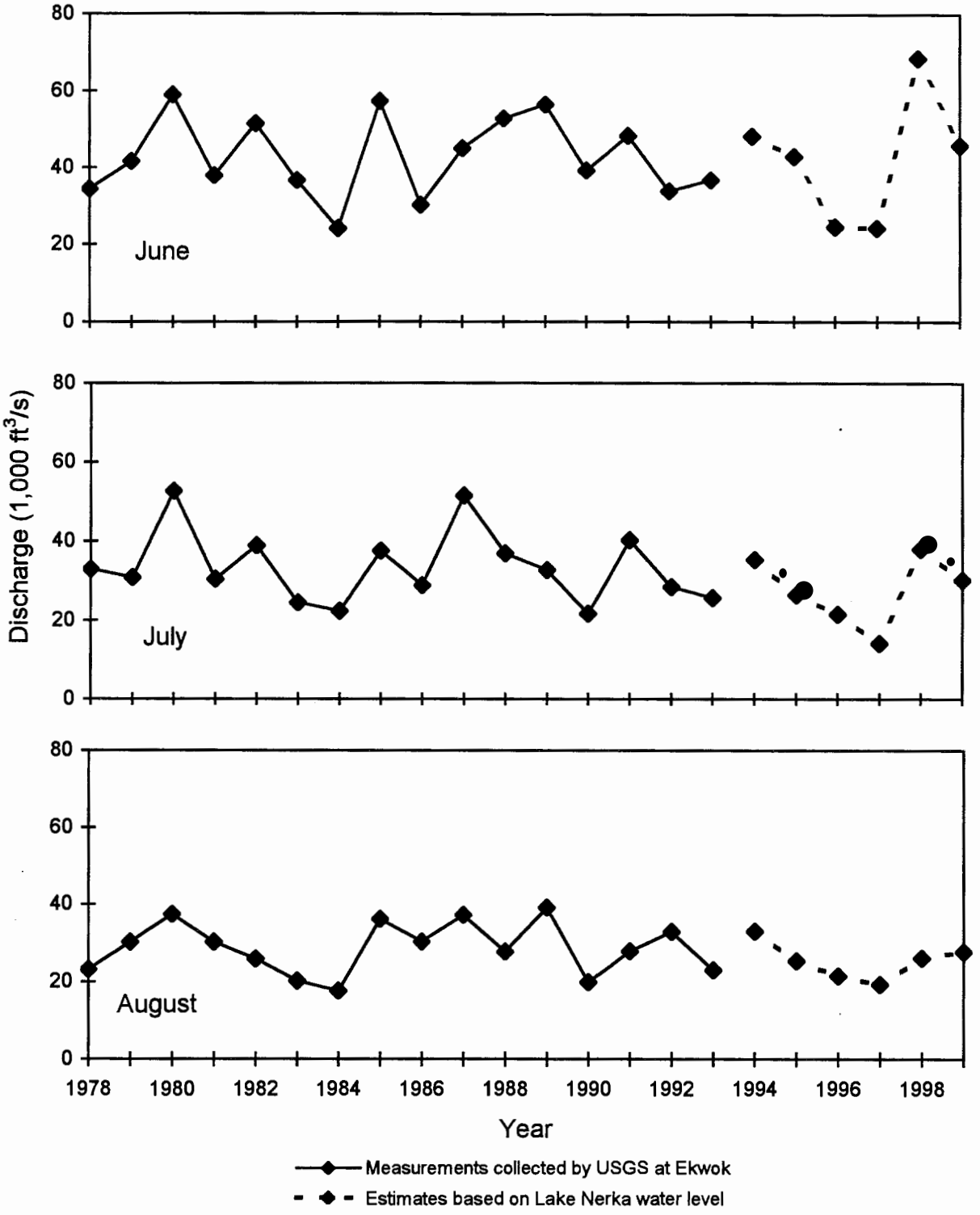


Figure 4. Average Nushagak River discharge by month and year, June - August, 1978-1999

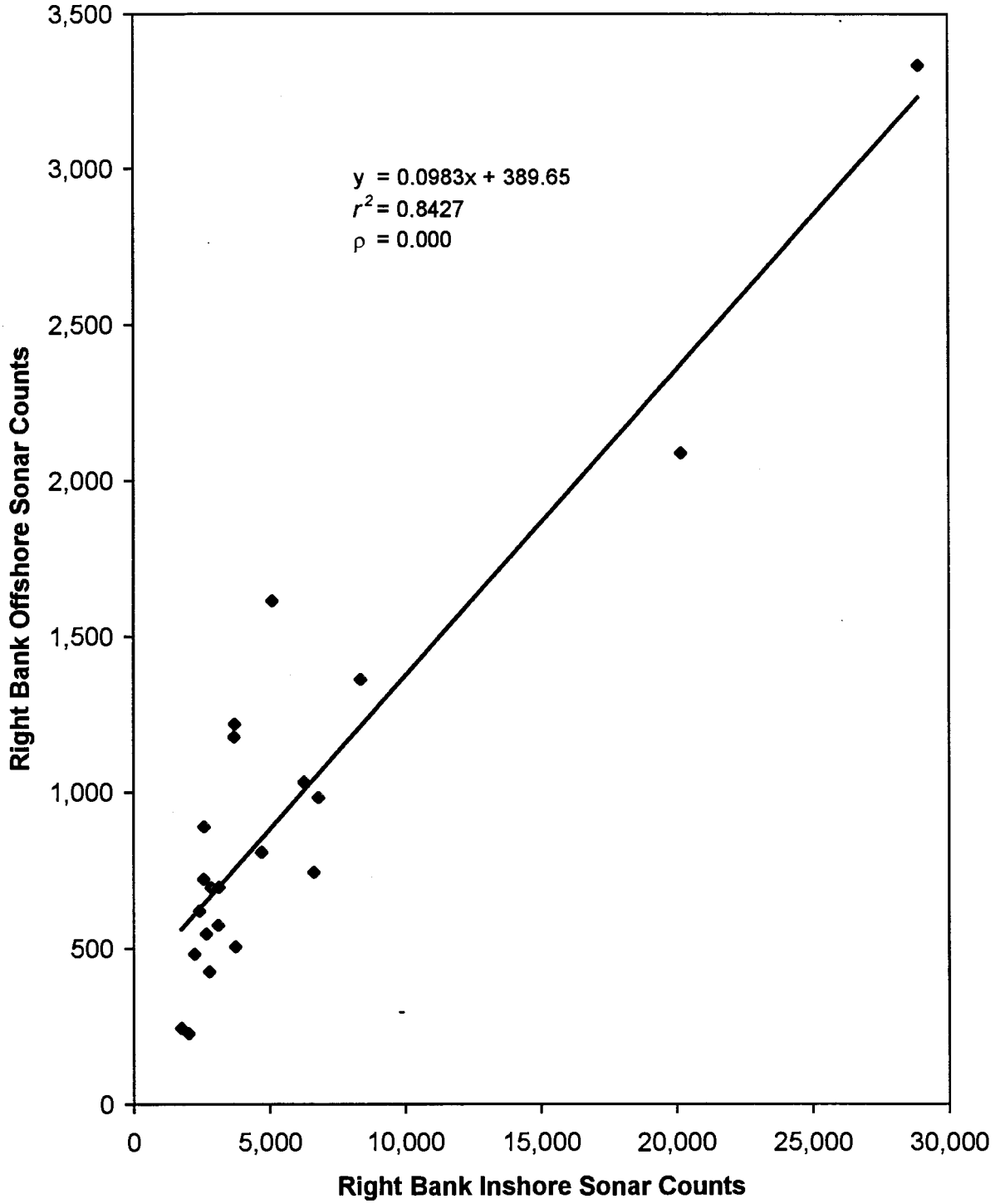


Figure 5. Regression model of the relationship of right bank inshore to right bank offshore sonar counts, Nushagak River sonar project, July 6-27, 1999.

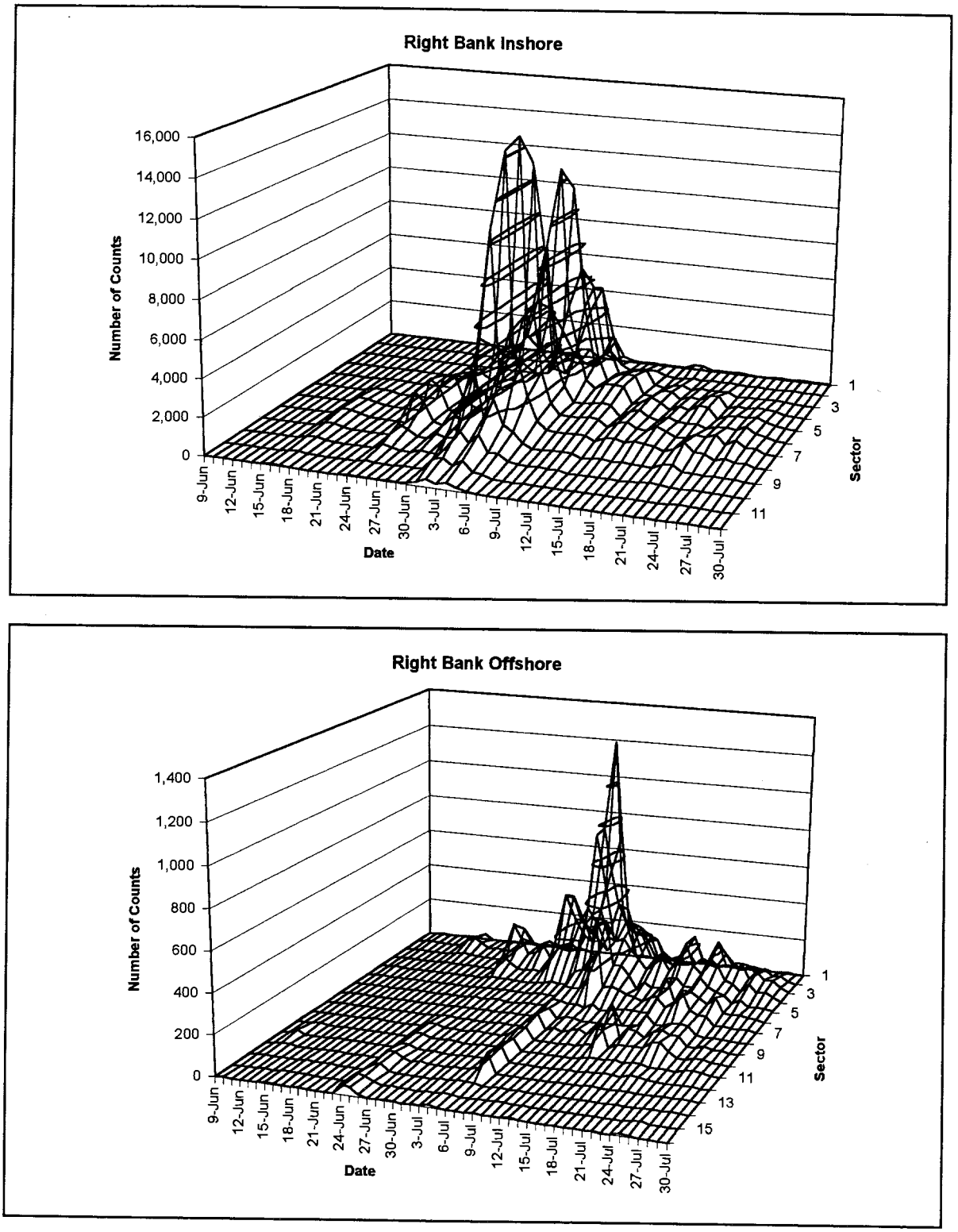


Figure 6. Number of sonar counts by sector for the right bank inshore and offshore counters, Nushagak River sonar project, June 9 - July 30, 1999.

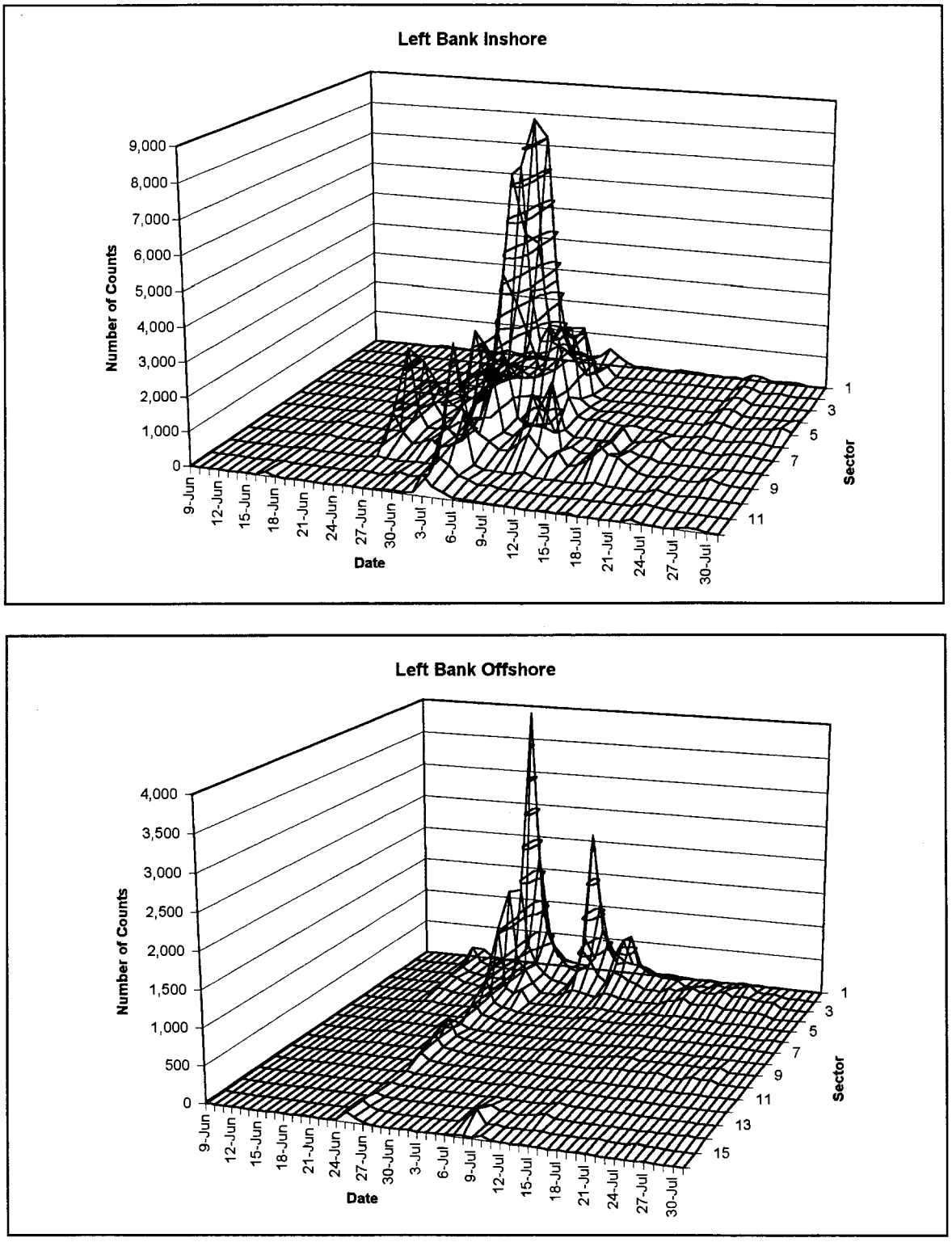


Figure 7. Number of sonar counts by sector for the left bank inshore and offshore counters, Nushagak River sonar project, June 9 - July 30, 1999.

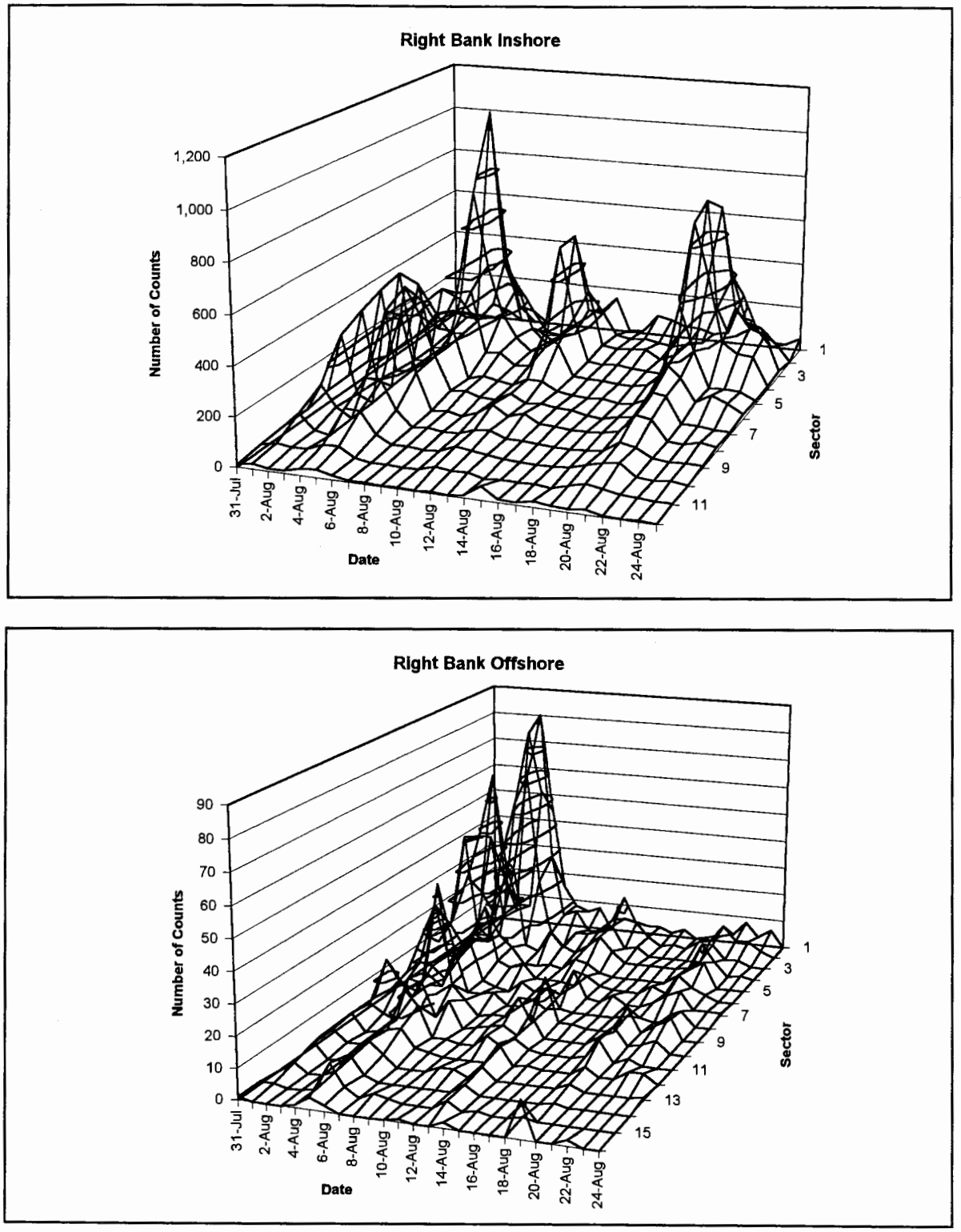


Figure 8. Number of sonar counts by sector for the right bank inshore and offshore counters, Nushagak River sonar project, July 31 - August 25, 1999.

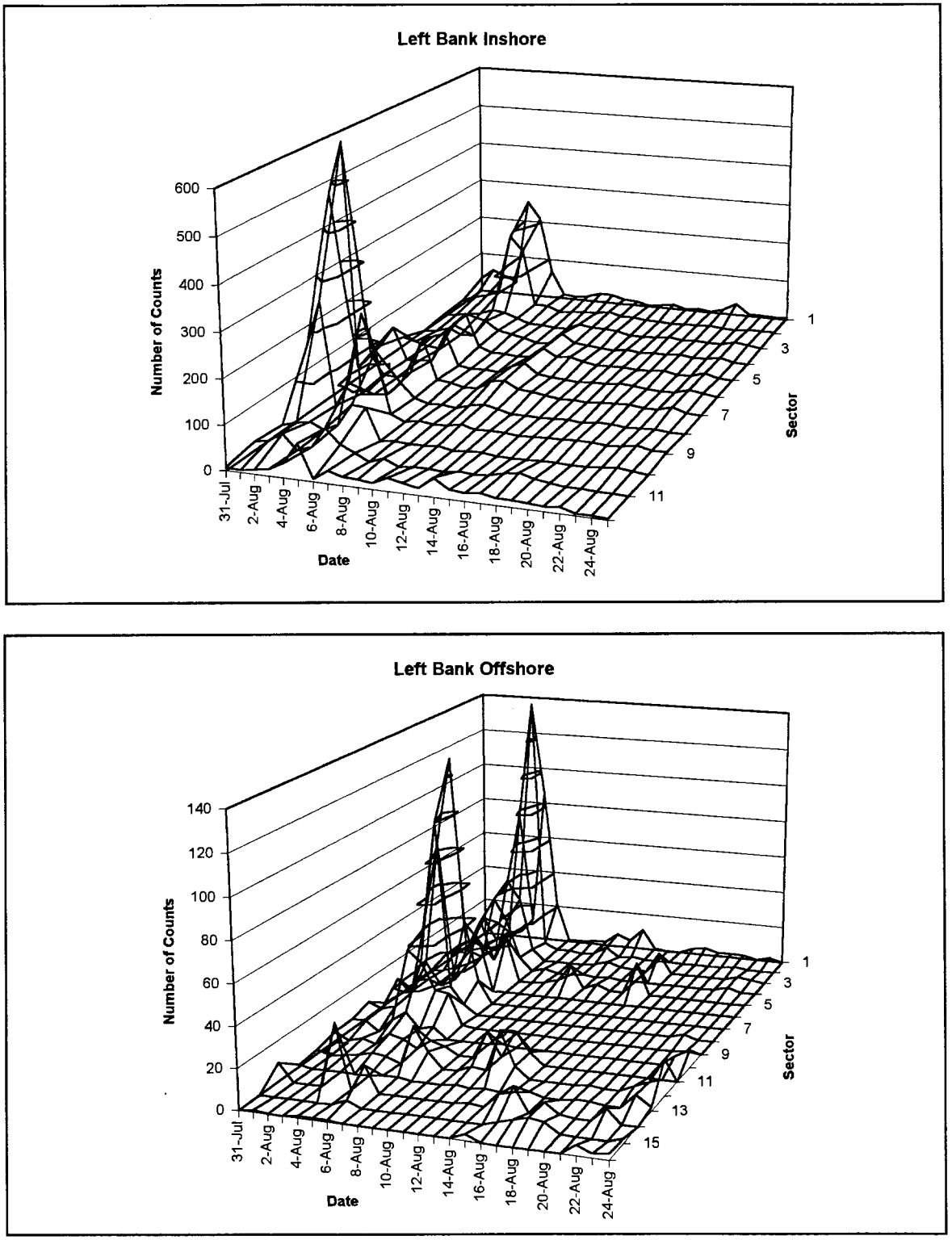


Figure 9. Number of sonar counts by sector for the left bank inshore and offshore counters, Nushagak River sonar project, July 31 - August 25, 1999.

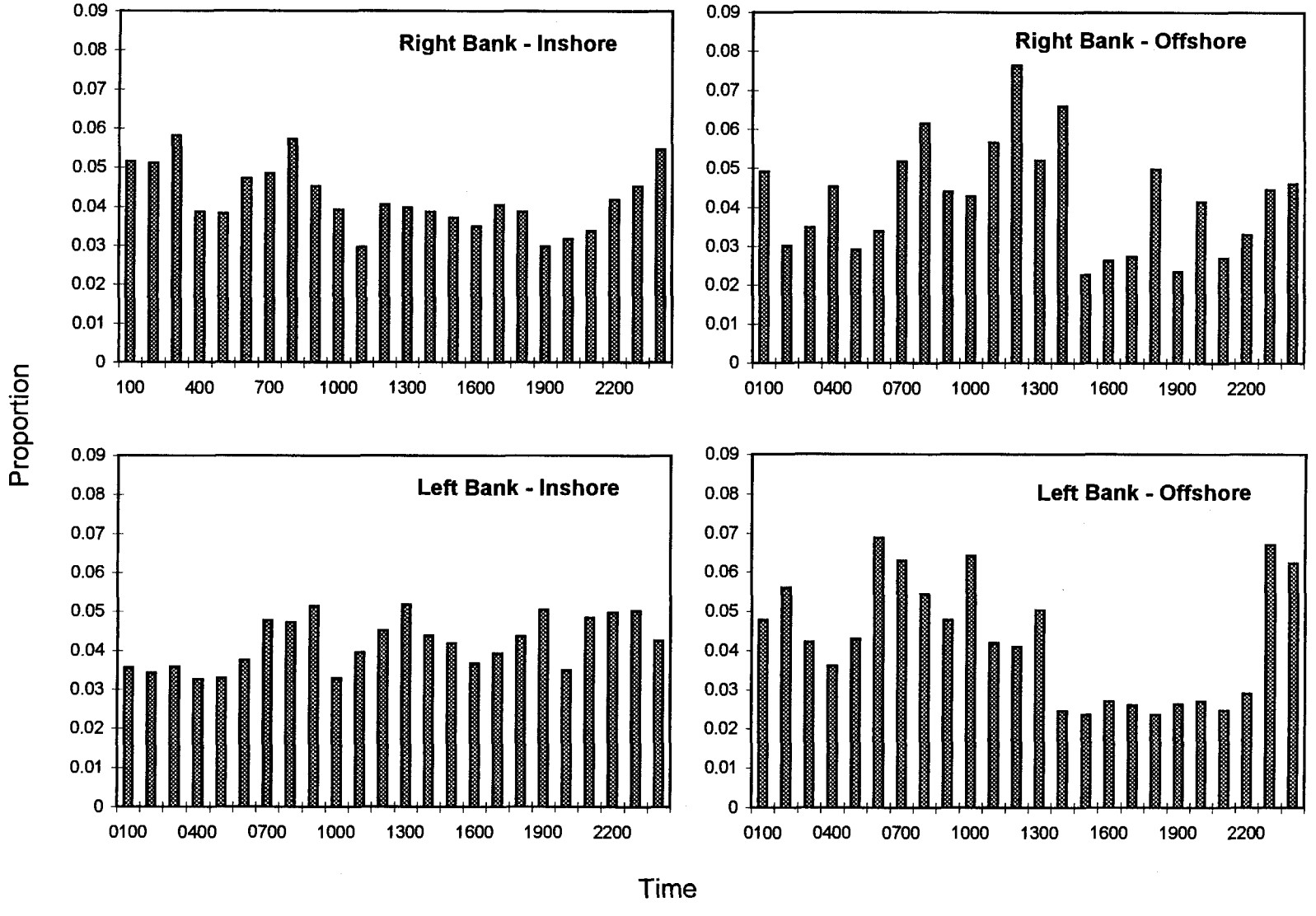


Figure 10. Average proportion of total sonar counts by hour for the right and left banks inshore and offshore counters, Nushagak River sonar project, June 9 - July 30, 1999.

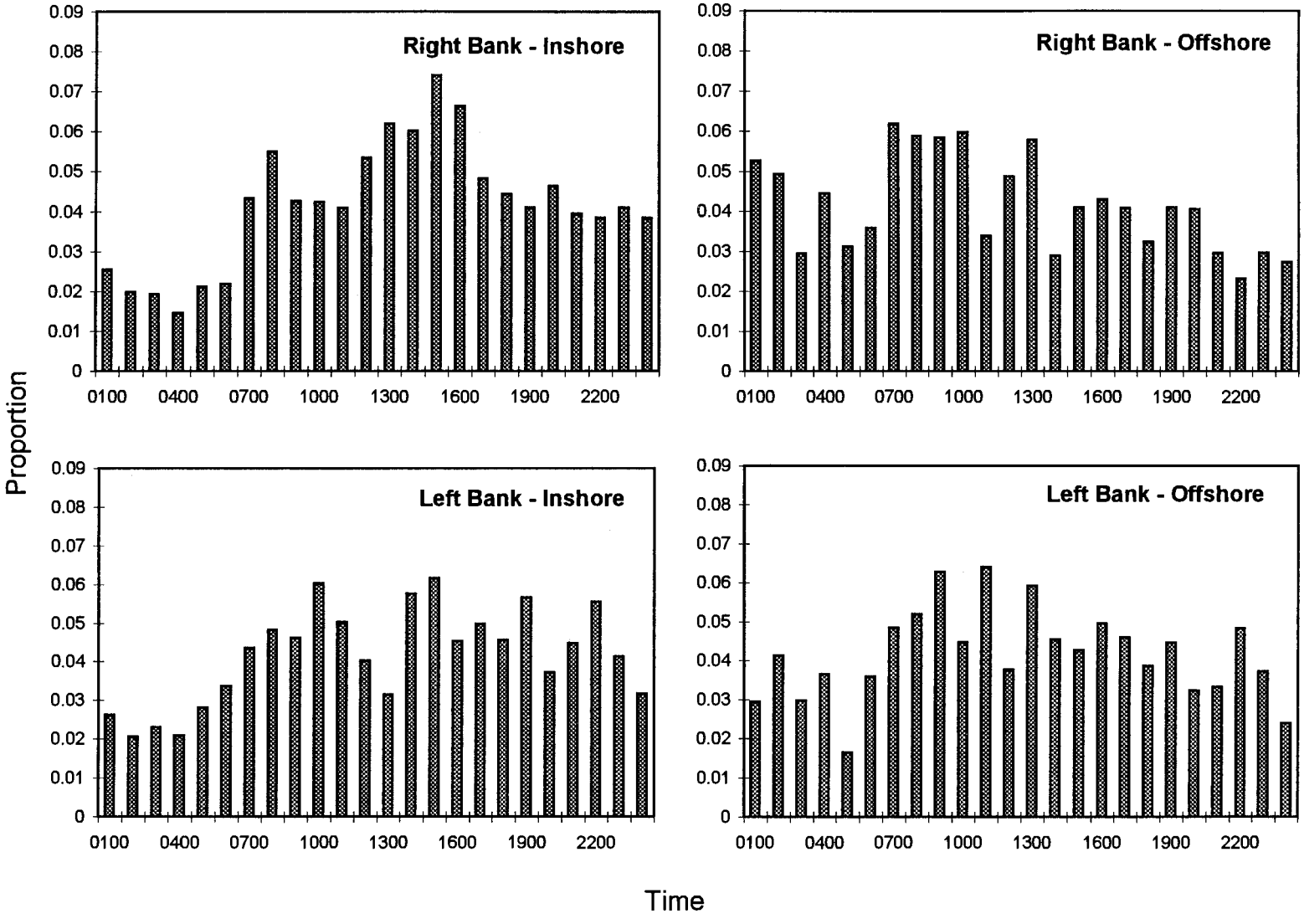


Figure 11. Average proportion of total sonar counts by hour for the right and left banks inshore and offshore counters, Nushagak River sonar project, July 31 - August 25, 1999.

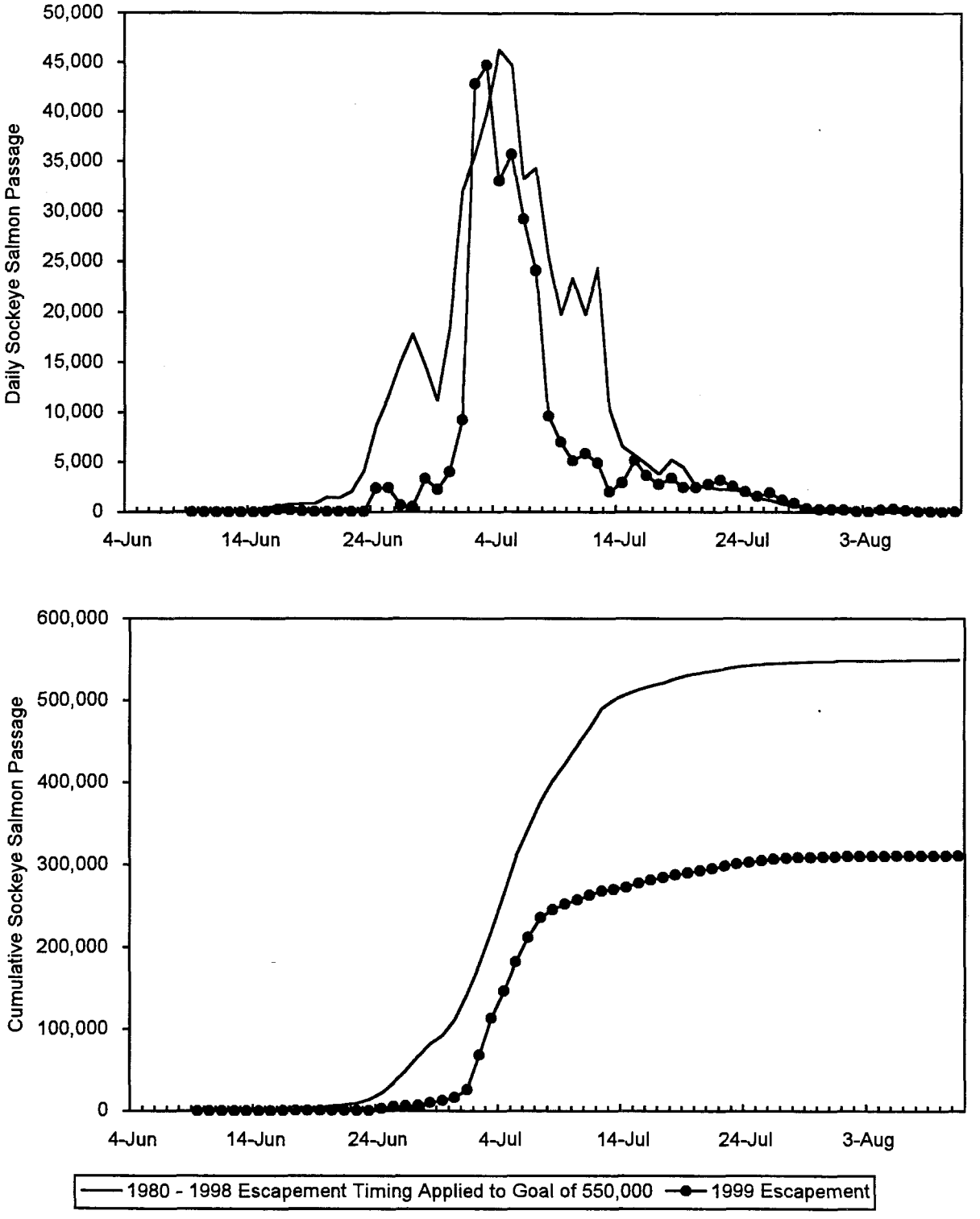


Figure 12. Average daily and cumulative escapement timing of sockeye salmon into Nushagak River, June 4 through August 10, 1980 - 1999.

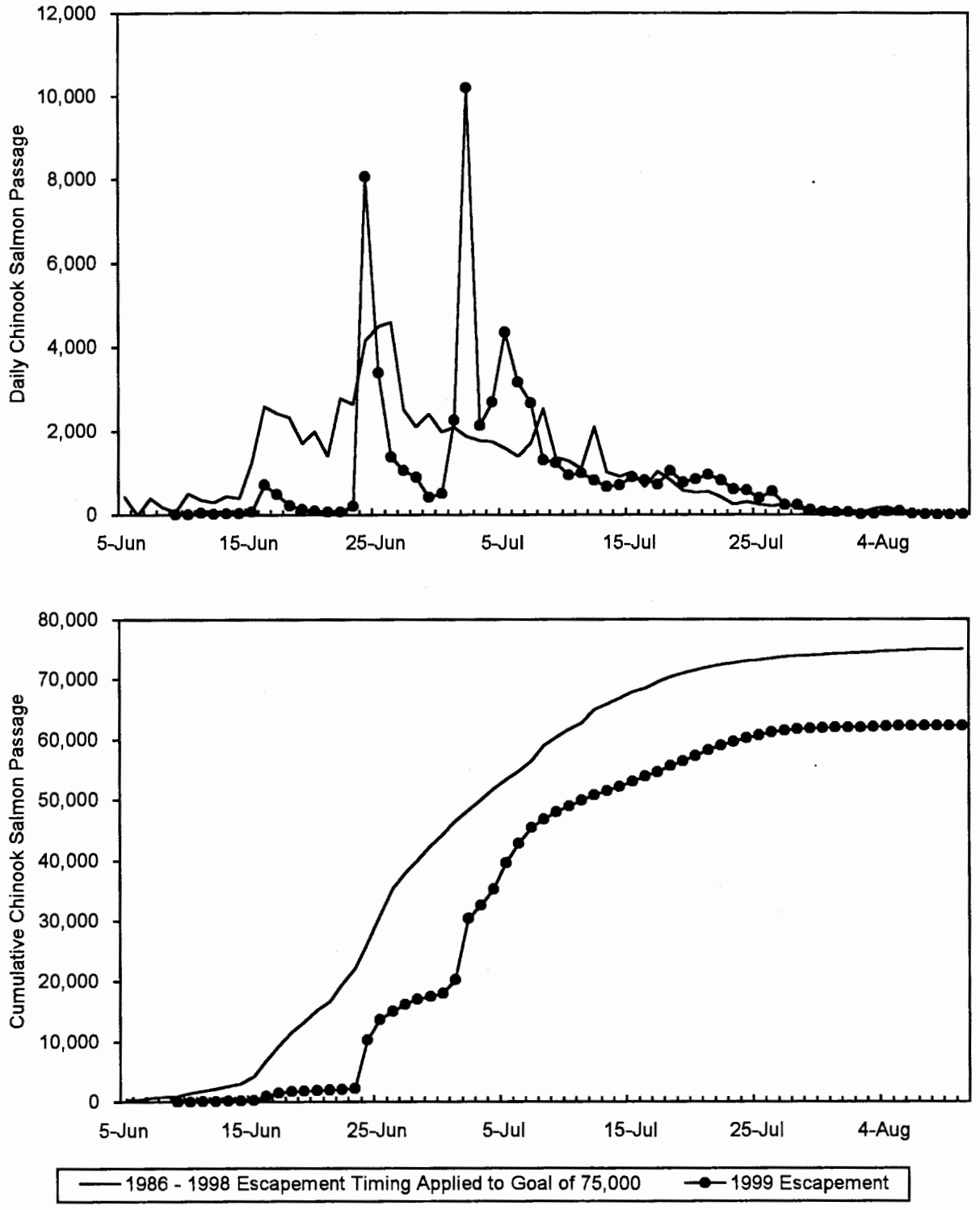


Figure 13. Average daily and cumulative escapement timing of chinook salmon into Nushagak River, June 5 through August 10, 1986 - 1999.

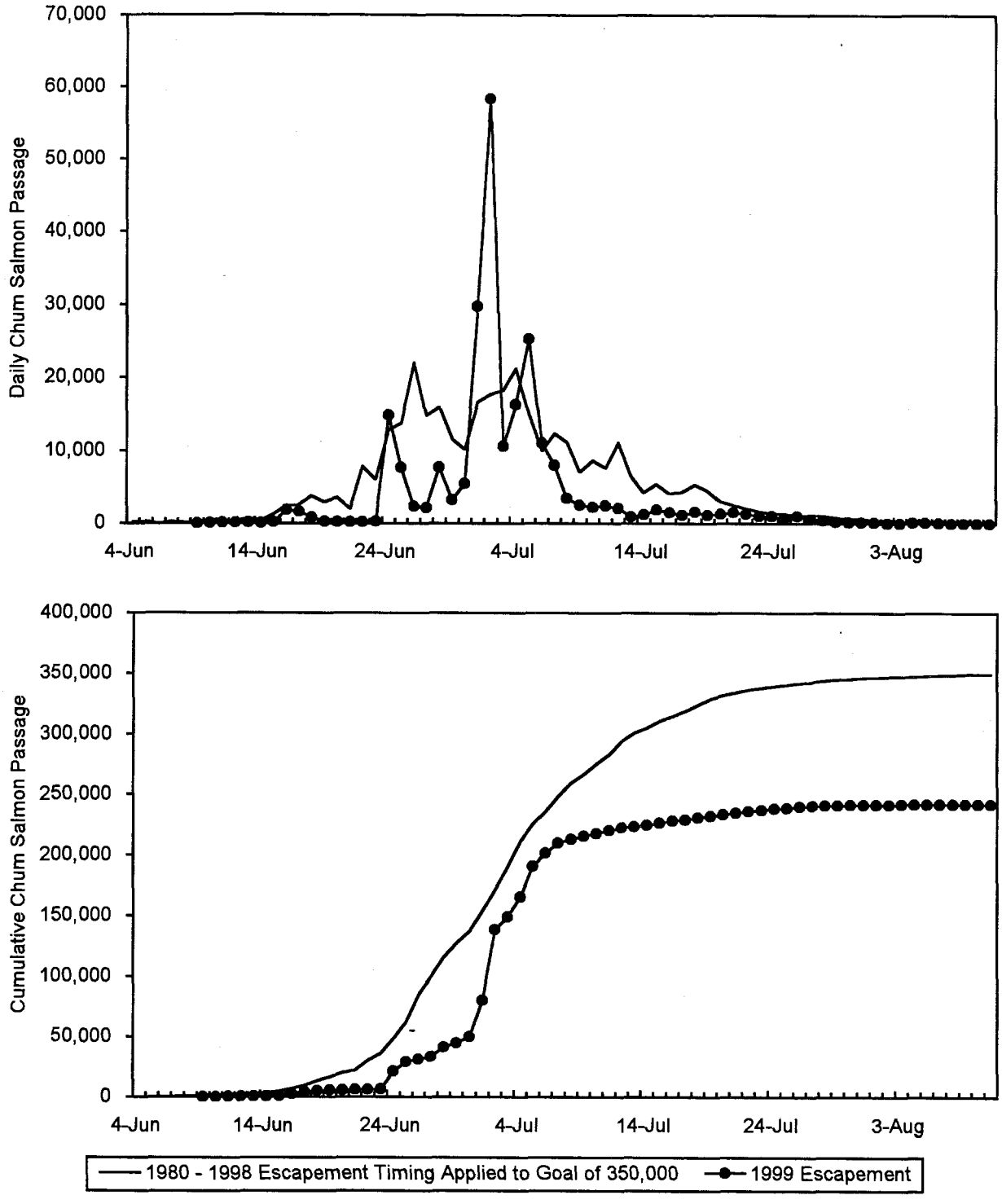


Figure 14. Average daily and cumulative escapement timing of chum salmon into Nushagak River, June 4 through August 10, 1980 - 1999.

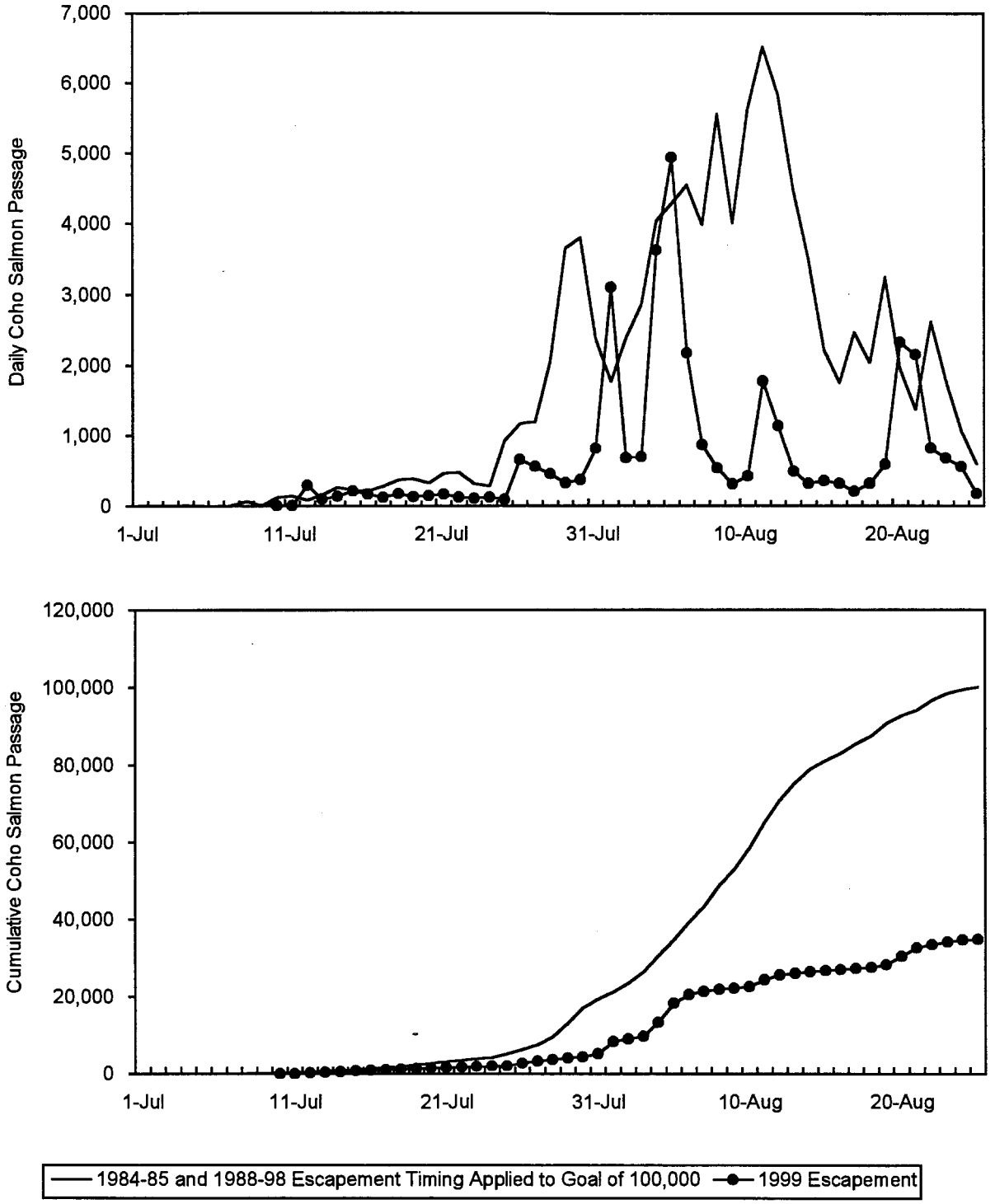
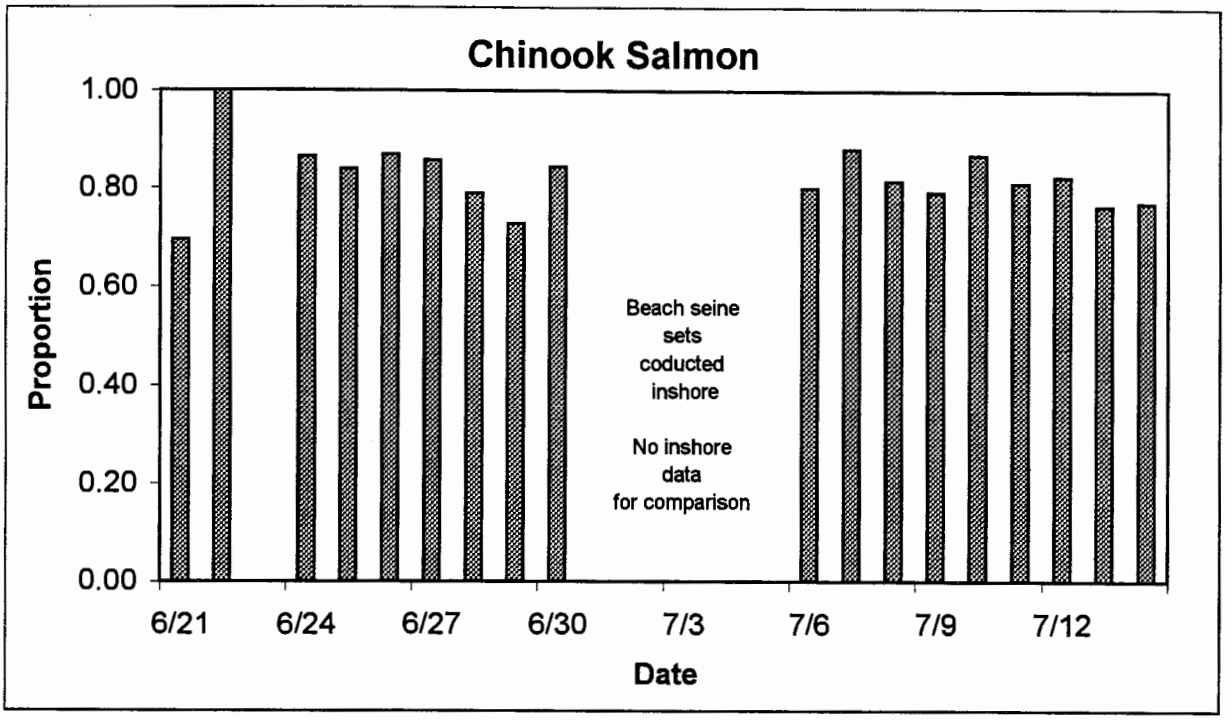


Figure 15. Average daily and cumulative escapement timing of coho salmon into Nushagak River, July 1 through August 25, 1984 - 1985 and 1988 - 1999.



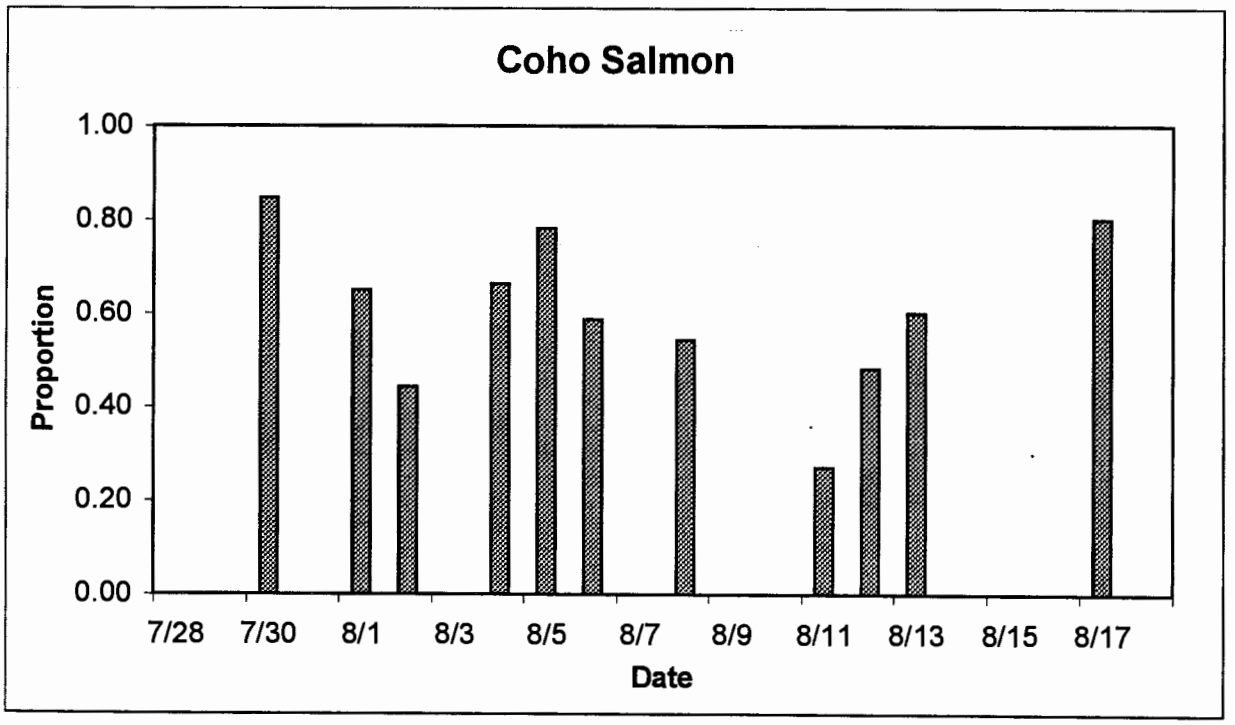


Figure 16. Proportion of daily chinook and coho salmon CPUE outside the ensonified areas, Nushagak River sonar project, June 21 - July 14 and July 28 - August 18, 1999.

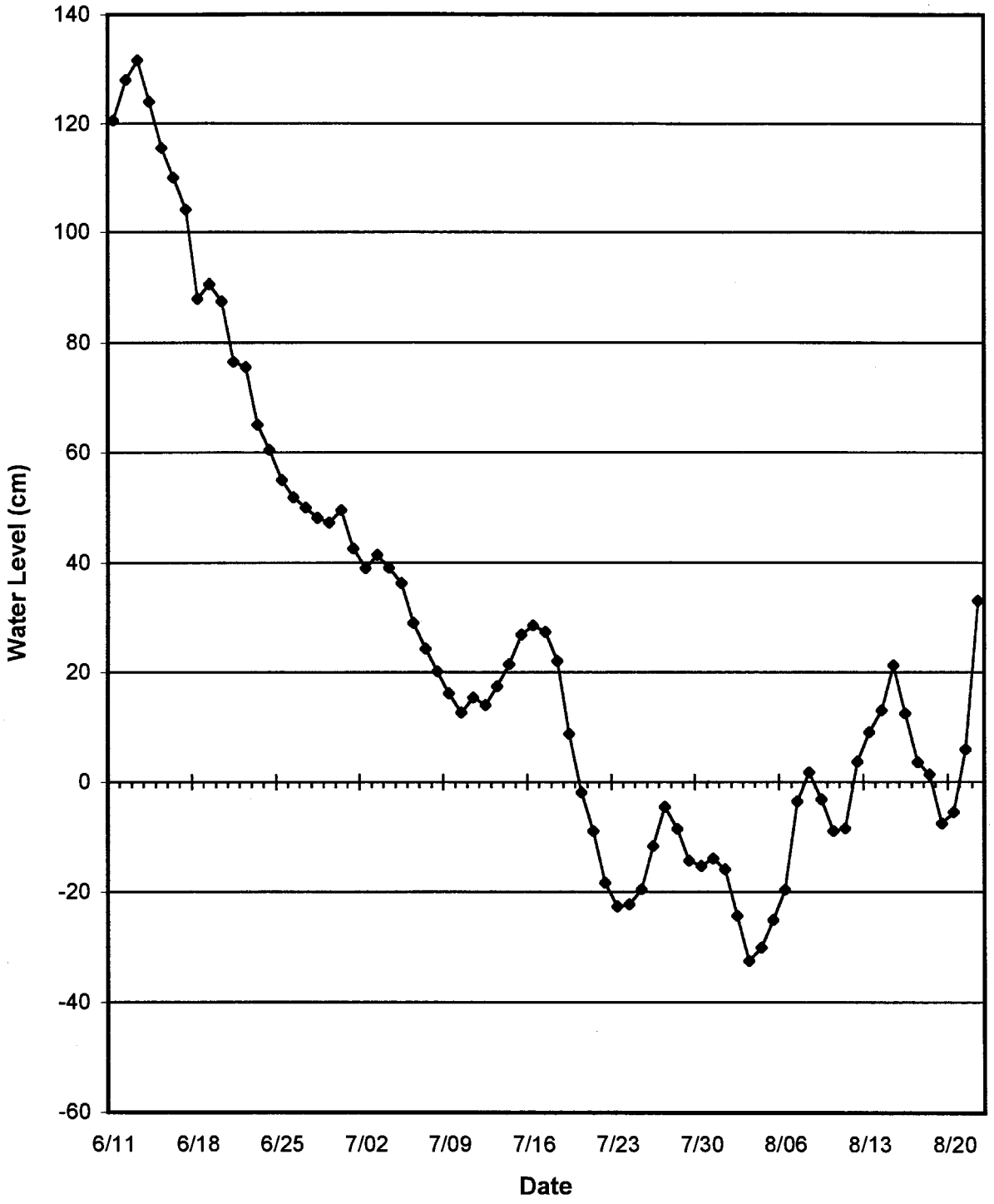
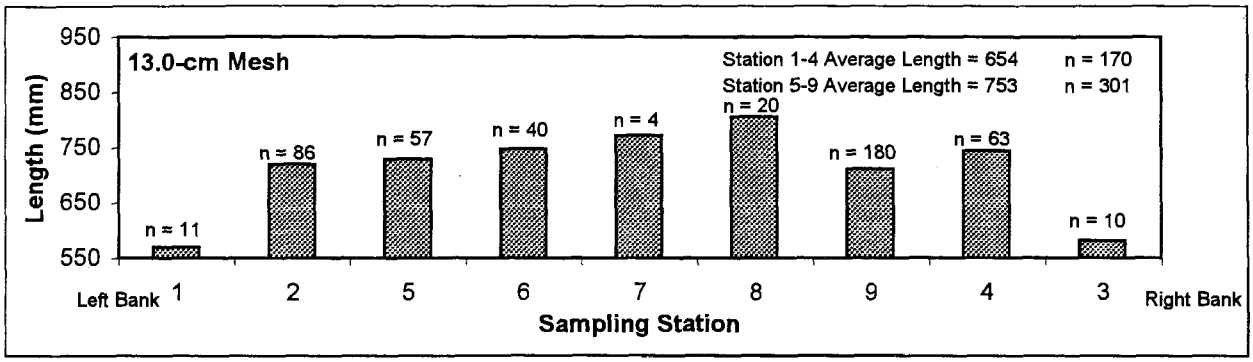
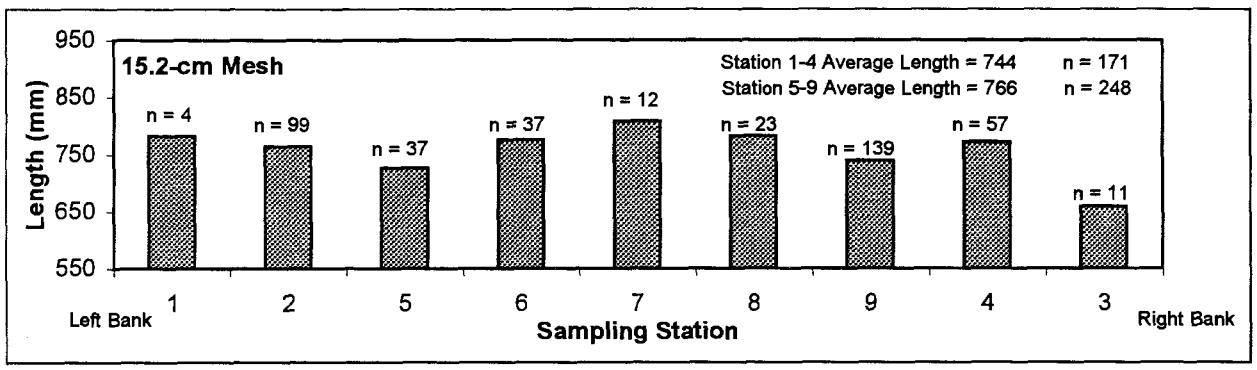
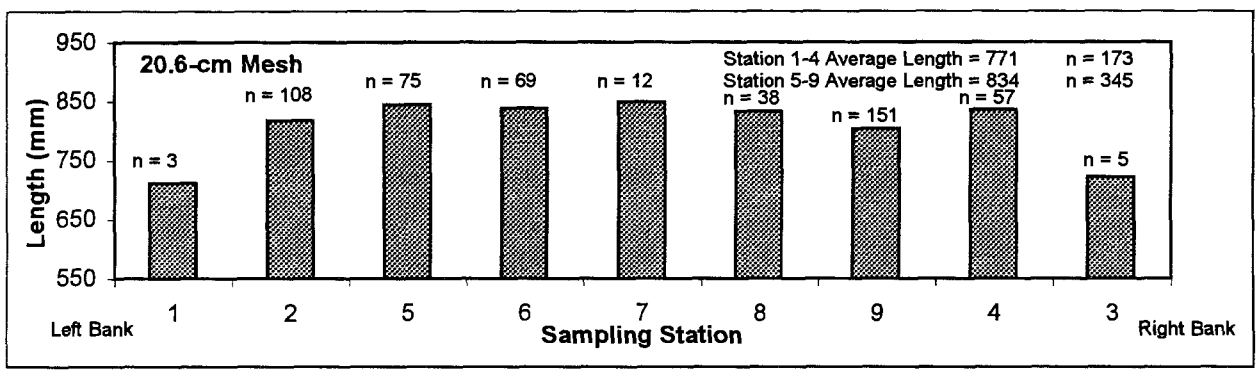


Figure 17. Nushagak River water level recorded at the Nushagak River sonar site, June 11 - August 22, 1999.







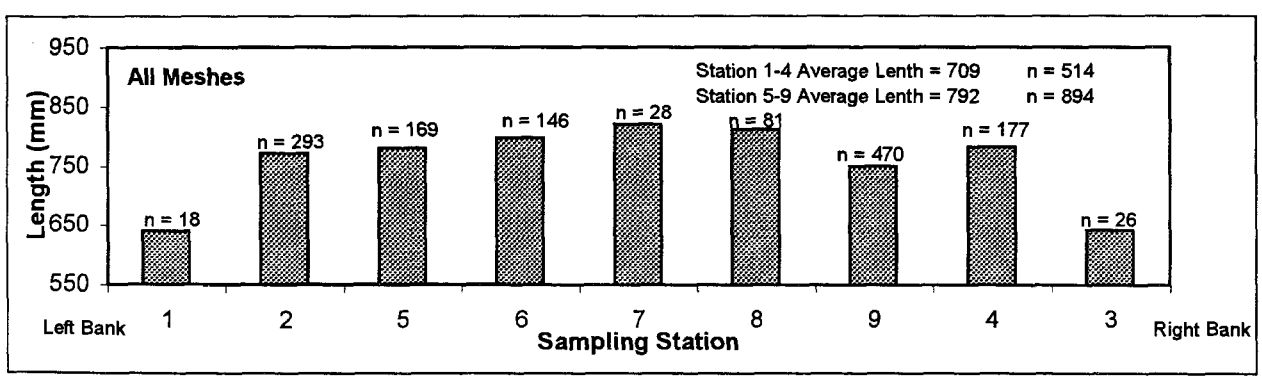
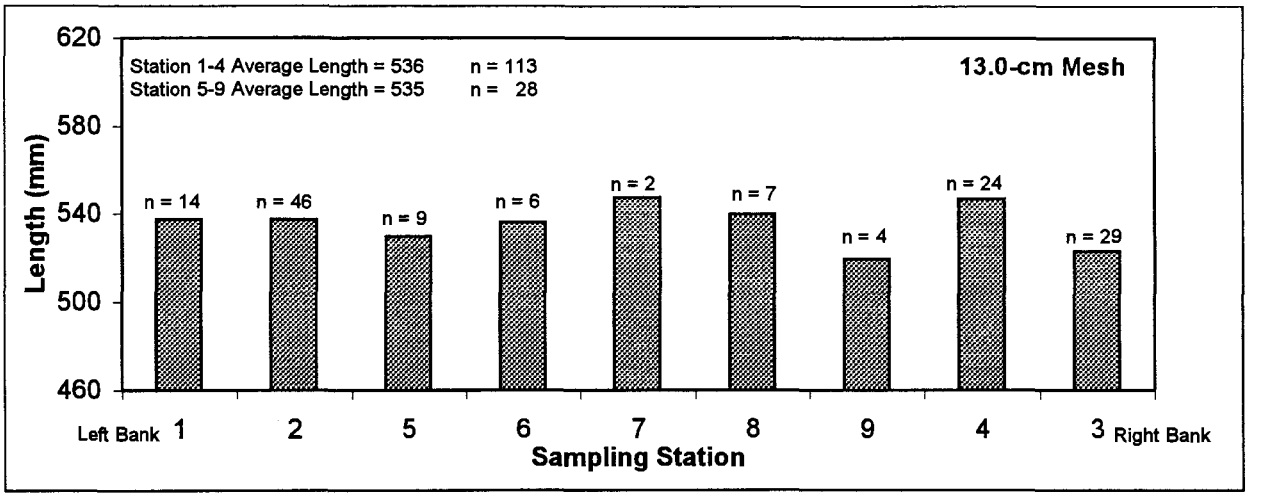
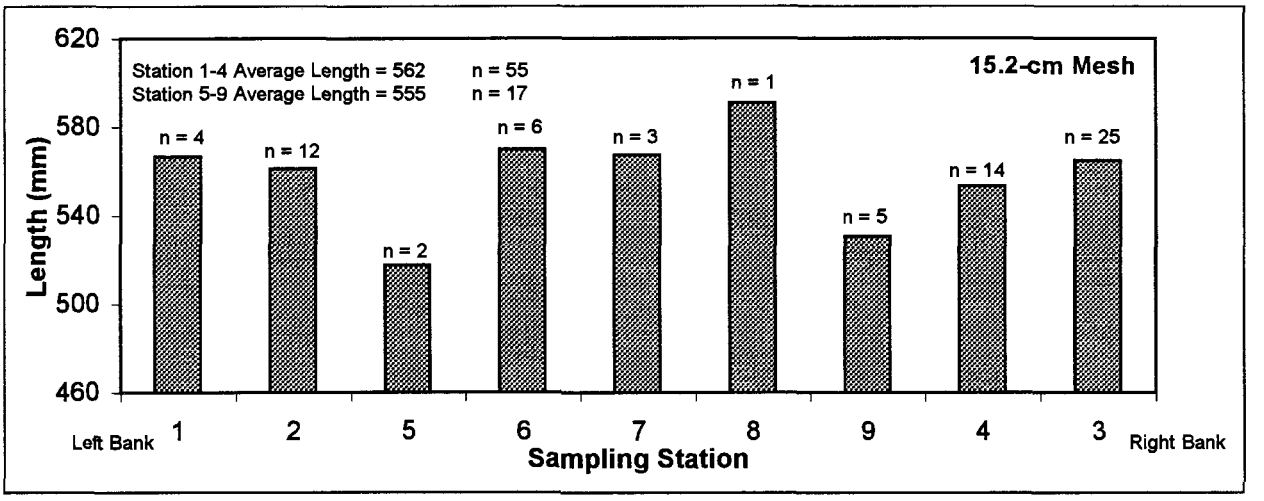


Figure 18. Chinook salmon average length (mid-eye to fork-of-tail) by mesh size and sampling station, Nushagak River sonar project, June 21 - July 14, 1999.





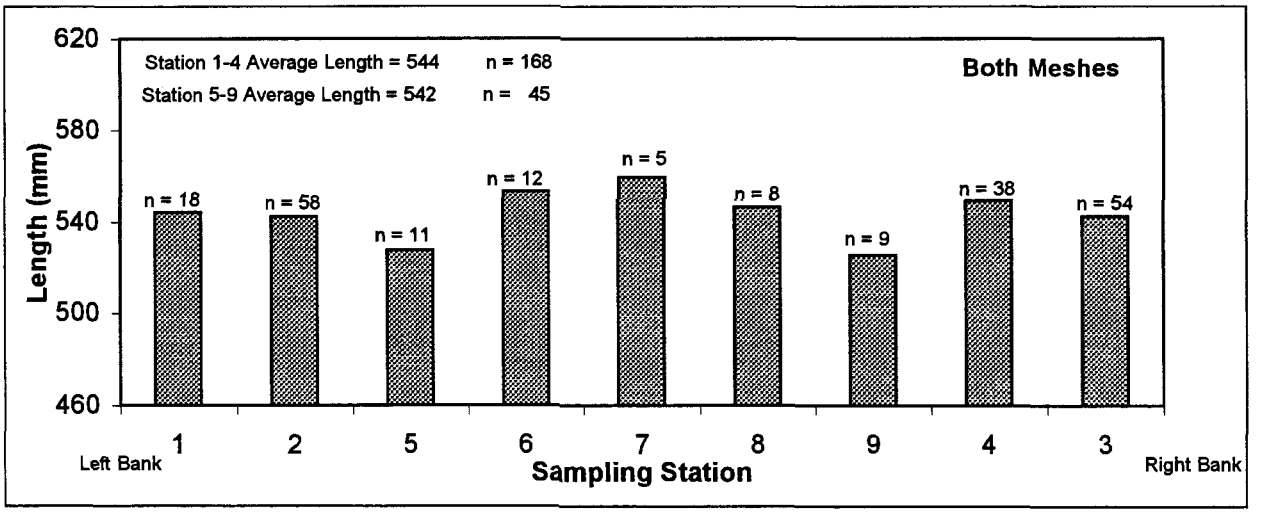


Figure 19. Coho salmon average length (mid-eye to fork-of-tail) by mesh size and sampling station, Nushagak River sonar project, July 28 - August 18, 1999.

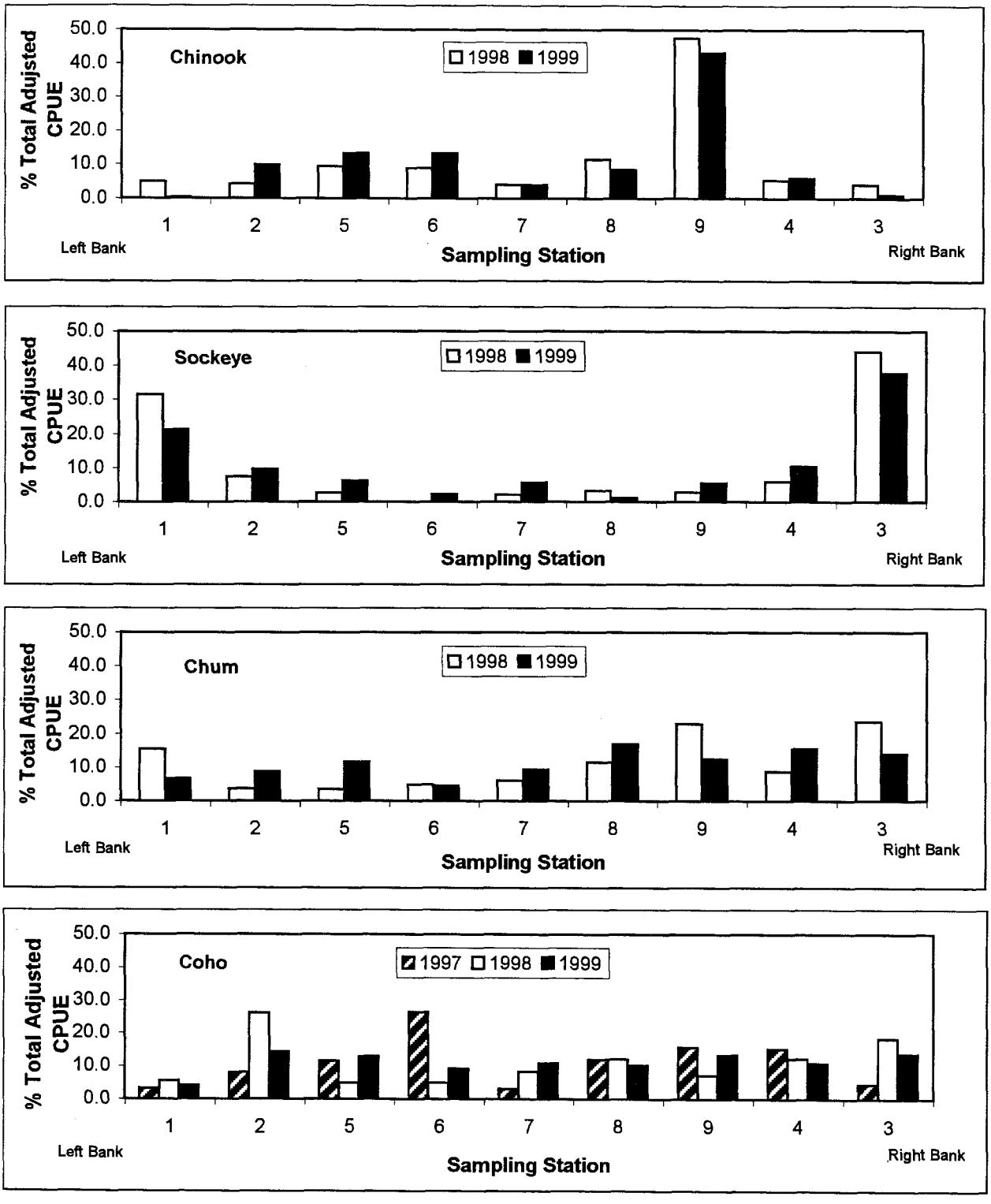


Figure 20. Percent of total adjusted CPUE by species, sampling station, and year, Nushagak River sonar project, 1997-1999.

Appendix A.1. Report periods for pooling escapement sampling data for the estimation of species composition, Nushagak River sonar project, 1999.

	Counting Range			
Date(s)	Left Inshore	Left Offshore	Right Inshore	Right Offshore
6/09-6/24	1	1	1	1
6/25	1	1	2	1
6/26-6/27	1	1	2	2
6/28	2	2	2	2
6/29-6/30	2	2	3	2
7/01	2	2	4	2
7/02	3	2	5	3
7/03	4	3	6	3
7/04	5	3	7	3
7/05	5	3	8	4
7/06	6	3	9	4
7/07-7/09	6	4	9	4
7/10-7/11	6	4	9	5
7/12	6	4	10	5
7/13	6	5	10	5
7/14-7/25	6	5	10	5
7/26-7/30	7	5	10	5
7/31	7	6	10	6
8/01-8/25	7	6	11	6

Appendix B.1. Climatological observations, Nushagak River sonar project, 1999.

Date	Cloud Cover[a] 800	Cloud Cover[a] 2000	Wind Direction & Velocity (k/hr) 800	Wind Direction & Velocity (k/hr) 2000	Air Temperature (°C) 800	Air Temperature (°C) 2000	Water Temperature (°C) 800	Water Temperature (°C) 2000	Precipitation (mm)	Water Color
6/10	4	2	calm	W 5-10	7.3	14.2	8.0	9.0	Trace[c]	Dark Brown
6/11	3	4	NW 0-5	calm	8.8	10.0	9.0	9.0	6	Dark Brown
6/12	3	3	N 0-5	NW 0-5	8.1	14.6	9.0	9.0	1	Dark Brown
6/13	4	3	NW 0-5	NE 0-5	10.3	18.2	9.0	10.0	Trace	Dark Brown
6/14	2	4	NW 5-10	N 10	11.8	13.5	10.0	11.0	Trace	Dark Brown
6/15	3	[b]	NNE 0-5	calm	11.6	13.5	10.0	11.0	2	Dark Brown
6/16	3	3	calm	calm	11.5	16.8	10.0	12.0	1	Dark Brown
6/17	4	4	calm	SE 5	10.1	15.6	11.0	13.0	2	Dark Brown
6/18	3	3	calm	SE 0-5	10.7	14.5	11.0	12.0	6	Dark Brown
6/19	2	1	NE 0-5	calm	8.4	15.8	11.0	13.0	Trace	Dark Brown
6/20	3	3	SE 0-5	SE 0-5	10.8	12.6	11.0	13.0	1	Dark Brown
6/21	2	4	calm	calm	8.0	14.7	11.0	12.0	Trace	Dark Brown
6/22	3	4	calm	S 0-5	9.9	12.5	11.0	12.0	5	Dark Brown
6/23	4	1	SE 5-10	SW 20	7.4	12.0	10.0	12.5	Trace	Dark Brown
6/24	4	4	SE 5-10	calm	7.8	12.6	11.0	12.0	0	Dark Brown
6/25	4	3	E 0-5	calm	8.5	13.0	12.0	12.0	Trace	Dark Brown
6/26	4	4	E 0-6	calm	8.7	12.3	11.0	12.0	Trace	Dark Brown
6/27	3	1	calm	NE 0-5	6.8	16.5	11.0	12.5	0	Brown
6/28	3	3	SE 5-10	SE 0-5	11.2	14.7	12.0	13.0	1	Brown
6/29	4	3	SE 5-10	SE 0-5	9.8	15.6	11.5	13.0	1	Brown
6/30	5	3	S 5-10	SSE 5-10	8.1	9.3	11.5	12.0	0	Brown
7/01	4	3	calm	calm	8.1	16.4	12.0	14.0	0	Brown
7/02	3	3	calm	S 0-5	11.3	17.8	13.0	14.0	0	Brown
7/03	1	1	calm	SE 0-5	11.4	16.9	12.5	14.0	0	Brown
7/04	5	2	calm	SE 0-5	7.6	17.9	13.0	16.0	0	Brown
7/05	3	3	SE 0-5	SSE 5-10	10.9	13.1	14.0	15.0	0	Brown
7/06	4	2	calm	NNE 0-5	8.8	17.7	14.0	15.0	1	Brown
7/07	3	1	calm	SE 5-10	9.3	18.2	14.0	16.0	0	Brown
7/08	2	2	ESE 0-5	NE 0-5	11.7	12.8	14.0	16.0	0	Brown
7/09	4	1	NE 0-5	NE 5-10	10.1	18.4	15.0	15.0	0	Brown
7/10	1	3	W 0-5	NE 5-15	11.9	16.3	15.0	16.0	0	Brown
7/11	4	2	calm	E 10	9.1	18.5	15.0	15.0	Trace	Brown
7/12	3	3	NE 0-5	E 10-15	12.6	16.9	15.0	16.0	0	Brown
7/13	4	4	NE 0-5	calm	10.2	13.8	13.0	14.0	4	Brown
7/14	4	4	ENE 0-5	E 0-5	11.2	14.3	13.0	13.5	8	Brown
7/15	3	3	SE 5-10	calm	11.3	15.1	13.0	13.0	0	Brown
7/16	3	3	NE 0-5	SE 10	10.2	12.5	12.0	13.0	3	Brown
7/17	4	4	calm	E 0-5	[b]	14.1	[b]	14.0	Trace	Brown
7/18	4	4	SE 10	SE 5	11.2	11.6	13.0	14.0	10	Brown
7/19	5	4	calm	SE 5-20	10.3	14.3	13.0	14.0	1	Brown
7/20	4	4	S 10	SW 5-15	8.7	9.5	12.0	12.0	8	Brown
7/21	1	2	SW 10	W 10	8.8	14.3	11.0	14.0	0	Brown

Appendix B.1. Climatological observations, Nushagak River sonar project, 1999.

Date	Cloud Cover[a] 800	Cloud Cover[a] 2000	Wind Direction & Velocity (k/hr) 800	Wind Direction & Velocity (k/hr) 2000	Air Temperature (°C) 800	Air Temperature (°C) 2000	Water Temperature (°C) 800	Water Temperature (°C) 2000	Precipitation (mm)	Water Color
7/22	2	4	calm	SE 0-5	6.4	14.1	12.0	13.0	0	Brown
7/23	4	4	S 5-10	SE 0-5	11.0	14.0	12.0	14.0	1	Brown
7/24	4	5	SE 0-5	S 0-5	11.9	11.7	12.0	13.0	2	Brown
7/25	4	4	S 0-5	SE 5-15	11.9	10.5	13.0	13.0	7	Brown
7/26	4	4	S 5-10	SE 5-15	8.8	9.7	14.0	12.0	Trace	Brown
7/27	2	2	SSW 10	S 10	10.0	13.2	12.0	13.0	Trace	Brown
7/28	4	4	calm	W 5	9.0	15.1	12.0	13.0	0	Brown
7/29	4	4	S 5-10	S 0-5	11.1	12.8	12.0	14.0	41	Brown
7/30	4	1	calm	E 10	10.7	16.6	12.5	15.0	Trace	Brown
7/31	4	4	SE 5	SE 5-10	12.1	12.1	13.0	14.0	0	Brown
8/01	4	4	SE 5	SE 5-15	9.2	11.7	13.5	13.0	0	Brown
8/02	4	2	calm	E 10	8.4	17.6	13.0	15.5	0	lt brown
8/03	3	4	NE 5	NE 20	14.0	13.7	13.0	14.0	5	lt brown
8/04	4	1	NE 5-10	E 5-10	11.9	13.8	15.0	[b]	12	Brown
8/05	3	1	E 0-5	SE 0-5	10.5	15.8	14.0	14.0	0	Brown
8/06	4	3	calm	SW 5-10	8.4	12.5	12.0	13.0	0	Brown
8/07	3	4	SE 0-5	SE 5-10	8.4	11.9	11.0	12.0	0	Brown
8/08	3	2	S 0-5	calm	9.1	14.5	12.0	14.0	0	Brown
8/09	3	4	calm	SE 5-10	8.5	14.7	12.5	14.0	0	Brown
8/10	4	4	SE 5-10	E 0-5	12.0	13.9	13.0	13.0	0	Brown
8/11	4	4	calm	SE 15	11.6	13.8	13.0	13.0	8	Brown
8/12	4	3	calm	0-5	10.6	17.0	13.5	13.0	7	Brown
8/13	2	3	calm	S 5-10	2.7	16.9	12.5	13.0	0	Brown
8/14	4	4	calm	S 5-10	10.5	12.1	12.0	13.0	1	Brown
8/15	4	3	calm	NW 10-15	9.0	15.2	13.0	13.0	Trace	Brown
8/16	3	3	calm	calm	3.2	16.9	13.0	15.0	0	Brown
8/17	1	1	calm	SW 5-10	2.4	16.8	13.0	16.0	0	Brown
8/18	5	1	calm	SE 0-5	9.6	13.4	12.5	15.0	0	Brown
8/19	4	4	E 5-15	SE 20	11.2	10.3	13.0	14.0	14	Brown
8/20	4	4	calm	calm	9.7	10.4	13.5	12.0	19	Brown
8/21	2	4	calm	calm	8.0	10.4	13.0	13.0	13	Brown
8/22	3	2	SE 0-5	[b]	8.8	[b]	12.0	13.0	0	Brown
8/23	3	3	calm	calm	9.6	11.7	12.0	12.5	5	Brown
8/24	3	4	calm	calm	5.4	10.4	11.0	13.0	10	Dark Brown

[a] 1 = clouds covering less than 1/10 of sky
2 = not more than 1/2
3 = more than 1/2
4 = completely
5 = fog or thick haze

[b] No observation made.

[c] Precipitation less than 1.0 mm

Appendix C.1. Sonar counts by date and sector, right bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
6/09	1	0	1	4	2	0	0	0	0	0	0	0	8	8
6/10	20	4	1	0	1	5	0	0	1	1	1	0	34	42
6/11	0	1	7	17	16	20	12	12	4	2	1	3	95	137
6/12	0	4	8	17	16	21	13	6	7	8	9	7	116	253
6/13	0	19	12	11	5	11	19	9	4	7	1	2	100	353
6/14	1	3	7	10	7	10	5	8	6	1	3	4	65	418
6/15	0	1	1	9	12	27	33	41	18	6	8	5	161	579
6/16	0	2	7	29	83	171	314	327	224	155	97	68	1,477	2,056
6/17	0	5	34	30	61	158	260	314	213	152	87	64	1,378	3,434
6/18	0	29	17	24	51	118	152	166	82	48	33	22	742	4,176
6/19	0	50	28	9	9	14	15	26	20	22	11	4	208	4,384
6/20	0	22	8	7	8	13	14	10	10	6	2	6	106	4,490
6/21	43	20	27	10	16	15	12	13	11	4	2	2	175	4,665
6/22	27	20	14	32	40	19	8	4	2	2	4	4	176	4,841
6/23	20	24	26	9	6	4	2	1	0	0	0	1	93	4,934
6/24	209	289	29	80	569	1,424	1,816	1,770	678	269	123	77	7,333	12,267
6/25	39	49	61	349	1,036	1,501	1,452	1,240	438	142	58	57	6,422	18,689
6/26	32	49	18	48	136	208	274	268	123	64	36	38	1,294	19,983
6/27	16	57	30	30	46	67	140	115	63	28	27	30	649	20,632
6/28	43	63	46	187	474	741	783	939	409	215	85	66	4,051	24,683
6/29	32	84	28	94	221	385	537	498	255	136	64	46	2,380	27,063
6/30	69	100	31	185	725	994	923	775	319	151	119	80	4,471	31,534
7/01	115	135	159	725	1,949	3,133	3,987	5,014	2,851	1,454	653	207	23,980	55,514
7/02	407	353	1,896	7,367	12,917	14,718	14,356	10,724	3,979	1,583	789	415	69,504	125,018
7/03	449	228	248	1,139	2,779	4,167	3,714	3,589	1,587	923	430	229	19,482	144,500
7/04	61	243	1,311	3,364	5,142	6,020	5,749	5,445	2,607	1,443	804	388	32,577	177,077
7/05	33	147	4,171	11,282	12,693	9,150	6,430	4,109	1,324	577	268	190	50,374	227,451
7/06	62	992	5,326	6,922	5,294	3,177	2,945	2,253	1,053	585	219	78	28,906	256,357
7/07	271	2,039	5,317	4,579	3,162	1,634	1,336	1,020	521	255	34	4	20,172	276,529
7/08	104	454	1,819	2,008	1,431	781	742	587	272	149	19	1	8,367	284,896

Appendix C.1. Sonar counts by date and sector, right bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
7/09	40	168	557	834	995	780	729	548	293	148	14	0	5,106	290,002
7/10	76	218	760	1,256	1,299	838	730	563	327	183	31	3	6,284	296,286
7/11	40	351	963	1,277	1,304	975	832	576	323	151	15	6	6,813	303,099
7/12	63	311	995	1,275	1,269	885	779	558	325	144	31	5	6,640	309,739
7/13	37	106	188	286	361	336	416	334	126	40	12	1	2,243	311,982
7/14	54	34	73	232	546	678	708	545	178	48	9	1	3,106	315,088
7/15	250	67	278	619	887	836	842	613	238	54	14	2	4,700	319,788
7/16	254	131	361	616	633	510	543	465	166	41	16	2	3,738	323,526
7/17	61	63	140	234	304	386	508	602	216	51	17	2	2,584	326,110
7/18	70	136	289	463	592	629	793	545	165	35	11	0	3,728	329,838
7/19	40	83	228	377	407	447	590	461	147	54	9	4	2,847	332,685
7/20	93	126	285	634	722	428	366	275	122	75	13	0	3,139	335,824
7/21	31	63	284	709	707	452	396	473	379	174	22	3	3,693	339,517
7/22	14	45	37	51	120	262	623	897	427	110	11	8	2,605	342,122
7/23	14	63	110	249	341	447	552	453	128	43	5	12	2,417	344,539
7/24	69	35	113	175	437	465	762	449	122	30	18	4	2,679	347,218
7/25	49	56	130	283	398	395	278	161	83	89	84	13	2,019	349,237
7/26	18	65	125	266	513	638	583	330	123	64	38	30	2,793	352,030
7/27	95	107	104	217	287	322	264	171	81	46	32	27	1,753	353,783
7/28	44	38	35	82	153	218	285	212	86	44	21	33	1,251	355,034
7/29	41	55	32	55	80	62	48	51	25	11	10	14	484	355,518
7/30	42	30	15	27	35	51	42	40	23	15	29	34	383	355,901
7/31	11	52	31	21	24	62	59	55	33	34	23	10	415	356,316
8/01	8	74	114	305	406	385	350	301	150	94	35	23	2,245	358,561
8/02	4	48	30	21	22	33	50	55	62	31	27	10	393	358,954
8/03	0	49	34	26	28	38	32	23	22	17	28	11	308	359,262
8/04	40	127	100	257	357	349	472	422	199	135	55	27	2,540	361,802
8/05	0	358	1,072	746	345	242	354	412	194	134	56	33	3,946	365,748
8/06	0	129	388	421	361	236	187	176	81	45	19	18	2,061	367,809
8/07	0	115	284	213	93	35	46	22	16	10	5	6	845	368,654

Appendix C.1. Sonar counts by date and sector, right bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
8/08	0	21	93	111	98	54	50	27	22	13	9	6	504	369,158
8/09	0	13	33	54	49	41	32	14	14	6	5	3	264	369,422
8/10	0	27	65	78	55	30	27	37	16	11	7	6	359	369,781
8/11	73	145	539	535	201	62	63	79	39	37	26	3	1,802	371,583
8/12	154	147	292	226	167	62	30	36	45	30	18	8	1,215	372,798
8/13	5	42	52	37	29	26	35	58	18	21	19	2	344	373,142
8/14	15	31	42	29	26	16	24	22	17	13	4	13	252	373,394
8/15	91	39	46	35	24	12	21	19	13	8	8	56	372	373,766
8/16	77	26	53	26	18	16	8	12	9	7	7	12	271	374,037
8/17	55	16	15	21	17	4	3	13	8	8	9	10	179	374,216
8/18	52	34	43	18	30	11	18	18	13	12	3	24	276	374,492
8/19	31	49	112	127	81	41	24	31	18	31	21	16	582	375,074
8/20	45	218	752	700	391	205	140	108	63	48	37	13	2,720	377,794
8/21	230	370	727	469	200	146	131	97	51	58	26	21	2,526	380,320
8/22	77	168	286	189	47	49	22	15	17	9	14	6	899	381,219
8/23	0	148	202	144	51	87	21	11	9	5	10	3	691	381,910
8/24	21	86	179	137	47	58	12	28	13	12	5	6	604	382,514
8/25	53	8	24	16	15	23	11	17	11	4	6	2	190	382,704
Total	4,591	10,377	32,398	53,756	64,479	62,069	59,934	50,713	22,337	10,871	4,931	2,650	382,704	

Appendix C.2. Sonar counts by date and sector, right bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
6/09	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	3	3
6/10	0	2	0	0	0	0	0	0	0	0	2	2	3	3	0	4	16	19
6/11	4	6	3	3	7	3	3	2	2	2	3	22	10	7	2	0	79	98
6/12	0	1	0	0	0	0	0	1	1	1	9	1	9	1	0	0	24	122
6/13	2	0	0	0	0	0	0	0	0	0	0	0	1	3	4	0	10	132
6/14	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	5	137
6/15	8	4	0	0	0	0	0	0	0	0	2	2	0	0	7	6	29	166
6/16	4	33	8	4	0	1	0	0	0	2	3	4	3	9	5	5	81	247
6/17	30	54	14	2	0	0	1	0	0	5	3	5	3	5	5	2	129	376
6/18	1	32	9	1	1	0	0	0	1	2	2	3	5	4	4	1	66	442
6/19	1	6	2	4	0	0	0	0	0	0	0	3	1	6	2	6	31	473
6/20	5	8	1	1	0	0	0	0	0	0	0	0	0	0	0	1	16	489
6/21	6	6	1	0	0	0	0	0	0	0	0	0	2	2	2	1	20	509
6/22	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	511
6/23	12	18	12	1	1	0	0	0	0	2	1	0	0	2	2	0	51	562
6/24	1	138	210	81	13	2	2	2	7	19	23	25	42	27	45	53	1,110	1,672
6/25	0	68	133	48	9	5	8	4	7	20	23	23	43	44	36	41	983	2,655
6/26	29	54	53	18	10	3	0	4	2	6	8	7	18	8	18	12	516	3,171
6/27	13	59	65	13	7	7	7	1	5	7	7	2	5	3	3	2	453	3,624
6/28	2	60	116	24	5	4	10	3	2	3	9	8	13	3	11	5	787	4,411
6/29	33	65	44	15	3	4	0	0	1	4	7	1	4	2	3	7	623	5,034
6/30	0	57	100	57	9	2	0	2	0	11	1	0	4	5	5	6	828	5,862
7/01	84	223	407	184	14	5	4	4	7	7	1	1	3	0	0	0	2,746	8,608
7/02	57	228	405	154	25	9	10	3	4	6	8	5	9	9	7	7	7,221	15,829
7/03	65	164	276	149	16	7	5	5	1	2	6	7	5	5	3	4	2,304	18,133
7/04	16	213	347	163	21	7	14	6	10	18	9	6	9	13	12	15	3,591	21,724
7/05	67	420	751	309	92	66	48	39	54	49	29	25	24	12	8	5	5,341	27,065
7/06	278	1,223	793	365	111	62	43	55	80	64	60	88	102	10	1	0	3,335	30,400
7/07	128	723	568	395	173	64	31	5	0	1	0	0	0	0	0	0	2,088	32,488
7/08	4	312	385	252	208	120	38	19	17	2	0	0	0	1	3	0	1,361	33,849

Appendix C.2. Sonar counts by date and sector, right bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
7/09	10	189	291	230	387	447	20	19	1	2	2	1	1	6	4	5	1,615	35,464
7/10	4	174	290	251	152	82	48	8	16	0	1	0	0	0	7	0	1,033	36,497
7/11	6	182	272	195	158	97	18	10	27	6	0	0	0	5	6	1	983	37,480
7/12	7	161	200	149	108	81	23	8	6	0	0	0	0	0	1	0	744	38,224
7/13	6	52	112	95	40	60	32	11	39	12	2	3	1	1	4	12	482	38,706
7/14	0	32	147	132	81	53	38	14	37	23	5	5	3	0	1	2	573	39,279
7/15	3	37	115	167	57	36	39	13	178	141	17	1	2	1	1	0	808	40,087
7/16	3	40	135	107	63	58	35	18	14	11	13	7	1	0	0	0	505	40,592
7/17	4	56	180	163	65	74	37	27	60	34	13	6	3	0	0	0	722	41,314
7/18	2	67	253	260	127	173	119	85	55	34	22	13	7	1	0	0	1,218	42,532
7/19	0	64	139	147	87	53	78	40	26	38	10	9	2	1	0	0	694	43,226
7/20	7	42	108	109	85	90	101	39	58	35	19	3	1	0	0	0	697	43,923
7/21	1	66	238	196	141	117	178	57	78	67	16	19	3	1	0	0	1,177	45,100
7/22	4	58	178	164	98	91	79	59	55	75	5	15	3	3	0	2	889	45,989
7/23	2	46	132	89	76	62	55	55	56	33	7	7	1	0	0	0	621	46,610
7/24	14	73	136	74	61	101	55	12	9	7	4	2	0	0	0	0	548	47,158
7/25	5	30	59	37	26	25	10	4	7	3	0	0	1	4	5	12	228	47,386
7/26	1	67	101	83	48	21	17	7	21	16	12	4	5	3	12	7	425	47,811
7/27	5	32	59	41	16	24	10	5	9	16	19	4	2	1	0	1	244	48,055
7/28	10	36	60	51	19	15	8	2	10	5	12	5	4	5	1	3	246	48,301
7/29	0	12	28	27	18	14	14	0	1	4	4	1	3	1	0	1	128	48,429
7/30	1	1	9	8	10	2	1	1	1	0	0	2	0	0	0	0	36	48,465
7/31	1	14	23	11	6	13	3	1	2	2	2	2	0	0	1	1	82	48,547
8/01	20	59	39	42	13	24	7	3	16	5	6	5	5	3	1	0	248	48,795
8/02	6	20	39	9	6	6	6	1	9	2	0	1	0	0	0	0	105	48,900
8/03	6	8	9	5	8	6	2	4	4	0	1	1	0	0	0	0	54	48,954
8/04	51	76	53	36	8	15	12	4	13	15	5	4	3	2	1	1	299	49,253
8/05	44	83	63	32	11	25	16	17	44	14	16	7	8	8	10	4	402	49,655
8/06	15	30	24	4	7	6	3	3	10	3	11	8	4	2	3	2	135	49,790
8/07	8	8	5	2	1	4	1	3	5	9	1	2	0	0	0	0	49	49,839

Appendix C.2. Sonar counts by date and sector, right bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
8/08	6	10	0	10	1	6	0	4	0	0	1	1	0	0	2	0	41	49,880
8/09	8	3	6	5	2	1	4	0	1	1	0	0	0	0	1	0	32	49,912
8/10	0	3	6	3	1	1	1	0	1	2	0	0	2	0	0	0	20	49,932
8/11	13	8	8	6	5	1	3	3	8	3	4	0	2	0	0	1	65	49,997
8/12	4	9	10	10	4	0	1	0	0	0	1	0	0	0	0	0	39	50,036
8/13	3	8	2	5	1	4	10	1	16	8	4	7	4	3	3	0	79	50,115
8/14	3	3	3	1	0	1	1	0	1	0	1	0	0	0	0	2	16	50,131
8/15	1	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	5	50,136
8/16	3	1	0	1	0	0	3	0	0	0	0	0	0	0	0	0	8	50,144
8/17	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	50,145
8/18	1	3	0	1	0	3	0	1	0	3	1	0	0	0	1	0	14	50,159
8/19	2	4	0	2	3	1	2	1	9	7	7	3	2	1	0	12	56	50,215
8/20	3	10	7	11	6	8	5	0	1	1	0	0	0	0	0	0	52	50,267
8/21	8	5	2	5	9	4	7	1	4	2	2	0	0	0	0	0	49	50,316
8/22	3	5	2	0	0	2	1	5	8	4	0	3	0	0	0	2	35	50,351
8/23	6	2	0	1	0	0	1	0	0	0	0	3	0	0	0	0	13	50,364
8/24	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	50,366
Total	1,162	6,066	8,246	5,222	2,740	2,278	1,329	701	1,118	876	463	395	394	240	254	255	50,366	

[a] Adjusted daily totals.

Appendix C.3. Sonar counts by date and sector, left bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
6/09	5	5	5	5	1	1	0	0	0	4	1	2	29	29
6/10	11	1	3	1	1	1	0	2	0	5	4	3	32	61
6/11	17	8	0	1	1	0	0	4	4	6	9	10	60	121
6/12	22	3	3	0	0	0	2	1	0	1	0	2	34	155
6/13	24	4	4	1	2	2	0	0	1	3	2	4	47	202
6/14	2	0	0	1	0	0	1	0	2	3	10	13	32	234
6/15	10	11	9	0	0	0	0	2	2	4	10	12	60	294
6/16	64	21	3	0	2	19	30	63	46	33	42	120	443	737
6/17	57	12	3	5	15	27	43	79	78	24	7	21	371	1,108
6/18	36	7	3	1	2	21	32	35	25	1	1	1	165	1,273
6/19	35	6	4	0	0	3	3	12	15	4	4	13	99	1,372
6/20	22	11	3	1	3	9	7	11	3	1	3	7	81	1,453
6/21	49	12	2	0	1	5	4	4	6	2	2	4	91	1,544
6/22	45	7	1	0	1	3	2	3	4	1	0	1	68	1,612
6/23	40	19	4	1	1	0	2	6	7	1	2	0	83	1,695
6/24	141	7	2	3	99	660	1,798	2,545	959	78	56	17	6,365	8,060
6/25	74	39	11	5	48	228	577	708	399	36	27	14	2,166	10,226
6/26	90	95	46	11	21	79	147	212	109	5	8	2	825	11,051
6/27	207	31	20	81	138	373	173	210	195	32	27	9	1,496	12,547
6/28	80	27	96	1,115	1,564	2,529	504	262	326	41	136	50	6,730	19,277
6/29	39	15	49	391	590	1,007	210	86	123	33	78	62	2,683	21,960
6/30	18	25	81	704	1,199	1,731	287	153	186	44	87	56	4,571	26,531
7/01	9	32	189	1,690	3,146	4,331	1,074	1,169	347	1,246	196	71	13,500	40,031
7/02	67	781	1,328	4,744	5,307	7,331	2,878	2,927	914	3,601	726	640	31,244	71,275
7/03	246	611	1,897	7,996	8,760	7,600	1,707	1,846	630	1,579	520	310	33,702	104,977
7/04	132	723	1,099	3,623	3,676	3,893	422	354	456	150	262	186	14,976	119,953
7/05	283	586	677	1,924	2,097	2,413	176	257	243	54	171	61	8,942	128,895
7/06	539	204	360	1,867	2,559	2,933	237	558	253	40	52	66	9,668	138,563
7/07	329	323	459	2,226	2,561	2,511	184	1,585	498	44	99	49	10,868	149,431
7/08	160	28	34	150	386	800	76	1,324	805	24	37	31	3,855	153,286

Appendix C.3. Sonar counts by date and sector, left bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
7/09	27	26	20	35	152	249	201	1,989	464	139	26	24	3,352	156,638
7/10	59	19	13	22	71	153	18	0	177	19	46	25	622	157,260
7/11	40	22	9	29	95	222	33	143	403	5	27	15	1,043	158,303
7/12	39	20	24	23	104	167	10	0	3	18	14	3	425	158,728
7/13	25	11	17	32	78	116	34	30	88	7	7	3	448	159,176
7/14	83	30	13	9	34	111	45	188	249	13	15	43	833	160,009
7/15	73	21	9	18	73	170	510	477	798	12	12	14	2,187	162,196
7/16	58	34	19	18	38	92	56	133	495	102	31	85	1,161	163,357
7/17	23	19	14	7	22	74	146	254	450	23	11	9	1,052	164,409
7/18	39	24	10	9	34	46	158	124	238	18	34	21	755	165,164
7/19	0	0	0	0	0	0	257	104	73	7	16	9	466	165,630
7/20	46	30	28	23	24	8	10	0	6	1	28	13	217	165,847
7/21	23	11	8	7	6	2	8	0	18	5	24	14	126	165,973
7/22	173	161	164	168	161	87	76	2	84	119	134	133	1,462	167,435
7/23	155	129	156	175	108	19	39	0	9	27	85	30	932	168,367
7/24	35	13	8	8	9	3	3	0	8	9	58	17	171	168,538
7/25	52	24	9	2	4	0	6	4	29	39	31	6	206	168,744
7/26	70	62	15	2	45	64	81	24	174	38	23	30	628	169,372
7/27	64	16	13	17	90	79	66	30	53	31	20	88	567	169,939
7/28	8	15	18	25	106	61	67	26	12	18	18	91	465	170,404
7/29	5	24	9	27	197	15	19	11	8	5	7	30	357	170,761
7/30	57	23	9	81	80	17	19	57	17	9	14	35	418	171,179
7/31	33	10	6	0	21	39	24	471	157	13	19	8	801	171,980
8/01	58	19	8	3	14	87	62	591	262	22	26	5	1,157	173,137
8/02	44	29	14	14	6	10	13	8	23	28	45	11	245	173,382
8/03	32	39	19	1	2	11	11	10	79	13	12	16	245	173,627
8/04	252	191	31	1	68	16	26	14	243	29	23	32	926	174,553
8/05	210	155	27	42	98	86	110	45	161	77	68	80	1,159	175,712
8/06	67	16	15	22	19	9	15	13	17	75	36	6	310	176,022
8/07	11	15	5	14	6	5	11	3	3	3	21	28	125	176,147

Appendix C.3. Sonar counts by date and sector, left bank inshore strata, Nushagak River sonar project, 1999.

Date	Sector												Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12		
8/08	6	3	4	8	6	7	4	4	10	7	6	19	84	176,231
8/09	11	5	1	0	3	4	5	0	5	4	18	18	74	176,305
8/10	22	9	2	2	8	21	25	10	5	5	3	14	126	176,431
8/11	20	9	16	29	31	34	31	16	13	7	7	29	242	176,673
8/12	12	15	11	9	12	10	14	9	4	1	6	23	126	176,799
8/13	10	7	10	6	16	5	11	1	5	4	4	16	95	176,894
8/14	2	7	9	3	8	3	7	1	4	5	9	42	100	176,994
8/15	7	3	0	0	2	0	2	0	1	1	6	21	43	177,037
8/16	11	2	0	6	3	4	3	1	3	0	8	18	59	177,096
8/17	3	1	2	1	4	4	0	3	5	1	17	22	63	177,159
8/18	7	2	6	3	2	9	4	0	5	2	23	15	78	177,237
8/19	2	3	2	3	3	7	6	5	7	2	13	15	68	177,305
8/20	11	5	4	7	6	2	7	4	6	1	9	13	75	177,380
8/21	30	2	2	2	0	0	2	0	3	1	4	11	57	177,437
8/22	5	0	2	4	1	1	3	2	5	4	5	15	47	177,484
8/23	4	5	10	10	11	11	13	4	11	8	3	5	95	177,579
8/24	3	4	6	1	2	7	2	1	4	4	3	5	42	177,621
8/25	5	4	1	0	1	1	0	0	4	0	1	3	20	177,641
Total	4,885	4,948	7,193	27,475	34,065	40,658	12,849	19,230	11,537	8,081	3,655	3,065	177,641	

Appendix C.4. Sonar counts by date and sector, left bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
6/09	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6/10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
6/11	1	2	2	2	2	0	1	0	0	0	0	0	0	0	0	0	10	13
6/12	2	6	0	0	2	1	0	0	0	0	1	1	0	0	0	0	13	26
6/13	12	8	2	5	7	0	0	0	0	1	0	0	0	0	7	0	42	68
6/14	7	4	5	11	3	1	0	0	0	0	0	0	4	1	0	0	36	104
6/15	13	20	11	8	8	2	1	0	0	1	0	4	1	0	0	0	69	173
6/16	129	296	147	121	79	27	10	4	25	10	2	0	5	3	4	12	874	1,047
6/17	32	94	61	108	76	32	21	7	27	14	10	0	0	1	4	1	488	1,535
6/18	16	48	38	39	35	8	6	3	5	4	0	0	1	0	0	1	204	1,739
6/19	2	32	24	42	29	6	2	1	1	2	0	0	0	0	1	12	154	1,893
6/20	16	23	19	7	33	7	3	0	4	3	2	0	0	3	0	13	133	2,026
6/21	7	15	1	5	19	9	3	3	4	0	1	0	0	0	0	2	69	2,095
6/22	6	10	10	15	18	3	0	0	5	5	3	0	0	0	0	7	82	2,177
6/23	6	34	35	51	59	28	22	5	23	13	7	2	0	0	5	23	313	2,490
6/24	861	3,985	1,411	1,498	1,067	445	261	80	305	242	128	28	37	58	135	145	10,680	13,170
6/25	460	1,810	564	479	195	124	82	23	76	64	33	3	2	14	53	82	4,061	17,231
6/26	144	666	290	341	124	60	54	13	34	38	17	3	4	6	13	26	1,833	19,064
6/27	105	434	159	159	196	41	21	2	17	20	5	3	1	3	10	0	1,175	20,239
6/28	74	231	79	16	0	1	1	0	0	0	0	0	0	1	0	0	403	20,642
6/29	52	128	48	12	1	2	0	0	0	1	0	0	0	2	1	0	247	20,889
6/30	45	89	20	6	0	0	0	0	0	0	0	0	0	0	0	0	159	21,048
7/01	175	621	155	50	3	1	3	1	1	0	0	0	0	0	4	13	1,026	22,074
7/02	631	2,210	573	108	6	5	6	0	0	0	0	1	0	2	3	1	3,545	25,619
7/03	286	1,212	427	86	8	7	6	0	1	0	1	0	1	2	5	5	2,046	27,665
7/04	116	590	223	63	8	9	4	2	2	5	0	0	0	1	7	7	1,037	28,702
7/05	164	423	130	39	6	5	4	0	2	2	0	0	2	15	15	11	817	29,519
7/06	142	645	286	113	34	38	29	14	29	25	17	28	15	69	89	29	1,602	31,121
7/07	146	709	253	98	30	39	28	8	21	3	16	3	4	83	204	28	1,671	32,792
7/08	44	287	182	60	13	21	17	7	15	13	5	4	5	21	17	19	730	33,522

Appendix C.4. Sonar counts by date and sector, left bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
7/09	31	253	146	50	9	12	27	8	8	15	2	1	4	28	35	63	692	34,214
7/10	22	161	75	37	5	9	7	2	10	10	1	1	0	1	4	9	354	34,568
7/11	35	128	84	37	10	13	22	10	6	7	1	20	4	24	16	9	426	34,994
7/12	18	123	65	38	3	6	12	6	15	5	5	3	6	27	8	5	345	35,339
7/13	12	110	131	41	47	23	17	21	20	16	9	31	43	66	17	11	615	35,954
7/14	2	31	104	96	35	43	39	15	46	45	6	26	14	12	20	10	544	36,498
7/15	6	52	134	108	33	32	28	23	39	42	13	9	8	8	1	13	549	37,047
7/16	19	65	182	169	50	43	35	22	55	56	5	10	15	2	5	1	734	37,781
7/17	2	48	121	93	41	22	24	13	18	29	8	8	9	5	9	9	458	38,239
7/18	7	104	121	91	41	27	24	20	30	45	12	8	10	4	3	8	555	38,794
7/19	0	85	142	99	41	25	22	19	35	41	7	7	11	4	3	19	560	39,354
7/20	20	88	172	122	36	22	24	24	36	65	14	11	14	14	21	10	693	40,047
7/21	7	99	99	65	31	22	21	11	24	34	15	1	7	0	4	0	439	40,486
7/22	12	160	133	73	20	13	14	10	41	5	7	2	0	0	0	0	490	40,976
7/23	2	62	109	63	25	14	14	14	30	24	2	0	1	0	0	1	361	41,337
7/24	6	46	87	50	25	18	27	10	30	63	1	0	0	6	23	2	394	41,731
7/25	3	54	82	64	17	16	28	7	30	35	12	0	1	2	7	4	362	42,093
7/26	5	27	86	39	16	13	21	15	60	58	4	1	3	12	15	11	386	42,479
7/27	1	7	9	1	4	3	12	1	2	3	2	0	0	0	1	0	46	42,525
7/28	4	14	6	6	3	5	7	3	3	5	5	0	0	25	0	0	86	42,611
7/29	1	5	3	1	8	16	3	1	1	2	8	2	0	1	0	0	52	42,663
7/30	1	2	1	4	1	0	3	0	1	0	4	8	0	16	0	1	42	42,705
7/31	0	1	4	4	1	1	0	1	8	5	5	2	1	9	0	0	42	42,747
8/01	7	15	8	9	2	3	3	15	5	5	1	0	0	0	0	1	74	42,821
8/02	2	3	4	8	4	0	19	8	7	0	3	1	0	0	0	0	59	42,880
8/03	3	6	5	5	7	4	84	43	38	7	1	2	0	0	0	0	205	43,085
8/04	11	77	44	39	32	22	129	100	32	12	7	4	0	32	0	1	540	43,625
8/05	86	140	34	27	11	27	43	14	18	4	5	3	0	0	0	1	412	44,037
8/06	22	4	6	7	24	0	12	5	17	6	1	0	1	13	3	1	122	44,159
8/07	1	1	0	0	0	0	0	0	1	0	6	20	1	0	0	0	30	44,189

Appendix C.4. Sonar counts by date and sector, left bank offshore strata, Nushagak River sonar project, 1999.

Date	Sector																Daily Total	Cumulative Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
8/08	1	1	0	2	0	0	0	0	0	0	4	8	0	0	0	0	16	44,205
8/09	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	44,208
8/10	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6	44,214
8/11	7	5	1	1	12	0	0	0	0	1	14	3	1	0	0	0	45	44,259
8/12	4	0	3	0	0	0	0	0	0	0	2	2	0	0	0	0	11	44,270
8/13	11	1	1	1	3	0	0	0	0	0	16	23	1	1	0	0	58	44,328
8/14	1	0	0	0	0	0	0	0	0	0	6	6	0	0	0	0	13	44,341
8/15	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	3	11	44,352
8/16	0	0	11	0	17	0	0	0	0	0	0	0	2	12	2	0	44	44,396
8/17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	7	44,403
8/18	4	0	0	0	0	0	0	0	0	0	0	0	0	6	6	0	16	44,419
8/19	2	0	0	0	0	0	0	0	0	0	0	1	1	1	5	0	10	44,429
8/20	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	44,432
8/21	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	44,435
8/22	0	0	2	2	0	0	0	2	0	0	0	3	0	7	0	5	21	44,456
8/23	2	0	1	0	0	0	0	0	1	5	0	6	7	0	0	2	24	44,480
8/24	0	0	0	0	0	0	0	0	0	9	0	18	2	0	2	3	34	44,514
Total	4,088	16,612	7,371	4,994	2,679	1,376	1,306	616	1,264	1,125	462	331	251	630	791	640	44,514	

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/11	1	1	5.125	1.9	0.32	0	0	0	0	0	0	0	0
1	6/11	1	2	5.125	1.9	0.32	0	0	0	0	0	0	0	0
1	6/11	1	9	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	1	10	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	1	17	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	1	18	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	25	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	26	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	33	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	34	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	41	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/11	3	42	6.000	2.2	0.37	0	0	0	0	0	0	0	0
1	6/12	1	49	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	1	50	6.000	1.9	0.32	0	0	0	0	0	0	0	0
1	6/12	1	57	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	1	58	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	1	65	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	1	66	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	3	73	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/12	3	74	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	3	81	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	3	82	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/12	3	89	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/12	3	90	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	97	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	98	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	105	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	106	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	113	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	1	114	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	3	121	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/13	3	122	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	3	129	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	3	130	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	3	137	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/13	3	138	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/14	1	145	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	1	146	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	1	153	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	1	154	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	1	161	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/14	1	162	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	3	169	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/14	3	170	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	3	177	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	3	178	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	3	185	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/14	3	186	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	1	193	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	1	194	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	1	201	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	1	202	5.125	2.8	0.47	0	0	0	0	0	0	0	0
1	6/15	1	209	6.000	2.5	0.41	0	0	0	0	0	0	0	0
1	6/15	1	210	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/15	3	217	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	3	218	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	3	225	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/15	3	226	8.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/15	3	233	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/15	3	234	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	1	241	5.125	2.5	0.42	1	1	0	0	0	0	0	0
1	6/16	1	242	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	1	249	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	1	250	6.000	2.5	0.42	5	1	0	4	0	0	0	0
1	6/16	1	257	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	1	258	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	3	265	8.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/16	3	266	8.125	2.4	0.40	0	0	0	0	0	0	0	0
1	6/16	3	273	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	3	274	6.000	2.5	0.41	2	2	0	0	0	0	0	0
1	6/16	3	281	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/16	3	282	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	1	289	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	1	290	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	1	297	6.000	2.6	0.43	1	1	0	0	0	0	0	0
1	6/17	1	298	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	1	305	5.125	2.5	0.42	2	1	0	1	0	0	0	0
1	6/17	1	306	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	3	313	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	3	314	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	3	321	6.000	2.6	0.43	0	0	0	0	0	0	0	0
1	6/17	3	322	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/17	3	329	8.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/17	3	330	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/18	1	337	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/18	1	338	8.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/18	1	345	6.000	2.5	0.41	0	0	0	0	0	0	0	0
1	6/18	1	346	6.000	2.5	0.41	0	0	0	0	0	0	0	0
1	6/18	1	353	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/18	1	354	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/18	3	361	5.125	2.6	0.43	1	0	1	0	0	0	0	0
1	6/18	3	362	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/18	3	369	6.000	2.6	0.44	0	0	0	0	0	0	0	0
1	6/18	3	370	6.000	2.8	0.46	0	0	0	0	0	0	0	0
1	6/18	3	377	8.125	2.6	0.43	0	0	0	0	0	0	0	0
1	6/18	3	378	8.125	2.6	0.44	0	0	0	0	0	0	0	0
1	6/19	1	385	8.125	2.6	0.44	0	0	0	0	0	0	0	0
1	6/19	1	386	8.125	2.6	0.43	0	0	0	0	0	0	0	0
1	6/19	1	393	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	1	394	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	1	400	5.125	2.6	0.43	0	0	0	0	0	0	0	0
1	6/19	1	401	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	3	409	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	3	410	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	3	417	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	3	418	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/19	3	425	8.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/19	3	426	8.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/20	1	433	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	1	434	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	1	441	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	1	442	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	1	449	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	1	450	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	3	457	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/20	3	458	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	6/20	3	465	6.000	2.6	0.43	0	0	0	0	0	0	0	0
1	6/20	3	466	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	3	473	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/20	3	474	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	481	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	482	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	489	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	490	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	497	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	1	498	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	505	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	506	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	513	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	514	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	521	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/21	3	522	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	529	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	530	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	537	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	538	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	545	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	1	546	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	553	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	554	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	561	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	562	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	569	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/22	3	570	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	577	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	578	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	585	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	586	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	593	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	1	594	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	601	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	602	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	609	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	610	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	617	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	2	618	8.125	2.6	0.43	0	0	0	0	0	0	0	0
1	6/23	3	625	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	3	626	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	3	633	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	3	634	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	3	641	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/23	3	642	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/24	1	649	5.125	2.5	0.42	1	0	0	1	0	0	0	0
1	6/24	1	650	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/24	1	657	6.000	2.5	0.42	1	0	0	1	0	0	0	0
1	6/24	1	658	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	6/24	1	665	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/24	1	666	8.125	2.5	0.42	0	0	0	0	0	0	0	0
1	6/24	2	673	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/24	2	674	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/24	2	681	6.000	2.0	0.33	9	1	0	8	0	0	0	0
1	6/24	2	682	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/24	2	689	5.125	2.0	0.33	1	1	0	0	0	0	0	0
1	6/24	2	690	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/24	3	697	5.125	2.0	0.33	4	1	0	3	0	0	0	0
1	6/24	3	698	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/24	3	705	6.000	1.8	0.29	5	0	0	5	0	0	0	0
1	6/24	3	706	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	6/24	3	713	8.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/24	3	714	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	1	721	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	1	722	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/25	1	729	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	1	730	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	6/25	1	737	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	1	738	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	2	745	5.125	2.0	0.33	2	1	0	1	0	0	0	0
1	6/25	2	746	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	2	753	6.000	2.0	0.33	2	1	0	1	0	0	0	0
1	6/25	2	754	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	6/25	2	761	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/25	2	762	8.125	2.1	0.35	0	0	0	0	0	0	0	0
1	6/25	3	769	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	3	770	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	3	777	6.000	2.0	0.33	2	0	0	2	0	0	0	0
1	6/25	3	778	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	3	785	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/25	3	786	5.125	2.0	0.33	5	1	3	1	0	0	0	0
1	6/26	1	793	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	1	794	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	1	801	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	6/26	1	802	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	1	809	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	1	810	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	2	817	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	2	818	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/26	2	825	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	2	826	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	2	833	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	2	834	5.125	2.0	0.33	1	1	0	0	0	0	0	0
1	6/26	3	841	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/26	3	842	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/26	3	843	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	3	849	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/26	3	850	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	6/26	3	857	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/26	3	858	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	1	865	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	1	866	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	1	873	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	6/27	1	874	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	1	881	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	1	882	5.125	2.0	0.33	2	0	1	1	0	0	0	0
1	6/27	2	889	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/27	2	890	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	2	897	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	2	898	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	2	905	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	2	906	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	913	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	914	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	921	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	922	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	929	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/27	3	930	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/28	1	937	6.000	2.0	0.33	7	0	2	5	0	0	0	0
1	6/28	1	938	6.000	2.0	0.33	2	0	1	1	0	0	0	0
1	6/28	1	945	5.125	2.0	0.33	8	0	1	7	0	0	0	0
1	6/28	1	946	5.125	2.1	0.35	4	0	1	3	0	0	0	0
1	6/28	1	953	8.125	2.0	0.33	3	0	2	1	0	0	0	0
1	6/28	1	954	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/28	2	961	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/28	2	962	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/28	2	969	6.000	2.0	0.33	5	0	0	5	0	0	0	0
1	6/28	2	970	6.000	2.0	0.33	2	0	2	0	0	0	0	0
1	6/28	2	977	5.125	2.0	0.33	7	1	1	5	0	0	0	0
1	6/28	2	978	5.125	2.0	0.33	5	0	2	3	0	0	0	0
1	6/28	3	985	5.125	2.0	0.33	2	0	0	2	0	0	0	0
1	6/28	3	986	5.125	2.0	0.33	4	0	3	1	0	0	0	0
1	6/28	3	993	6.000	2.1	0.34	0	0	0	0	0	0	0	0
1	6/28	3	994	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	6/28	3	1,001	8.125	2.0	0.33	2	0	0	2	0	0	0	0
1	6/28	3	1,002	8.125	2.0	0.33	1	1	0	0	0	0	0	0
1	6/29	1	1,009	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/29	1	1,010	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	1	1,017	6.000	2.0	0.33	5	0	1	4	0	0	0	0
1	6/29	1	1,018	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	1	1,025	5.125	2.0	0.33	2	0	2	0	0	0	0	0
1	6/29	1	1,026	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	2	1,033	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/29	2	1,034	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	2	1,041	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	6/29	2	1,042	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	2	1,049	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	2	1,050	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/29	3	1,057	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	3	1,058	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/29	3	1,065	6.000	2.0	0.33	2	0	1	1	0	0	0	0
1	6/29	3	1,066	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	6/29	3	1,073	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	6/29	3	1,074	5.125	2.0	0.33	2	0	0	2	0	0	0	0
1	6/30	1	1,081	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/30	1	1,082	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/30	1	1,089	6.000	2.0	0.33	9	0	0	9	0	0	0	0
1	6/30	1	1,090	6.000	2.0	0.33	8	0	0	8	0	0	0	0
1	6/30	1	1,097	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	6/30	1	1,098	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/30	2	1,105	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/30	2	1,106	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	6/30	2	1,113	6.000	2.1	0.34	4	0	0	4	0	0	0	0
1	6/30	2	1,114	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	6/30	2	1,121	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/30	2	1,122	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	6/30	3	1,129	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/30	3	1,130	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	6/30	3	1,137	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	6/30	3	1,138	6.000	2.0	0.33	5	0	1	4	0	0	0	0
1	6/30	3	1,145	8.125	2.0	0.33	8	0	3	5	0	0	0	0
1	6/30	3	1,146	8.125	2.0	0.33	5	0	5	0	0	0	0	0
1	7/01	1	1,153	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/01	1	1,154	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/01	1	1,161	5.125	2.0	0.33	2	0	1	1	0	0	0	0
1	7/01	1	1,162	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/01	1	1,169	6.000	2.0	0.33	6	0	2	4	0	0	0	0
1	7/01	1	1,170	6.000	2.0	0.33	6	0	2	4	0	0	0	0
1	7/01	2	1,177	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	7/01	2	1,178	6.000	2.0	0.33	15	0	4	11	0	0	0	0
1	7/01	2	1,183	5.125	2.0	0.33	9	2	1	6	0	0	0	0
1	7/01	2	1,184	5.125	2.0	0.33	1	1	0	0	0	0	0	0
1	7/01	2	1,189	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/01	2	1,190	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/01	3	1,195	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/01	3	1,196	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/01	3	1,201	6.000	1.5	0.25	12	1	4	7	0	0	0	0
1	7/01	3	1,202	6.000	2.0	0.33	3	0	2	1	0	0	0	0
1	7/01	3	1,207	5.125	2.0	0.33	3	0	2	1	0	0	0	0
1	7/01	3	1,208	5.125	1.5	0.25	6	0	6	0	0	0	0	0
1	7/03	1	1,249	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/03	1	1,250	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/03	1	1,257	6.000	2.0	0.33	7	0	6	1	0	0	0	0
1	7/03	1	1,258	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/03	1	1,265	5.125	2.0	0.33	13	0	12	1	0	0	0	0
1	7/03	1	1,266	5.125	2.0	0.33	2	0	1	1	0	0	0	0
1	7/04	1	1,309	5.125	2.0	0.33	8	0	7	1	0	0	0	0
1	7/04	1	1,310	5.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/04	1	1,317	6.000	2.0	0.33	2	0	2	0	0	0	0	0
1	7/04	1	1,318	6.000	2.0	0.33	4	0	3	1	0	0	0	0
1	7/04	1	1,325	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/04	1	1,326	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/04	2	1,333	8.125	2.0	0.33	3	2	1	0	0	0	0	0
1	7/04	2	1,334	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/04	2	1,339	6.000	2.0	0.33	13	0	11	2	0	0	0	0
1	7/04	2	1,340	6.000	1.7	0.28	9	0	9	0	0	0	0	0
1	7/04	2	1,345	5.125	1.5	0.25	13	0	10	3	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/04	2	1,346	5.125	1.5	0.25	15	0	2	13	0	0	0	0
1	7/04	3	1,351	5.125	1.5	0.25	7	0	1	6	0	0	0	0
1	7/04	3	1,352	5.125	1.5	0.25	2	0	2	0	0	0	0	0
1	7/04	3	1,357	6.000	1.5	0.25	13	1	6	6	0	0	0	0
1	7/04	3	1,358	6.000	1.5	0.25	2	0	2	0	0	0	0	0
1	7/04	3	1,363	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/04	3	1,364	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/05	1	1,369	5.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/05	1	1,370	5.125	2.0	0.34	7	0	7	0	0	0	0	0
1	7/05	1	1,377	6.000	2.0	0.33	10	0	10	0	0	0	0	0
1	7/05	1	1,378	6.000	2.0	0.33	9	0	9	0	0	0	0	0
1	7/05	1	1,383	8.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/05	1	1,384	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/05	2	1,389	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/05	2	1,390	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/05	2	1,395	6.000	2.0	0.33	6	0	4	2	0	0	0	0
1	7/05	2	1,396	6.000	2.0	0.33	4	0	3	1	0	0	0	0
1	7/05	2	1,401	5.125	2.0	0.33	14	1	5	8	0	0	0	0
1	7/05	2	1,402	5.125	1.5	0.25	13	0	12	1	0	0	0	0
1	7/05	3	1,407	5.125	2.0	0.33	5	0	4	1	0	0	0	0
1	7/05	3	1,408	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/05	3	1,413	6.000	2.0	0.33	5	0	5	0	0	0	0	0
1	7/05	3	1,414	6.000	1.5	0.25	5	0	5	0	0	0	0	0
1	7/05	3	1,419	8.125	2.0	0.33	1	0	0	1	0	0	0	0
1	7/05	3	1,420	8.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/06	1	1,425	8.125	1.5	0.26	4	0	4	0	0	0	0	0
1	7/06	1	1,426	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/06	1	1,433	6.000	1.5	0.25	9	0	8	1	0	0	0	0
1	7/06	1	1,434	6.000	2.0	0.33	3	0	3	0	0	0	0	0
1	7/06	1	1,441	5.125	1.5	0.25	5	0	5	0	0	0	0	0
1	7/06	1	1,442	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/06	2	1,449	5.125	2.0	0.33	4	0	4	0	0	0	0	0
1	7/06	2	1,450	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/06	2	1,457	6.000	2.0	0.33	4	0	4	0	0	0	0	0
1	7/06	2	1,458	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/06	2	1,465	8.125	1.5	0.25	2	0	2	0	0	0	0	0
1	7/06	2	1,466	8.125	1.5	0.25	0	0	0	0	0	0	0	0
1	7/06	3	1,473	8.125	2.1	0.34	2	0	2	0	0	0	0	0
1	7/06	3	1,474	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/06	3	1,481	6.000	2.0	0.33	3	0	2	1	0	0	0	0
1	7/06	3	1,482	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/06	3	1,489	5.125	2.0	0.33	5	0	5	0	0	0	0	0
1	7/06	3	1,490	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/07	1	1,497	5.125	2.0	0.34	9	0	8	1	0	0	0	0
1	7/07	1	1,498	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/07	1	1,505	6.000	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	1	1,506	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/07	1	1,513	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/07	1	1,514	8.125	2.1	0.34	0	0	0	0	0	0	0	0
1	7/07	2	1,521	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/07	2	1,522	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/07	2	1,529	6.000	2.0	0.33	2	0	1	1	0	0	0	0
1	7/07	2	1,530	6.000	2.0	0.34	5	0	5	0	0	0	0	0
1	7/07	2	1,537	5.125	1.5	0.25	4	0	4	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/07	2	1,538	5.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	3	1,545	5.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	3	1,546	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/07	3	1,553	6.000	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	3	1,554	6.000	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	3	1,561	8.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/07	3	1,562	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	1	1,569	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	1	1,570	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	1	1,577	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/08	1	1,578	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/08	1	1,585	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/08	1	1,586	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/08	2	1,593	5.125	2.0	0.33	9	1	7	1	0	0	0	0
1	7/08	2	1,594	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	2	1,601	6.000	2.0	0.33	2	0	2	0	0	0	0	0
1	7/08	2	1,602	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/08	2	1,609	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	2	1,610	8.125	1.5	0.25	1	0	0	1	0	0	0	0
1	7/08	3	1,617	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	3	1,618	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	3	1,625	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	3	1,626	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	3	1,633	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/08	3	1,634	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/09	1	1,641	5.125	2.0	0.33	2	0	2	0	0	0	0	0
1	7/09	1	1,642	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	1	1,649	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	1	1,650	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	1	1,657	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	1	1,658	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	2	1,665	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/09	2	1,666	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/09	2	1,673	6.000	2.0	0.33	4	0	4	0	0	0	0	0
1	7/09	2	1,674	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	2	1,681	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	2	1,682	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/09	3	1,689	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	3	1,690	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	3	1,697	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/09	3	1,698	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/09	3	1,705	8.125	2.2	0.36	0	0	0	0	0	0	0	0
1	7/09	3	1,706	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	1	1,713	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	1	1,714	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	1	1,721	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	1	1,722	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	1	1,729	5.125	2.7	0.45	1	0	1	0	0	0	0	0
1	7/10	1	1,730	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/10	2	1,737	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/10	2	1,738	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	2	1,745	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	2	1,746	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/10	2	1,753	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/10	2	1,754	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	3	1,761	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	3	1,762	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/10	3	1,769	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/10	3	1,770	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	3	1,777	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/10	3	1,778	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/11	1	1,785	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	1	1,786	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	1	1,793	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	1	1,794	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	1	1,801	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	1	1,802	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	2	1,809	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	2	1,810	8.125	2.2	0.36	0	0	0	0	0	0	0	0
1	7/11	2	1,817	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	2	1,818	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	2	1,825	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	2	1,826	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,833	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,834	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,841	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,842	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,849	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/11	3	1,850	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	1	1,857	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	1	1,858	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	1	1,865	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	1	1,866	6.000	2.1	0.34	0	0	0	0	0	0	0	0
1	7/12	1	1,873	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	7/12	1	1,874	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/12	2	1,881	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	2	1,882	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/12	2	1,889	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/12	2	1,890	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/12	2	1,897	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/12	2	1,898	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,905	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,906	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,913	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,914	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,921	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/12	3	1,922	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	1	1,929	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/13	1	1,930	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/13	1	1,937	5.125	2.0	0.33	3	0	3	0	0	0	0	0
1	7/13	1	1,938	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	1	1,945	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	1	1,946	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	2	1,953	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	2	1,954	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/13	2	1,961	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	2	1,962	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	2	1,969	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/13	2	1,970	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	3	1,977	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	3	1,978	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	3	1,985	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	3	1,986	6.000	2.1	0.34	0	0	0	0	0	0	0	0
1	7/13	3	1,993	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/13	3	1,994	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	1	2,001	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	1	2,002	8.125	2.1	0.35	0	0	0	0	0	0	0	0
1	7/14	1	2,009	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	1	2,010	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	1	2,017	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	1	2,018	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	2	2,025	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	2	2,026	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	2	2,033	6.000	2.1	0.34	0	0	0	0	0	0	0	0
1	7/14	2	2,034	6.000	2.2	0.36	0	0	0	0	0	0	0	0
1	7/14	2	2,041	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/14	2	2,042	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,049	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,050	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,057	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,058	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,065	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/14	3	2,066	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,073	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,074	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,081	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,082	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,089	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	1	2,090	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,097	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,098	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,105	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,106	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,113	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/15	3	2,114	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,121	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,122	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,129	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,130	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,137	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	1	2,138	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/16	3	2,145	8.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/16	3	2,146	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	3	2,153	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	3	2,154	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	3	2,161	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/16	3	2,162	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/17	1	2,169	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	1	2,170	5.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/17	1	2,177	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	1	2,178	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/17	1	2,185	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/17	1	2,186	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	3	2,193	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	3	2,194	8.125	2.2	0.36	0	0	0	0	0	0	0	0
1	7/17	3	2,201	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	3	2,202	5.125	2.1	0.34	1	1	0	0	0	0	0	0
1	7/17	3	2,209	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/17	3	2,210	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	1	2,217	6.000	2.0	0.33	1	0	1	0	0	0	0	0
1	7/18	1	2,218	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/18	1	2,225	5.125	2.3	0.38	0	0	0	0	0	0	0	0
1	7/18	1	2,226	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	1	2,233	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	1	2,234	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	3	2,241	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	3	2,242	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	3	2,249	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	3	2,250	6.000	2.1	0.34	0	0	0	0	0	0	0	0
1	7/18	3	2,257	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/18	3	2,258	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	1	2,265	5.125	2.0	0.34	1	0	0	1	0	0	0	0
1	7/19	1	2,266	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	1	2,273	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	1	2,274	8.125	2.0	0.33	1	0	1	0	0	0	0	0
1	7/19	1	2,281	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	1	2,282	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	7/19	3	2,289	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	3	2,290	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	3	2,297	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	3	2,298	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	3	2,305	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/19	3	2,306	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	1	2,313	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	7/20	1	2,314	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	1	2,321	6.000	2.4	0.40	0	0	0	0	0	0	0	0
1	7/20	1	2,322	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	1	2,329	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	1	2,330	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	3	2,337	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	3	2,338	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	3	2,345	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	3	2,346	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/20	3	2,353	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	7/20	3	2,354	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	1	2,361	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	1	2,362	6.000	2.1	0.34	1	0	0	1	0	0	0	0
1	7/21	1	2,369	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	1	2,370	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	1	2,377	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	1	2,378	5.125	2.1	0.35	0	0	0	0	0	0	0	0
1	7/21	3	2,385	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	3	2,386	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	3	2,393	6.000	2.0	0.33	1	0	0	1	0	0	0	0
1	7/21	3	2,394	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/21	3	2,401	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/21	3	2,402	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,409	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,410	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,417	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,418	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,425	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	1	2,426	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,433	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,434	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,441	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,442	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,449	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/22	3	2,450	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,457	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,458	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,465	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,466	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,473	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	1	2,474	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	3	2,481	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	3	2,482	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	3	2,489	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	3	2,490	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/23	3	2,497	6.000	2.1	0.35	0	0	0	0	0	0	0	0
1	7/23	3	2,498	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	1	2,505	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	1	2,506	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	1	2,513	5.125	2.0	0.40	0	0	0	0	0	0	0	0
1	7/24	1	2,514	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	1	2,521	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	1	2,522	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,529	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,530	8.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,537	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,538	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,545	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/24	3	2,546	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,553	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,554	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,555	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,565	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,566	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	1	2,567	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	3	2,577	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	7/25	3	2,578	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	3	2,579	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	3	2,589	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	3	2,590	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/25	3	2,591	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	1	2,601	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	1	2,602	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	1	2,603	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	1	2,613	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	1	2,614	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/26	1	2,615	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	3	2,625	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	3	2,626	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	3	2,627	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	3	2,637	6.000	2.0	0.33	1	0	0	0	0	1	0	0
1	7/26	3	2,638	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/26	3	2,639	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	1	2,649	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	1	2,650	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	1	2,651	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	1	2,661	5.125	2.0	0.33	1	0	0	1	0	0	0	0
1	7/27	1	2,662	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	1	2,663	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	3	2,673	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	3	2,675	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	3	2,685	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	3	2,686	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/27	3	2,687	6.000	1.8	0.31	0	0	0	0	0	0	0	0
1	7/28	1	2,697	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	1	2,698	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	1	2,699	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	1	2,709	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/28	1	2,710	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	1	2,711	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/28	3	2,721	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	3	2,722	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	3	2,723	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	3	2,733	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	3	2,734	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/28	3	2,735	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,745	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,746	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,747	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,757	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,758	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	1	2,759	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,769	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,770	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,771	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,781	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,782	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/29	3	2,783	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	1	2,793	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	1	2,794	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	1	2,795	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	7/30	1	2,805	5.125	2.1	0.34	0	0	0	0	0	0	0	0
1	7/30	1	2,806	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	1	2,807	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,817	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,818	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,819	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,829	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,830	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/30	3	2,831	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	7/31	1	2,841	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	1	2,842	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	1	2,843	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	1	2,853	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	1	2,854	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	7/31	1	2,855	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,865	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,866	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,867	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,877	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,878	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	7/31	3	2,879	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	1	2,889	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	1	2,890	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	1	2,891	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	1	2,901	5.125	2.0	0.33	1	0	0	0	0	0	0	1
1	8/01	1	2,902	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	1	2,903	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	3	2,913	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	3	2,914	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	8/01	3	2,915	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	3	2,925	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	3	2,926	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/01	3	2,927	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	1	2,937	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	1	2,938	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	1	2,939	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	1	2,949	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/02	1	2,950	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	1	2,951	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,961	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,962	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,963	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,973	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,974	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/02	3	2,975	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	1	2,985	6.000	2.0	0.33	1	1	0	0	0	0	0	0
1	8/03	1	2,986	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	1	2,987	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	1	2,997	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	1	2,998	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	1	2,999	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	3	3,009	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	3	3,010	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	3	3,011	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	3	3,021	6.000	2.1	0.35	0	0	0	0	0	0	0	0
1	8/03	3	3,022	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/03	3	3,023	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	1	3,033	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	1	3,034	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	1	3,035	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	1	3,045	5.125	2.1	0.34	0	0	0	0	0	0	0	0
1	8/04	1	3,046	5.125	2.0	0.33	1	0	0	0	0	1	0	0
1	8/04	1	3,047	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	8/04	3	3,057	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	3	3,058	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	3	3,059	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	3	3,069	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	3	3,070	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/04	3	3,071	6.000	2.0	0.34	0	0	0	0	0	0	0	0
1	8/05	1	3,081	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	1	3,082	6.000	2.0	0.33	1	0	0	0	0	1	0	0
1	8/05	1	3,083	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	1	3,093	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	1	3,094	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	1	3,095	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,105	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,106	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,107	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,117	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,118	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/05	3	3,119	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	1	3,129	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	1	3,130	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	1	3,131	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	1	3,141	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	1	3,142	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	8/06	1	3,143	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,153	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,154	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,155	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,165	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,166	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/06	3	3,167	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/07	1	3,177	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/07	1	3,179	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/07	1	3,189	5.125	2.0	0.34	0	0	0	0	0	0	0	0
1	8/07	1	3,190	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/07	1	3,191	5.125	2.0	0.33	0	0	0	0	0	0	0	0
1	8/07	3	3,201	5.125	2.7	0.45	0	0	0	0	0	0	0	0
1	8/07	3	3,202	5.125	2.8	0.46	1	0	0	0	0	1	0	0
1	8/07	3	3,203	5.125	2.2	0.36	0	0	0	0	0	0	0	0
1	8/07	3	3,213	6.000	2.8	0.46	0	0	0	0	0	0	0	0
1	8/07	3	3,214	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/07	3	3,215	6.000	2.5	0.41	0	0	0	0	0	0	0	0
1	8/08	1	3,225	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/08	1	3,226	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/08	1	3,227	6.000	2.0	0.33	0	0	0	0	0	0	0	0
1	8/08	1	3,237	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	1	3,238	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	1	3,239	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,249	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,250	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,251	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,261	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,262	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/08	3	3,263	6.000	2.6	0.43	0	0	0	0	0	0	0	0
1	8/09	1	3,273	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	8/09	1	3,274	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	1	3,275	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	1	3,285	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	1	3,286	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	1	3,287	5.125	1.7	0.28	0	0	0	0	0	0	0	0
1	8/09	3	3,297	5.125	2.5	0.41	0	0	0	0	0	0	0	0
1	8/09	3	3,298	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	3	3,299	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/09	3	3,309	6.000	2.6	0.44	0	0	0	0	0	0	0	0
1	8/09	3	3,310	6.000	2.5	0.42	1	0	0	0	0	1	0	0
1	8/09	3	3,311	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,321	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,322	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,323	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,333	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,334	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	1	3,335	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	3	3,345	5.125	2.5	0.42	1	0	0	0	0	1	0	0
1	8/10	3	3,346	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	3	3,347	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	3	3,357	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	3	3,358	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/10	3	3,359	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/11	1	3,369	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/11	1	3,370	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/11	1	3,371	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/11	1	3,381	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/11	1	3,382	5.125	2.6	0.44	0	0	0	0	0	0	0	0
1	8/11	1	3,383	5.125	2.5	0.42	3	0	0	0	0	3	0	0
1	8/12	3	3,393	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,394	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,395	5.125	2.5	0.42	1	0	0	0	0	1	0	0
1	8/12	3	3,405	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,406	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,407	6.000	2.5	0.42	1	0	0	0	0	1	0	0
1	8/12	1	3,417	6.000	2.5	0.41	0	0	0	0	0	0	0	0
1	8/12	1	3,418	6.000	2.5	0.42	1	0	0	0	0	1	0	0
1	8/12	1	3,419	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	1	3,429	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	1	3,430	5.125	2.5	0.42	1	0	0	0	0	1	0	0
1	8/12	1	3,431	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,441	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,442	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,443	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,453	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,454	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/12	3	3,455	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	1	3,465	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	1	3,466	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	1	3,467	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	1	3,477	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	1	3,478	5.125	2.6	0.43	0	0	0	0	0	0	0	0
1	8/13	1	3,479	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	3	3,489	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	8/13	3	3,490	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	3	3,491	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	3	3,501	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	3	3,502	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/13	3	3,503	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	1	3,513	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	1	3,514	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	1	3,515	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	1	3,525	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	1	3,526	5.125	2.5	0.42	4	0	0	0	0	4	0	0
1	8/14	1	3,527	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,537	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,538	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,539	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,549	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,550	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/14	3	3,551	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	1	3,561	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	1	3,562	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	1	3,563	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	1	3,573	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	1	3,574	5.125	2.5	0.42	1	0	0	0	0	1	0	0
1	8/15	1	3,575	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,585	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,586	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,587	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,597	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,598	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/15	3	3,599	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	1	3,609	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	1	3,610	6.000	2.7	0.44	0	0	0	0	0	0	0	0
1	8/16	1	3,611	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	1	3,621	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	1	3,622	5.125	2.5	0.42	1	0	0	0	0	1	0	0
1	8/16	1	3,623	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,633	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,634	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,635	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,645	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,646	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/16	3	3,647	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,657	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,658	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,659	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,669	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,670	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	1	3,671	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,681	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,682	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,683	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,693	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,694	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/17	3	3,695	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	1	3,705	6.000	2.5	0.41	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
1	8/18	1	3,706	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	1	3,707	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	1	3,717	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	1	3,718	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	1	3,719	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,729	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,730	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,731	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,741	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,742	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/18	3	3,743	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,753	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,754	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,755	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,765	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,766	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	1	3,767	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	3	3,777	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	3	3,778	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	3	3,779	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	3	3,789	6.000	2.5	0.42	1	0	0	0	0	1	0	0
1	8/19	3	3,790	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/19	3	3,791	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/20	1	3,801	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/20	1	3,802	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/20	1	3,803	6.000	2.5	0.42	0	0	0	0	0	0	0	0
1	8/20	1	3,813	5.125	2.5	0.42	2	0	0	0	0	2	0	0
1	8/20	1	3,814	5.125	2.5	0.42	0	0	0	0	0	0	0	0
1	8/20	1	3,815	5.125	2.5	0.42	0	0	0	0	0	0	0	0
Range 1 Total -					2033.0	338.93	610	26	351	210	0	22	0	1
2	6/11	1	3	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	1	4	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	1	11	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	1	12	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	1	19	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	1	20	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	3	27	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	3	28	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	3	35	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	6/11	3	36	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	3	43	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/11	3	44	6.000	2.1	0.35	0	0	0	0	0	0	0	0
2	6/12	1	51	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	1	52	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	1	59	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	1	60	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	1	67	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	1	68	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	6/12	3	75	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	3	76	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	3	83	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	3	84	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	6/12	3	91	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/12	3	92	8.125	1.8	0.31	0	0	0	0	0	0	0	0
2	6/13	1	99	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	1	100	8.125	2.1	0.34	0	0	0	0	0	0	0	0
2	6/13	1	107	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	1	108	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	1	115	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	1	116	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	123	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	124	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	131	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	132	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	139	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/13	3	140	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/14	1	147	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	1	148	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	1	155	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	1	156	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	1	163	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	1	164	5.125	2.5	0.42	1	0	0	0	0	0	1	0
2	6/14	3	171	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	3	172	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	3	179	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	3	180	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	3	187	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/14	3	188	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	195	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	196	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	203	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	204	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	211	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	1	212	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	219	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	220	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	227	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	228	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	235	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/15	3	236	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/16	1	243	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/16	1	244	5.125	2.5	0.42	1	0	0	1	0	0	0	0
2	6/16	1	251	6.000	2.5	0.41	0	0	0	0	0	0	0	0
2	6/16	1	252	6.000	2.6	0.44	1	0	0	1	0	0	0	0
2	6/16	1	259	8.125	2.5	0.42	2	2	0	0	0	0	0	0
2	6/16	1	260	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/16	3	267	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/16	3	268	8.125	2.5	0.42	2	2	0	0	0	0	0	0
2	6/16	3	275	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/16	3	276	6.000	2.7	0.44	1	0	0	1	0	0	0	0
2	6/16	3	283	5.125	2.5	0.42	1	1	0	0	0	0	0	0
2	6/16	3	284	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	1	291	8.125	2.5	0.42	3	0	0	3	0	0	0	0
2	6/17	1	292	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	1	299	6.000	2.5	0.42	1	0	0	1	0	0	0	0
2	6/17	1	300	6.000	2.5	0.42	2	0	0	2	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	6/17	1	307	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/17	1	308	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/17	3	315	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	3	316	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	3	323	6.000	2.5	0.41	0	0	0	0	0	0	0	0
2	6/17	3	324	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	3	331	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/17	3	332	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	1	339	8.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/18	1	340	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	1	347	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	1	348	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	1	355	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	1	356	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/18	3	363	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/18	3	364	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	6/18	3	371	6.000	2.7	0.45	0	0	0	0	0	0	0	0
2	6/18	3	372	6.000	3.1	0.52	0	0	0	0	0	0	0	0
2	6/18	3	379	8.125	2.6	0.44	0	0	0	0	0	0	0	0
2	6/18	3	380	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/19	1	387	8.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/19	1	388	8.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/19	1	395	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/19	1	396	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/19	1	403	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	6/19	1	404	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	6/19	3	411	5.125	2.7	0.44	0	0	0	0	0	0	0	0
2	6/19	3	412	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	6/19	3	419	6.000	2.5	0.42	1	1	0	0	0	0	0	0
2	6/19	3	420	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/19	3	427	8.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/19	3	428	8.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/20	1	435	8.125	2.6	0.44	0	0	0	0	0	0	0	0
2	6/20	1	436	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	1	443	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	1	444	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	1	451	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	1	452	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	3	459	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/20	3	460	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	3	467	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	3	468	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	3	475	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/20	3	476	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	483	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	484	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	491	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	492	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	499	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	1	500	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	3	507	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	6/21	3	508	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	3	515	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	3	516	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	6/21	3	523	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/21	3	524	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	531	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	532	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	539	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	540	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	547	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	1	548	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	555	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	556	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	563	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	564	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	571	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/22	3	572	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	1	579	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	1	580	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	1	587	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	1	588	6.000	2.4	0.40	0	0	0	0	0	0	0	0
2	6/23	1	595	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	6/23	1	596	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	603	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	604	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	611	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	612	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	619	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	2	620	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	3	627	8.125	2.5	0.42	1	1	0	0	0	0	0	0
2	6/23	3	628	8.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	3	635	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	3	636	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	3	643	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/23	3	644	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/24	1	651	5.125	2.4	0.40	2	2	0	0	0	0	0	0
2	6/24	1	652	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	6/24	1	659	6.000	2.5	0.42	2	2	0	0	0	0	0	0
2	6/24	1	660	6.000	2.5	0.42	1	0	0	1	0	0	0	0
2	6/24	1	667	8.125	2.5	0.42	5	4	0	1	0	0	0	0
2	6/24	1	668	8.125	2.5	0.42	1	1	0	0	0	0	0	0
2	6/24	2	675	8.125	2.0	0.33	4	4	0	0	0	0	0	0
2	6/24	2	676	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	6/24	2	683	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/24	2	684	6.000	2.0	0.34	0	0	0	0	0	0	0	0
2	6/24	2	691	5.125	2.0	0.33	8	5	1	2	0	0	0	0
2	6/24	2	692	5.125	2.0	0.33	2	1	0	1	0	0	0	0
2	6/24	3	699	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/24	3	700	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/24	3	707	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	6/24	3	708	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/24	3	715	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	6/24	3	716	8.125	2.0	0.33	1	0	0	1	0	0	0	0
2	6/25	1	723	8.125	2.0	0.33	4	4	0	0	0	0	0	0
2	6/25	1	724	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	6/25	1	731	6.000	2.0	0.33	2	0	0	2	0	0	0	0
2	6/25	1	732	6.000	2.0	0.33	1	1	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	6/25	1	739	5.125	2.0	0.33	2	1	0	1	0	0	0	0
2	6/25	1	740	5.125	2.0	0.33	2	0	0	2	0	0	0	0
2	6/25	2	747	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/25	2	748	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/25	2	755	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/25	2	756	6.000	0.5	0.08	1	1	0	0	0	0	0	0
2	6/25	2	763	8.125	2.0	0.34	1	1	0	0	0	0	0	0
2	6/25	2	764	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/25	3	771	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/25	3	772	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/25	3	779	6.000	2.1	0.34	0	0	0	0	0	0	0	0
2	6/25	3	780	6.000	2.1	0.34	0	0	0	0	0	0	0	0
2	6/25	3	787	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/25	3	788	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	1	795	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	1	796	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	6/26	1	803	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	6/26	1	804	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	6/26	1	811	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	1	812	8.125	2.0	0.34	1	1	0	0	0	0	0	0
2	6/26	2	819	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	2	820	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/26	2	827	6.000	2.0	0.33	2	0	0	2	0	0	0	0
2	6/26	2	828	6.000	2.1	0.34	0	0	0	0	0	0	0	0
2	6/26	2	835	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	2	836	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	3	844	5.125	2.1	0.35	0	0	0	0	0	0	0	0
2	6/26	3	851	6.000	2.0	0.33	1	0	1	0	0	0	0	0
2	6/26	3	852	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	6/26	3	859	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/26	3	860	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	6/27	1	867	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	1	868	8.125	1.0	0.17	0	0	0	0	0	0	0	0
2	6/27	1	875	6.000	2.0	0.33	3	0	1	2	0	0	0	0
2	6/27	1	876	6.000	2.1	0.35	1	1	0	0	0	0	0	0
2	6/27	1	883	5.125	2.0	0.33	2	0	1	1	0	0	0	0
2	6/27	1	884	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	2	891	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/27	2	892	5.125	2.0	0.34	2	2	0	0	0	0	0	0
2	6/27	2	899	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	2	900	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	6/27	2	907	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	2	908	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	3	915	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	6/27	3	916	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	3	923	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	6/27	3	924	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/27	3	931	6.000	2.0	0.33	3	2	0	1	0	0	0	0
2	6/27	3	932	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	6/28	1	939	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	6/28	1	940	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	6/28	1	947	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	1	948	5.125	2.0	0.34	1	1	0	0	0	0	0	0
2	6/28	1	955	8.125	2.0	0.33	2	0	1	1	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	6/28	1	956	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	2	963	8.125	2.1	0.34	1	1	0	0	0	0	0	0
2	6/28	2	964	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	2	971	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	6/28	2	972	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	2	979	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/28	2	980	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	6/28	3	987	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	6/28	3	988	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/28	3	995	6.000	2.0	0.33	4	0	0	4	0	0	0	0
2	6/28	3	996	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	3	1,003	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/28	3	1,004	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	1	1,011	8.125	2.0	0.33	1	0	1	0	0	0	0	0
2	6/29	1	1,012	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/29	1	1,019	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	1	1,020	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	1	1,027	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/29	1	1,028	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	2	1,035	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	2	1,036	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/29	2	1,043	6.000	2.0	0.34	2	1	0	1	0	0	0	0
2	6/29	2	1,044	6.000	2.0	0.34	0	0	0	0	0	0	0	0
2	6/29	2	1,051	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	2	1,052	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/29	3	1,059	8.125	2.2	0.36	0	0	0	0	0	0	0	0
2	6/29	3	1,060	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	6/29	3	1,067	6.000	2.3	0.39	0	0	0	0	0	0	0	0
2	6/29	3	1,068	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/29	3	1,075	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/29	3	1,076	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/30	1	1,083	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	6/30	1	1,084	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	6/30	1	1,091	6.000	2.0	0.33	2	0	0	2	0	0	0	0
2	6/30	1	1,092	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	1	1,099	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	1	1,100	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	2	1,107	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	2	1,108	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	2	1,115	6.000	2.0	0.34	2	2	0	0	0	0	0	0
2	6/30	2	1,116	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	2	1,123	5.125	2.0	0.33	4	1	0	3	0	0	0	0
2	6/30	2	1,124	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	3	1,131	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	6/30	3	1,132	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	3	1,139	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	3	1,140	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	3	1,147	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	6/30	3	1,148	8.125	1.9	0.32	0	0	0	0	0	0	0	0
2	7/01	1	1,155	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/01	1	1,156	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/01	1	1,163	5.125	2.0	0.34	1	0	0	1	0	0	0	0
2	7/01	1	1,164	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/01	1	1,171	6.000	2.0	0.33	1	1	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/01	1	1,172	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/01	2	1,179	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/01	2	1,180	6.000	2.0	0.33	5	1	0	4	0	0	0	0
2	7/01	2	1,185	5.125	2.0	0.33	3	0	0	3	0	0	0	0
2	7/01	2	1,186	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/01	2	1,191	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/01	2	1,192	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/01	3	1,197	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/01	3	1,198	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/01	3	1,203	6.000	2.0	0.33	5	4	0	1	0	0	0	0
2	7/01	3	1,204	6.000	2.0	0.33	2	1	0	1	0	0	0	0
2	7/01	3	1,209	5.125	2.0	0.33	4	3	0	1	0	0	0	0
2	7/01	3	1,210	5.125	2.0	0.33	3	2	1	0	0	0	0	0
2	7/02	1	1,213	5.125	2.0	0.33	3	1	0	2	0	0	0	0
2	7/02	1	1,214	5.125	2.0	0.34	1	0	0	1	0	0	0	0
2	7/02	1	1,217	6.000	2.0	0.33	5	4	0	1	0	0	0	0
2	7/02	1	1,218	6.000	2.0	0.33	6	5	0	1	0	0	0	0
2	7/02	1	1,221	6.000	1.5	0.25	3	3	0	0	0	0	0	0
2	7/02	1	1,222	6.000	1.5	0.25	3	3	0	0	0	0	0	0
2	7/02	2	1,225	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/02	2	1,226	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/02	2	1,229	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/02	2	1,230	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/02	2	1,233	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/02	2	1,234	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/02	3	1,237	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/02	3	1,238	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/02	3	1,241	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/02	3	1,242	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/02	3	1,245	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/02	3	1,246	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/03	1	1,251	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/03	1	1,252	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/03	1	1,259	6.000	2.0	0.33	3	2	0	1	0	0	0	0
2	7/03	1	1,260	6.000	2.0	0.33	2	1	0	1	0	0	0	0
2	7/03	1	1,267	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/03	1	1,268	5.125	2.0	0.33	5	0	4	1	0	0	0	0
2	7/03	2	1,273	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/03	2	1,274	5.125	2.0	0.33	5	2	0	3	0	0	0	0
2	7/03	2	1,279	6.000	2.0	0.33	8	2	0	6	0	0	0	0
2	7/03	2	1,280	6.000	2.0	0.33	3	0	0	3	0	0	0	0
2	7/03	2	1,285	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/03	2	1,286	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/03	3	1,291	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/03	3	1,292	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/03	3	1,297	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/03	3	1,298	6.000	2.0	0.33	3	0	0	3	0	0	0	0
2	7/03	3	1,303	5.125	2.0	0.33	4	3	0	1	0	0	0	0
2	7/03	3	1,304	5.125	2.0	0.33	2	1	0	1	0	0	0	0
2	7/04	1	1,311	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/04	1	1,312	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/04	1	1,319	6.000	2.0	0.33	6	4	0	2	0	0	0	0
2	7/04	1	1,320	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/04	1	1,327	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/04	1	1,328	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/04	2	1,335	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/04	2	1,336	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/04	2	1,341	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/04	2	1,342	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/04	2	1,347	5.125	2.0	0.33	2	0	1	1	0	0	0	0
2	7/04	2	1,348	5.125	2.0	0.33	2	0	0	2	0	0	0	0
2	7/04	3	1,353	5.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/04	3	1,354	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/04	3	1,359	6.000	2.0	0.33	2	0	0	2	0	0	0	0
2	7/04	3	1,360	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/04	3	1,365	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/04	3	1,366	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	1	1,371	5.125	2.0	0.34	3	3	0	0	0	0	0	0
2	7/05	1	1,372	5.125	2.0	0.33	3	2	1	0	0	0	0	0
2	7/05	1	1,379	6.000	1.5	0.26	2	2	0	0	0	0	0	0
2	7/05	1	1,380	6.000	2.0	0.33	3	2	1	0	0	0	0	0
2	7/05	1	1,385	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/05	1	1,386	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/05	2	1,391	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/05	2	1,392	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	2	1,397	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/05	2	1,398	6.000	2.0	0.33	3	2	0	1	0	0	0	0
2	7/05	2	1,403	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/05	2	1,404	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,409	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,410	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,415	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,416	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,421	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/05	3	1,422	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/06	1	1,427	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/06	1	1,428	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/06	1	1,435	6.000	2.0	0.33	2	1	1	0	0	0	0	0
2	7/06	1	1,436	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/06	1	1,443	5.125	2.0	0.33	3	1	1	1	0	0	0	0
2	7/06	1	1,444	5.125	2.0	0.33	2	0	2	0	0	0	0	0
2	7/06	2	1,451	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/06	2	1,451	5.125	2.0	0.34	1	0	1	0	0	0	0	0
2	7/06	2	1,452	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/06	2	1,459	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/06	2	1,460	6.000	2.0	0.33	3	2	0	1	0	0	0	0
2	7/06	2	1,467	8.125	1.5	0.25	1	1	0	0	0	0	0	0
2	7/06	2	1,468	8.125	1.5	0.25	1	1	0	0	0	0	0	0
2	7/06	3	1,475	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/06	3	1,476	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/06	3	1,483	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/06	3	1,484	6.000	2.1	0.35	0	0	0	0	0	0	0	0
2	7/06	3	1,491	5.125	2.0	0.33	11	0	7	4	0	0	0	0
2	7/06	3	1,492	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/07	1	1,499	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/07	1	1,500	5.125	2.0	0.33	4	4	0	0	0	0	0	0
2	7/07	1	1,507	6.000	2.0	0.34	4	0	4	0	0	0	0	0
2	7/07	1	1,508	6.000	2.0	0.33	2	2	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/07	1	1,515	8.125	2.1	0.34	3	3	0	0	0	0	0	0
2	7/07	1	1,516	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/07	2	1,523	8.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/07	2	1,524	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/07	2	1,531	6.000	2.0	0.34	0	0	0	0	0	0	0	0
2	7/07	2	1,532	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/07	2	1,539	5.125	2.0	0.33	3	2	0	1	0	0	0	0
2	7/07	2	1,540	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/07	3	1,547	5.125	2.0	0.33	4	0	4	0	0	0	0	0
2	7/07	3	1,548	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/07	3	1,555	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/07	3	1,556	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/07	3	1,563	8.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/07	3	1,564	8.125	2.1	0.34	0	0	0	0	0	0	0	0
2	7/08	1	1,571	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	1	1,572	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/08	1	1,579	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	1	1,580	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	1	1,587	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	1	1,588	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	2	1,595	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/08	2	1,596	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	2	1,603	6.000	2.0	0.33	6	6	0	0	0	0	0	0
2	7/08	2	1,604	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	2	1,611	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	2	1,612	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	3	1,619	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/08	3	1,620	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	3	1,627	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/08	3	1,628	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	3	1,635	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/08	3	1,636	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	1	1,643	5.125	2.0	0.33	3	1	2	0	0	0	0	0
2	7/09	1	1,644	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/09	1	1,651	6.000	2.0	0.33	5	2	2	1	0	0	0	0
2	7/09	1	1,652	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	1	1,659	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	1	1,660	8.125	2.0	0.34	2	2	0	0	0	0	0	0
2	7/09	2	1,667	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	2	1,668	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/09	2	1,675	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/09	2	1,676	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/09	2	1,683	5.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/09	2	1,684	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/09	3	1,691	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	3	1,692	5.125	1.9	0.32	0	0	0	0	0	0	0	0
2	7/09	3	1,699	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/09	3	1,700	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/09	3	1,707	8.125	1.9	0.32	1	1	0	0	0	0	0	0
2	7/09	3	1,708	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	1	1,715	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/10	1	1,716	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/10	1	1,723	6.000	1.9	0.32	1	0	0	1	0	0	0	0
2	7/10	1	1,724	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/10	1	1,731	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	1	1,732	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/10	2	1,739	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/10	2	1,740	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	2	1,747	6.000	2.1	0.34	2	0	1	1	0	0	0	0
2	7/10	2	1,748	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	2	1,755	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/10	2	1,756	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	3	1,763	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	3	1,764	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	3	1,771	5.125	2.0	0.33	2	0	0	2	0	0	0	0
2	7/10	3	1,772	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/10	3	1,779	6.000	2.0	0.34	1	0	0	1	0	0	0	0
2	7/10	3	1,780	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/11	1	1,787	5.125	2.0	0.34	1	1	0	0	0	0	0	0
2	7/11	1	1,788	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/11	1	1,795	6.000	2.0	0.33	2	1	0	1	0	0	0	0
2	7/11	1	1,796	6.000	2.0	0.34	2	0	1	1	0	0	0	0
2	7/11	1	1,803	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/11	1	1,804	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/11	2	1,811	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/11	2	1,812	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/11	2	1,819	6.000	2.0	0.33	3	3	0	0	0	0	0	0
2	7/11	2	1,820	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/11	2	1,827	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/11	2	1,828	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/11	3	1,835	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/11	3	1,836	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/11	3	1,843	6.000	2.0	0.33	3	0	0	3	0	0	0	0
2	7/11	3	1,844	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/11	3	1,851	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/11	3	1,852	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	1	1,859	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/12	1	1,860	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/12	1	1,867	6.000	2.0	0.34	2	2	0	0	0	0	0	0
2	7/12	1	1,868	6.000	2.1	0.34	2	2	0	0	0	0	0	0
2	7/12	1	1,875	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	1	1,876	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/12	2	1,883	5.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/12	2	1,884	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/12	2	1,891	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	2	1,892	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	2	1,899	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	2	1,900	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/12	3	1,907	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/12	3	1,908	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	3	1,915	6.000	2.0	0.33	1	0	1	0	0	0	0	0
2	7/12	3	1,916	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/12	3	1,923	5.125	2.0	0.33	3	0	1	2	0	0	0	0
2	7/12	3	1,924	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	1	1,931	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/13	1	1,932	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	1	1,939	5.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/13	1	1,940	5.125	2.0	0.33	1	1	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/13	1	1,947	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/13	1	1,948	8.125	2.2	0.37	0	0	0	0	0	0	0	0
2	7/13	2	1,955	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/13	2	1,956	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/13	2	1,963	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	2	1,964	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	2	1,971	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/13	2	1,972	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/13	3	1,979	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	3	1,980	5.125	2.0	0.33	4	4	0	0	0	0	0	0
2	7/13	3	1,987	6.000	2.1	0.35	0	0	0	0	0	0	0	0
2	7/13	3	1,988	6.000	2.0	0.34	0	0	0	0	0	0	0	0
2	7/13	3	1,995	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/13	3	1,996	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/14	1	2,003	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	1	2,004	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	1	2,011	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/14	1	2,012	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	1	2,019	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	1	2,020	5.125	2.0	0.34	1	1	0	0	0	0	0	0
2	7/14	2	2,027	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/14	2	2,028	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	2	2,035	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	2	2,036	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	2	2,043	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	2	2,044	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/14	3	2,051	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/14	3	2,052	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/14	3	2,059	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	3	2,060	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	3	2,067	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/14	3	2,068	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	1	2,075	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/15	1	2,076	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	1	2,083	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/15	1	2,084	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	1	2,091	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	1	2,092	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	3	2,099	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/15	3	2,100	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	3	2,107	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/15	3	2,108	6.000	2.0	0.34	1	1	0	0	0	0	0	0
2	7/15	3	2,115	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/15	3	2,116	5.125	2.0	0.33	2	1	1	0	0	0	0	0
2	7/16	1	2,123	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	1	2,124	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	1	2,131	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/16	1	2,132	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	1	2,139	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	1	2,140	8.125	2.0	0.33	3	3	0	0	0	0	0	0
2	7/16	3	2,147	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/16	3	2,148	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	3	2,155	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/16	3	2,156	6.000	2.0	0.33	1	1	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/16	3	2,163	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/16	3	2,164	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	1	2,171	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	1	2,172	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/17	1	2,179	6.000	2.0	0.33	3	0	1	2	0	0	0	0
2	7/17	1	2,180	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	1	2,187	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	1	2,188	8.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/17	3	2,195	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/17	3	2,196	8.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/17	3	2,203	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	3	2,204	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/17	3	2,211	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/17	3	2,212	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	1	2,219	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	1	2,220	6.000	2.1	0.34	1	1	0	0	0	0	0	0
2	7/18	1	2,227	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	1	2,228	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/18	1	2,235	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	1	2,236	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	3	2,243	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/18	3	2,244	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	3	2,251	6.000	2.0	0.33	1	0	1	0	0	0	0	0
2	7/18	3	2,252	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/18	3	2,259	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/18	3	2,260	5.125	2.0	0.33	2	1	0	1	0	0	0	0
2	7/19	1	2,267	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/19	1	2,268	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	1	2,275	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	1	2,276	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	1	2,283	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/19	1	2,284	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/19	3	2,291	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/19	3	2,292	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/19	3	2,299	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	3	2,300	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	3	2,307	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/19	3	2,308	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	1	2,315	5.125	2.0	0.33	2	0	2	0	0	0	0	0
2	7/20	1	2,316	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/20	1	2,323	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	1	2,324	6.000	2.0	0.33	6	0	1	5	0	0	0	0
2	7/20	1	2,331	8.125	2.0	0.33	2	0	0	2	0	0	0	0
2	7/20	1	2,332	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	3	2,339	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/20	3	2,340	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	3	2,347	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	3	2,348	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	3	2,355	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/20	3	2,356	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/21	1	2,339	5.125	2.0	0.33	1	0	1	0	0	0	0	0
2	7/21	1	2,363	6.000	2.1	0.34	1	0	0	1	0	0	0	0
2	7/21	1	2,364	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/21	1	2,371	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/21	1	2,372	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/21	1	2,380	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/21	3	2,387	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/21	3	2,388	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/21	3	2,395	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	7/21	3	2,396	6.000	2.0	0.33	2	1	0	1	0	0	0	0
2	7/21	3	2,403	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/21	3	2,404	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,411	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,412	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,419	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,420	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,427	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	1	2,428	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	3	2,435	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/22	3	2,436	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	3	2,443	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	3	2,444	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/22	3	2,451	5.125	2.0	0.33	2	0	0	2	0	0	0	0
2	7/22	3	2,452	5.125	2.0	0.33	2	0	1	1	0	0	0	0
2	7/23	1	2,459	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/23	1	2,460	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/23	1	2,467	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	1	2,468	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	1	2,475	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/23	1	2,476	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,483	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,484	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,491	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,492	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,499	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/23	3	2,500	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	1	2,507	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/24	1	2,508	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	1	2,515	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	1	2,516	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	1	2,523	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	1	2,524	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	3	2,531	8.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	3	2,532	8.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/24	3	2,539	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	3	2,540	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/24	3	2,547	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/24	3	2,548	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	1	2,556	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/25	1	2,557	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/25	1	2,558	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/25	1	2,568	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/25	1	2,569	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/25	1	2,570	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	3	2,580	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	3	2,581	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	3	2,582	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	3	2,592	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/25	3	2,593	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/25	3	2,594	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	1	2,604	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	1	2,605	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/26	1	2,606	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	1	2,616	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/26	1	2,617	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/26	1	2,618	5.125	2.0	0.33	2	2	0	0	0	0	0	0
2	7/26	3	2,628	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/26	3	2,629	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	3	2,630	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	3	2,640	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	3	2,641	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/26	3	2,642	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	1	2,652	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	1	2,653	6.000	2.0	0.33	2	2	0	0	0	0	0	0
2	7/27	1	2,654	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	1	2,664	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	1	2,665	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	1	2,666	5.125	2.0	0.33	1	0	0	1	0	0	0	0
2	7/27	3	2,676	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	3	2,677	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/27	3	2,678	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	3	2,688	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/27	3	2,689	6.000	2.1	0.35	0	0	0	0	0	0	0	0
2	7/27	3	2,690	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,700	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,701	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,702	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,712	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,713	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	1	2,714	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	3	2,724	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/28	3	2,725	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	7/28	3	2,726	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	3	2,736	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	3	2,737	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/28	3	2,738	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,748	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,749	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,750	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,760	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,761	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	1	2,762	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/29	3	2,772	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	3	2,773	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	3	2,774	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	3	2,784	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	3	2,785	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/29	3	2,786	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	1	2,796	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	7/30	1	2,797	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	1	2,798	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	1	2,808	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	7/30	1	2,809	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	1	2,810	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,820	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,821	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,822	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,832	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,833	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/30	3	2,834	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,844	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,845	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,846	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,856	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,857	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	1	2,858	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	3	2,868	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	3	2,869	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	3	2,870	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	7/31	3	2,880	6.000	2.0	0.33	2	0	0	0	0	2	0	0
2	7/31	3	2,881	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	7/31	3	2,882	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	1	2,892	6.000	2.0	0.34	0	0	0	0	0	0	0	0
2	8/01	1	2,893	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	1	2,894	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	1	2,904	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	1	2,905	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	1	2,906	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	3	2,916	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	3	2,917	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	3	2,918	5.125	2.1	0.35	1	1	0	0	0	0	0	0
2	8/01	3	2,928	6.000	2.0	0.33	1	0	0	0	0	1	0	0
2	8/01	3	2,929	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/01	3	2,930	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,940	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,941	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,942	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,952	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,953	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	1	2,954	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	3	2,964	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	3	2,965	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	8/02	3	2,966	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	8/02	3	2,976	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	3	2,977	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/02	3	2,978	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	1	2,988	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	1	2,989	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	1	2,990	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	1	3,000	5.125	2.0	0.33	1	1	0	0	0	0	0	0
2	8/03	1	3,001	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	1	3,002	5.125	2.0	0.33	1	0	0	0	0	1	0	0
2	8/03	3	3,012	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	3	3,013	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	3	3,014	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	3	3,024	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	8/03	3	3,025	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/03	3	3,026	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,036	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,037	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,038	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,048	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,049	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	1	3,050	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	3	3,060	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/04	3	3,061	5.125	2.0	0.33	2	0	0	0	0	2	0	0
2	8/04	3	3,062	5.125	2.0	0.33	1	0	0	0	0	1	0	0
2	8/04	3	3,072	6.000	2.1	0.34	1	0	0	0	0	1	0	0
2	8/04	3	3,073	6.000	2.0	0.33	2	0	0	0	0	2	0	0
2	8/04	3	3,074	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/05	1	3,084	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/05	1	3,085	6.000	2.0	0.33	1	0	0	1	0	0	0	0
2	8/05	1	3,086	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/05	1	3,096	5.125	2.0	0.33	2	0	0	0	0	2	0	0
2	8/05	1	3,097	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/05	1	3,098	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/05	3	3,108	5.125	2.0	0.33	13	0	0	0	0	13	0	0
2	8/05	3	3,109	5.125	2.0	0.33	5	0	0	0	0	5	0	0
2	8/05	3	3,110	5.125	2.0	0.33	4	0	0	0	0	4	0	0
2	8/05	3	3,120	6.000	2.0	0.33	2	0	0	0	0	2	0	0
2	8/05	3	3,121	6.000	2.0	0.33	1	1	0	0	0	0	0	0
2	8/05	3	3,122	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/06	1	3,132	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/06	1	3,133	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/06	1	3,134	6.000	2.0	0.33	3	0	0	0	0	3	0	0
2	8/06	1	3,144	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/06	1	3,145	5.125	2.0	0.33	3	0	0	0	0	3	0	0
2	8/06	1	3,146	5.125	2.0	0.33	2	0	0	0	0	2	0	0
2	8/06	3	3,156	5.125	2.0	0.34	0	0	0	0	0	0	0	0
2	8/06	3	3,157	5.125	2.1	0.35	0	0	0	0	0	0	0	0
2	8/06	3	3,158	5.125	2.0	0.33	1	0	0	0	0	1	0	0
2	8/06	3	3,168	6.000	2.3	0.38	0	0	0	0	0	0	0	0
2	8/06	3	3,169	6.000	2.1	0.35	0	0	0	0	0	0	0	0
2	8/06	3	3,170	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	1	3,180	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	1	3,181	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	1	3,182	6.000	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	1	3,192	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/07	1	3,193	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	1	3,194	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/07	3	3,204	5.125	2.3	0.39	0	0	0	0	0	0	0	0
2	8/07	3	3,205	5.125	2.4	0.40	0	0	0	0	0	0	0	0
2	8/07	3	3,206	5.125	2.6	0.44	0	0	0	0	0	0	0	0
2	8/07	3	3,216	6.000	2.6	0.43	0	0	0	0	0	0	0	0
2	8/07	3	3,217	6.000	2.6	0.44	0	0	0	0	0	0	0	0
2	8/07	3	3,218	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	1	3,228	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	1	3,229	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	1	3,230	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	1	3,240	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	8/08	1	3,241	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	8/08	1	3,242	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	3	3,252	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/08	3	3,253	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	3	3,254	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	3	3,264	6.000	2.9	0.48	0	0	0	0	0	0	0	0
2	8/08	3	3,265	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/08	3	3,266	6.000	2.5	0.41	0	0	0	0	0	0	0	0
2	8/09	1	3,276	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	1	3,277	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	1	3,278	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	1	3,288	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/09	1	3,289	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	1	3,290	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	3	3,300	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	3	3,301	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	3	3,302	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	8/09	3	3,312	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	3	3,313	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/09	3	3,314	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	1	3,324	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	1	3,325	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	1	3,326	6.000	2.3	0.38	0	0	0	0	0	0	0	0
2	8/10	1	3,336	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	1	3,337	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	1	3,338	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	3	3,348	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/10	3	3,349	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	3	3,350	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	3	3,360	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	3	3,361	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/10	3	3,362	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,372	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,373	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,374	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,384	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,385	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/11	1	3,386	5.125	2.0	0.33	0	0	0	0	0	0	0	0
2	8/12	3	3,396	5.125	2.5	0.41	0	0	0	0	0	0	0	0
2	8/12	3	3,397	5.125	2.5	0.42	3	0	0	0	0	3	0	0
2	8/12	3	3,398	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,408	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,409	6.000	2.5	0.42	1	0	0	0	0	1	0	0
2	8/12	3	3,410	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	1	3,420	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	1	3,421	6.000	2.5	0.41	0	0	0	0	0	0	0	0
2	8/12	1	3,422	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	1	3,432	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	1	3,433	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	1	3,434	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,444	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,445	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,446	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,456	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	8/12	3	3,457	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/12	3	3,458	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,468	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,469	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,470	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,480	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,481	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	1	3,482	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	3	3,492	5.125	2.5	0.42	2	0	0	0	0	2	0	0
2	8/13	3	3,493	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/13	3	3,494	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	3	3,504	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	3	3,505	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/13	3	3,506	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,516	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,517	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,518	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,528	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,529	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	1	3,530	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	3	3,540	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	3	3,541	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	8/14	3	3,542	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	3	3,552	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	3	3,553	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/14	3	3,554	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	1	3,564	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	1	3,565	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	1	3,566	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	1	3,576	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	1	3,577	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/15	1	3,578	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/15	3	3,588	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	3	3,589	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	3	3,590	5.125	2.6	0.44	0	0	0	0	0	0	0	0
2	8/15	3	3,600	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	3	3,601	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/15	3	3,602	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	1	3,612	6.000	2.7	0.44	0	0	0	0	0	0	0	0
2	8/16	1	3,613	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	1	3,614	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	1	3,624	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	1	3,625	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	1	3,626	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/16	3	3,636	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	3	3,637	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	3	3,638	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	3	3,648	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	3	3,649	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/16	3	3,650	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	1	3,660	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	1	3,661	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	1	3,662	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	1	3,672	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
2	8/17	1	3,673	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	1	3,674	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	3	3,684	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	3	3,685	5.125	2.6	0.43	0	0	0	0	0	0	0	0
2	8/17	3	3,686	5.125	3.0	0.50	0	0	0	0	0	0	0	0
2	8/17	3	3,696	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	3	3,697	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/17	3	3,698	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,708	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,709	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,710	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,720	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,721	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	1	3,722	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	3	3,732	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	3	3,733	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/18	3	3,734	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	3	3,744	6.000	2.6	0.43	0	0	0	0	0	0	0	0
2	8/18	3	3,745	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/18	3	3,746	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,756	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,757	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,758	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,768	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,769	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	1	3,770	5.125	2.5	0.42	1	0	0	0	0	1	0	0
2	8/19	3	3,780	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	3	3,781	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	3	3,782	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	3	3,792	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	3	3,793	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/19	3	3,794	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/20	1	3,804	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/20	1	3,805	6.000	2.5	0.42	1	0	0	0	0	1	0	0
2	8/20	1	3,806	6.000	2.5	0.42	0	0	0	0	0	0	0	0
2	8/20	1	3,816	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/20	1	3,817	5.125	2.5	0.42	0	0	0	0	0	0	0	0
2	8/20	1	3,818	5.125	2.5	0.42	1	0	0	0	0	1	0	0
Range 2 Total -					2,101.0	350.12	626	367	60	136	0	62	1	0
3	6/11	1	5	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	1	6	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	1	13	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	1	14	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	1	21	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	1	22	8.125	2.0	0.33	1	1	0	0	0	0	0	0
3	6/11	3	29	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	3	30	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/11	3	37	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	3	38	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	3	45	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/11	3	46	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	1	53	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/12	1	54	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	1	61	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	1	62	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/12	1	69	5.125	2.1	0.34	0	0	0	0	0	0	0	0
3	6/12	1	70	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	77	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	78	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	85	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	86	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	93	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/12	3	94	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	1	101	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	1	102	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	1	109	6.000	2.1	0.36	1	0	0	1	0	0	0	0
3	6/13	1	110	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	1	117	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	1	118	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	125	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	126	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	133	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	134	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	141	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/13	3	142	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/14	1	149	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	1	150	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	1	157	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	1	158	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	1	165	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	1	166	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	3	173	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	3	174	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/14	3	181	6.000	2.5	0.41	0	0	0	0	0	0	0	0
3	6/14	3	182	6.000	2.5	0.42	1	0	0	1	0	0	0	0
3	6/14	3	189	8.125	2.3	0.39	0	0	0	0	0	0	0	0
3	6/14	3	190	8.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/15	1	197	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	1	198	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	1	205	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	1	206	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	1	213	6.000	2.5	0.42	1	0	0	1	0	0	0	0
3	6/15	1	214	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	3	221	6.000	2.6	0.43	0	0	0	0	0	0	0	0
3	6/15	3	222	6.000	2.5	0.41	0	0	0	0	0	0	0	0
3	6/15	3	229	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	3	230	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	3	237	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/15	3	238	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/16	1	245	5.125	2.5	0.42	2	2	0	0	0	0	0	0
3	6/16	1	246	5.125	2.5	0.42	2	1	0	1	0	0	0	0
3	6/16	1	253	6.000	2.5	0.42	2	0	0	2	0	0	0	0
3	6/16	1	254	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/16	1	261	8.125	2.5	0.42	1	1	0	0	0	0	0	0
3	6/16	1	262	8.125	2.5	0.42	1	1	0	0	0	0	0	0
3	6/16	3	269	8.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/16	3	270	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/16	3	277	6.000	2.5	0.42	2	0	0	2	0	0	0	0
3	6/16	3	278	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/16	3	285	5.125	2.5	0.42	2	1	0	1	0	0	0	0
3	6/16	3	286	5.125	2.5	0.42	3	0	0	3	0	0	0	0
3	6/17	1	293	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	1	294	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	1	301	6.000	2.6	0.43	6	0	0	6	0	0	0	0
3	6/17	1	302	6.000	2.5	0.42	2	0	0	2	0	0	0	0
3	6/17	1	309	5.125	2.5	0.42	5	0	0	5	0	0	0	0
3	6/17	1	310	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	3	317	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	3	318	5.125	2.5	0.42	1	0	0	1	0	0	0	0
3	6/17	3	325	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	3	326	6.000	2.5	0.42	1	0	0	1	0	0	0	0
3	6/17	3	333	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/17	3	334	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/18	1	341	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/18	1	342	8.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/18	1	349	6.000	2.5	0.42	6	1	0	5	0	0	0	0
3	6/18	1	350	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/18	1	357	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/18	1	358	5.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/18	3	365	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/18	3	366	5.125	2.5	0.42	2	0	0	2	0	0	0	0
3	6/18	3	373	6.000	2.6	0.43	0	0	0	0	0	0	0	0
3	6/18	3	374	6.000	3.0	0.50	0	0	0	0	0	0	0	0
3	6/18	3	381	8.125	2.7	0.44	0	0	0	0	0	0	0	0
3	6/18	3	382	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	1	389	8.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/19	1	390	8.125	2.6	0.43	0	0	0	0	0	0	0	0
3	6/19	1	397	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	1	398	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	1	405	5.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/19	1	406	5.125	2.5	0.41	1	0	1	0	0	0	0	0
3	6/19	3	413	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	3	414	5.125	2.5	0.42	2	0	0	2	0	0	0	0
3	6/19	3	421	6.000	2.5	0.41	0	0	0	0	0	0	0	0
3	6/19	3	422	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	3	429	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/19	3	430	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	1	437	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	1	438	8.125	2.5	0.41	0	0	0	0	0	0	0	0
3	6/20	1	445	6.000	2.5	0.41	0	0	0	0	0	0	0	0
3	6/20	1	446	6.000	2.6	0.43	0	0	0	0	0	0	0	0
3	6/20	1	453	5.125	2.6	0.43	0	0	0	0	0	0	0	0
3	6/20	1	454	5.125	2.6	0.44	4	0	0	4	0	0	0	0
3	6/20	3	461	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	3	462	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	3	469	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	3	470	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	3	477	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/20	3	478	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	1	485	8.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/21	1	486	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	1	493	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	1	494	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	1	501	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	1	502	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	509	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	510	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	517	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	518	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	525	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/21	3	526	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	533	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	534	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	541	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	542	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	549	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	1	550	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	3	557	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	3	558	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	3	565	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	3	566	6.000	2.6	0.43	0	0	0	0	0	0	0	0
3	6/22	3	573	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/22	3	574	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	1	581	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	1	582	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	1	589	6.000	2.5	0.42	1	1	0	0	0	0	0	0
3	6/23	1	590	6.000	2.5	0.41	0	0	0	0	0	0	0	0
3	6/23	1	597	5.125	2.5	0.42	1	1	0	0	0	0	0	0
3	6/23	1	598	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	2	605	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	2	606	5.125	2.5	0.42	1	0	0	1	0	0	0	0
3	6/23	2	613	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	2	614	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	2	621	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	2	622	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	629	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	630	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	637	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	638	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	645	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/23	3	646	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/24	1	653	5.125	2.0	0.33	7	1	1	5	0	0	0	0
3	6/24	1	654	5.125	2.5	0.42	8	1	0	7	0	0	0	0
3	6/24	1	661	6.000	2.5	0.42	4	0	1	3	0	0	0	0
3	6/24	1	662	6.000	2.5	0.42	6	0	1	5	0	0	0	0
3	6/24	1	669	8.125	2.5	0.42	2	0	0	2	0	0	0	0
3	6/24	1	670	8.125	2.5	0.42	0	0	0	0	0	0	0	0
3	6/24	2	677	8.125	2.0	0.33	3	0	0	3	0	0	0	0
3	6/24	2	678	8.125	2.0	0.33	3	0	0	3	0	0	0	0
3	6/24	2	685	6.000	2.0	0.33	9	2	0	7	0	0	0	0
3	6/24	2	686	6.000	2.0	0.33	6	1	1	4	0	0	0	0
3	6/24	2	693	5.125	2.0	0.34	6	0	1	5	0	0	0	0
3	6/24	2	694	5.125	2.0	0.33	6	0	3	3	0	0	0	0
3	6/24	3	701	5.125	2.0	0.33	1	0	0	1	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/24	3	702	5.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/24	3	709	6.000	2.0	0.33	4	0	1	3	0	0	0	0
3	6/24	3	710	6.000	2.0	0.33	7	0	0	7	0	0	0	0
3	6/24	3	717	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/24	3	718	8.125	2.0	0.33	2	0	1	1	0	0	0	0
3	6/25	1	725	8.125	2.0	0.34	1	0	0	1	0	0	0	0
3	6/25	1	726	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/25	1	733	6.000	2.0	0.34	4	0	0	4	0	0	0	0
3	6/25	1	734	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	6/25	1	741	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/25	1	742	5.125	2.0	0.33	1	1	0	0	0	0	0	0
3	6/25	2	749	5.125	2.0	0.33	7	1	0	6	0	0	0	0
3	6/25	2	750	5.125	2.0	0.33	2	0	0	2	0	0	0	0
3	6/25	2	757	6.000	2.0	0.33	6	1	0	5	0	0	0	0
3	6/25	2	758	6.000	2.0	0.33	1	1	0	0	0	0	0	0
3	6/25	2	765	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/25	2	766	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/25	3	773	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/25	3	774	8.125	2.1	0.34	0	0	0	0	0	0	0	0
3	6/25	3	781	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	6/25	3	782	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	6/25	3	789	5.125	2.0	0.33	6	0	1	5	0	0	0	0
3	6/25	3	790	5.125	2.0	0.33	2	1	1	0	0	0	0	0
3	6/26	1	797	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	1	798	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	1	805	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	1	806	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	1	813	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	1	814	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/26	2	821	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/26	2	822	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	2	829	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	2	830	6.000	2.0	0.33	1	1	0	0	0	0	0	0
3	6/26	2	837	5.125	2.0	0.33	1	1	0	0	0	0	0	0
3	6/26	2	838	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	3	845	5.125	2.0	0.34	1	0	1	0	0	0	0	0
3	6/26	3	846	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	3	853	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	6/26	3	854	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	3	861	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/26	3	862	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	1	869	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	1	870	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	1	877	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	6/27	1	878	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	1	885	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	1	886	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	2	893	5.125	2.0	0.33	5	0	3	2	0	0	0	0
3	6/27	2	894	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/27	2	901	6.000	2.0	0.33	3	1	0	2	0	0	0	0
3	6/27	2	902	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	2	909	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	2	910	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	3	917	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/27	3	918	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/27	3	925	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	6/27	3	926	5.125	2.0	0.33	5	1	2	2	0	0	0	0
3	6/27	3	933	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	6/27	3	934	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	6/28	1	941	6.000	2.0	0.33	4	0	1	3	0	0	0	0
3	6/28	1	942	6.000	2.0	0.33	3	0	1	2	0	0	0	0
3	6/28	1	949	5.125	2.0	0.34	6	0	3	3	0	0	0	0
3	6/28	1	950	5.125	2.0	0.34	8	0	3	5	0	0	0	0
3	6/28	1	957	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/28	1	958	8.125	2.0	0.33	2	1	0	1	0	0	0	0
3	6/28	2	965	8.125	2.0	0.33	2	0	0	2	0	0	0	0
3	6/28	2	966	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/28	2	973	6.000	2.0	0.33	9	0	2	7	0	0	0	0
3	6/28	2	974	6.000	2.0	0.33	6	0	0	6	0	0	0	0
3	6/28	2	981	5.125	2.0	0.33	4	0	2	2	0	0	0	0
3	6/28	2	982	5.125	2.0	0.33	3	0	2	1	0	0	0	0
3	6/28	3	989	5.125	2.0	0.33	3	0	0	3	0	0	0	0
3	6/28	3	990	5.125	2.1	0.34	1	0	1	0	0	0	0	0
3	6/28	3	997	6.000	2.0	0.33	2	0	1	1	0	0	0	0
3	6/28	3	998	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/28	3	1,005	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/28	3	1,006	8.125	2.0	0.34	2	0	0	2	0	0	0	0
3	6/29	1	1,013	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/29	1	1,014	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/29	1	1,021	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	6/29	1	1,022	6.000	2.0	0.33	2	0	1	1	0	0	0	0
3	6/29	1	1,029	5.125	2.0	0.34	3	0	2	1	0	0	0	0
3	6/29	1	1,030	5.125	2.0	0.34	1	0	0	1	0	0	0	0
3	6/29	2	1,037	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	6/29	2	1,038	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	6/29	2	1,045	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	6/29	2	1,046	6.000	2.0	0.34	5	1	4	0	0	0	0	0
3	6/29	2	1,053	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/29	2	1,054	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/29	3	1,061	8.125	2.0	0.33	2	0	0	2	0	0	0	0
3	6/29	3	1,062	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/29	3	1,069	6.000	2.0	0.33	5	0	1	4	0	0	0	0
3	6/29	3	1,070	6.000	2.0	0.33	3	0	1	2	0	0	0	0
3	6/29	3	1,077	5.125	2.0	0.33	2	0	1	1	0	0	0	0
3	6/29	3	1,078	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	1	1,085	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	1	1,086	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	1	1,093	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	6/30	1	1,094	6.000	2.0	0.34	1	0	0	1	0	0	0	0
3	6/30	1	1,101	8.125	2.0	0.34	2	0	1	1	0	0	0	0
3	6/30	1	1,102	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	2	1,109	8.125	2.0	0.33	3	0	0	3	0	0	0	0
3	6/30	2	1,110	8.125	2.0	0.33	1	0	0	1	0	0	0	0
3	6/30	2	1,117	6.000	2.0	0.33	3	0	1	2	0	0	0	0
3	6/30	2	1,118	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	6/30	2	1,125	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	2	1,126	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	3	1,133	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

							Catch							
Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	6/30	3	1,134	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	6/30	3	1,141	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	6/30	3	1,142	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	3	1,149	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	6/30	3	1,150	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/01	1	1,157	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/01	1	1,158	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/01	1	1,165	5.125	2.0	0.33	7	0	5	2	0	0	0	0
3	7/01	1	1,166	5.125	2.0	0.33	2	0	0	1	0	0	1	0
3	7/01	1	1,173	6.000	2.0	0.33	4	0	0	4	0	0	0	0
3	7/01	1	1,174	6.000	2.0	0.33	4	0	2	2	0	0	0	0
3	7/03	1	1,253	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/03	1	1,254	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/03	1	1,261	6.000	2.0	0.33	11	0	8	3	0	0	0	0
3	7/03	1	1,262	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	7/03	1	1,269	5.125	2.0	0.33	12	0	12	0	0	0	0	0
3	7/03	1	1,270	5.125	2.0	0.33	3	0	3	0	0	0	0	0
3	7/03	2	1,275	5.125	1.5	0.25	6	0	5	1	0	0	0	0
3	7/03	2	1,276	5.125	2.0	0.33	8	0	6	2	0	0	0	0
3	7/03	2	1,281	6.000	1.5	0.25	13	0	12	1	0	0	0	0
3	7/03	2	1,282	6.000	1.5	0.25	2	0	2	0	0	0	0	0
3	7/03	2	1,287	8.125	2.0	0.33	5	0	5	0	0	0	0	0
3	7/03	2	1,288	8.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/03	3	1,293	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/03	3	1,294	8.125	2.0	0.33	2	0	1	1	0	0	0	0
3	7/03	3	1,299	6.000	2.0	0.33	8	0	7	1	0	0	0	0
3	7/03	3	1,300	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/03	3	1,305	5.125	2.1	0.35	5	0	5	0	0	0	0	0
3	7/03	3	1,306	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/03	3	1,399	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/04	1	1,313	5.125	2.0	0.33	3	0	3	0	0	0	0	0
3	7/04	1	1,314	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/04	1	1,321	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	7/04	1	1,322	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/04	1	1,329	8.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/04	1	1,330	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/05	1	1,373	5.125	2.0	0.34	9	1	8	0	0	0	0	0
3	7/05	1	1,374	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/06	1	1,429	8.125	2.0	0.33	2	1	1	0	0	0	0	0
3	7/06	1	1,430	8.125	2.0	0.33	3	0	3	0	0	0	0	0
3	7/06	1	1,437	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/06	1	1,438	6.000	2.0	0.33	8	0	8	0	0	0	0	0
3	7/06	1	1,445	5.125	1.7	0.28	4	0	4	0	0	0	0	0
3	7/06	1	1,446	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/06	2	1,453	5.125	2.0	0.33	4	0	4	0	0	0	0	0
3	7/06	2	1,454	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/06	2	1,461	6.000	1.5	0.25	8	0	4	4	0	0	0	0
3	7/06	2	1,462	6.000	1.5	0.25	2	1	1	0	0	0	0	0
3	7/06	2	1,469	8.125	1.5	0.25	0	0	0	0	0	0	0	0
3	7/06	2	1,470	8.125	1.6	0.26	1	0	1	0	0	0	0	0
3	7/06	3	1,477	8.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/06	3	1,478	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/06	3	1,485	6.000	2.0	0.34	1	0	1	0	0	0	0	0
3	7/06	3	1,486	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/06	3	1,493	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/06	3	1,494	5.125	2.0	0.33	6	0	2	4	0	0	0	0
3	7/07	1	1,501	5.125	2.0	0.33	7	0	6	1	0	0	0	0
3	7/07	1	1,502	5.125	1.6	0.26	0	0	0	0	0	0	0	0
3	7/07	1	1,509	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	7/07	1	1,510	6.000	1.5	0.25	2	0	2	0	0	0	0	0
3	7/07	1	1,517	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/07	1	1,518	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/07	2	1,525	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/07	2	1,526	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/07	2	1,533	6.000	2.0	0.33	5	0	4	1	0	0	0	0
3	7/07	2	1,534	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/07	2	1,541	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/07	2	1,542	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/07	3	1,549	5.125	2.1	0.34	0	0	0	0	0	0	0	0
3	7/07	3	1,550	5.125	2.0	0.33	1	0	0	1	0	0	0	0
3	7/07	3	1,557	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/07	3	1,558	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	7/07	3	1,565	8.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/07	3	1,566	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/08	1	1,573	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	1	1,574	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	1	1,581	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/08	1	1,582	6.000	2.1	0.34	1	0	0	1	0	0	0	0
3	7/08	1	1,589	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	1	1,590	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	2	1,597	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/08	2	1,598	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	2	1,605	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/08	2	1,606	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	2	1,613	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	2	1,614	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/08	3	1,621	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	3	1,622	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/08	3	1,629	6.000	2.0	0.33	2	0	0	2	0	0	0	0
3	7/08	3	1,630	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/08	3	1,637	5.125	2.0	0.33	2	0	0	2	0	0	0	0
3	7/08	3	1,638	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/09	1	1,645	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/09	1	1,646	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	1	1,653	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	1	1,654	6.000	2.0	0.33	1	1	0	0	0	0	0	0
3	7/09	1	1,661	8.125	2.0	0.33	2	1	0	1	0	0	0	0
3	7/09	1	1,662	8.125	2.1	0.34	0	0	0	0	0	0	0	0
3	7/09	2	1,669	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	2	1,670	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	2	1,677	6.000	2.1	0.35	2	0	1	1	0	0	0	0
3	7/09	2	1,678	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	2	1,685	5.125	2.0	0.33	5	0	3	2	0	0	0	0
3	7/09	2	1,686	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	3	1,693	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/09	3	1,694	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/09	3	1,701	6.000	2.0	0.33	2	0	1	1	0	0	0	0
3	7/09	3	1,702	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/09	3	1,709	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/09	3	1,710	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	1	1,717	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/10	1	1,718	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	1	1,725	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/10	1	1,726	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	1	1,733	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/10	1	1,734	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/10	2	1,741	5.125	2.0	0.33	3	0	0	3	0	0	0	0
3	7/10	2	1,742	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	2	1,749	6.000	2.0	0.33	3	0	1	2	0	0	0	0
3	7/10	2	1,750	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/10	2	1,757	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/10	2	1,758	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/10	3	1,765	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	3	1,766	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/10	3	1,773	5.125	2.0	0.33	3	0	1	2	0	0	0	0
3	7/10	3	1,774	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/10	3	1,781	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	7/10	3	1,782	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/11	1	1,789	5.125	2.0	0.34	2	0	1	1	0	0	0	0
3	7/11	1	1,790	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/11	1	1,797	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/11	1	1,798	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	1	1,805	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	1	1,806	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	2	1,813	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	2	1,814	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	2	1,821	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/11	2	1,822	6.000	2.0	0.34	1	0	1	0	0	0	0	0
3	7/11	2	1,829	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	2	1,830	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	3	1,837	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	3	1,838	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	3	1,845	6.000	2.0	0.34	3	0	0	3	0	0	0	0
3	7/11	3	1,846	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/11	3	1,853	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/11	3	1,854	8.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/12	1	1,861	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/12	1	1,862	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/12	1	1,869	6.000	2.0	0.34	1	0	1	0	0	0	0	0
3	7/12	1	1,870	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	1	1,877	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	1	1,878	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	2	1,885	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/12	2	1,886	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	2	1,893	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	2	1,894	6.000	2.1	0.34	0	0	0	0	0	0	0	0
3	7/12	2	1,901	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	2	1,902	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	3	1,909	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	3	1,910	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/12	3	1,917	6.000	2.0	0.33	5	0	5	0	0	0	0	0
3	7/12	3	1,918	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/12	3	1,925	5.125	2.0	0.33	11	0	9	2	0	0	0	0
3	7/12	3	1,926	5.125	2.0	0.34	2	0	2	0	0	0	0	0
3	7/13	1	1,933	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/13	1	1,934	6.000	2.2	0.36	0	0	0	0	0	0	0	0
3	7/13	1	1,941	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	1	1,942	5.125	2.0	0.33	5	0	4	1	0	0	0	0
3	7/13	1	1,949	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	1	1,950	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/13	2	1,957	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	2	1,958	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/13	2	1,965	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	2	1,966	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/13	2	1,973	5.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/13	2	1,974	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,981	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,982	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,989	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,990	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,997	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/13	3	1,998	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	1	2,005	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/14	1	2,006	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	1	2,013	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	1	2,014	6.000	2.0	0.33	1	1	0	0	0	0	0	0
3	7/14	1	2,021	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	1	2,022	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	2	2,029	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	2	2,030	5.125	2.0	0.33	2	0	1	1	0	0	0	0
3	7/14	2	2,037	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	2	2,038	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	2	2,045	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/14	2	2,046	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	3	2,053	8.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/14	3	2,054	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	3	2,061	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/14	3	2,062	5.125	2.0	0.33	3	0	3	0	0	0	0	0
3	7/14	3	2,069	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	7/14	3	2,070	6.000	2.0	0.33	3	0	3	0	0	0	0	0
3	7/15	1	2,077	6.000	2.0	0.33	4	1	1	2	0	0	0	0
3	7/15	1	2,078	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	1	2,085	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/15	1	2,086	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	1	2,093	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	1	2,094	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	3	2,101	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	3	2,102	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	3	2,109	6.000	2.0	0.33	2	0	2	0	0	0	0	0
3	7/15	3	2,110	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/15	3	2,117	5.125	2.0	0.33	6	0	6	0	0	0	0	0
3	7/15	3	2,118	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/16	1	2,125	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	1	2,126	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	1	2,133	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	1	2,134	6.000	2.0	0.34	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/16	1	2,141	8.125	2.0	0.33	1	0	0	0	0	0	0	1
3	7/16	1	2,142	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	1	2,143	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/16	1	2,144	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,149	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,150	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,157	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,158	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,165	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/16	3	2,166	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	1	2,173	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	1	2,174	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	1	2,181	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/17	1	2,182	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	1	2,189	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	1	2,190	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	3	2,197	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	3	2,198	8.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/17	3	2,205	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	3	2,206	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/17	3	2,213	6.000	2.0	0.33	3	0	2	1	0	0	0	0
3	7/17	3	2,214	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/18	1	2,221	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	1	2,222	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/18	1	2,229	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/18	1	2,230	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/18	1	2,237	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	1	2,238	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	3	2,245	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	3	2,246	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/18	3	2,253	6.000	2.0	0.33	3	0	0	3	0	0	0	0
3	7/18	3	2,254	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	3	2,261	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/18	3	2,262	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	1	2,269	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/19	1	2,270	5.125	2.0	0.33	1	0	0	1	0	0	0	0
3	7/19	1	2,277	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	1	2,278	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	1	2,285	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	1	2,286	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	3	2,293	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	3	2,294	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/19	3	2,301	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	3	2,302	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	3	2,309	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/19	3	2,310	5.125	2.0	0.33	2	0	2	0	0	0	0	0
3	7/20	1	2,317	5.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/20	1	2,318	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	1	2,325	6.000	2.0	0.33	6	0	1	5	0	0	0	0
3	7/20	1	2,326	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	1	2,333	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	1	2,334	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	3	2,341	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	3	2,342	8.125	1.9	0.32	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/20	3	2,349	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/20	3	2,350	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/20	3	2,357	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/20	3	2,358	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/21	1	2,365	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/21	1	2,366	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/21	1	2,373	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/21	1	2,374	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/21	1	2,381	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/21	1	2,382	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/21	3	2,389	5.125	2.2	0.36	0	0	0	0	0	0	0	0
3	7/21	3	2,390	5.125	2.2	0.36	0	0	0	0	0	0	0	0
3	7/21	3	2,397	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/21	3	2,398	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/21	3	2,405	8.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/21	3	2,406	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	1	2,413	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	1	2,414	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	1	2,421	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/22	1	2,422	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	1	2,429	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	1	2,430	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/22	3	2,437	6.000	2.0	0.33	2	0	0	2	0	0	0	0
3	7/22	3	2,438	6.000	2.0	0.34	1	0	1	0	0	0	0	0
3	7/22	3	2,445	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	3	2,446	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/22	3	2,453	5.125	2.0	0.33	3	0	1	2	0	0	0	0
3	7/22	3	2,454	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	1	2,461	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	1	2,462	5.125	2.0	0.33	2	0	1	1	0	0	0	0
3	7/23	1	2,469	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	1	2,470	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	1	2,477	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	1	2,478	8.125	2.0	0.33	1	1	0	0	0	0	0	0
3	7/23	3	2,485	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	3	2,486	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	3	2,493	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	3	2,494	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/23	3	2,501	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/23	3	2,502	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	1	2,509	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	1	2,510	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/24	1	2,517	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	1	2,518	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	1	2,525	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	1	2,526	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,533	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,534	8.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,541	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,542	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/24	3	2,549	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,550	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/24	3	2,551	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/24	3	2,552	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/25	1	2,559	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	1	2,560	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	1	2,561	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	1	2,571	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	1	2,572	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	1	2,573	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/25	3	2,583	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	3	2,584	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	3	2,585	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	3	2,595	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/25	3	2,596	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/25	3	2,597	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,607	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,608	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,609	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,619	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,620	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	1	2,621	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	7/26	3	2,631	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	3	2,632	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	3	2,633	5.125	2.0	0.33	2	0	1	0	0	1	0	0
3	7/26	3	2,643	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/26	3	2,644	6.000	2.0	0.33	2	0	0	0	0	2	0	0
3	7/26	3	2,645	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	1	2,655	6.000	2.1	0.34	0	0	0	0	0	0	0	0
3	7/27	1	2,656	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	1	2,657	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	7/27	1	2,667	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	1	2,668	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	1	2,669	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	3	2,679	5.125	2.0	0.33	2	0	0	0	0	2	0	0
3	7/27	3	2,680	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	3	2,681	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	3	2,691	6.000	2.2	0.36	0	0	0	0	0	0	0	0
3	7/27	3	2,692	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/27	3	2,693	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	1	2,703	6.000	2.0	0.33	1	0	0	1	0	0	0	0
3	7/28	1	2,704	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	1	2,705	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	1	2,715	5.125	2.0	0.33	2	0	1	0	0	1	0	0
3	7/28	1	2,716	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	1	2,717	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	3	2,727	5.125	2.0	0.34	1	0	0	1	0	0	0	0
3	7/28	3	2,728	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	3	2,729	5.125	2.0	0.33	1	0	0	0	0	0	0	1
3	7/28	3	2,739	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/28	3	2,740	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	7/28	3	2,741	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	1	2,751	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	1	2,752	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	1	2,753	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	1	2,763	5.125	2.1	0.34	0	0	0	0	0	0	0	0
3	7/29	1	2,764	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	1	2,765	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	7/29	3	2,775	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	3	2,776	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	3	2,777	5.125	2.0	0.33	1	0	1	0	0	0	0	0
3	7/29	3	2,787	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	3	2,788	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/29	3	2,789	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	1	2,799	6.000	2.0	0.33	2	0	0	1	0	1	0	0
3	7/30	1	2,800	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	1	2,801	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	1	2,811	5.125	2.0	0.33	1	0	0	0	0	0	0	1
3	7/30	1	2,812	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	1	2,813	5.125	2.0	0.33	1	0	0	1	0	0	0	0
3	7/30	3	2,823	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	3	2,824	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	3	2,825	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	3	2,835	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	7/30	3	2,836	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/30	3	2,837	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,847	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,848	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,849	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,859	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,860	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	1	2,861	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,871	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,872	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,873	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,883	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,884	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	7/31	3	2,885	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	1	2,895	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	1	2,896	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	1	2,897	6.000	2.0	0.33	1	0	0	0	0	1	0	0
3	8/01	1	2,907	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	1	2,908	5.125	2.0	0.33	4	0	1	0	0	3	0	0
3	8/01	1	2,909	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	3	2,919	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	8/01	3	2,920	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	8/01	3	2,921	5.125	2.0	0.33	2	0	0	0	0	2	0	0
3	8/01	3	2,931	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	3	2,932	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/01	3	2,933	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,943	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,944	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,945	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,955	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,956	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	1	2,957	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	3	2,967	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	3	2,968	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	3	2,969	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	8/02	3	2,979	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	3	2,980	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/02	3	2,981	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	8/03	1	2,991	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	1	2,992	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	1	2,993	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	1	3,003	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	1	3,004	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	1	3,005	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	3	3,015	5.125	2.1	0.34	0	0	0	0	0	0	0	0
3	8/03	3	3,016	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	3	3,017	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	3	3,027	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	3	3,028	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/03	3	3,029	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	1	3,039	6.000	2.0	0.33	2	0	0	0	0	2	0	0
3	8/04	1	3,040	6.000	2.0	0.33	1	0	1	0	0	0	0	0
3	8/04	1	3,041	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	1	3,051	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	1	3,052	5.125	2.0	0.33	3	0	0	0	0	3	0	0
3	8/04	1	3,053	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	3	3,063	5.125	2.0	0.33	1	0	0	0	0	0	0	1
3	8/04	3	3,064	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	3	3,065	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	8/04	3	3,075	6.000	2.0	0.34	1	0	0	0	0	1	0	0
3	8/04	3	3,076	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/04	3	3,077	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	1	3,087	6.000	2.0	0.33	4	0	2	0	0	2	0	0
3	8/05	1	3,088	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	1	3,089	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	1	3,099	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	1	3,100	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	1	3,101	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	3	3,111	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	3	3,112	5.125	2.0	0.34	0	0	0	0	0	0	0	0
3	8/05	3	3,113	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	3	3,123	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	3	3,124	6.000	2.0	0.33	1	0	0	0	0	0	0	1
3	8/05	3	3,125	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/05	3	3,126	6.000	2.0	0.34	0	0	0	0	0	0	0	0
3	8/06	1	3,135	6.000	2.0	0.34	1	0	0	0	0	1	0	0
3	8/06	1	3,136	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	1	3,137	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	1	3,147	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	1	3,148	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	1	3,149	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	3	3,159	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	3	3,160	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	3	3,161	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	3	3,171	6.000	2.0	0.33	1	0	0	0	0	1	0	0
3	8/06	3	3,172	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/06	3	3,173	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/07	1	3,183	6.000	2.0	0.33	1	0	0	0	0	0	0	1
3	8/07	1	3,184	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/07	1	3,185	6.000	2.0	0.33	0	0	0	0	0	0	0	0
3	8/07	1	3,195	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/07	1	3,196	5.125	2.1	0.36	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	8/07	1	3,197	5.125	2.0	0.33	0	0	0	0	0	0	0	0
3	8/07	3	3,207	5.125	2.1	0.34	0	0	0	0	0	0	0	0
3	8/07	3	3,208	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/07	3	3,209	5.125	2.9	0.49	0	0	0	0	0	0	0	0
3	8/07	3	3,219	6.000	2.5	0.41	1	0	0	0	0	1	0	0
3	8/07	3	3,220	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/07	3	3,221	6.000	2.6	0.43	0	0	0	0	0	0	0	0
3	8/08	1	3,231	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	1	3,232	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	1	3,233	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	1	3,243	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	1	3,244	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	1	3,245	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	3	3,255	5.125	2.5	0.42	1	0	0	1	0	0	0	0
3	8/08	3	3,256	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	3	3,257	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	3	3,267	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	3	3,268	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/08	3	3,269	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	1	3,279	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	1	3,280	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	1	3,281	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	1	3,291	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/09	1	3,292	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	1	3,293	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	3	3,303	5.125	2.5	0.42	2	0	0	0	0	2	0	0
3	8/09	3	3,304	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/09	3	3,305	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	3	3,315	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	3	3,316	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/09	3	3,317	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,327	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,328	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,329	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,339	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,340	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	1	3,341	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	3	3,351	5.125	2.5	0.41	0	0	0	0	0	0	0	0
3	8/10	3	3,352	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/10	3	3,353	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	3	3,363	6.000	2.5	0.42	1	0	0	0	0	1	0	0
3	8/10	3	3,364	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/10	3	3,365	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/11	1	3,375	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/11	1	3,376	6.000	2.5	0.42	1	0	0	0	0	1	0	0
3	8/11	1	3,377	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/11	1	3,387	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/11	1	3,388	5.125	2.5	0.42	3	0	0	0	0	3	0	0
3	8/11	1	3,389	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,399	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/12	3	3,400	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,401	5.125	2.4	0.40	6	0	0	0	0	6	0	0
3	8/12	3	3,411	6.000	2.4	0.39	5	0	0	0	0	5	0	0
3	8/12	3	3,412	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	8/12	3	3,413	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	1	3,423	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	1	3,424	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	1	3,425	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	1	3,426	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	1	3,435	5.125	2.5	0.42	2	0	0	0	0	2	0	0
3	8/12	1	3,436	5.125	2.5	0.41	0	0	0	0	0	0	0	0
3	8/12	1	3,437	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,447	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,448	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/12	3	3,449	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,459	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,460	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/12	3	3,461	6.000	2.5	0.42	2	0	0	0	0	2	0	0
3	8/13	1	3,471	6.000	2.5	0.42	2	0	0	0	0	2	0	0
3	8/13	1	3,472	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	1	3,473	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	1	3,483	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	1	3,484	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	1	3,485	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	3	3,495	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	3	3,496	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	3	3,497	5.125	2.6	0.44	0	0	0	0	0	0	0	0
3	8/13	3	3,507	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/13	3	3,508	6.000	2.5	0.42	1	0	0	0	0	1	0	0
3	8/13	3	3,509	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,519	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,520	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,521	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,531	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,532	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	1	3,533	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	3	3,543	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	3	3,544	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/14	3	3,545	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	3	3,555	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	3	3,556	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/14	3	3,557	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,567	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,568	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,569	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,579	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,580	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	1	3,581	5.125	2.6	0.43	0	0	0	0	0	0	0	0
3	8/15	3	3,591	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	3	3,592	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	3	3,593	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	3	3,603	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	3	3,604	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/15	3	3,605	6.000	2.5	0.42	1	0	0	0	0	1	0	0
3	8/16	1	3,615	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	1	3,616	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	1	3,617	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	1	3,627	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
3	8/16	1	3,628	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	1	3,629	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,639	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,640	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,641	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,651	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,652	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/16	3	3,653	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	1	3,663	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	1	3,664	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	1	3,665	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	1	3,675	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	1	3,676	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/17	1	3,677	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,687	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,688	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,689	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,699	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,700	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/17	3	3,701	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	1	3,711	6.000	3.0	0.50	0	0	0	0	0	0	0	0
3	8/18	1	3,712	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	1	3,713	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	1	3,723	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	1	3,724	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	1	3,725	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	3	3,735	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	3	3,736	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	3	3,737	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	3	3,747	6.000	2.5	0.42	3	0	0	0	0	3	0	0
3	8/18	3	3,748	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/18	3	3,749	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	1	3,759	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	1	3,760	6.000	2.8	0.47	0	0	0	0	0	0	0	0
3	8/19	1	3,761	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	1	3,771	5.125	2.5	0.42	1	0	0	0	0	0	0	1
3	8/19	1	3,772	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	1	3,773	5.125	2.5	0.42	1	0	0	0	0	1	0	0
3	8/19	3	3,783	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	3	3,784	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	3	3,785	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	3	3,795	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/19	3	3,796	6.000	2.5	0.42	1	0	0	0	0	0	0	1
3	8/19	3	3,797	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,807	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,808	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,809	6.000	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,819	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,820	5.125	2.5	0.42	0	0	0	0	0	0	0	0
3	8/20	1	3,821	5.125	2.5	0.42	0	0	0	0	0	0	0	0
Range 3 Total -					1,998.0	332.97	713	39	324	280	0	61	1	8
4	6/11	1	7	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/11	1	8	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	1	15	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	1	16	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	1	23	8.125	2.1	0.34	0	0	0	0	0	0	0	0
4	6/11	1	24	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	3	31	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	3	32	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	3	39	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/11	3	40	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/11	3	47	6.000	2.1	0.35	0	0	0	0	0	0	0	0
4	6/11	3	48	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	55	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	56	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	63	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	64	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	71	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	1	72	5.125	2.1	0.34	0	0	0	0	0	0	0	0
4	6/12	3	79	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	3	80	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	3	87	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	3	88	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	3	95	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/12	3	96	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/13	1	103	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	1	104	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	1	111	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	1	112	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	1	119	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/13	1	120	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	127	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	128	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	135	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	136	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	143	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/13	3	144	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/14	1	151	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	1	152	8.125	2.6	0.43	0	0	0	0	0	0	0	0
4	6/14	1	159	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	1	160	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	1	167	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	1	168	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	3	175	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	3	176	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	3	183	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	3	184	6.000	2.5	0.41	0	0	0	0	0	0	0	0
4	6/14	3	191	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/14	3	192	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	199	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	200	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	207	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	208	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	215	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	1	216	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	3	223	6.000	2.5	0.41	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/15	3	224	6.000	2.5	0.42	1	0	0	1	0	0	0	0
4	6/15	3	231	8.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/15	3	232	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	3	239	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/15	3	240	5.125	2.5	0.41	0	0	0	0	0	0	0	0
4	6/16	1	247	5.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/16	1	248	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/16	1	255	6.000	2.5	0.42	3	2	0	1	0	0	0	0
4	6/16	1	256	6.000	2.5	0.42	3	1	0	2	0	0	0	0
4	6/16	1	263	8.125	2.6	0.44	0	0	0	0	0	0	0	0
4	6/16	1	264	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/16	3	271	8.125	2.5	0.42	1	1	0	0	0	0	0	0
4	6/16	3	272	8.125	2.5	0.42	2	1	0	1	0	0	0	0
4	6/16	3	279	6.000	2.6	0.43	3	2	0	1	0	0	0	0
4	6/16	3	280	6.000	2.5	0.42	4	4	0	0	0	0	0	0
4	6/16	3	287	5.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/16	3	288	5.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/17	1	295	8.125	2.6	0.43	3	0	0	3	0	0	0	0
4	6/17	1	296	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/17	1	303	6.000	2.5	0.41	0	0	0	0	0	0	0	0
4	6/17	1	304	6.000	2.5	0.42	1	0	0	1	0	0	0	0
4	6/17	1	311	5.125	2.5	0.42	1	1	0	0	0	0	0	0
4	6/17	1	312	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/17	3	319	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/17	3	320	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/17	3	327	6.000	2.5	0.42	2	0	0	2	0	0	0	0
4	6/17	3	328	6.000	2.5	0.42	2	0	0	2	0	0	0	0
4	6/17	3	335	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/17	3	336	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	1	343	8.125	2.5	0.41	0	0	0	0	0	0	0	0
4	6/18	1	344	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	1	351	6.000	2.5	0.41	0	0	0	0	0	0	0	0
4	6/18	1	352	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	1	359	5.125	2.5	0.41	0	0	0	0	0	0	0	0
4	6/18	1	360	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	3	367	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	3	368	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/18	3	375	6.000	2.8	0.47	0	0	0	0	0	0	0	0
4	6/18	3	376	6.000	3.0	0.51	0	0	0	0	0	0	0	0
4	6/18	3	383	8.125	2.6	0.43	0	0	0	0	0	0	0	0
4	6/18	3	384	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	1	391	8.125	2.6	0.43	0	0	0	0	0	0	0	0
4	6/19	1	392	8.125	2.5	0.42	1	1	0	0	0	0	0	0
4	6/19	1	399	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	1	400	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	1	406	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	1	407	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	3	415	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	3	416	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	3	423	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	3	424	6.000	2.5	0.41	0	0	0	0	0	0	0	0
4	6/19	3	431	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/19	3	432	8.125	2.5	0.41	0	0	0	0	0	0	0	0
4	6/20	1	439	8.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/20	1	440	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/20	1	447	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/20	1	448	6.000	2.7	0.44	0	0	0	0	0	0	0	0
4	6/20	1	455	5.125	2.7	0.44	0	0	0	0	0	0	0	0
4	6/20	1	456	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/20	3	463	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/20	3	464	5.125	2.6	0.43	0	0	0	0	0	0	0	0
4	6/20	3	471	6.000	2.6	0.43	0	0	0	0	0	0	0	0
4	6/20	3	472	6.000	2.6	0.43	0	0	0	0	0	0	0	0
4	6/20	3	479	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/20	3	480	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	1	487	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	1	488	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	1	495	6.000	2.5	0.41	1	1	0	0	0	0	0	0
4	6/21	1	496	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	1	503	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	1	504	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	3	511	5.125	2.5	0.42	1	1	0	0	0	0	0	0
4	6/21	3	512	5.125	2.6	0.43	0	0	0	0	0	0	0	0
4	6/21	3	519	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	3	520	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	3	527	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/21	3	528	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	1	535	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	1	536	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	1	543	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	1	544	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	1	551	5.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/22	1	552	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	559	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	560	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	567	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	568	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	575	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/22	3	576	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	583	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	584	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	591	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	592	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	599	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	1	600	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	2	607	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	2	608	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	2	615	6.000	2.6	0.43	0	0	0	0	0	0	0	0
4	6/23	2	616	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	2	623	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	2	624	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	631	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	632	8.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	639	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	640	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	647	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/23	3	648	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	6/24	1	655	5.125	2.5	0.42	1	0	0	1	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/24	1	656	5.125	2.5	0.42	5	1	0	4	0	0	0	0
4	6/24	1	663	6.000	2.6	0.43	9	0	0	9	0	0	0	0
4	6/24	1	664	6.000	2.5	0.42	1	1	0	0	0	0	0	0
4	6/24	1	671	8.125	2.5	0.42	4	1	0	3	0	0	0	0
4	6/24	1	672	8.125	2.5	0.42	1	0	0	1	0	0	0	0
4	6/24	2	679	8.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/24	2	680	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/24	2	687	6.000	2.0	0.33	4	1	0	3	0	0	0	0
4	6/24	2	688	6.000	2.0	0.33	3	2	0	1	0	0	0	0
4	6/24	2	695	5.125	2.0	0.33	4	1	0	3	0	0	0	0
4	6/24	2	696	5.125	2.0	0.33	4	3	0	1	0	0	0	0
4	6/24	3	703	5.125	2.0	0.33	6	1	0	5	0	0	0	0
4	6/24	3	704	5.125	2.0	0.33	6	0	0	6	0	0	0	0
4	6/24	3	711	6.000	2.0	0.34	5	0	0	5	0	0	0	0
4	6/24	3	712	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	6/24	3	719	8.125	2.0	0.33	3	1	0	2	0	0	0	0
4	6/24	3	720	8.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/25	1	727	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/25	1	728	8.125	2.0	0.34	1	1	0	0	0	0	0	0
4	6/25	1	735	6.000	2.0	0.33	2	0	0	2	0	0	0	0
4	6/25	1	736	6.000	2.0	0.33	4	2	0	2	0	0	0	0
4	6/25	1	743	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/25	1	744	5.125	2.0	0.34	1	0	0	1	0	0	0	0
4	6/25	2	751	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/25	2	752	5.125	2.0	0.33	5	2	0	3	0	0	0	0
4	6/25	2	759	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	6/25	2	760	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/25	2	767	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/25	2	768	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/25	3	775	8.125	2.0	0.33	4	3	0	1	0	0	0	0
4	6/25	3	776	8.125	2.0	0.33	2	1	1	0	0	0	0	0
4	6/25	3	783	6.000	2.1	0.34	4	1	0	3	0	0	0	0
4	6/25	3	784	6.000	2.1	0.34	1	0	0	1	0	0	0	0
4	6/25	3	791	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/25	3	792	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	1	799	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/26	1	800	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	1	807	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	1	808	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	1	815	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	1	816	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	2	823	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	2	824	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	2	831	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	2	832	6.000	2.0	0.34	1	0	1	0	0	0	0	0
4	6/26	2	839	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/26	2	840	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	3	847	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/26	3	848	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/26	3	855	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	6/26	3	856	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	6/26	3	863	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/26	3	864	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/27	1	871	8.125	2.0	0.34	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/27	1	872	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/27	1	879	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	1	880	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	1	887	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/27	1	888	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	895	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	896	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	903	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	904	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	911	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	2	912	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	3	919	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/27	3	920	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	3	927	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	6/27	3	928	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/27	3	935	6.000	2.2	0.36	0	0	0	0	0	0	0	0
4	6/27	3	936	6.000	2.2	0.36	1	1	0	0	0	0	0	0
4	6/28	1	943	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	6/28	1	944	6.000	2.0	0.34	1	0	0	1	0	0	0	0
4	6/28	1	951	5.125	2.1	0.35	1	0	0	1	0	0	0	0
4	6/28	1	952	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	1	959	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	1	960	8.125	2.0	0.34	1	1	0	0	0	0	0	0
4	6/28	2	967	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	6/28	2	968	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	2	975	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	6/28	2	976	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	2	983	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	2	984	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	6/28	3	991	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	6/28	3	992	5.125	2.0	0.33	2	0	0	2	0	0	0	0
4	6/28	3	999	6.000	2.0	0.33	4	0	0	4	0	0	0	0
4	6/28	3	1,000	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	3	1,007	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/28	3	1,008	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	1	1,015	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	1	1,016	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	1	1,023	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	6/29	1	1,024	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	1	1,031	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	1	1,032	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	2	1,039	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	6/29	2	1,040	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	6/29	2	1,047	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	6/29	2	1,048	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	2	1,055	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	2	1,056	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/29	3	1,063	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	6/29	3	1,064	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	6/29	3	1,071	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	6/29	3	1,072	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/29	3	1,079	5.125	2.0	0.33	5	1	2	2	0	0	0	0
4	6/29	3	1,080	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	1	1,087	5.125	2.0	0.33	1	0	0	1	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	6/30	1	1,088	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	6/30	1	1,095	6.000	2.0	0.33	3	0	0	3	0	0	0	0
4	6/30	1	1,096	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	1	1,103	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	1	1,104	8.125	2.0	0.34	1	1	0	0	0	0	0	0
4	6/30	2	1,111	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	2	1,112	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	2	1,119	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	2	1,120	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	2	1,127	5.125	2.0	0.33	7	0	0	7	0	0	0	0
4	6/30	2	1,128	5.125	2.0	0.33	3	2	0	1	0	0	0	0
4	6/30	3	1,135	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	3	1,136	5.125	2.0	0.33	2	0	0	2	0	0	0	0
4	6/30	3	1,143	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	6/30	3	1,144	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	6/30	3	1,151	8.125	2.0	0.33	7	0	1	6	0	0	0	0
4	6/30	3	1,152	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	1	1,159	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	1	1,160	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	1	1,167	5.125	2.0	0.33	3	1	0	2	0	0	0	0
4	7/01	1	1,168	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	1	1,175	6.000	2.0	0.33	3	0	3	0	0	0	0	0
4	7/01	1	1,176	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	2	1,181	6.000	2.0	0.33	8	0	3	5	0	0	0	0
4	7/01	2	1,182	6.000	2.0	0.33	3	0	0	3	0	0	0	0
4	7/01	2	1,187	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	7/01	2	1,188	5.125	2.0	0.34	3	2	0	1	0	0	0	0
4	7/01	2	1,193	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/01	2	1,194	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/01	3	1,199	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	3	1,200	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/01	3	1,205	6.000	2.0	0.33	5	1	0	4	0	0	0	0
4	7/01	3	1,206	6.000	2.0	0.33	5	0	0	5	0	0	0	0
4	7/01	3	1,211	5.125	2.0	0.33	6	1	0	5	0	0	0	0
4	7/01	3	1,212	5.125	2.0	0.33	11	3	0	8	0	0	0	0
4	7/02	1	1,215	5.125	2.0	0.33	3	0	0	3	0	0	0	0
4	7/02	1	1,216	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/02	1	1,219	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/02	1	1,220	6.000	2.0	0.33	5	0	3	2	0	0	0	0
4	7/02	1	1,223	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/02	1	1,224	6.000	2.0	0.33	3	3	0	0	0	0	0	0
4	7/02	2	1,227	8.125	2.0	0.33	2	1	1	0	0	0	0	0
4	7/02	2	1,228	8.125	2.0	0.33	2	1	1	0	0	0	0	0
4	7/02	2	1,231	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/02	2	1,232	6.000	2.0	0.33	3	2	0	1	0	0	0	0
4	7/02	2	1,235	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/02	2	1,236	5.125	2.0	0.34	1	0	0	1	0	0	0	0
4	7/02	3	1,239	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/02	3	1,240	5.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/02	3	1,243	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/02	3	1,244	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/02	3	1,247	8.125	2.1	0.35	2	2	0	0	0	0	0	0
4	7/02	3	1,248	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/03	1	1,255	8.125	2.0	0.34	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/03	1	1,256	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/03	1	1,263	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/03	1	1,264	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	7/03	1	1,271	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/03	1	1,272	5.125	2.0	0.33	3	1	1	1	0	0	0	0
4	7/03	2	1,277	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/03	2	1,278	5.125	2.0	0.33	2	1	1	0	0	0	0	0
4	7/03	2	1,283	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/03	2	1,284	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/03	2	1,289	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/03	2	1,290	8.125	2.0	0.33	3	3	0	0	0	0	0	0
4	7/03	3	1,295	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/03	3	1,296	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/03	3	1,300	6.000	2.0	0.33	1	0	1	0	0	0	0	0
4	7/03	3	1,301	6.000	2.0	0.33	3	0	0	3	0	0	0	0
4	7/03	3	1,302	6.000	2.0	0.33	2	0	0	2	0	0	0	0
4	7/03	3	1,307	5.125	2.0	0.33	4	1	0	3	0	0	0	0
4	7/03	3	1,308	5.125	2.0	0.33	4	2	0	2	0	0	0	0
4	7/04	1	1,315	5.125	2.0	0.33	2	0	0	2	0	0	0	0
4	7/04	1	1,316	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/04	1	1,323	6.000	2.0	0.34	6	1	2	3	0	0	0	0
4	7/04	1	1,324	6.000	2.0	0.33	2	1	1	0	0	0	0	0
4	7/04	1	1,331	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/04	1	1,332	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/04	2	1,337	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/04	2	1,338	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/04	2	1,343	6.000	2.0	0.33	5	1	3	1	0	0	0	0
4	7/04	2	1,344	6.000	1.5	0.25	5	1	2	2	0	0	0	0
4	7/04	2	1,349	5.125	2.0	0.33	5	3	0	2	0	0	0	0
4	7/04	2	1,350	5.125	2.0	0.33	3	0	0	3	0	0	0	0
4	7/04	3	1,355	5.125	2.0	0.33	5	3	0	2	0	0	0	0
4	7/04	3	1,356	5.125	2.0	0.33	6	2	3	1	0	0	0	0
4	7/04	3	1,361	6.000	2.0	0.33	5	0	0	5	0	0	0	0
4	7/04	3	1,362	6.000	2.0	0.33	5	1	1	3	0	0	0	0
4	7/04	3	1,367	8.125	2.0	0.34	3	0	2	1	0	0	0	0
4	7/04	3	1,368	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/05	1	1,375	5.125	2.0	0.33	7	1	3	3	0	0	0	0
4	7/05	1	1,376	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/05	1	1,381	6.000	2.1	0.34	5	1	1	3	0	0	0	0
4	7/05	1	1,382	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	7/05	1	1,387	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/05	1	1,388	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/05	2	1,393	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/05	2	1,394	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/05	2	1,399	6.000	2.0	0.33	5	4	1	0	0	0	0	0
4	7/05	2	1,400	6.000	2.0	0.33	1	0	1	0	0	0	0	0
4	7/05	2	1,405	5.125	2.0	0.33	7	0	4	3	0	0	0	0
4	7/05	2	1,406	5.125	2.0	0.33	5	0	1	4	0	0	0	0
4	7/05	3	1,411	5.125	2.0	0.33	4	2	0	2	0	0	0	0
4	7/05	3	1,412	5.125	2.0	0.33	3	0	0	3	0	0	0	0
4	7/05	3	1,417	6.000	2.0	0.33	4	1	1	2	0	0	0	0
4	7/05	3	1,418	6.000	1.9	0.32	6	2	1	3	0	0	0	0
4	7/05	3	1,423	8.125	2.1	0.34	4	4	0	0	0	0	0	0
4	7/05	3	1,424	8.125	2.0	0.33	1	1	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/06	1	1,431	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/06	1	1,432	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/06	1	1,439	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/06	1	1,440	6.000	2.0	0.33	2	1	1	0	0	0	0	0
4	7/06	1	1,447	5.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/06	1	1,448	5.125	1.5	0.25	0	0	0	0	0	0	0	0
4	7/06	2	1,455	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	7/06	2	1,456	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/06	2	1,463	6.000	1.5	0.25	3	3	0	0	0	0	0	0
4	7/06	2	1,464	6.000	1.5	0.25	2	1	0	1	0	0	0	0
4	7/06	2	1,471	8.125	1.5	0.25	0	0	0	0	0	0	0	0
4	7/06	2	1,472	8.125	1.5	0.25	1	1	0	0	0	0	0	0
4	7/06	3	1,479	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/06	3	1,480	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/06	3	1,487	6.000	2.0	0.33	3	1	1	1	0	0	0	0
4	7/06	3	1,488	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/06	3	1,495	5.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/06	3	1,496	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	1	1,503	5.125	2.0	0.33	2	0	2	0	0	0	0	0
4	7/07	1	1,504	5.125	2.0	0.34	1	1	0	0	0	0	0	0
4	7/07	1	1,511	6.000	1.5	0.25	1	0	1	0	0	0	0	0
4	7/07	1	1,512	6.000	2.0	0.33	2	0	2	0	0	0	0	0
4	7/07	1	1,519	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	1	1,520	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/07	2	1,527	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/07	2	1,528	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/07	2	1,535	6.000	2.0	0.33	2	0	1	1	0	0	0	0
4	7/07	2	1,536	6.000	2.0	0.33	1	0	1	0	0	0	0	0
4	7/07	2	1,543	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	7/07	2	1,544	5.125	2.0	0.33	2	0	0	2	0	0	0	0
4	7/07	3	1,551	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	3	1,552	5.125	2.0	0.33	2	1	1	0	0	0	0	0
4	7/07	3	1,559	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	3	1,560	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	3	1,567	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/07	3	1,568	8.125	2.0	0.33	2	1	1	0	0	0	0	0
4	7/08	1	1,575	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	1	1,576	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/08	1	1,583	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	1	1,584	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	1	1,591	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	1	1,592	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	2	1,599	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	2	1,600	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	2	1,607	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	2	1,608	6.000	2.0	0.33	2	0	0	2	0	0	0	0
4	7/08	2	1,615	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/08	2	1,616	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/08	3	1,623	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/08	3	1,624	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/08	3	1,631	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	3	1,632	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	7/08	3	1,639	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/08	3	1,640	5.125	2.0	0.33	1	0	0	1	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/09	1	1,647	5.125	2.0	0.33	3	3	0	0	0	0	0	0
4	7/09	1	1,648	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	1	1,655	6.000	2.0	0.33	2	2	0	0	0	0	0	0
4	7/09	1	1,656	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	1	1,663	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	1	1,664	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	2	1,671	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	2	1,672	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/09	2	1,679	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	2	1,680	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	2	1,687	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	2	1,688	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	3	1,695	5.125	2.0	0.33	4	4	0	0	0	0	0	0
4	7/09	3	1,696	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	3	1,703	6.000	2.0	0.34	2	0	0	2	0	0	0	0
4	7/09	3	1,704	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	3	1,711	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/09	3	1,712	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	1	1,719	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/10	1	1,720	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	1	1,727	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	1	1,728	6.000	2.0	0.33	1	0	1	0	0	0	0	0
4	7/10	1	1,735	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	1	1,736	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	7/10	2	1,743	5.125	2.0	0.33	5	4	0	1	0	0	0	0
4	7/10	2	1,744	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	2	1,751	6.000	2.0	0.33	2	0	0	2	0	0	0	0
4	7/10	2	1,752	6.000	2.0	0.33	4	0	0	4	0	0	0	0
4	7/10	2	1,759	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	2	1,760	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	3	1,767	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	3	1,768	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	3	1,775	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	7/10	3	1,776	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/10	3	1,783	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	7/10	3	1,784	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/11	1	1,791	5.125	2.0	0.33	2	1	0	1	0	0	0	0
4	7/11	1	1,792	5.125	2.0	0.33	2	0	2	0	0	0	0	0
4	7/11	1	1,799	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/11	1	1,800	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	1	1,807	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	1	1,808	8.125	2.0	0.34	1	1	0	0	0	0	0	0
4	7/11	2	1,815	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	2	1,816	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/11	2	1,823	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	2	1,824	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	2	1,831	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	2	1,832	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/11	3	1,839	5.125	2.0	0.33	2	0	1	1	0	0	0	0
4	7/11	3	1,840	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/11	3	1,847	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/11	3	1,848	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	3	1,855	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/11	3	1,856	8.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/12	1	1,863	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	1	1,864	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/12	1	1,871	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	1	1,872	6.000	2.0	0.34	1	0	1	0	0	0	0	0
4	7/12	1	1,879	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	1	1,880	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	2	1,887	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	2	1,888	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/12	2	1,895	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	2	1,896	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	2	1,903	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	2	1,904	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/12	3	1,911	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	3	1,912	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	3	1,919	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	3	1,920	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/12	3	1,927	5.125	2.0	0.34	1	1	0	0	0	0	0	0
4	7/12	3	1,928	5.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/13	1	1,935	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	7/13	1	1,936	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	1	1,943	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	1	1,944	5.125	2.0	0.33	2	0	2	0	0	0	0	0
4	7/13	1	1,951	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	1	1,952	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/13	2	1,959	8.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/13	2	1,960	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	2	1,967	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/13	2	1,968	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	2	1,975	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/13	2	1,976	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/13	3	1,983	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	3	1,984	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	3	1,991	6.000	2.0	0.33	2	0	2	0	0	0	0	0
4	7/13	3	1,992	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	3	1,999	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/13	3	2,000	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/14	1	2,007	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	1	2,008	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	1	2,015	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	1	2,016	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	1	2,023	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	1	2,024	5.125	2.1	0.36	0	0	0	0	0	0	0	0
4	7/14	2	2,031	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	2	2,032	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	2	2,039	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	7/14	2	2,040	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	2	2,047	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	2	2,048	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,055	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,056	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,063	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,064	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,071	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/14	3	2,072	6.000	2.0	0.33	2	2	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/15	1	2,079	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	7/15	1	2,080	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	1	2,087	5.125	2.1	0.34	0	0	0	0	0	0	0	0
4	7/15	1	2,088	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	1	2,095	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	1	2,096	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/15	3	2,103	8.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/15	3	2,104	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	3	2,111	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	3	2,112	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	3	2,119	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/15	3	2,120	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/16	1	2,127	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/16	1	2,128	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/16	1	2,135	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/16	1	2,136	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/16	3	2,151	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/16	3	2,152	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/16	3	2,159	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/16	3	2,160	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/16	3	2,167	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/16	3	2,168	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	1	2,175	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	1	2,176	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	1	2,183	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	1	2,184	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/17	1	2,191	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	1	2,192	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	3	2,199	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	3	2,200	8.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/17	3	2,207	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	3	2,208	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	3	2,215	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/17	3	2,216	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	1	2,223	6.000	2.0	0.34	1	1	0	0	0	0	0	0
4	7/18	1	2,224	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/18	1	2,231	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	1	2,232	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	1	2,239	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	1	2,240	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	3	2,247	8.125	2.0	0.34	2	0	0	2	0	0	0	0
4	7/18	3	2,248	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	3	2,255	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	3	2,256	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/18	3	2,263	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/18	3	2,264	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/19	1	2,271	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	1	2,272	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/19	1	2,279	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	1	2,280	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	1	2,287	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	1	2,288	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	3	2,295	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	3	2,296	6.000	2.0	0.33	2	2	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/19	3	2,303	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	3	2,304	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	3	2,311	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/19	3	2,312	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	1	2,319	5.125	2.1	0.35	0	0	0	0	0	0	0	0
4	7/20	1	2,320	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	1	2,327	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	1	2,328	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	1	2,335	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	1	2,336	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	3	2,343	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	3	2,344	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/20	3	2,351	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/20	3	2,352	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/20	3	2,359	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/20	3	2,360	6.000	2.0	0.33	2	0	1	1	0	0	0	0
4	7/21	1	2,367	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	1	2,368	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	1	2,375	8.125	2.1	0.34	0	0	0	0	0	0	0	0
4	7/21	1	2,376	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	1	2,383	5.125	2.1	0.34	0	0	0	0	0	0	0	0
4	7/21	1	2,384	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	7/21	3	2,391	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	3	2,392	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	3	2,399	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/21	3	2,400	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/21	3	2,407	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/21	3	2,408	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	1	2,415	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	1	2,416	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	1	2,423	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	1	2,424	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	1	2,431	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	7/22	1	2,432	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	3	2,439	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	3	2,440	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	3	2,447	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	3	2,448	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/22	3	2,455	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/22	3	2,456	5.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/23	1	2,463	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	1	2,464	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	1	2,471	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	1	2,472	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/23	1	2,479	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	1	2,480	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	3	2,487	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	3	2,488	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	3	2,495	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/23	3	2,496	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	3	2,503	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/23	3	2,504	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/24	1	2,511	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/24	1	2,512	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/24	1	2,519	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/24	1	2,520	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/24	1	2,527	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/24	1	2,528	8.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/24	3	2,535	8.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/24	3	2,536	8.125	2.0	0.33	4	0	0	4	0	0	0	0
4	7/24	3	2,543	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/24	3	2,544	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	1	2,562	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	1	2,563	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	1	2,564	6.000	2.0	0.33	2	1	0	1	0	0	0	0
4	7/25	1	2,574	5.125	2.0	0.33	1	1	0	0	0	0	0	0
4	7/25	1	2,575	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	1	2,576	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,586	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,587	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,588	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,598	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,599	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/25	3	2,600	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/26	1	2,610	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	1	2,611	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	1	2,612	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	1	2,622	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	1	2,623	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	1	2,624	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	3	2,634	5.125	2.0	0.33	2	2	0	0	0	0	0	0
4	7/26	3	2,635	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	3	2,636	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	3	2,646	6.000	2.0	0.33	2	0	0	1	0	1	0	0
4	7/26	3	2,647	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/26	3	2,648	6.000	2.1	0.35	0	0	0	0	0	0	0	0
4	7/27	1	2,658	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	1	2,659	6.000	2.0	0.33	2	0	0	2	0	0	0	0
4	7/27	1	2,660	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/27	1	2,670	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	1	2,671	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	1	2,672	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,682	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,683	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,684	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,694	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,695	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/27	3	2,696	6.000	2.0	0.33	1	1	0	0	0	0	0	0
4	7/28	1	2,706	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/28	1	2,707	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/28	1	2,708	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/28	1	2,718	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/28	1	2,719	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/28	1	2,720	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/28	3	2,730	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/28	3	2,731	5.125	2.0	0.34	0	0	0	0	0	0	0	0
4	7/28	3	2,732	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/28	3	2,742	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	7/28	3	2,743	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/28	3	2,744	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,754	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,755	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,756	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,766	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,767	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	1	2,768	5.125	2.1	0.34	0	0	0	0	0	0	0	0
4	7/29	3	2,778	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	3	2,779	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	3	2,780	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	3	2,790	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	3	2,791	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/29	3	2,792	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,802	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,803	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,804	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,814	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,815	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	1	2,816	5.125	2.3	0.39	1	0	0	0	0	0	0	1
4	7/30	3	2,826	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	3	2,827	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	3	2,828	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	3	2,838	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	3	2,839	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/30	3	2,840	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	1	2,850	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	1	2,851	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	1	2,852	6.000	2.0	0.34	0	0	0	0	0	0	0	0
4	7/31	1	2,862	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	1	2,863	5.125	2.0	0.33	1	0	1	0	0	0	0	0
4	7/31	1	2,864	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,874	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,875	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,876	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,886	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,887	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	7/31	3	2,888	6.000	2.0	0.33	1	0	0	0	0	1	0	0
4	8/01	1	2,898	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	1	2,899	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	1	2,900	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	1	2,910	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	1	2,911	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	1	2,912	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	3	2,922	5.125	2.0	0.33	7	0	0	0	0	7	0	0
4	8/01	3	2,923	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	3	2,924	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	8/01	3	2,934	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	3	2,935	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/01	3	2,936	6.000	2.1	0.34	0	0	0	0	0	0	0	0
4	8/02	1	2,946	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/02	1	2,947	6.000	2.0	0.33	1	0	0	0	0	1	0	0
4	8/02	1	2,958	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/02	1	2,959	5.125	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	8/02	1	2,960	5.125	2.0	0.33	3	0	0	0	0	3	0	0
4	8/02	3	2,970	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/02	3	2,971	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/02	3	2,972	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/02	3	2,982	6.000	2.0	0.33	1	0	0	0	0	1	0	0
4	8/02	3	2,983	6.000	2.1	0.34	0	0	0	0	0	0	0	0
4	8/02	3	2,984	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	2,994	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	2,995	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	2,996	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	3,006	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	3,007	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	1	3,008	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,018	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,019	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,020	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,030	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,031	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/03	3	3,032	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,042	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,043	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,044	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,054	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,055	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	1	3,056	5.125	2.0	0.33	2	0	0	0	0	2	0	0
4	8/04	3	3,066	5.125	2.0	0.33	1	0	0	0	0	1	0	0
4	8/04	3	3,067	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	3	3,068	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/04	3	3,078	6.000	2.0	0.33	2	0	0	0	0	2	0	0
4	8/05	1	3,090	6.000	2.0	0.33	2	0	0	0	0	2	0	0
4	8/05	1	3,091	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/05	1	3,092	6.000	2.0	0.33	1	0	0	1	0	0	0	0
4	8/05	1	3,102	5.125	2.0	0.33	2	0	0	0	0	2	0	0
4	8/05	1	3,103	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/05	1	3,104	5.125	2.2	0.36	0	0	0	0	0	0	0	0
4	8/05	3	3,114	5.125	2.0	0.33	4	0	0	0	0	4	0	0
4	8/05	3	3,115	5.125	2.0	0.33	1	0	0	0	0	1	0	0
4	8/05	3	3,116	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/05	3	3,127	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/05	3	3,128	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	1	3,138	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	1	3,139	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	1	3,140	6.000	2.0	0.33	2	0	0	0	0	2	0	0
4	8/06	1	3,150	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	1	3,151	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	1	3,152	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	3	3,162	5.125	2.0	0.33	1	0	0	1	0	0	0	0
4	8/06	3	3,163	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	3	3,164	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	3	3,174	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	3	3,175	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/06	3	3,176	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	1	3,186	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	1	3,187	6.000	2.0	0.33	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	8/07	1	3,188	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	1	3,198	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	1	3,199	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	1	3,200	5.125	2.0	0.33	0	0	0	0	0	0	0	0
4	8/07	3	3,210	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/07	3	3,211	5.125	3.1	0.52	0	0	0	0	0	0	0	0
4	8/07	3	3,212	5.125	2.5	0.41	0	0	0	0	0	0	0	0
4	8/07	3	3,222	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/07	3	3,223	6.000	2.6	0.43	0	0	0	0	0	0	0	0
4	8/07	3	3,224	6.000	2.0	0.33	0	0	0	0	0	0	0	0
4	8/08	1	3,234	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	1	3,235	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	1	3,236	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	1	3,246	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	1	3,247	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	1	3,248	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	3	3,258	5.125	2.5	0.41	0	0	0	0	0	0	0	0
4	8/08	3	3,259	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	3	3,260	5.125	2.5	0.42	1	0	0	0	0	1	0	0
4	8/08	3	3,270	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/08	3	3,271	6.000	2.5	0.42	2	0	0	0	0	2	0	0
4	8/08	3	3,272	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,282	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,283	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,284	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,294	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,295	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	1	3,296	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,306	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,307	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,308	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,318	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,319	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/09	3	3,320	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	1	3,330	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	1	3,331	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	1	3,332	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	1	3,342	5.125	2.7	0.44	0	0	0	0	0	0	0	0
4	8/10	1	3,343	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	1	3,344	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	3	3,354	5.125	2.5	0.41	0	0	0	0	0	0	0	0
4	8/10	3	3,355	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	3	3,356	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	3	3,366	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	3	3,367	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/10	3	3,368	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/11	1	3,378	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/11	1	3,379	6.000	2.5	0.42	1	0	0	0	0	1	0	0
4	8/11	1	3,380	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/11	1	3,390	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/11	1	3,391	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/11	1	3,392	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,402	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,403	5.125	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	8/12	3	3,404	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,414	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,415	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,416	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	1	3,427	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	1	3,428	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	1	3,438	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	1	3,439	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	1	3,440	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,450	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,451	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,452	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,462	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,463	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/12	3	3,464	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	1	3,474	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	1	3,475	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	1	3,476	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	1	3,486	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	1	3,487	5.125	2.5	0.42	1	0	0	0	0	1	0	0
4	8/13	1	3,488	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,498	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,499	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,500	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,510	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,511	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/13	3	3,512	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	1	3,522	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	1	3,523	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	1	3,524	6.000	2.5	0.42	2	0	0	0	0	2	0	0
4	8/14	1	3,534	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	1	3,535	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	1	3,536	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	3	3,546	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	3	3,547	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	3	3,548	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	3	3,558	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/14	3	3,559	6.000	3.0	0.50	0	0	0	0	0	0	0	0
4	8/14	3	3,560	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	1	3,570	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	1	3,571	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	1	3,572	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	1	3,582	5.125	2.5	0.42	1	0	0	0	0	1	0	0
4	8/15	1	3,583	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	1	3,584	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	3	3,594	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	3	3,595	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	3	3,596	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	3	3,606	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/15	3	3,607	6.000	2.6	0.43	0	0	0	0	0	0	0	0
4	8/15	3	3,608	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	1	3,618	6.000	2.5	0.41	0	0	0	0	0	0	0	0
4	8/16	1	3,619	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	1	3,620	6.000	2.5	0.42	0	0	0	0	0	0	0	0

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
4	8/16	1	3,630	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	1	3,631	5.125	2.5	0.42	1	0	0	0	0	1	0	0
4	8/16	1	3,632	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,642	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,643	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,644	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,654	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,655	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/16	3	3,656	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,666	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,667	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,668	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,678	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,679	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	1	3,680	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,690	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,691	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,692	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,702	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,703	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/17	3	3,704	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	1	3,714	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	1	3,715	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	1	3,716	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	1	3,726	5.125	2.8	0.46	0	0	0	0	0	0	0	0
4	8/18	1	3,727	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	1	3,728	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,738	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,739	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,740	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,750	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,751	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/18	3	3,752	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	1	3,762	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	1	3,763	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	1	3,764	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	1	3,774	5.125	2.5	0.42	2	0	0	0	0	2	0	0
4	8/19	1	3,775	5.125	2.5	0.42	1	0	0	0	0	1	0	0
4	8/19	1	3,776	5.125	2.6	0.43	0	0	0	0	0	0	0	0
4	8/19	3	3,786	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	3	3,787	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	3	3,788	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	3	3,798	6.000	3.0	0.50	0	0	0	0	0	0	0	0
4	8/19	3	3,799	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/19	3	3,800	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/20	1	3,810	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/20	1	3,811	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/20	1	3,812	6.000	2.5	0.42	0	0	0	0	0	0	0	0
4	8/20	1	3,822	5.125	2.5	0.42	3	0	0	0	0	3	0	0
4	8/20	1	3,823	5.125	2.5	0.42	0	0	0	0	0	0	0	0
4	8/20	1	3,824	5.125	2.5	0.42	0	0	0	0	0	0	0	0
Range 4 Total -					2,087.0	347.79	606	224	77	259	0	45	0	1

Appendix D.1. Drift gillnet catch by range, date, session, drift number, mesh, and species, Nushgak River sonar project, 1999.

Range[a]	Date	Session[b]	Drift Number	Mesh (in)	Fishing Time (min)	Fathom Hours	Catch							
							Total	Chinook	Sockeye	Chum	Pink	Coho	White	Other[c]
All Ranges Total -					8,218.0	1,369.81	2,555	656	812	885	0	190	2	10

[a] 1 = Left bank inshore
2 = Left bank offshore
3 = Right bank inshore
4 = Right bank offshore

[b] 1 = 0700 - 1100 hours
2 = 1300 - 1700 hours
3 = 1800 - 2200 hours

[c] "Other" includes Arctic char, Arctic grayling, and rainbow trout.

Appendix D.2. Beach seine catch by date and range, Nushagak River sonar project, 1999.

			Number Caught by Species					
Date	Range	Number of Sets	Chinook	Sockeye	Chum	Pink	Coho	Total
7/01	3	9	5	41	160	0	0	206
7/02	1	3	8	67	51	0	0	126
7/02	3	4	6	45	75	0	0	126
7/03	1	3	1	81	20	0	0	102
7/04	3	3	2	65	31	0	0	98
7/05	3	9	7	107	79	0	0	193
Total		31	29	406	416	0	0	851